DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 18

[Docket No. FWS–R7–ES–2019–0012; FXES111607MRG01–190–FF07CAMM00]

RIN 1018–BD63

Marine Mammals; Incidental Take During Specified Activities: Cook Inlet, Alaska

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule; availability of draft environmental assessment; revision of information collection; and request for comments.

SUMMARY: We, the U.S. Fish and Wildlife Service, in response to a request from Hilcorp Alaska, LLC, Harvest Alaska, LLC, and the Alaska Gasline Development Corporation, propose to issue regulations authorizing the nonlethal, incidental take by harassment of small numbers of northern sea otters in State and Federal waters (Alaska and the Outer Continental Shelf) within Cook Inlet, Alaska, as well as all adjacent rivers, estuaries, and coastal lands. Take may result from oil and gas exploration, development, production, and transportation activities occurring for a period of 5 years. This proposed rule would authorize take by harassment only; no lethal take would be authorized. If this rule is finalized, we will issue Letters of Authorization, upon request, for specific proposed activities in accordance with the regulations. We intend that any final action resulting from this proposed rule will be as accurate and as effective as possible. Therefore, we request comments on these proposed regulations. We have also submitted a request for revision of existing Information Collection 1018–0070 to the Office of Management and Budget for approval.

DATES: Comments on these proposed incidental take regulations and the accompanying draft environmental assessment will be accepted on or before April 3, 2019.

Information Collection Requirements: If you wish to comment on the information collection requirements in this proposed rule, please note that the Office of Management and Budget (OMB) is required to make a decision concerning the collection of information contained in this proposed rule between 30 and 60 days after publication of this proposed rule in the **Federal Register**. Therefore, comments should be submitted to OMB by April 18, 2019.

ADDRESSES:

Document availability: You may view this proposed rule, the application package, supporting information, draft environmental assessment, and the list of references cited herein at *http://www.regulations.gov* under Docket No. FWS–R7–ES–2019–0012, or these documents may be requested as described under **FOR FURTHER INFORMATION CONTACT**. You may submit comments on the proposed rule by one of the following methods:

- *U.S. mail or hand-delivery:* Public Comments Processing, Attn: Docket No. FWS–R7–ES–2019–0012, Division of Policy, Performance, and Management Programs, U.S. Fish and Wildlife Service, 5275 Leesburg Pike, MS: BPHC, Falls Church, VA 22041–3803.
- *Electronic submission:* Federal eRulemaking Portal at: *http://www.regulations.gov.* Follow the instructions for submitting comments to Docket No. FWS–R7–ES–2019–0012.

We will post all comments at *http://www.regulations.gov.* You may request that we withhold personal identifying information from public review; however, we cannot guarantee that we will be able to do so. See Request for Public Comments for more information.

Information collection requirements: Send your comments on the requested revision of the information collection request (ICR) to the Desk Officer for the Department of the Interior at OMB–OIRA at 202–395–5806 (fax) or *oira_submission@omb.eop.gov* (email). Please provide a copy of your comments to the Service Information Collection Clearance Officer, U.S. Fish and Wildlife Service, MS: BPHC, 5275 Leesburg Pike, Falls Church, VA 22041–3803 (mail); or *info_coll@fws.gov* (email). Please include ''1018–0070'' in the subject line of your comments.

FOR FURTHER INFORMATION CONTACT: Mr. Christopher Putnam, U.S. Fish and Wildlife Service, MS 341, 1011 East Tudor Road, Anchorage, Alaska 99503, by email at *christopher_putnam@fws.gov,* or by telephone at 907–786–3844. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Relay Service (FRS) at 1–800–877–8339, 24 hours a day, 7 days a week.

Questions regarding the Service's request to revise the Information Collection control number 1018–0070 may be submitted to the Service Information Collection Clearance Officer, U.S. Fish and Wildlife Service, MS: BPHC, 5275 Leesburg Pike, Falls Church, VA 22041–3803 (mail); 703–358–2503 (telephone), or *info_coll@fws.gov* (email). Please include ''1018–0070'' in the subject line of your email request.

SUPPLEMENTARY INFORMATION:

Background

Section 101(a)(5)(A) of the Marine Mammal Protection Act of 1972 (16 U.S.C. 1361(a)(5)(A)) (MMPA), gives the Secretary of the Interior (Secretary) the authority to allow the incidental, but not intentional, taking of small numbers of marine mammals in response to requests by U.S. citizens engaged in a specified activity in a specified region. The Secretary has delegated authority for implementation of the MMPA to the U.S. Fish and Wildlife Service (Service). According to the MMPA, the Service shall allow this incidental taking for a period of up to 5 years if we make findings that such taking: (1) Will affect only small numbers of individuals of these species or stocks; (2) will have no more than a negligible impact on these species or stocks; (3) will not have an unmitigable adverse impact on the availability of these species or stocks for taking for subsistence use by Alaska Natives; and (4) we issue an incidental take regulation (ITR) setting forth: (a) The permissible methods of taking, (b) the means of effecting the least practicable adverse impact on the species, their habitat, and the availability of the species for subsistence uses, and (c) the requirements for monitoring and reporting. If final regulations allowing such incidental taking are issued, we may then subsequently issue a letter of authorization (LOA), upon request, to authorize incidental take during the specified activities.

The term ''take,'' as defined by the MMPA, means to harass, hunt, capture, or kill, or to attempt to harass, hunt, capture, or kill any marine mammal (16 U.S.C. 1362(13)). Harassment, as defined by the MMPA, means any act of pursuit, torment, or annoyance that (i) has the potential to injure a marine mammal or marine mammal stock in the wild (the MMPA calls this ''Level A harassment''), or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (the MMPA calls this ''Level B harassment'').

The terms ''negligible impact,'' ''small numbers,'' ''unmitigable adverse impact,'' and ''U.S. citizens,'' among others, are defined in title 50 of the Code of Federal Regulations at 50 CFR 18.27, the Service's regulations governing take of small numbers of marine mammals incidental to specified

activities. ''Negligible impact'' is defined as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival. ''Small numbers'' is defined as a portion of a marine mammal species or stock whose taking would have a negligible impact on that species or stock. However, we do not rely on that definition here, as it conflates the terms ''small numbers'' and ''negligible impact,'' which we recognize as two separate and distinct requirements. Instead, in our small numbers determination, we evaluate whether the number of marine mammals likely to be taken is small relative to the size of the overall stock.

''Unmitigable adverse impact'' is defined as an impact resulting from the specified activity (1) that is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by (i) causing the marine mammals to abandon or avoid hunting areas, (ii) directly displacing subsistence users, or (iii) placing physical barriers between the marine mammals and the subsistence hunters; and (2) that cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met. The term ''least practicable adverse impact'' is not defined in the MMPA or its enacting regulations. We ensure the least practicable adverse impact by requiring mitigation measures that are effective in reducing the impacts of the proposed activities, but are not so restrictive as to make conducting the activities unduly burdensome or impossible to undertake and complete.

Implementation of the ITR, if finalized, will require information collection activities. The Service has requested that the Office of Management and Budget revise the existing Information Collection form 1018–0070, for incidental take of marine mammals in the Beaufort and Chukchi Seas, to include oil and gas activities in Cook Inlet.

Summary of Request

On May 3, 2018, Hilcorp Alaska, LLC (Hilcorp), Harvest Alaska, LLC (Harvest), and the Alaska Gasline Development Corporation (AGDC), hereinafter referred to as the ''applicant,'' petitioned the Service to promulgate regulations pursuant to section 101(a)(5)(A) of the MMPA for the nonlethal, unintentional taking of small numbers of northern sea otters (*Enhydra lutris kenyoni;* hereafter ''sea otters'' or ''otters'') incidental to oil and gas exploration, development, production, and transportation activities in Cook Inlet, Alaska, for a period of 5 years. On June 28, 2018, the applicant submitted an amended request providing additional project details.

Description of the Proposed ITR

The proposed ITR, if finalized, will not authorize the proposed activities. Rather, it will authorize the nonlethal incidental, unintentional take of small numbers of sea otters associated with those activities based on standards set forth in the MMPA. The proposed ITR includes: Permissible amounts and methods of nonlethal taking; measures to ensure the least practicable adverse impact on sea otters and their habitat; measures to avoid and reduce impacts to subsistence uses; and requirements for monitoring and reporting.

Description of the ITR Geographic Area

The geographic region of the proposed ITR encompasses Cook Inlet south of a line from the Susitna River Delta to Point Possession (approximately 61°15′54″ N, 150°41′07″ W, to 61°02′19″ N, 150°23′48″ W, WGS 1984) and north of a line from Rocky Cove to Coal Cove (at approximately 59°25′56″ N, 153°44′25″ W and 59°23′48″ N, 151°54′28″ W WGS 1984), excluding Ursus Cove, Iniskin Bay, Iliamna Bay, and Tuxedni Bay (see Proposed Regulation Promulgation, § 18.131 Specified geographic region where this subpart applies). The proposed ITR area includes all Alaska State waters and Outer Continental Shelf (OCS) Federal waters within this area as well as all adjacent rivers, estuaries, and coastal lands where sea otters may occur, unless explicitly excluded.

The geographical extent of the proposed Cook Inlet ITR region is approximately 1.1 million hectares (ha) (2.7 million acres (ac)). For descriptive purposes, the specified area is organized into two marine areas within Cook Inlet: Lower Cook Inlet (south of the Forelands to Homer) and middle Cook Inlet (north of the Forelands to the Susitna River and Point Possession).

Description of Specified Activities

The specified activities include work related to oil and gas exploration, development, production, transport, and the decommissioning of existing facilities conducted by the applicant within a 5-year period. Hilcorp and Harvest jointly plan to conduct the following activities: Two-dimensional (2D) and three-dimensional (3D) seismic surveys in lower Cook Inlet; production drilling from, routine operation of, and maintenance of existing oil and gas facilities in middle Cook Inlet; geophysical and geohazard surveys in both regions; drilling of two to four exploration wells in OCS waters of lower Cook Inlet and one to three wells in middle Cook Inlet; construction of a dock facility in Chinitna Bay; and decommissioning of an existing facility at the Drift River Terminal in middle Cook Inlet. The following support activities will be conducted: Pipe and pile driving; vertical seismic profiling; and use of a water jet, hydraulic grinder, and submersible saw for pipeline and platform maintenance. AGDC plans to install a natural gas pipeline from the west side of middle Cook Inlet to the east side of lower Cook Inlet and to construct processing and loading facilities on either side. Support activities for AGDC will include pile driving, dredging, geophysical surveys, trenching, fill placement, and anchor handling. Hilcorp, Harvest, and AGDC will use vessels and aircraft to support the activities. Detailed descriptions of the proposed work are provided in the applicant's petition for incidental take regulations for oil and gas activities in Cook Inlet (June 28, 2018), the stakeholder engagement plan (April 2018), and the marine mammal monitoring and mitigation plan (May 2018). These documents can be obtained from the locations described above in **ADDRESSES**. Table 1 summarizes the planned activities.

TABLE 1—SUMMARY OF PLANNED ACTIVITIES INCLUDED IN ITR PETITION

Project component name & location	Geographic region	Year(s) planned	Seasonal timing	Total anticipated duration (2019–2024)
Anchor Point two-dimensional (2D) seismic survey.	Lower Cook Inlet, Anchor Point to Kasilof.	2021 or 2022	April–October	30 days.

TABLE 1—SUMMARY OF PLANNED ACTIVITIES INCLUDED IN ITR PETITION—Continued

Project component name & location	Geographic region	Year(s) planned	Seasonal timing	Total anticipated duration (2019–2024)
Outer Continental Shelf (OCS) three-dimensional (3D) seismic survey.	Lower Cook Inlet OCS	2019	April–June	90 days.
OCS geohazard survey	Lower Cook Inlet OCS	2019 or 2020	Fall 2019 or spring 2020	30 days.
OCS exploratory wells	Lower Cook Inlet OCS	2020–2022	April–October	40–60 days per well 2–4 wells per year.
Iniskin Peninsula exploration and development	Lower Cook Inlet, west side.	2019–2020	April–October	180 days.
Platform & pipeline maintenance	Middle Cook Inlet	2019–2024	April–October	180 days.
North Cook Inlet Unit subsea well geohazard survey.	Middle Cook Inlet	2020	May	14 days.
North Cook Inlet Unit well abandonment activity.	Middle Cook Inlet	2020	May–June	90 days.
Trading Bay area geohazard survey	Middle Cook Inlet	2020	May	30 days.
Trading Bay area exploratory wells	Middle Cook Inlet	2020	May–October	120–150 days.
Drift River terminal decommissioning	Lower Cook Inlet, west side.	2023	April–October	120 days.
Product loading facility pile driving	Middle Cook Inlet	2021–2023	April–October	162 days.
Material offloading facilities dredging	Middle Cook Inlet	2021–2022	April–October	360 days.
Material offloading facilities pile driving	Middle Cook Inlet	2021–2022	April–October	146.5 days.
Trenching, pipelay, burial	Middle Cook Inlet	2023–2024	April–October	360 days.
Pipelay anchor handling	Middle Cook Inlet	2023–2024	April–October	18.75 days.

Description of Marine Mammals in the Specified Area

The northern sea otter is currently the only marine mammal under the Service's jurisdiction that normally occupies Cook Inlet, Alaska. Sea otters in Alaska are composed of three stocks. Those in Cook Inlet belong to either the southwest Alaska stock or the southcentral Alaska stock, depending on whether they occur west or east of the center of Cook Inlet, respectively. A third stock occurs in southeast Alaska.

The southwest stock of the northern sea otter is the southwest distinct population segment (DPS), which was listed as threatened under the Endangered Species Act of 1973 (ESA; 16 U.S.C. 1531, *et seq.*) on August 9, 2005 (70 FR 46366). On October 8, 2009 (74 FR 51988), the Service finalized designation of 15,164 square kilometers (km^2) (or 5,855 square miles (mi^2)) of critical habitat for the sea otter in southwest Alaska. Critical habitat occurs in nearshore marine waters ranging from the mean high tide line seaward for a distance of 100 meters (m), or to a water depth of 20 m. Detailed information about the biology and conservation status of the listed DPS can be found at *https://www.fws.gov/alaska/fisheries/mmm/seaotters/otters.htm.* Stock assessment reports for each of the three stocks are available at *https://www.fws.gov/alaska/fisheries/mmm/stock/stock.htm.*

Sea otters may occur anywhere within the specified project area, other than upland areas, but are not usually found north of about 60°23′30″ N. The number of sea otters in Cook Inlet was estimated from an aerial survey conducted by the Service in cooperation with the U.S. Geological Survey (USGS) in May 2017 (Garlich-Miller *et al.* 2018). The sea otter survey was conducted in all areas of Cook Inlet south of approximately 60°16′30″ N within the 40-m (131-feet (ft)) depth contour, including Kachemak Bay in southeastern Cook Inlet and Kamishak Bay in southwestern Cook Inlet. This survey was designed to estimate abundance in Cook Inlet while accounting for the variable densities and observability of sea otters in the region. Total abundance was estimated to be 19,889 sea otters (standard error = 2,988). Within the project area, the highest densities of sea otters were found in the outer Kamishak Bay area, with 3.5 otters per km^2, followed by the eastern shore of Cook Inlet with 1.7 otters per km^2.

Sea otters generally occur in shallow water near the shoreline. They are most commonly observed within the 40-m (131-ft) depth contour (USFWS 2014a,b), although they can be found in areas with deeper water. Depth is generally correlated with distance to shore, and sea otters typically remain within 1 to 2 kilometers (km) or 0.62 to 1.24 miles (mi) of shore (Riedman and Estes 1990). They tend to remain closer to shore during storms, but they venture farther out during good weather and calm seas (Lensink 1962; Kenyon 1969).

Sea otters are non-migratory and generally do not disperse over long distances (Garshelis and Garshelis 1984). They usually remain within a few kilometers of their established feeding grounds (Kenyon 1981). Breeding males remain for all or part of the year in a breeding territory covering up to 1 km (0.62 mi) of coastline. Adult females have home ranges of approximately 8 to 16 km (5 to 10 mi), which may include one or more male territories. Juveniles move greater distances between resting and foraging areas (Lensink 1962; Kenyon 1969; Riedman and Estes 1990; Tinker and Estes 1996).

Although sea otters generally remain local to an area, they may shift home ranges seasonally, and are capable of long-distance travel. Otters in Alaska have shown daily movement distances greater than 3 km (1.9 mi) at speeds up to 5.5 km per hour (3.4 mi per hour) (Garshelis and Garshelis 1984). In eastern Cook Inlet, large numbers of sea otters have been observed riding the incoming tide northward and returning on the outgoing tide, especially in August. They are presumably feeding along the eastern shoreline of Cook Inlet during the slack tides when the weather is good and remaining in Kachemak Bay during periods of less favorable weather (Gill *et al.* 2009; BlueCrest 2013). In western Cook Inlet, otters appear to move in and out of Kamishak Bay in response to seasonal changes in the presence of sea ice (Larned 2006).

Potential Effects of the Activities

Effects of Noise

The operations outlined in the Description of Specified Activities and described in the applicant's petition have the potential to result in take of sea otters by harassment from acoustic

disturbance. Potential effects are likely to depend on the distance of the otter from the sound source and the level of sound received by the otter. Project components most likely to cause acoustic disturbance are shown in Table 2. Temporary disturbance or localized displacement reactions are the most likely to occur. With implementation of the proposed mitigation and monitoring measures described in § 18.137 Mitigation, § 18.138 Monitoring, and § 18.139 Reporting requirements, no lethal take is anticipated, and take by harassment (Level A and Level B) is expected to be minimized to the greatest extent practicable.

TABLE 2—PROJECT COMPONENTS PROPOSED BY HILCORP ALASKA, LLC, HARVEST ALASKA, LLC, AND THE ALASKA GASLINE DEVELOPMENT CORPORATION CAPABLE OF CAUSING INCIDENTAL TAKE BY HARASSMENT OF NORTHERN SEA OTTERS DUE TO ACOUSTIC EXPOSURE IN COOK INLET

Project component name & location	Anticipated noise sources
Anchor Point two-dimensional (2D) seismic survey.	Marine: 1 source vessel with airgun, 1 node vessel; Onshore/Intertidal: Shot holes, tracked vehicles, helicopters.
Outer Continental Shelf (OCS) three-dimensional (3D) seismic survey.	2 source vessels with airguns, 2 support vessels, 1 mitigation vessel (potentially).
OCS geohazard survey	1 vessel with echosounders and/or subbottom profilers.
OCS exploratory wells	1 jack-up rig, drive pipe installation, 2–3 tugs for towing rig, support vessels, helicopters.
Iniskin Peninsula exploration and development	Construction of causeway, dredging, vessels.
Platform & pipeline maintenance	Vessels, water jets, hydraulic grinders, helicopters, and/or sub-bottom profilers.
North Cook Inlet Unit subsea well geohazard survey.	1 vessel with echosounders and/or subbottom profilers.
North Cook Inlet Unit well abandonment activity	1 jack-up rig, tugs towing rig, support vessel, helicopters.
Trading Bay area geohazard survey	1 vessel with echosounders and/or subbottom profilers.
Trading Bay area exploratory wells	1 jack-up rig, drive pipe installation, tugs for towing rig, support vessels, helicopters.
Drift River terminal decommissioning	Vessels.

Noise Levels

Whether a specific noise source will affect a sea otter depends on several factors, including the distance between the animal and the sound source, the sound intensity, background noise levels, the noise frequency, the noise duration, and whether the noise is pulsed or continuous. The actual noise level perceived by individual sea otters will depend on distance to the source, whether the animal is above or below water, atmospheric and environmental conditions, as well as aspects of the noise emitted.

Noise levels herein are given in decibels referenced to 1 μPa (dB re: 1 μPa) for underwater sound. All dB levels are dB_{RMS} unless otherwise noted; dB_{RMS} refers to the root-mean-squared dB level, the square root of the average of the squared sound pressure level (SPL) typically measured over 1 second. Other important metrics include the sound exposure level (SEL; represented as dB re: 1 μPa^2-s), which represents the total energy contained within a pulse and considers both intensity and duration of exposure, and the peak sound pressure (also referred to as the zero-to-peak sound pressure or 0–p). Peak sound pressure is the maximum instantaneous sound pressure measurable in the water at a specified distance from the source and is represented in the same units as the RMS sound pressure. See Richardson *et al.* (1995), Götz *et al.* (2009), Hopp *et al.* (2012), Navy (2014), or similar resources for descriptions of acoustical terms and measurement units in the context of ecological impact assessment. A summary of the sounds produced by the various components of the proposed activities is provided in Tables 3 and 4.

TABLE 3—SUMMARY OF ACOUSTIC SOURCE LEVELS FOR PROPOSED ACTIVITIES

Applicant	Activity	Sound pressure levels (dB re 1 μPa)	Frequency	Reference
Hilcorp/Harvest Alaska, AGDC.	General vessel operations	145–175 dB rms at 1 m	10–1,500 Hz	Richardson *et al.* 1995; Blackwell and Greene 2003; Ireland and Bisson 2016.
Hilcorp/Harvest Alaska, AGDC.	General aircraft operations	100–124 dB rms at 1 m	<500 Hz	Richardson *et al.* 1995.
Hilcorp/Harvest Alaska.	2D seismic survey (2,400 cui airgun).	217 dB peak at 100 m; 185 dB SEL at 100 m; 197 dB rms at 100 m.	<300 Hz	Austin and Warner 2012; 81 FR 47240 (July 20, 2016).
Hilcorp/Harvest Alaska.	3D seismic survey (2,400 cui airgun).	217 dB peak at 100 m; 185 dB SEL at 100 m; 197 dB rms at 100 m.	<300 Hz	Austin and Warner 2012; 81 FR 47240 (July 20, 2016).
Hilcorp/Harvest Alaska.	Geohazard surveys	210–220 dB rms at 1 m	Echosounders & side scan sonar: >200 kHz. High-resolution sub-bottom profiler: 2–24 kHz. Low-resolution sub-bottom profiler: 1–4 kHz.	Manufacturer specifications.
Hilcorp/Harvest Alaska.	Exploratory drilling rig	137 dB rms at 1 m	<200 Hz	Marine Acoustics Inc. 2011.

TABLE 3—SUMMARY OF ACOUSTIC SOURCE LEVELS FOR PROPOSED ACTIVITIES—Continued

Applicant	Activity	Sound pressure levels (dB re 1 μPa)	Frequency	Reference
Hilcorp/Harvest Alaska.	Tugs under load towing rig	191 dB rms at 1 m	<500 Hz	LGL/JASCO/Greeneridge 2014.
Hilcorp/Harvest Alaska.	Drive pipe installation	190 dB rms at 55 m	<500 Hz	Illingworth & Rodkin 2014.
Hilcorp/Harvest Alaska.	Vertical seismic profiling	227 dB rms at 1 m	<500 Hz	Illingworth & Rodkin 2014.
Hilcorp/Harvest Alaska.	Sub-bottom profiling	212 dB rms at 1 m	1–24 kHz	Manufacturer specifications.
Hilcorp/Harvest Alaska.	Rock laying for Iniskin Peninsula causeway.	136–141 dB rms at 12–19 m	<500 Hz	Nedwell and Edwards 2004; URS 2007.
Hilcorp/Harvest Alaska.	Vibratory sheet pile driving for Iniskin Peninsula causeway.	175 dB peak at 10 m; 160 dB SEL at 10 m; 160 dB rms at 10 m.	<100–2,500 Hz	Illingworth & Rodkin 2007.
Hilcorp/Harvest Alaska.	Offshore production platforms	97–111 dB rms at 0.3–19 km	<500 Hz	Blackwell and Greene 2003.
Hilcorp/Harvest Alaska.	Water jet	176 dB rms at 1 m	500 Hz–2 kHz	Austin 2017.
Hilcorp/Harvest Alaska.	Hydraulic grinder	159 dB at 1 m	<1 kHz	Stanley 2014.
Hilcorp/Harvest Alaska.	Pingers	192 dB rms at 1 m	4–14 kHz	Manufacturer specifications.
AGDC	Dredging: Including Clamshell dredge, Winching in/out, Dumping into barge, Empty barge at placement site.	107–142.6 dB rms at 10 m	<2.5 kHz, broadband	Dickerson *et al.* 2001, URS 2007.
AGDC	Underwater trenching with backhoe in shallow water.	145 dB @10 m	<2.5 kHz, broadband	Greene *et al.* 2008.
AGDC	Anchor handling	188 dB	<2.5 kHz, broadband	LGL/JASCO/Greeneridge 2014.

TABLE 4—SUMMARY OF ACOUSTICAL SOURCES OF PILE-DRIVING ACTIVITIES FOR AGDC FROM ILLINGWORTH & RODKIN

[2007]

Representative pile type and size	Hammer type	Sound pressure level (dB re 1 μPa)			Project pile type and size
		Peak	RMS	SEL	
24-inch AZ sheet pile	Impact	205	190	180	Sheet pile.
24-inch AZ sheet pile	Vibratory	175	160	160	Sheet pile.
24-inch steel pipe pile	Impact	207	194	178	18- and 24-inch piles.
60-inch steel shell pile	Impact	210	195	185	48- and 60-inch piles.
72-inch steel pipe piles	Vibratory	183	170	170	All size piles

Sea Otter Hearing

Sound frequencies produced by the applicant's survey and construction activities will fall within the hearing range of sea otters and therefore will be audible to animals. Controlled sound exposure trials on southern sea otters (*E. l. nereis*) indicate that otters can hear frequencies between 125 hertz (Hz) and 38 kilohertz (kHz) with best sensitivity between 1.2 and 27 kHz (Ghoul and Reichmuth 2014). Aerial and underwater audiograms for a captive adult male southern sea otter in the presence of ambient noise suggest the sea otter's hearing was less sensitive to high-frequency (greater than 22 kHz) and low-frequency (less than 2 kHz) sounds than terrestrial mustelids but similar to that of a sea lion. Dominant frequencies of southern sea otter vocalizations are between 3 and 8 kHz, with some energy extending above 60 kHz (McShane *et al.* 1995; Ghoul and Reichmuth 2012a).

Exposure to high levels of sound may cause changes in behavior, masking of communications, temporary changes in hearing sensitivity, discomfort, and physical or auditory injury. Species-specific criteria for preventing harmful exposures to sound have not been identified for sea otters. Thresholds have been developed for other marine mammals, above which exposure is likely to cause behavioral disturbance and injuries (Southall *et al.* 2007; Finneran and Jenkins 2012; NMFS 2018a). Because sea otter hearing abilities and sensitivities have not been fully evaluated, we relied on the closest related proxy, California sea lions (*Zalophus californianus*), to evaluate the potential effects of noise exposure.

The California sea lion, an otariid pinniped, has a frequency range of hearing most similar to that of the southern sea otter (Ghoul and Reichmuth 2014) and provides the closest related proxy for which data are available. Sea otters and pinnipeds share a common mammalian aural physiology (Echteler *et al.* 1994; Solntseva 2007). Both are adapted to amphibious hearing, and both use sound in the same way (primarily for communication rather than feeding).

Exposure Criteria

Noise exposure criteria have been established by the National Marine Fisheries Service (NMFS) for identifying underwater noise levels capable of causing Level A harassment (injury) of

marine mammals, including otariid pinnipeds (NMFS 2018a). Sea otter-specific criteria have not been determined; however, because of their biological similarities, we assume that noise criteria developed by NMFS for injury for otariid pinnipeds will be a suitable surrogate for sea otter impacts as well. Those criteria are based on estimated levels of sound exposure capable of causing a permanent shift in sensitivity of hearing (*e.g.,* a permanent threshold shift (PTS) (NMFS 2018a)). PTS occurs when noise exposure causes hairs within the inner ear system to die. This can occur due to moderate durations of very loud noise level exposure, or long-term continuous exposure of moderate noise levels.

NMFS's (2018a) criteria for sound exposure incorporate two metrics of exposure: The peak level of instantaneous exposure likely to cause PTS, and the cumulative exposure level during a 24-hour period (SELcum). They also include weighting adjustments for the sensitivity of different species to varying frequencies. PTS-based injury criteria were developed from theoretical extrapolation of observations of temporary threshold shifts (TTS) detected in lab settings during sound exposure trials. Studies were summarized by Finneran (2015). For pinnipeds, PTS is predicted to occur at 232 dB peak or 203 dB SELcum for impulsive sound, or 219 dB SELcum for non-impulsive (continuous) sound.

NMFS criteria for Level A represents the best available information for predicting injury from exposure to underwater sound among pinnipeds, and in the absence of data specific to otters, we assume these criteria also represent appropriate exposure limits for Level A take of sea otters.

NMFS (2018a) criteria do not identify thresholds for avoidance of Level B take. For pinnipeds, NMFS has adopted a 160-dB threshold for Level B take from exposure to impulse noise and a 120-dB threshold for continuous noise (NMFS 1998; HESS 1999; NMFS undated). These thresholds were developed from observations of mysticete (baleen) whales responding to airgun operations (*e.g.,* Malme *et al.* 1983a, 1983b; Richardson *et al.* 1986, 1995) and from equating Level B take with noise levels capable of causing TTS in lab settings.

We have evaluated these thresholds and determined that the Level B threshold of 120 dB for non-impulsive noise is not applicable to sea otters. The 120-dB threshold is based on studies conducted by Malme *et al.* in the 1980s, during which gray whales were exposed to experimental playbacks of industrial noise. Based on the behavioral responses of gray whales to the playback of drillship noise during a study at St. Lawrence Island, Alaska, Malme *et al.* (1988) concluded that ''exposure to levels of 120 dB or more would probably cause avoidance of the area by more than one-half of the gray whales.'' Sea otters do not usually occur at St. Lawrence Island, Alaska, but similar playback studies conducted off the coast of California (Malme 1983a, 1984) included a southern sea otter monitoring component (Riedman 1983, 1984). The 1983 and 1984 studies detected probabilities of avoidance in gray whales comparable to those reported in Malme *et al.* (1988), but there was no evidence of disturbance reactions or avoidance in southern sea otters.

The applicable Level B thresholds mays also depend on the levels of background noise present and the frequencies generated. NMFS acknowledges that the 120-dB threshold may not be applicable if background noise levels are high (NMFS undated), which is the case in Cook Inlet, where ambient levels can often exceed 120 dB (Blackwell and Greene 2003).

Thresholds developed for one species may not be appropriate for another due to differences in their frequency sensitivities. Continuous sound sources associated with the proposed activities include vibratory pile driving, vessel activities, use of a hydraulic grinder or water jet, dredging, trenching, and anchor handling. These are expected to produce low-frequency broadband noise. For example, vibratory pile driving will generate sound with frequencies that are predominantly lower than 2 kHz, and with the greatest pressure spectral densities at frequencies below 1 kHz (Dahl *et al.* 2015). Sea otters are capable of hearing down to 125 Hz, but have relatively poor hearing sensitivity at frequencies below 2 kHz (Ghoul and Reichmuth 2014). As a result, much of the noise generated by vibratory pile driving and other broadband noise is expected to be inaudible or marginally audible to sea otters. During a project that occurred in Elkhorn Slough, California, sound levels ranging from approximately 135 to 165 dB during vibratory pile driving elicited no clear pattern of disturbance or avoidance among southern sea otters in areas exposed to these levels of underwater sound (ESNERR 2011). In contrast, gray whales are in the group of marine mammals believed to be most sensitive to low frequency sounds, with an estimated audible frequency range of approximately 10 Hz to 30 kHz (Finneran 2016). Given the different range of frequencies to which sea otters and gray whales are sensitive, the NMFS 120-dB threshold based on gray whale behavior is not useful for predicting sea otter behavioral responses to low frequency sound.

The NMFS Level B thresholds do not account for different behaviors among taxa. Harbor porpoise, beaked whales, and mysticete whales appear significantly more sensitive to noise exposure than other marine mammals (*e.g.,* Richardson *et al.* 1999. Tyack *et al.* 2011; Southall *et al.* 2007). Although no specific thresholds have been developed for sea otters, several alternative behavioral response thresholds for have been developed for pinnipeds.

Southall *et al.* (2007) assessed behavioral response studies, found considerable variability among pinnipeds, and determined that exposures between approximately 90 to 140 dB generally do not appear to induce strong behavioral responses in pinnipeds in water, but behavioral effects, including avoidance, become more likely in the range between 120 to 160 dB, and most marine mammals showed some, albeit variable, responses to sound between 140 to 180 dB. Wood *et al.* (2012) later adapted the approach identified in Southall *et al.* (2007) to develop a probabilistic scale for marine mammal taxa at which 10 percent, 50 percent, and 90 percent of individuals exposed are assumed to produce a behavioral response. For many marine mammals, including pinnipeds, these response rates were set at sound pressure levels of 140, 160, and 180 dB respectively.

Thresholds based on TTS have been used as a proxy for Level B harassment (*i.e.,* 70 FR 1871, January 11, 2005; 71 FR 3260, January 20, 2006; and 73 FR 41318, July 18, 2008). Southall *et al.* (2007) derived TTS thresholds for pinnipeds based on 212 dB peak and 171-dB SELcum. Kastak *et al.* (2005) found exposures resulting in TTS in pinnipeds ranging from 152 to 174 dB (183–206 dB SEL). Kastak *et al.* (2008) demonstrated a persistent TTS, if not a PTS, after 60 seconds of 184 dB SEL. Kastelein *et al.* (2012) found small but statistically significant TTSs at approximately 170 dB SEL (136 dB, 60 min) and 178 dB SEL (148 dB, 15 min). Finneran (2015) summarized these and others studies, which NMFS (2018a) has used to develop TTS threshold for pinnipeds of 199 dB SELcum.

Based on the lack of a disturbance response or any other reaction by sea otters to the 1980s playback studies and the absence of a clear pattern of disturbance or avoidance behaviors attributable to underwater sound levels up to about 160 dB resulting from

vibratory pile driving and other sources of similar low-frequency broadband noise, we assume 120 is not an appropriate behavioral response threshold for sea otters exposed to continuous underwater noise. We assume, based on the work of NMFS (2018a), Southall *et al.* (2007), and others described here, that either a 160-dB threshold or a 199-dB SELcum threshold is likely to be the best predictor of Level B take of sea otters for continuous noise exposure, using southern sea otters and pinnipeds as a proxy, and based on the best available data.

We compared a 199-dB SELcum threshold for TTS from NMFS (2018a) with a 160-dB behavioral response threshold (NMFS undated) to determine the most appropriate criteria for identifying Level B take from the proposed activities. We first evaluated the probability of reaching TTS at 199 dB SELcum given the projects' predicted sound levels using calculations in user spreadsheets developed by NMFS (2018b; available at *http://www.nmfs.noaa.gov/pr/acoustics/guidelines.htm*). We used the same assumptions presented by Hilcorp to estimate sound production for the proposed 3D seismic surveys. The source levels were estimated at 217 dB peak, 185 dB SEL, and 197 dB rms at a distance of 100 m. A sound source verification (SSV) conducted for similar seismic work in Cook Inlet using a 2,400-cui source array indicated a 160-dB zone extended 7.33 km (4.5 mi) from the source (Austin and Warner 2013; 81 FR 47240, July 20, 2016). We assumed the maximum sound pressure level of 217.97 dB at 1 m, the default 1-kHz frequency weighting adjustment for seismic, and a transmission loss coefficient of 15 for shallow water. The model output predicts that pinnipeds within 133 m (436 ft) of the sound source could experience TTS within 60 seconds. Those remaining within 882 m (0.54 mi) of the sound source for 17 minutes could experience TTS, as could those within 1.2 km (0.75 mi) for 28 minutes, 1.7 km (1.1 mi) for 43 minutes, and those remaining within 2.3 km (1.4 mi) for 72 minutes or longer.

For Hilcorp's 3D seismic work, a 160-dB threshold predicts an otter would experience Level B take at 7.3 km (4.5 mi) from the source regardless of duration of exposure. A 199-dB SELcum threshold predicts sea otters at 7.3 km (4.5 mi) from the source would experience TTS after 6.7 hours of exposure. For an otter within 7.3 km (4.5 mi) of a sound source, if duration of exposure is less than 6.7 hours, the 160-dB threshold will overestimate exposure compared to the 199-dB SELcum threshold. Beyond 7.3 km (4.5 mi), the 160-dB threshold will underestimate take for otters exposed to noise for periods longer than 6.7 hours. The normal work period for Hilcorp's 3D seismic will be 2.5-hour intervals based on the slack tide periods. This suggests that the 160-dB threshold overestimates otters exposed to a single interval of work. However, multiple intervals can be conducted in a day, and if both the work and the otters were to remain stationary, otters could be exposed for a longer overall duration, causing the 160-dB threshold to underestimate take.

In reality, neither the otters, nor the seismic vessels are stationary. Sea otters can swim at average speeds of 5.5 km/h (3.4 mi/hr) (Garshelis and Garshelis 1984) and maximum speeds up to 9 km/h (5.6 mi/hr) (UMMZ 2007). At those rates of travel, a sea otter could easily depart an ensonification zone prior to cumulative TTS exposure. For instance, an otter would experience cumulative TTS after remaining 882 m (0.54 mi) from a sound source for 17 minutes; alternately, in that time, the otter could swim 1.6 km (1 mi) away at a normal pace. If all otters did this, a 199-dB SELcum threshold for TTS would overestimate take. However, an otter may not be willing to travel beyond the boundaries of its normal range. Annual home range sizes of adult sea otters are relatively small, with males ranging from 10.5–28.5 km^2 (4–11 mi^2) and adult females from a few to 62 km^2 (24 mi^2); juveniles may move greater distances between resting and foraging areas (Lensink 1962; Kenyon 1969; Garshelis and Garshelis 1984; Ralls *et al.* 1988; Jameson 1989; Riedman and Estes 1990; Tinker and Estes 1996). Territorial adult males usually remain within a few kilometers of their established feeding grounds (Kenyon 1981). Based on these patterns, adult females and subadults are expected to be able to effectively avoid TTS due to cumulative exposure from up to the full four-interval set of seismic surveys in a 24-hour period, whereas territorial males might not. For the territorial males, a 160-dB threshold could underestimate take.

In conclusion, a 199-dB SELcum exposure threshold is likely to be more accurate than a 160-dB single level threshold when the behaviors of individual otters can be closely monitored. However, a 160-dB threshold will generate similar estimates of take from Hilcorp's 3D seismic surveys and will overestimate take for quieter sound sources. Given the lack of TTS data specific to otters, the 160-dB threshold provides a measure of insurance against underestimation of the possible risks to otters, and provides greater practicability for application of mitigation and monitoring.

Exposure to impulsive sound levels greater than 160 dB can elicit behavioral changes in marine mammals that might be detrimental to health and long-term survival where it disrupts normal behavioral routines. Thus, using information available for other marine mammals as a surrogate, and taking into consideration the best available information about sea otters, the Service has set the received sound level under water of 160 dB as a threshold for Level B take by disturbance for sea otters for this proposed ITR (based on Ghoul and Reichmuth 2012a,b; McShane *et al.* 1995; NOAA 2005; Riedman 1983; Richardson *et al.* 1995, and others). Exposure to unmitigated in-water noise levels between 125 Hz and 32 kHz that are greater than 160 dB will be considered by the Service as Level B take; thresholds for potentially injurious Level A take will be 232 dB peak or 203 dB SEL for impulsive sounds and 219 dB SEL for continuous sounds (Table 5).

TABLE 5—SUMMARY OF NORTHERN SEA OTTER ACOUSTIC THRESHOLDS FOR UNDERWATER SOUND IN THE FREQUENCY RANGE 125 Hz–32 kHz

Marine mammals	Injury (Level A) threshold		Disturbance (Level B) threshold
	Impulsive [1]	Non-impulsive [1]	All
Sea otters	232 dB peak; 203 dB XXXXX	219 dB SELcum	160 dB rms.

[1] Based on NMFS acoustic criteria for otariid pinnipeds (NMFS 2018a).

Noise-Generating Activities

The components of the proposed activities that have the greatest likelihood of exposing sea otters to underwater noise capable of causing Level A or Level B take include geophysical surveys, pile driving, drilling activities, and anchor handling associated with pipeline construction. Vessel and aircraft operations also have the ability to expose otters to sound and human activities that may cause disturbance.

Geophysical Surveys—Airgun arrays used in seismic surveys to locate potential hydrocarbon-bearing geologic formations typically produce most noise energy in the 10- to 120-Hertz (Hz) range, with some energy extending to 1,000 Hz (Richardson *et al.* 1995). There is no empirical evidence that exposure to pulses of airgun sound is likely to cause serious injury or death in any marine mammal, even with large arrays of airguns (Southall *et al.* 2007). However, with source levels of up to 260 dB, the potential of seismic airgun arrays to acoustically injure marine mammals at close proximity must be considered.

In addition to seismic surveys for hydrocarbon-bearing formations, geophysical surveys are conducted to produce imagery of sea-floor surfaces and substrates on a finer spatial scale. These images aid in the selection of sites for structures such as docks or submerged pipelines and the identification of obstacles or hazards within the substrate that may interfere with exploratory drilling. Sounds produced by the instruments used for these surveys vary in terms of frequency bands, source levels, repetition rates, and beam widths. Peak-to-peak operating frequencies range from roughly 300 Hz to several hundred kHz and source levels ranging from 170 to 240 dB (Crocker and Fratantonio 2016).

Pipe/Pile Driving—During the course of pile driving, a portion of the kinetic energy from the hammer is lost to the water column in the form of sound. Levels of underwater sounds produced during pile driving are dependent upon the size and composition of the pile, the substrate into which the pile is driven, bathymetry, physical and chemical characteristics of the surrounding waters, and pile installation method (Illingworth and Rodkin 2007, 2014; Denes *et al.* 2016).

Both impact and vibratory pile installation produce underwater sounds of frequencies predominantly lower than 2.5 kHz, with the highest intensity of pressure spectral density at or below 1 kHz (Denes *et al.* 2016; Dahl *et al.* 2015; Illingworth and Rodkin 2007). Source levels of underwater sounds produced by impact pile driving tend to be higher than for vibratory pile driving; however, both methods of installation can generate underwater sound levels capable of causing behavioral disturbance or hearing threshold shift in marine mammals.

Drilling Operations—For drilling operations, two project components have the potential to disturb sea otters: Installing the drive pipe at each well prior to drilling; and vertical seismic profiling (VSP) operations that may occur at the completion of each well drilling. The types of underwater sounds generated by these activities are discussed in ''Pile Driving'' and ''Geophysical Surveys,'' respectively.

Lattice-legged jack-up drill rigs are relatively quiet because the lattice legs limit transfer of noise generated from the drilling table to the water (Richardson *et al.* 1995, Spence *et al.* 2007). Further, the drilling platform and other noise-generating equipment is located above the ocean surface so there is very little surface contact with the water compared to drill ships and semi-submersible drill rigs. Hydro-acoustic measurements of the *Spartan 151* resulted in a source level of 137 dB (Marine Acoustics, Inc. 2011). The survey results showed that this noise was largely associated with the diesel engines used as power generators. Generators used on the *Endeavour,* another lattice-legged jack-up rig operating in Cook Inlet, are mounted on pedestals specifically to reduce noise transfer through the infrastructure, and they are enclosed in an insulated engine room. The results from a sound source verification done by Illingworth and Rodkin (2014) indicated that noise generated from drilling and generators were below ambient noise, 128 dB at distances of 30 to 70 m. Thus, neither drilling itself nor the running of pumps and generators on the drill rig is expected to produce underwater noise levels that will affect sea otters.

Aircraft Overflights—Richardson *et al.* (1995) presented analyses of recordings of sounds produced by a Bell 212 helicopter. The estimated source levels for two of the flights were 149 and 151 dB re 1 µPa-m, and underwater received levels were 109 dB when the aircraft flew at an altitude of 152 m (500 ft) and 107 dB at a flight altitude of 305 m (1,000 ft). Received sound levels in air at the water surface would be 81 and 75 dB re 20 µPa for flights at 152 and 305 m (500 and 1,000 ft), respectively.

Rig Towing and Anchor Handling—The characteristics of sounds produced by vessels are a product of several variables pertaining to the specifications of the vessel, including the number and type of engines, propeller shape and size, and the mechanical condition of these components. Operational status of the vessel, such as towing heavy loads or using bow thrusters, can significantly affect the levels of sounds emitted by the same vessel at different times (Richardson *et al.* 1995). Two components of the proposed activities, towing of Hilcorp's drilling rig and the manipulation of anchors for the laying of the AGDC pipeline, will involve vessel operations that are likely to be substantially louder than normal transit.

Data from recent exploratory drilling activities in the Chukchi and Beaufort seas indicate that anchor handling can intermittently produce sounds likely greater than 190 dB; the source level of the anchor-handling vessel was estimated to be 188 dB (LGL/JASCO/Greeneridge 2014). The same study reported measurements of two configurations of tugs towing drilling rigs, the average of which was 190.5 dB.

Airborne Sounds

The NMFS (2018a) guidance neither addresses thresholds for preventing injury or disturbance from airborne noise, nor provides thresholds for avoidance of Level B take. However, a review of literature by Southall *et al.* (2007) suggested thresholds for PTS and TTS for sea lions exposed to non-pulsed airborne noise of 172.5 and 159 dB re $(20\ \mu Pa)^2$-s SEL. Behavioral responses to overflights are addressed in *Responses to Activities.*

Conveyance of underwater noise into the air is of little concern since the effects of pressure release and interference at the water's surface scatter and reflect sound (similar to a Lloyd's mirror) which reduces underwater noise transmission into the air. For activities that create both in-air and underwater sounds, such as pile driving, we will estimate take based on parameters for underwater noise transmission. Because sound energy travels more efficiently through water than through air, this estimation will also account for exposures to animals at the surface.

Aircraft are the most significant source of airborne sounds. Proposed flights are to be conducted at an altitude of 305 m (1,000 ft) except during takeoff and landing. At the surface of the water, the received sound level from a helicopter flown at this altitude is roughly 75 dB re 20 µPa (see ''Noise-Generating Activities''), and so threshold shift is extremely unlikely.

Loud screams are used to communicate between pups and

mothers at the surface (McShane *et al.* 1995), but sea otters do not appear to communicate vocally under water, and they do not use sound to detect prey. Although masking of these crucial airborne calls is possible, the duration of sound from aircraft will be brief and therefore unlikely to result in separation of females from pups.

Effects on Habitat and Prey

Habitat areas of significance for sea otters exist in the project area. Sea otter critical habitat was designated under the ESA (74 FR 51988, October 8, 2009). In Cook Inlet, critical habitat occurs along the western shoreline south of approximately Redoubt Point. It extends from mean high tide line out to 100 m (328.1 ft) from shore or to the 20-m (65.6-ft) depth contour. Physical and biological features of critical habitat essential to the conservation of sea otters include the benthic invertebrates (urchins, mussels, clams, etc.) eaten by otters and the shallow rocky areas and kelp beds that provide cover from predators. Other important habitat in the applicant's project area includes outer Kamishak Bay between Augustine Island and Iniskin Bay within the 40-m (131-ft) depth contour where high densities of otters have been detected.

The applicant's proposed activities include drilling, dredging, trenching, pile driving, and dock construction. These activities would change the physical characteristics of localized areas of habitat. Construction would result in seafloor disturbance and temporary increases in water column turbidity. Docks can increase seafloor shading, which affects the amount of light penetration on the seafloor. Water quality in may be affected by drilling-related discharges within limits permitted by the State of Alaska.

Sampling efforts at borrow and disposal areas before and after dredging activity have produced mixed results in terms of whether dredging causes significant changes to the productivity and diversity of infaunal benthic and epibenthic invertebrate communities (Fraser *et al.,* 2017; Angonesi *et al.* 2006). The areas where dredging activities are proposed include a materials loading facility at Nikiski and along the planned AGDC pipeline route between Nikiski and Beluga; the proposed disposal area is just west of Nikiski. This is beyond the northern limit of sea otter distribution in Cook Inlet, so effects of dredging upon invertebrate communities would not affect availability of prey to sea otters.

In addition to the disturbances outlined above to sea otters or their designated critical habitat, survey and construction activities could affect sea otter habitat in the form of impacts to prey species. The primary prey species for sea otters are sea urchins, abalone, clams, mussels, crabs, and squid (Tinker and Estes 1999). When preferential prey are scarce, otters will also eat kelp, crabs, clams, turban snails, octopuses, barnacles, sea stars, scallops, rock oysters, fat innkeeper worms, and chitons (Riedman and Estes 1990).

Limited research has been conducted on the effects of noise on invertebrates (Normandeau Associates, Inc. 2012). Christian *et al.* (2003) concluded that there were no obvious effects from seismic signals on crab behavior and no significant effects on the health of adult crabs. Pearson *et al.* (1994) had previously found no effects of seismic signals upon crab larvae for exposures as close as 1 m (3.3 ft) from the array, or for mean sound pressure as high as 231 dB. Pearson *et al.* (1994) did not observe any statistically significant effects on Dungeness crab (*Cancer magister*) larvae shot as close as 1 m from a 231-dB source. Further, Christian *et al.* (2004) did not find any behavioral or significant health impacts to snow crabs (*Chionoecetes opilio*) exposed to seismic noise. The only effect noted was a reduction in the speed of egg development after exposure to noise levels (221 dB at 2 m), far higher than what bottom-dwelling crabs could be exposed to by seismic guns. Invertebrates such as mussels, clams, and crabs do not have auditory systems or swim bladders that could be affected by sound pressure. Squid and other cephalopod species have complex statocysts (Nixon and Young 2003) that resemble the otolith organs of fish that may allow them to detect sounds (Budelmann 1992).

Some species of invertebrates have shown temporary behavioral changes in the presence of increased sound levels. Fewtrell and McCauley (2012) reported increases in alarm behaviors in wild-caught captive reef squid (*Sepioteuthis australis*) exposed to seismic airguns at noise levels between 156–161 dB. Additionally, captive crustaceans have changed behaviors when exposed to simulated sounds consistent with those emitted during seismic exploration and pile-driving activities (Tidau and Briffa 2016).

In general, there is little knowledge regarding hearing in marine invertebrates or how invertebrates are affected by high noise levels (Hawkins and Popper 2012). A review of literature pertaining to effects of seismic surveys on fish and invertebrates (Carroll *et al.* 2016) noted that there is a wide disparity between results obtained in field and laboratory settings. Some of the reviewed studies indicate the potential for noise-induced physiological and behavioral changes in a number of invertebrates. However, changes were observed only when animals were housed in enclosed tanks and many were exposed to prolonged bouts of continuous, pure tones. We would not expect similar results in open marine conditions. Given the short-term duration of sounds produced by each component of the proposed work, it is unlikely that noises generated by survey and construction activities will have any lasting effect on sea otter prey.

Potential Impacts From an Oil Spill or Unpermitted Discharge

Sea otters could be affected by accidentally spilled diesel fuel from a vessel associated with proposed activities or from a spill or leak from a pipeline or well. An oil spill or unpermitted discharge is an illegal act, and ITRs do not authorize take of sea otters caused by illegal or unpermitted activities. Typical spills that may result from the proposed activities are relatively small in scale and are not likely to affect otters. A large spill could affect large numbers of otters, but these events are rare.

Information on oil spills throughout the range of the listed sea otter from 2006 to 2010 indicates that an average of four spills of crude oil occurred each year in the marine environment (ADEC 2014). Crude oil spills ranged in size from less than 4 to 760 liters (L) or 1 to 200 gallons (gal), with a mean size of about 41.8 L (11 gal). Spills of non-crude oil averaged 62 per year, ranging in size from less than 4 to 24,320 L (1 to 6,400 gal). The majority of the non-crude oil spills were small, with a mean size of about 380 L (100 gal) and a median size of 4 L (1 gal). These events will have only localized impacts to habitat and are unlikely to affect sea otters.

Effects of a larger spill would depend on the size and location of a spill and meteorological conditions at the time. Spilled fuel would rapidly be spread by waves, currents, the prevailing winds. Lighter, volatile components of the fuel would evaporate to the atmosphere almost completely in a few days. Rougher seas, high wind speeds, and high temperatures also tend to increase the rate of evaporation and the proportion of fuel lost by this process (Scholz *et al.* 1999). Heavier components of fuel may drift, wash ashore, or settle into the water column and the seabed.

If a large oil spill were to occur, the most likely impact upon sea otters

would be mortality due to exposure to and ingestion of spilled oil. Contamination of sea otter habitat, their invertebrate prey, and prey habitat would most likely result in a range of impacts ranging from sublethal to lethal, depending on a wide variety of factors.

Sea otters are critically dependent upon their fur for thermoregulation, and oiling severely reduces fur thermoregulatory performance. Thermal conductance (an index of insulative quality) of marine mammal fur was significantly decreased after oiling, with sea otter pup fur being the most affected (Kooyman *et al.* 1976). A live otter would experience thermal stress, including decreased body temperature and significantly increased metabolic rate, as well as increased energy expenditure through additional grooming attempts (Kooyman *et al.* 1976; Costa and Kooyman, 1982, 1984; Engelhardt 1983). Sea otters may also ingest oil through grooming of oiled fur and through ingestion of contaminated prey. Sea otters have exhibited hemorrhagic gastrointestinal lesions (Baker *et al.* 1981), lung, liver, and kidney damage, DNA damage, and altered blood chemistry (Lipscomb 1996; Bickham 1998) after oil ingestion.

Spills may cause direct and indirect effects on critical habitat elements for sea otters, particularly kelp forests. For example, the rocky shoreline recovery after the Exxon *Valdez* oil spill took a decade or more (Peterson 2003). The initial loss of the rockweed *Fucus gardneri* triggered a community cascade, including blooms of ephemeral green algae caused by loss of *Fucus* on rocks, followed by loss of grazing and predatory gastropods. *Fucus* recovery was constrained; without canopy cover, *Fucus* recruits were subject to desiccation. Even after apparent recovery of *Fucus,* previously oiled shores exhibited more rockweed mortality caused by the senescence of the single-aged stand (Peterson 2003). These studies and others such as those after the Torrey Canyon oil spill in the United Kingdom (Peterson 2003) point out the importance of indirect interactions to the continuity of rocky intertidal communities and the lengthy recovery time after severe oiling. All of these effects may result in population-level impacts to sea otters, as demonstrated by the very large Exxon *Valdez* oil spill (Albers 2003), with a reduction in otter survival rates still evident 9 years post-spill (Monson 2000).

Oil and gas operators in Cook Inlet are required to prepare spill prevention and response plans to minimize the risk of a spill and reduce impacts, should one occur. These efforts help ensure that spills and unpermitted discharges of contaminants are unlikely. We do not anticipate effects to sea otters as a result of oil spills from this activity, and spills are not discussed further in this document.

Collisions

Vessel collisions with marine mammals can result in death or serious injury. Wounds resulting from ship strike may include massive trauma, hemorrhaging, broken bones, or propeller lacerations (Knowlton and Kraus 2001). An animal at the surface may be struck directly by a vessel, a surfacing animal may hit the bottom of a vessel, or an animal just below the surface may be cut by a vessel's propeller. Mortality associated with boat strike has been identified from recovery of carcasses with lacerations indicative of propeller injuries (*e.g.,* Wild and Ames 1974; Morejohn *et al.* 1975). From 1998 to 2001, boat strike was identified as the cause of death for 5 of 105 southern sea otter mortalities (Kreuder *et al.* 2003). From 2006 through 2010, evidence indicates that 11 southern sea otters were likely struck by boats (USGS and California Department of Fish and Game, unpublished data cited in 77 FR 59211–59220, September 26, 2012). From January 2003 to May 2013, researchers recovered 35 southern sea otters with trauma consistent with impact from a boat hull or propeller. These data suggest a rate of boat-strike mortality in California of 2.6 otters per year, or about 0.1 percent of the population size.

Boat strike has been documented as a cause of death across all three stocks of northern sea otters in Alaska. Since 2002, the Service has undertaken a health and disease study of sea otters in Alaska in which the Service conducts necropsies on sea otter carcasses to determine cause of death, disease incidence, and status of general health parameters. Of 1,433 necropsies conducted during 24 years, boat strike or blunt trauma was identified as a definitive or presumptive cause of death in 64 cases (4 percent) (USFWS unpublished data). It has been determined in most of these cases that, while trauma was the ultimate cause of death, there was a contributing factor, such as disease or biotoxin exposure, which incapacitated the animal and made it more vulnerable to boat strike (USFWS 2014).

In Alaska, the annual rate of mortality from boat strike was similar to that reported for California: 2.7 otters per year (USFWS unpublished data). However, these otters belong to much larger and more dispersed populations where carcass recovery is lower. Instances of vessel collision are likely to be underreported, and the probability of collision is unknown.

Likelihood of vessel strikes involving sea otters appears to be primarily related to vessel speed. Most collision reports have come from small, fast-moving vessels (NMFS 2003). The severity of injuries to marine mammals during a boat strike also depends on vessel speed, with the probability of death or serious injury increasing as vessel speed increases (Laist *et al.* 2001; Vanderlaan and Taggart 2007). Because sea otters spend a considerable portion of their time at the surface of the water, they are typically visually aware of approaching boats and are able to move away if a vessel is not traveling too quickly.

The probability of a sea otter/vessel collision involving the proposed activities in Cook Inlet is very low for three reasons: First, most of the work will occur in lower-density regions of Cook Inlet; second, the project work will involve slow-moving, noisy vessels that sea otters will easily avoid; and third, the proposed activities will constitute only a small fraction of the total level of vessel traffic in the region. The high level of traffic in Cook Inlet increases the likelihood that otters in the project area are accustomed to avoiding vessels and activities similar to the activities proposed.

The AGDC pipeline work and work by Hilcorp and Harvest on maintenance of existing facilities will be conducted in middle Cook Inlet, in areas that are outside of the normal range of sea otters. The unusual occurrence of otters in middle Cook Inlet makes vessel collisions extremely unlikely. Hilcorp and Harvest will conduct their 3D seismic work in offshore areas of lower Cook Inlet where otter densities are also low. They will conduct 2D seismic work along the eastern shoreline of lower Cook Inlet where densities are higher, but vessel speeds during the proposed activities will be slow. Hilcorp's seismic vessels would travel at approximately 4 knots (kn) or 7.4 km/hr while towing seismic survey gear and a maximum of 4.5 kn (8.3 km/hr) while conducting geophysical surveys. Vessel speed during rig towing will generally be less than 5 kn. AGDC's pipeline construction operations will proceed at similar slow speeds. Anchor handling will occur at about 3 kn. For comparison, freighters in Cook Inlet travel at 20 to 24 kn (Eley 2006), and small recreational vessels may travel at 40 kn.

The applicant's support vessels and vessels in transit will travel at faster speeds; for example, Hilcorp's

maintenance activities will require the use of dive vessels, typically ranging up to 21 m (70 ft) in length and capable of approximately 7 knots (13 km/hr). The risk of collision is thus reduced, but not eliminated, by the predominance of slow-moving vessel work in areas of low density.

Commercial and recreational vessels are much more common in both space and time than are geophysical survey activities, drilling support operations, and pipeline work. Based on U.S. Coast Guard records and other local sources of information compiled by Eley (2006), 704 large vessels, other than fuel barges in domestic trade, called at Cook Inlet ports from January 1, 2005, through July 15, 2006. Almost two-thirds (65 percent) of the calls were made by container vessels, cargo, or ferries. Twenty-nine percent (29 percent) of the vessel traffic was gas or liquid tankships calling primarily at Nikiski. Bulk carriers and general cargo ships represented 6 percent. Tugs and fishing and passenger vessels combined represented 2 percent of the Cook Inlet vessel traffic. Tugs made approximately 150 fuel barge transits a year, assisted in docking and undocking ships in Nikiski and Anchorage, and moved miscellaneous deck and gravel barges in and out of the Port of Anchorage. Although small vessels are less common than larger ships, they are the most likely source of collision due to faster speeds and their presence in shallow water where sea otters are common. In 2005, there were 570 commercial fishing vessels registered in the Cook Inlet salmon/groundfish fleet. Of these, 86 percent were 31–40 ft in length. Vessels in this size class typically travel at up to 30 kn while in transit. The high level of ship traffic in Cook Inlet allows many sea otters in Cook Inlet to habituate to vessels. This will reduce risk of collision for the project activities when vessels are in transit.

Although the likelihood of a project vessel striking a sea otter is low, we intend to require mitigation measures that we believe will reduce the risk of ship strike. We anticipate that vessel collisions involving a seismic-data-acquisition vessel towing gear, tugs towing rigs, or vessels conducting geophysical operations are unlikely given the rarity of documented collisions, the low densities of otters in most of the project areas, the frequent vessel traffic to which otters have become accustomed, and the slow vessel speeds. Vessels in transit and support vessels travelling at greater rates of speed are more likely to cause collisions.

Mitigation measures for reducing probability of ship strike include speed reductions during periods of low visibility, required separation distances from observed otters, avoidance of nearshore travel, and use of navigation channels, when practicable. We believe these measures will further reduce the risk of collision. Given the required mitigation measures, the relatively slow speed of the vessel towing gear, the presence of marine mammal observers, and the short duration of many of the activities, we believe that the possibility of ship strike is discountable. No incidental take resulting from ship strike is anticipated, and this potential effect of the specified activity will not be discussed further in the following analysis.

Characterizing Take

In the previous section, we discussed the components of the proposed action that have the potential to affect sea otters. Here we describe and categorize the physiological and behavioral effects that can be expected based on documented responses to human activities observed during sea otter studies. We also discuss how these behaviors are characterized under the MMPA.

An individual sea otter's reaction to a human activity will depend on its prior exposure to the activity, its need to be in the particular area, its physiological status, or other intrinsic factors. The location, timing, frequency, intensity, and duration of the encounter are among the external factors that will also influence the animal's response.

Relatively minor reactions such as increased vigilance or a short-term change in direction of travel are not likely to disrupt biologically important behavioral patterns and are not considered take by harassment. These types of responses typify the most likely reactions of the majority of sea otters that will be exposed to the applicant's activities.

Reactions capable of causing injury are characterized as Level A harassment events. Examples include separation of mothers from young or repeatedly flushing sea otters from a haulout. Exposure to noise capable of causing PTS is also considered take by Level A harassment.

Intermediate reactions that disrupt biologically significant behaviors are considered Level B harassment under the MMPA. The Service has identified the following sea otter behaviors as indicating possible Level B take:

- Swimming away at a fast pace on belly (*i.e.,* porpoising);
- Repeatedly raising the head vertically above the water to get a better view (spyhopping) while apparently agitated or while swimming away;
- In the case of a pup, repeatedly spyhopping while hiding behind and holding onto its mother's head;
- Abandoning prey or feeding area;
- Ceasing to nurse and/or rest (applies to dependent pups);
- Ceasing to rest (applies to independent animals);
- Ceasing to use movement corridors along the shoreline;
- Ceasing mating behaviors;
- Shifting/jostling/agitation in a raft so that the raft disperses;
- Sudden diving of an entire raft;
- Flushing animals off a haulout.

This list is not meant to encompass all possible behaviors; other situations may also indicate Level B take. It is also important to note that depending on the duration and severity of the above-described behaviors, such responses could constitute take by Level A harassment, *e.g.,* repeatedly flushing sea otters from a haulout versus a single flushing event.

Direct and Indirect Effects

The reactions of wildlife to disturbance can range from short-term behavioral changes to long-term impacts that affect survival and reproduction. Most sea otters will respond to human disturbance with nonlethal reactions that are similar to antipredator responses (Frid and Dill 2002). Sea otters are susceptible to predation, particularly from killer whales and eagles, and have a well-developed antipredator response to perceived threats. Sea otters will swim away, dive, or hide among rocks or kelp, and will sometimes spyhop (vertically raise its head out of the water, presumably to look around) or splash when threatened. Limbaugh (1961) reported that sea otters were apparently undisturbed by the presence of a harbor seal (*Phoca vitulina*), but they were quite concerned with the appearance of a California sea lion. They demonstrated their fear by actively looking above and beneath the water when a sea lion was swimming nearby.

Although an increase in vigilance or a flight response is nonlethal, a tradeoff occurs between risk avoidance and energy conservation (Frid and Dill 2002). For example, southern sea otters in areas with heavy recreational boat traffic demonstrated changes in behavioral time budgeting showing decreased time resting and changes in haulout patterns and distribution (Benham *et al.* 2005; Maldini *et al.* 2012). In an example described by Pavez

et al. (2015), South American sea lions (*Otaria byronia*) visited by tourists exhibited an increase in the state of alertness and a decrease in maternal attendance and resting time on land, thereby potentially reducing population size. In another example, killer whales (*Orcinus orca*) that lost feeding opportunities due to boat traffic faced a substantial (18 percent) estimated decrease in energy intake (Williams *et al.* 2006). Such disturbance effects can have population-level consequences. Increased disturbance rates have been associated with a decline in abundance of bottlenose dolphins (*Tursiops* sp.) (Bejder *et al.* 2006; Lusseau *et al.* 2006).

These examples illustrate direct effects on survival and reproductive success, but disturbances can also have indirect effects. When disturbed by noise, animals may respond behaviorally (*e.g.,* escape response), as well as physiologically (*e.g.,* increased heart rate, hormonal response) (Harms *et al.* 1997; Tempel and Gutierrez 2003). In the absence of an apparent behavioral response, an animal exposed to noise disturbance may still experience stress and direct energy away from fitness-enhancing activities such as feeding and mating. The energy expense and physiological effects could ultimately lead to reduced survival and reproduction (Gill and Sutherland 2000; Frid and Dill 2002). Changes in behavior from anthropogenic disturbance can also include latent agonistic interactions between individuals (Barton *et al.* 1998). Chronic stress can lead to weakened reflexes, lowered learning responses (Welch and Welch 1970; van Polanen Petel *et al.* 2006), compromised immune function, decreased body weight, and abnormal thyroid function (Selye 1979).

The type and extent of response may be influenced by intensity of the disturbance (Cevasco *et al.* 2001), the extent of previous exposure to humans (Holcomb *et al.* 2009), the type of disturbance (Andersen *et al.* 2012), and the age and/or sex of the individuals (Shaughnessy *et al.* 2008; Holcomb *et al.* 2009). Despite the importance of understanding the effects of disturbance, few controlled experiments or field observations have been conducted on sea otters to address this topic.

Responses to Activities

The available studies of sea otter behavior suggest that sea otters may be more resistant to the effects of sound disturbance and other human activities than some other marine mammals. For example, at Soberanes Point, California, Riedman (1983) examined changes in the behavior, density, and distribution of southern sea otters that were exposed to recorded noises associated with oil and gas activity. The underwater sound sources were played at a level of 110 dB and a frequency range of 50 to 20,000 Hz and included production platform activity, drillship, helicopter, and semi-submersible sounds. Riedman (1983) also observed the sea otters during seismic airgun shots fired at decreasing distances from the nearshore environment (50, 20, 8, 3.8, 3, 1, and 0.5 nautical miles) at a firing rate of 4 shots per minute and a maximum air volume of 4,070 cubic inches (in^3). Riedman (1983) observed no changes in the presence, density, or behavior of sea otters as a result of underwater sounds from recordings or airguns, even at the closest distance of 0.5 nautical miles (<1 km or 0.6 mi). However, otters did display slight reactions to airborne engine noise. Riedman (1983, 1984) also monitored the behavior of sea otters along the California coast while they were exposed to a single 100-in^3 airgun and a 4,089-in^3 airgun array. Sea otters did not respond noticeably to the single airgun, and no disturbance reactions were evident when the airgun array was as close as 0.9 km (0.6 mi).

The limited response of sea otters to sound is probably due to three factors: First, sea otters use habitat where underwater noise exposure is limited; second, sea otters use sound differently than many other marine mammals; and third, sea otters show a high degree of behavioral plasticity in response to disturbance.

Sea otters spend from 30 to 80 percent of their time each day at the surface of the water resting and grooming (Riedman 1983, 1984; Bodkin *et al.* 2004; Wolt *et al.* 2012). While at the surface, turbulence from wind and waves attenuate noise more quickly than in deeper water, reducing potential noise exposure (Greene and Richardson 1988; Richardson *et al.* 1995). Additionally, Lloyd's mirror effects limit the transference of sound from water to air. A sea otter with its head above water will be exposed to only a small fraction of the sound energy travelling through the water beneath it. Thus, the amount of total time spent at the surface may help limit sea otters' exposure during noise-generating operations.

Many marine mammals depend on acoustic cues for vital biological functions, such as orientation, communication, locating prey, and avoiding predators. However, sea otters do not rely on sound to orient themselves, locate prey, or communicate underwater. Sea otters use sound for communication in air (especially mothers and pups; McShane *et al.* 1995) and may avoid predators by monitoring underwater sound. Davis *et al.* (1987) documented sea otters retreating from simulated killer whale vocalizations. Otters are not known to vocalize underwater and do not echolocate; therefore, masking of communications by anthropogenic sound is less of a concern than for other mammals.

Sea otters generally show a high degree of tolerance to noise. In another study using prerecorded sounds, Davis *et al.* (1988) exposed both northern sea otters in Simpson Bay, Alaska, and southern sea otters in Morro Bay, California, to a variety of airborne and underwater sounds, including a warble tone, sea otter pup calls, killer whale calls, airhorns, and an underwater acoustic harassment system designed to drive marine mammals away from crude oil spills. The sounds were projected at a variety of frequencies, decibel levels, and intervals. The authors noted that certain acoustic stimuli could cause a startle response and result in dispersal. However, the disturbance effects were limited in range (no responses were observed for otters approximately 100–200 m (328–656 ft) from the source of the stimuli), and habituation to the stimuli was generally very quick (within hours or, at most, 3 to 4 days).

Southern sea otters in an area with frequent railroad noise appeared to be relatively undisturbed by pile-driving activities, many showing no response and generally reacting more strongly to passing vessels than to the sounds of pile-driving equipment (ESNERR 2011; ESA 2016). Additionally, many of the otters who displayed a reaction behavior during pile driving did so while their heads were above the surface of the water, suggesting that airborne noise was as important as, and possibly more important than underwater noise in prompting the animals' reactions. When sea otters have displayed behavioral reactions in response to acoustic stimuli, these responses were often short-lived; the otters resumed normal activities soon after a new sound was introduced (Davis *et al.* 1987, 1988).

Among sea otters, exposure to moderate to high levels of underwater noise is not likely to cause injury and mortality from stranding or excessive nitrogen accumulation, both of which are concerns for other species of marine mammals, but the possibility of hearing loss cannot be discounted. The consequences of hearing loss among otters remains unknown. We have much more information about the observable

responses of sea otters to human activities.

Stimuli from shoreline construction activities, aircraft, and vessel traffic, including noise, are likely to cause some level of disturbance. Populations of sea otters in Alaska have been known to avoid areas with heavy boat traffic but return to those same areas during seasons with less traffic (Garshelis and Garshelis 1984). Sea otters in Alaska have shown signs of disturbance (escape behaviors) in response to the presence and approach of survey vessels, including: Otters diving and/or actively swimming away from a boat; hauled-out otters entering the water; and groups of otters disbanding and swimming in multiple different directions (Udevitz *et al.* 1995).

In Cook Inlet, otters were observed riding the tides past a new offshore drilling platform while drilling was being conducted. Otters drifting on a trajectory that would have taken them within 500 m (0.3 mi) of the rig tended to swim to change their angle of drift to avoid a close approach, although noise levels from the work were near the ambient level of underwater noise (BlueCrest 2013).

Sea otter behavior is suggestive of a dynamic response to disturbance, influenced by the intensity and duration of the source. Otters initially abandon areas when disturbed and return when the disturbance ceases. Groups of sea otters in two locations in California showed markedly different responses to kayakers approaching to within specific distances, suggesting a different level of tolerance between the groups (Gunvalson 2011). Benham (2006) found evidence that the otters exposed to high levels of recreational activity may have become more tolerant than individuals in less-disturbed areas.

Some individual otters will habituate to the presence of project vessels, noise, and activity. Sea otters often seem quite tolerant of boats or humans nearby (*e.g.,* Calkins 1979). Sea otters off the California coast showed only mild interest in boats passing within hundreds of meters and appeared to have habituated to boat traffic (Riedman 1983; Curland 1997). Boat traffic, commercial and recreational, is common in Cook Inlet. However, there are seasonal (*i.e.,* temporal) and spatial components to vessel traffic. Both recreational and commercial vessel traffic in Kachemak Bay is much higher than in western Cook Inlet, and all traffic is much higher in summer than in other months. Some sea otters in the area of activity are likely to have already become habituated to vessel traffic and noise caused by vessels, whereas for others, the proposed activities will be a novel experience and will elicit a more intense response.

Some degree of disturbance is also possible from unmitigated aircraft activities. Individual sea otters in Cook Inlet will show a range of responses to noise from low-flying aircraft. Some may abandon the flightpath area and return when the disturbance has ceased. Based on the observed movement patterns of wild sea otters (*i.e.,* Lensink 1962; Kenyon 1969, 1981; Garshelis and Garshelis 1984; Riedman and Estes 1990; Tinker and Estes 1996, and others), we expect that some individuals, independent juveniles, for example, will respond to the proposed activities by dispersing to areas of suitable habitat nearby, while others, especially breeding-age adult males, will not be displaced by overflights. Mitigation measures will stipulate a minimum of 305 m (1,000 ft) flight altitude to avoid harassment of otters.

Given the observed responses of sea otters to sources of disturbance, it is likely that some degree of take by harassment will occur due to underwater noise stimuli associated with the proposed activities. Some otters will likely show startle responses, change direction of travel, disperse from the area, or dive. Sea otters reacting to project activities may expend energy and divert time and attention from biologically important behaviors, such as feeding. Some effects may be undetectable in observations of behavior, especially the physiological effects of chronic and cumulative noise exposure. Air and vessel traffic, commercial and recreational, is routine in Cook Inlet. Construction activities are common. Some sea otters in the area of activity may become habituated to noise caused by the project due to the existing continual air traffic in the area and will have little, if any, reaction to project activities.

Mitigation and Monitoring

If an ITR is issued, it must specify means for effecting the least practicable adverse impact on sea otters and their habitat, paying particular attention to habitat areas of significance, and on the availability of sea otters for taking for subsistence uses by coastal-dwelling Alaska Natives. These proposed measures are outlined in § 18.137 Mitigation.

In evaluating what mitigation measures are appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses, we considered the manner in which, and the degree to which, the successful implementation of the measures are expected to reduce impacts to sea otters, stocks, and their habitat, as well as subsistence uses. We considered the nature of the potential adverse impact being mitigated (likelihood, scope, range), the likelihood the measures will be effective, and the likelihood the measures will be implemented. We also considered the practicability of the measures for applicant implementation (*e.g.,* cost, impact on operations).

To reduce the potential for disturbance from acoustic stimuli associated with the activities, the following mitigation measures will be applied:

- Development of marine mammal monitoring and mitigation plans;
- Establishment of an exclusion zone (EZ) and safety zone (SZ) during noise-generating work;
- Visual mitigation monitoring by designated protected species observers (PSOs);
- Site clearance before startup;
- Shutdown procedures;
- Power-down procedures;
- Ramp-up procedures; and
- Vessel strike avoidance measures.

A marine mammal mitigation and monitoring plan that will identify the specific avoidance and minimization measures an applicant will take to reduce effects to otters. It will describe the project in detail, assess the effects, identify effective means to avoid effects, and describe specific methods for limiting effects when they cannot be avoided.

During ''noise-generating work'' (work that creates underwater sound louder than 160 dB and within the frequency hearing range of sea otters), an applicant will establish and monitor an exclusion zone (EZ). This zone is defined as the area surrounding a sound source in which all operations must be shut down in the event a sea otter enters or is about to enter this zone based on distances to Level A thresholds. Any otter detected within this zone will be exposed to sound levels likely to cause take by Level A harassment. The safety zone (SZ) is an area larger than the EZ and is defined as the area in which otters may experience noise above the Level B exposure threshold. Sea otters observed inside the SZ are likely to be disturbed by underwater noise, and each otter within the SZ will be counted as one Level B take. In the event a sea otter is in or about to enter the zone, operations will be powered down, when practicable, to minimize take. Radii of each SZ and EZ will be specified in each LOA issued under this proposed ITR. The methodology for calculation of the radii will be described in each LOA

and is identified in proposed § 18.137 Mitigation. A minimum 10-m (33-ft) shutdown zone will be observed for all in-water construction and heavy machinery.

PSOs will be stationed on the source vessel or at a suitable vantage point with maximum view of the SZ and EZ. The PSOs will clear the EZ prior to the start of daily activities for which take has been requested or if activities have been stopped for longer than a 30-minute period. The PSOs will ensure the EZ is clear of sea otters for a period of 30 minutes. Clearing the EZ means no sea otters have been observed within the EZ for that 30-minute period. If any sea otters have been observed within the EZ, ramp-up cannot start until the sea otter has left the EZ or has not been observed in the EZ for a 30-minute period prior to the start of the survey.

A power-down procedure will be in place during seismic work. It will involve reducing the number of airguns in use, which reduces the EZ or SZ radius. In contrast, a shutdown procedure occurs when all airgun activity is suspended immediately. During a power down, a single airgun (''mitigation gun'') remains operational, maintaining a sound source with a much-reduced EZ. If a sea otter is detected outside of either the SZ or EZ but is likely to enter that zone, the airguns may be powered down before the animal is within the radius, as an alternative to a complete shutdown. Likewise, if a sea otter is already within the SZ when first detected, the airguns will be powered down if this is a reasonable alternative to an immediate shutdown. If a sea otter is already within the EZ when first detected, the airguns will be shut down immediately. All power down events will be at the discretion of the operator in cooperation with the PSOs. The applicant has determined that it is not practicable to power down in response to all sea otters within the SZ, and that to do so would incapacitate the 2D and 3D seismic operations. Because power down events will be discretionary, all otters within the SZ will be assumed to experience Level B take regardless of whether a power down is conducted. Although there is no calculated reduction of take estimated for this mitigation measure due to uncertainty in its application, it is expected that some unquantified benefits to sea otters will be realized whenever the operator powers down to reduce sea otter noise exposures.

A shutdown will occur when all underwater sound generation that is louder than 160 dB and within the frequency hearing range of sea otters is suspended. The sound source will be shut down completely if a sea otter approaches the EZ or appears to be in distress due to the noise-generating work. The shutdown procedure will be accomplished within several seconds of the determination that a sea otter is either in or about to enter the EZ. Following a shutdown, noise-generating work will not resume until the sea otter has cleared the EZ. Any shutdown due to a sea otter sighting within the EZ must be followed by a 30-minute all-clear period and then a standard, full ramp-up. Any shutdown for other reasons resulting in the cessation of the sound source for a period greater than 30 minutes must also be followed by full ramp-up procedures.

A ''ramp-up'' procedure will be in place to gradually increase sound volume at a specified rate. Ramp-up is used at the start of airgun operations, including after a power down, shutdown, or any period greater than 10 minutes in duration without airgun operations. The rate of ramp-up will be no more than 6 dB per 5-minute period. Ramp-up will begin with the smallest gun in the array that is being used for all airgun array configurations. The ramp-up procedure for pipe/pile driving involves initially starting with soft strikes. If the complete EZ has not been visible for at least 30 minutes prior to the start of operations, ramp-up will not commence unless the mitigation gun has been operating during the interruption of seismic survey operations. It will not be permissible to ramp up the 24-gun source from a complete shutdown in thick fog or at other times when the outer part of the EZ is not visible. Ramp-up of the airguns will not be initiated if a sea otter is sighted within the EZ at any time.

A speed or course alteration is appropriate if a sea otter is detected outside the EZ and, based on its position and relative motion, is likely to enter the EZ, and a vessel's speed and/or direct course may, when practical and safe, be changed. This technique can be used in coordination with a power-down procedure. The sea otter activities and movements relative to the seismic and support vessels will be closely monitored to ensure that the sea otter does not approach within the EZ. If the mammal appears likely to enter the EZ, further mitigative actions will be taken, *i.e.,* further course alterations, power down, or shutdown of the airguns.

A stakeholder engagement plan is required to determine whether conflicts with subsistence activities are likely to arise. If so, the applicant will be required to develop a plan of cooperation (POC), which will identify what measures have been taken and/or will be taken to minimize adverse effects on the availability of sea otters for subsistence purposes. The POC will include the applicant's plan to meet with the affected communities, both prior to and while conducting the activity, to resolve conflicts and to notify the communities of any changes in the operation. The POC will help coordinate activities with local stakeholders and thus subsistence users, minimize the risk of interfering with subsistence hunting activities, and keep current as to the timing and status of the subsistence hunts. The applicant's stakeholder engagement plan is provided with the applicant's petition, which is available as described in **ADDRESSES**. Meetings and communication will be coordinated with Cook Inlet Regional Citizens Advisory Council, local landowners, government and community organizations, and environmental groups.

In order to issue an LOA for an activity, section 101(a)(5)(A) of the MMPA states that the Service must set forth ''requirements pertaining to the monitoring and reporting of such taking.'' The Service's implementing regulations at 50 CFR 18.27(d)(1)(vii) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting. Effective reporting is critical to compliance as well as ensuring that the most value is obtained from the required monitoring. The applicant will employ PSOs to conduct visual project monitoring. During 2D and 3D seismic surveys, Hilcorp and Harvest have agreed to conduct aerial overflights for avoidance of other marine mammal species, which will improve monitoring of sea otters. Additional proposed monitoring and reporting requirements are at § 18.138 Monitoring and § 18.139 Reporting requirements.

Based on our evaluation of the applicant's proposed measures, as well as other measures considered, we have preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable adverse impact on sea otter stocks and their habitat.

Estimated Incidental Take

This section provides the number of incidental takes estimated to occur because of the proposed activities. The number of individuals taken and the number of takes per individual are then analyzed to make the required small numbers and negligible impact determinations.

Estimating Exposure Rates

The Service anticipates that incidental take of sea otters may occur during the proposed activities in Cook Inlet. Noise, aircraft, vessels, and human activities could temporarily interrupt feeding, resting, and movement patterns. Elevated underwater noise levels from seismic surveys may cause short-term, nonlethal, but biologically significant changes in behavior that the Service considers harassment. Pile-driving and other constructing activities along the shoreline may have similar effects and could cause behavioral disturbance leading to take. Harassment (Level A or B) is the only type of take expected to result from these activities; no lethal take is expected.

The number of animals affected will be determined by the distribution of animals and their location in proximity to the project work. Although we cannot predict the outcome of each encounter, it is possible to consider the most likely reactions, given observed responses of marine mammals to various stimuli.

Sound exposure criteria provide the best available proxy for estimation of exposure. The behavioral response of sea otters to shoreline construction and vessel activities is related to the distance between the activity and the animals. Underwater sound is generated in tandem with other airborne visual, olfactory, or auditory signals from the specified activities, and travels much farther. Therefore, estimating exposure to underwater sound can be used to estimate the number of otters exposed to all proposed activities.

No separate exposure evaluation was done for activities that do not generate underwater sound. Nearly all of the proposed activities that may disturb sea otters will occur simultaneously with in-water activities that do generate sound. For example, operation of heavy equipment along the shoreline will facilitate underwater pile driving. The otters affected by the equipment operations are the same as those affected by the pile driving. Sound exposure and behavioral disturbances are accumulated over a 24-hour period, resulting in estimation of one exposure from all in-water sources rather than one each from equipment operations and pile-driving noise. Aircraft support activities will be conducted without a corresponding underwater sound component, but no take is expected from this source of disturbance; see ''Airborne Sounds.''

To estimate the numbers of sea otters likely to experience take, we first calculated the number of otters in Cook Inlet that occur within the project area. The number of otters was calculated from density multiplied by project area. Density was estimated according to region in Cook Inlet.

Density data for Kamishak and the East side of Cook Inlet along the shore of the Kenai Peninsula was derived from aerial surveys conducted in May 2017 (Garlich-Miller *et al.* 2018). Surveys were not conducted for central Cook Inlet in 2017, and 2017 surveys for western Cook Inlet north of Kamishak did not yield useful results. Therefore, the density for those regions was derived from the 2002 surveys conducted by Bodkin *et al.* (2003) and corrected for population growth proportional to the growth rate of Cook Inlet as a whole, as determined from comparison of the 2002 and 2017 surveys. Density values (in otters per km^2) were 1.7 in East Cook Inlet (excluding Kachemak Bay and the outer Coast of Kenai Peninsula south and east of Seldovia), 3.53 in Kamishak Bay, and 0.026 in West and Central Cook Inlet. There are no density data for sea otters in the middle Cook Inlet region north of approximately 60°14′ N (the latitude of Clam Gulch), and otters are uncommon north of about 60°24′ N. Therefore, densities north of Clam Gulch were conservatively assumed to equal the 2002 mid-Cook Inlet survey region density of 0.01 per km^2 from Bodkin *et al.* (2003).

The geographic area of activity covers approximately 11,084 km^2 (4,280 mi^2) in Cook Inlet. Of this area, 1,572 km^2 (607 mi^2) is in East Cook Inlet, 725 km^2 (280 mi^2) in Kamishak Bay, 4,341 km^2 (1,676 mi^2) in West and Central Cook Inlet, and 4,445 km^2 (1,716 mi^2) in Cook Inlet north of the normal range of sea otters. The total number of otters within the project area was calculated to be 5,389 otters $((1{,}572 \times 1.7) + (725 \times 3.53) + (4{,}341 \times 0.026) + (4{,}445 \times 0.01) \approx 5{,}389)$.

Not all otters in the project area will be exposed to project activities. Many activities associated with oil and gas exploration, development, production, and transportation may result in underwater sounds and potential disturbance to marine mammals, but will not meet Levels A and B acoustic harassment criteria. The acoustic characteristics of the different project activities are described in Table 3. Only those specific activities with the likelihood of meeting the acoustic exposure criteria and occurring in the normal range of sea otters were evaluated for estimation of potential Levels A and B harassment. Specifically, Hilcorp's activities include 2D and 3D seismic surveys, vibratory driving of sheet piles at the Iniskin Peninsula causeway in Chinitna Bay, sub-bottom profilers used in high- and low-resolution geohazard surveys, drive-pipe installation, vertical seismic profiling, tugs towing the rig for exploratory wells, plug and abandon activities, and use of water jets or hydraulic grinders during routine maintenance. AGDC's activities include pile driving and anchor handling.

The number of otters that will be exposed to underwater sound levels capable of causing take by Level A and Level B harassment from specific project elements was estimated using the methods recommended by NMFS (2018a,b) for otariid pinnipeds. We multiplied the estimated area in which underwater sound in the frequency range of otter hearing from each activity will exceed 160 dB, termed the ''area of ensonification'' (km^2), by the density of sea otters in that area (number (#) of otters/km^2) to estimate the number of otters in the ensonified area. This value was then multiplied by the duration of the activity (# of days) over the course of the 5-year regulatory period to get the total number of exposures to sound above the thresholds for take.

Predicting Behavioral Response Rates

Although we cannot predict the outcome of each encounter between a sea otter and the equipment and vessels used for the proposed activities, it is possible to consider the most likely reactions. Sea otters have shown little reaction to underwater sounds but the presence of vessels may elicit stronger behavioral (see *Responses to Activities*). Whether an individual animal responds behaviorally to the presence of vessels and equipment is dependent upon several variables, including the activity of the animal prior to stimulus, whether the animal is habituated to similar disturbances, whether the animal is in a state of heightened awareness due to recent disturbances or the presence of predators, group size, the presence of pups, and the temperament of the individual animals. We assumed all animals exposed to underwater sound levels that meet acoustic criteria would experience Level A or Level B take.

Calculating Take

The total take of sea otters from the proposed oil and gas activities in Cook Inlet was estimated by calculating the number of otters in the ensonified area during the full duration of the project.

Distances to Thresholds

To calculate the ensonified area, we first estimated the distances that underwater sound will travel before attenuating to levels below thresholds

for take by Level A and Level B harassment. The distances to the Level A thresholds were calculated using the NMFS Acoustical Guidance Spreadsheets (NMFS 2018b) using thresholds for otariid pinnipeds as a proxy for sea otters. Distances to the 160-dB Level B threshold were calculated using a practical spreading transmission loss model (15 LogR). The only exceptions to the use of the practical spreading model were made when data was available from a site-specific sound source verification of substantially similar equipment used and powered in a similar manner to that proposed by the applicant.

Model estimates incorporated operational and environmental parameters for each activity. For example, sound levels at the source are shown in Table 3, and characteristics of the sound produced are shown in Table 6. Weighting factor adjustments were used for SEL (sound exposure level) calculations based on NMFS Technical Guidance (2018b). Operational parameters were estimated from the description of activities.

The distances to the modelled Level A and Level B thresholds are shown in Table 7. Each estimate represents the radial distance away from the sound source within which a sea otter exposed to the sound of the activity is expected to experience take by Level A or Level B harassment.

TABLE 6—ASSUMPTIONS USED IN CALCULATING DISTANCES TO LEVEL A AND LEVEL B THRESHOLDS

Activity	Type of source	Source level [1]	WFA [2] (kHz)	Source velocity (m/s)	Pulse duration (s)	Repetition rate	Duration per day
2D/3D seismic	Mobile Impulsive	217 @100 m (185 dB_{SEL} @100 m).	1	2.05	N/A	every 6 s	N/A.
Sub bottom profiler	Mobile Impulsive	212 @1 m	4	2.05	0.02	every 0.30 s	N/A.
Impact pile driving	Stationary Impulsive	≤195 @10 m	2	N/A	N/A	1,560 strikes/hr	≤5.5 hrs/day.
Pipe driving	Stationary Impulsive	≤195 @55 m	2	N/A	0.02	≤1,560 strikes/hr	≤4.8 hrs/day.
Vertical seismic profiling.	Stationary Impulsive	227 @1 m	1	N/A	0.02	every 6 s	4 hrs/day.
Impact sheet piling	Stationary Impulsive	190 @10 m	2	N/A	0.02	1,560 strikes/hr	3 hrs/day.
Vibratory sheet piling.	Stationary Non-impulsive.	160 @10 m	2.5	N/A	N/A	N/A	≤4.8 hrs/day.
Water jet	Stationary Non-impulsive.	176 @1 m	2	N/A	N/A	N/A	0.5 hrs/day.
Hydraulic grinder	Stationary Non-impulsive.	159 @1m	2	N/A	N/A	N/A	0.5 hrs/day.
Tug towing	Mobile Non-impulsive.	191 @1 m	1.5	1.54	N/A	N/A	6 hrs/day.
Anchor handling	Mobile Non-impulsive.	179 @1 m	1.5	1.54	N/A	N/A	3 hrs/day.

[1] Source level is given in dBrms, unless otherwise indicated, as measured at the given distance from the source in meters.
[2] Weighting Factor Adjustment.

TABLE 7—CALCULATED DISTANCE IN METERS (m) TO LEVEL A AND LEVEL B THRESHOLDS

Activity	Level A—NMFS Otariid			Level B—USFWS
	Impulsive		Non-impulsive	Both
	232 dB peak	203 dB SEL	219 dB SEL	160 dB rms
2D/3D seismic	10	1.32	N/A	7,330
Sub-bottom profiler	0.05	0.80	N/A	2,929
Pipe driving, Chinitna Bay	0.19	5.21	N/A	1,630
VSP	0.46	284.84	N/A	2,470
Vibratory sheet pile driving	N/A	N/A	0.63	10
Water jet	N/A	N/A	0.56	11.66
Hydraulic grinder	N/A	N/A	0.04	0.86
Tug towing	N/A	N/A	0.00	107.98
18- and 24-inch pipe, impact	0.22	50.53	N/A	1,874.85
48- and 60-inch pipe, impact	0.34	147.99	N/A	2,154.43
all sizes pipe, vibratory	N/A	N/A	3.30	46.42
Sheet pile, impact	0.16	68.69	NA	1,000
Sheet pile, vibratory	N/A	N/A	0.71	10
Anchor handling	N/A	N/A	0.00	37.41

Area and Duration

The area of ensonification is the area in which an animal exposed to underwater sound is expected to experience take from Level A or Level B harassment. The area of a circle ($A=\pi r^2$) where r is the distance to the Level A or Level B threshold was used to calculate the area of ensonification for impulsive stationary sources (pipe driving, vertical seismic profiling), non-impulsive stationary sources (water jets, hydraulic grinders, vibratory pile driving), and non-impulsive mobile sources (tugs towing rigs and anchor handling). For impulsive mobile sources (2D/3D seismic, sub-bottom profiler), the area was then multiplied by the distance of the line to be surveyed each day. Otters spend most of their time at the water's surface or below their last

surface location, so a circle with the sound source at its center is a reasonable representation of the ensonified area. For shoreline activities, the area of the circle is divided by two to remove the area that lies above the water line. Details about the assumptions used in calculations of the area of ensonification for each proposed activity are available in the applicant's petition, which is available as described in **ADDRESSES**.

The area of ensonification was then multiplied by the density of otters in the applicable region of Cook Inlet to estimate the number of otters that might be taken. The results are shown in Table 8. The total number of sea otters in Cook Inlet expected to be taken by Level A harassment over the 5-year course of this proposed ITR is 1. The total expected to be taken by Level B harassment over the 5-year course of this proposed ITR is 93.

The number of otters taken from each stock was estimated by categorizing activity by its location relative to sea otter stock boundaries. Some activities will occur in both the southcentral and southwestern stock boundaries. For these, take of sea otters was assigned in proportion to the area of the activity within each stock region. Of the estimated 93 otters expected to be taken by Level B harassment, 9 otters will belong to the southwest stock, and 84 to the southcentral stock. The one otter estimated to experience Level A take is likely to be from the southcentral stock.

The next step in analysis was to multiply the estimate of the number of individual otters taken by the duration of each activity to calculate the total number of takes. The total number of takes is higher than the number of otters taken because, for example, a resident otter may be taken on each day of noise-generating activity. For some projects, like the 3D seismic survey, the design of the project is well developed; therefore, the duration is well defined. However, for some projects, the duration is not well developed, such as activities around the lower Cook Inlet well sites. In each case, the calculations are based on the applicant's best forecast of activities in the 5-year ITR period. The assumptions regarding duration of these activities are presented in the applicant's petition. The durations used for each activity are provided in Table 9. We assumed one take per day regardless of duration of work within a day. The resulting estimate of the total number of Level B takes expected from proposed oil and gas activities in Cook Inlet from 2019 through the date 5 years from the effective date of the final rule is 1,663. The total number of takes by activity are also presented in Table 9.

The total number of takes from each stock was calculated in the same manner as for estimation of individuals taken. The proportion of takes was set equal to the proportion of an activity occurring inside a stock boundary. The total number of takes of sea otters from the southwest stock is 410. The take number from the southcentral stock is 1,256. A summary of take is shown in Table 10.

TABLE 8—NUMBER OF SEA OTTERS EXPECTED TO BE TAKEN

Applicant	Activity	Density (#/km^2)	Level A			Level B
			Impulsive		Non-impulsive	160 rms
			232 pk	203 SEL	219 SEL	
Hilcorp/Harvest Alaska	2D seismic	1.705	0.102	0.013		74.986
	3D seismic	0.026	0.019	0.003		14.118
	Vibratory sheet pile driving	0.026			0.000	0.000
	Sub-bottom profiler–LCI	0.026	0.000	0.000		1.505
	Sub-bottom profiler–NCI	0.010	0.000	0.000		0.579
	Sub-bottom profiler–TB	0.010	0.000	0.000		0.579
	Sub-bottom profiler–MCI	0.010	0.000	0.000		0.072
	Pipe driving–LCI	0.026	0.000	0.000		0.217
	Pipe driving–TB	0.010	0.000	0.000		0.083
	VSP–LCI	0.026	0.000	0.005		0.498
	VSP–TB	0.010	0.000	0.002		0.192
	Hydraulic grinder	0.010			0.000	0.000
	Water jet	0.010			0.000	0.000
	Tugs towing rig–LCI	0.026			0.000	0.000
	Tugs towing rig–NCI	0.010			0.000	0.000
	Tugs towing rig–TB	0.010			0.000	0.000
AGDC	Product Loading Facility					
	48-inch impact	0.010	0.000	0.000		0.073
	60-inch impact	0.010	0.000	0.000		0.073
	Temporary MOF					
	18-inch vibratory	0.010			0.000	0.000
	24-inch impact	0.010	0.000	0.000		0.054
	48-inch impact	0.010	0.000	0.000		0.073
	60-inch vibratory	0.010			0.000	0.000
	sheet vibratory	0.010			0.000	0.000
	Mainline MOF					
	sheet vibratory	0.010			0.000	0.000
	sheet impact	0.010	0.000	0.000		0.016
	Anchor handling	0.010000			0.000	0.000
Total			0.122	0.025	0.000	93.117

TABLE 9—ESTIMATE OF TOTAL TAKE FOR EACH PROPOSED ACTIVITY

Applicant	Activity	Duration (days)	Level A			Level B
			Impulsive		Non-impulsive	160 rms
			232 pk	203 SEL	219 SEL	
Hilcorp/Harvest Alaska	2D seismic	10.000	1.023	0.135		749.859
	3D seismic	60.000	1.156	0.152		847.090
	Vibratory sheet pile driving	5.000			0.000	0.000
	Sub-bottom profiler–LCI	31.093	0.001	0.013		46.783
	Sub-bottom profiler–NCI	7.773	0.000	0.001		4.498
	Sub-bottom profiler–TB	15.547	0.000	0.002		8.997
	Sub-bottom profiler–MCI	2.915	0.000	0.000		0.211
	Pipe driving–LCI	3.000	0.000	0.000		0.651
	Pipe driving–TB	1.500	0.000	0.000		0.125
	VSP–LCI	2.000	0.000	0.010		0.997
	VSP–TB	1.000	0.000	0.002		0.192
	Hydraulic grinder	10.500			0.000	0.000
	Water jet	10.500			0.000	0.000
	Tugs towing rig–LCI	14.000			0.000	0.013
	Tugs towing rig–NCI	21.000			0.000	0.008
	Tugs towing rig–TB	18.000			0.000	0.007
AGDC	Product Loading Facility					
	48-inch impact	14.000	0.000	0.005		1.021
	60-inch impact	26.500	0.000	0.009		1.932
	Temporary MOF					
	18-inch vibratory	21.804			0.000	0.001
	24-inch impact	1.750	0.000	0.000		0.094
	48-inch impact	1.750	0.000	0.001		0.128
	60-inch vibratory	4.300			0.000	0.000
	sheet vibratory	26.104			0.000	0.000
	Mainline MOF					
	sheet vibratory	2.68			0.000	0.000
	sheet impact	1.68	0.000	0.000		0.026
	Anchor handling	19.00			0.000	0.00
Total			2.180	0.331	0.000	1,662.634

TABLE 10—SUMMARY OF ESTIMATES OF SEA OTTER TAKE BY LEVEL A AND LEVEL B HARASSMENT AND STOCK

Type	Unit of take	Southwest stock	Southcentral stock	Sum
Level A	Number of takes	0	3	3
Level B	Number of takes	410	1,253	1,663
Total	Number of takes	410	1,256	1,666
Level A	Number of otters taken	0	1	1
Level B	Number of otters taken	9	84	93
Total	Number of otters taken	9	85	94

Annual Estimates of Take

The estimates of exposures by activity and location discussed in the previous section are not representative of the estimated exposures per year (*i.e.,* annual takes). It is difficult to characterize each year accurately because many of the activities are progressive (*i.e.,* they depend on results and/or completion of the previous activity). This results in much uncertainty in the timing, duration, and complete scope of work. Each year, each applicant will submit an application for an LOA with the specific details of the planned work for that year and estimated take numbers. Table 11 summarizes the activities according to a scenario presented in the applicant's petition. This scenario combines the most realistic progression by Hilcorp and Harvest with an optimistic scenario for AGDC. In the first season, Hilcorp and Harvest plan to conduct 3D seismic surveys. In the second season, in lower Cook Inlet they plan to conduct activities for one well; in middle Cook Inlet, they plan to conduct plugging and abandonment activities in North Cook Inlet Unit and two wells in the Trading Bay area. In the third season, activities include drilling two wells in lower Cook Inlet. The final well in lower Cook Inlet is planned for the fourth season.

The timing of AGDC's activities will depend on final authorizations and funding and may begin in 2020 rather than 2019. Season 1 will be the first year of project work regardless of year, followed by season 2 during the second year, etc. Work will generally occur from April through October. Material offloading facilities will be constructed in the first and second season, and a product loading facility will be installed during seasons 2, 3, and 4. Installation of the gas pipeline is planned for seasons 3 and 4 as well. The anticipated timing of project components that are

likely to meet or exceed criteria for take of sea otters is shown in Table 11.

The annual number of takes and the number of sea otters taken was then estimated by allocating the total expected take by proportion of each project component occurring in each year. For example, the 2D seismic surveys are planned for year 3, so all takes and otters taken during 2D seismic surveys were assigned to year 3. The resulting estimates of total take by year and number of otters taken by year are shown in Table 12.

TABLE 11—NOISE-GENERATING ACTIVITIES BY YEAR

[Activities are those with source levels above 160 dB rms within frequencies heard by sea otters]

Year	Applicant	Activity	Area
2019—Season 1	Hilcorp/Harvest	• 3D seismic	LCI
		• Geohazard	LCI
		• Sheet pile driving in Chinitna Bay	LCI
		• Pipeline maintenance (geohazard, water jet, grinder)	MCI
	AGDC	• Sheet pile driving at TMOF	MCI
		• Sheet pile driving at MMOF	MCI
2020—Season 2	Hilcorp/Harvest	• Drilling activities (tugs, geohazard, pipe driving, VSP) at 1 well	LCI
		• Drilling activities (tugs, geohazard, pipe driving, VSP) at 2 wells in TB	MCI
		• P&A activities (tugs, geohazard) at 1 well in the NCI	MCI
		• Pipeline maintenance (geohazard, water jet, grinder)	MCI
	AGDC	• Impact pile driving at PLF: 80 48-inch piles, 63 60-inch piles	LCI
		• Sheet pile driving at TMOF	MCI
		• Sheet pile driving at MMOF	MCI
2021—Season 3	Hilcorp/Harvest	• Drilling activities (tugs, geohazard, pipe driving, VSP) at 2 wells	LCI
		• 2D seismic	LCI
		• Pipeline maintenance (geohazard, water jet, grinder)	MCI
	AGDC	• Impact pile driving at PLF: 40 48-inch piles, 80 60-inch piles	LCI
		• Anchor handling for pipeline installation	MCI
2022—Season 4	Hilcorp/Harvest	• Drilling activities (tugs, geohazard, pipe driving, VSP) at 1 well	LCI
		• Pipeline maintenance (geohazard, water jet, grinder)	MCI
	AGDC	• Impact pile driving at PLF: 10 48-inch piles, 48 60-inch piles	LCI
		• Anchor handling for pipeline installation	MCI
2023—Season 5	Hilcorp/Harvest	• Pipeline maintenance (geohazard, water jet, grinder)	MCI

LCI = Lower Cook Inlet, MCI = Middle Cook Inlet Wells, NCI = North Cook Inlet Unit, TB = Trading Bay, PLF = Product Loading Facility, TMOF = Temporary Material Offloading Facility, MMOF = Mainline Material Offloading Facility, VSP = Vertical Seismic Profiling.

TABLE 12—ESTIMATES OF TOTAL NUMBER OF TAKES BY LEVEL B HARASSMENT AND NUMBER OF SEA OTTERS TAKEN BY YEAR

[or project season]

	2019 (Season 1)	2020 (Season 2)	2021 (Season 3)	2022 (Season 4)	2023 (Season 5)	Total
Takes by year (season)	903.98	5.80	751.34	1.48	0.00	1,662.60
% takes by year (season)	54	0	45	0	0	
No. of otters taken	16.65	0.89	75.28	0.23	0.00	93.12
% otters taken by year (season)	18	1	81	0	0	

Critical Assumptions

In order to conduct this analysis and estimate the potential amount of take, several critical assumptions were made. Here we discuss these assumptions, the potential sources of bias or error inherent in them, and their effects on the analysis. Take by harassment is equated herein with exposure to noise meeting or exceeding the specified criteria. We assume all otters exposed to these noise levels will exhibit behavioral responses that indicate harassment or disturbance. There are likely to be a proportion of animals that respond in ways that indicate some level of disturbance but do not experience significant biological consequences. A correction factor was not applied. This will result in overestimation in take calculations from exposure to underwater noise and underestimation of take from all other sources. The net effect is unknown.

Our estimates do not account for variable responses by age and sex. Females with dependent pups and with pups that have recently weaned are physiologically the most sensitive (Thometz *et al.* 2014) and most likely to experience take from disturbance. There is not enough information on composition of the Cook Inlet sea otter population in the applicant's project area to incorporate individual variability based on age and sex or to predict its influence on take estimates. We therefore assume the response rates are uniform throughout the population. The degree of over- or under-estimation of take is unknown.

The estimates of behavioral response presented here do not account for the individual movements of animals away from the project area due to avoidance or habituation. Our assessment assumes animals remain stationary; *i.e.,* density does not change. There is not enough information about the movement of sea otters in response to specific disturbances to refine these assumptions. For instance, on average, a single otter is expected to experience 18 instances of Level B take and another otter will experience 3 instances of Level A take. While otters do have restricted movements and smaller home ranges than other marine mammals and, therefore, are likely to be exposed to sound during multiple days of work, it is unlikely that any single otter will

continue to respond in the same manner. The otter will either depart from the area and return after activities are complete, or it will habituate to the disturbance and will no longer experience take. However, we have no data to adjust for the likelihood of departure or habituation. This situation is likely to result in overestimation of take.

We do not account for an otter's time at the water's surface where sound attenuates faster than in deeper water. The average dive time of a northern sea otter is only 85 to 149 seconds (Bodkin *et al.* 2004; Wolt *et al.* 2012). Wolt *et al.* (2012) found Prince William Sound sea otters average 8.6 dives per feeding bout, and when multiplied by the average dive time (149 sec), the average total time a sea otter spends underwater during a feeding bout is about 21 minutes. Bodkin *et al.* (2007) found the overall average activity budget (proportion of 24-hour day) spent foraging and diving was 0.48 (11.4 hours per day), and 0.52 nondiving time (12.5 hours per day). Gelatt *et al.* (2002) found that the percent time foraging ranged from 21 percent for females with very young (less than 3 weeks of age) dependent pups to 52 percent for females with old (greater than or equal to 10 weeks of age) pups. Therefore, although exposure to underwater sound during a single dive is limited, accumulation of exposure over time is expected. Our assessment will cause some overestimation in this regard.

We also assume that the mitigation measures presented will be effective for avoiding some level of take. However, additional information is needed to quantify the effectiveness of mitigation. The monitoring and reporting in this proposed ITR will help fill this information need in the future, but for this suite of proposed activities, no adjustments were made to estimate the number of takes that will be avoided by applying effective mitigation measures. This scenario leads to overestimation in calculation of take.

The current project description represents the applicant's best expectation of how, where, and when work will proceed. We expect that the current project description is an accurate depiction of the work that will be conducted. Details provided in future applications for LOAs under these proposed regulations must provide accurate project details, which may include minor changes from those described here. Minor changes to the details of the proposed activities, such as a change of the specific vessels or a change in the start date of a specific activity, are not expected to change the overall estimates of take. In all cases, the most accurate information about the project and the specific estimation parameters will be used, along with methods that are consistent with those described here, to calculate the effects of the activities and to ensure that the effects remain concordant with the determinations of this proposed rulemaking. Larger project changes that will alter the findings proposed here will not be considered as part of this proposed ITR.

Potential Impacts on Sea Otter Stocks

The estimated number of takes by Level B harassment is 1,663 instances of take of 93 otters due to behavioral responses or TTS associated with noise exposure. Among otters from the southwest stock, 410 Level B takes of 9 otters are expected; and among the southcentral stock, 1,253 takes of 84 otters from Level B harassment are expected. The estimated number of takes by Level A harassment is three instances of take of a single otter due to behavioral responses or PTS associated with noise exposure. This otter and is expected to belong to the southcentral stock. Combined, the expected number of Level A and Level B takes is 410 takes of 9 otters from the southwest stock and 1,256 takes of 85 otters from the southcentral stock.

These levels represent a small proportion relative to the most recent stock abundance estimates for the sea otter. Take of 9 animals is 0.02 percent of the best available estimate of the current population size of 45,064 animals in the southwest stock (USFWS 2014a) (9/45,064 ≈ 0.0002). Take of 85 is about 0.5 percent of the 18,297 animals in the southcentral stock (USFWS 2014b) (85/18,297 ≈ 0.00465).

Sea otters exposed to sound produced by the project are likely to respond with temporary behavioral modification or displacement. Project activities could temporarily interrupt the feeding, resting, and movement of sea otters. Because activities will occur during a limited amount of time and in a localized region, the impacts associated with the project are likewise temporary and localized. The anticipated effects are primarily short-term behavioral reactions and displacement of sea otters near active operations.

Animals that encounter the proposed activities may exert more energy than they would otherwise due to temporary cessation of feeding, increased vigilance, and retreat from the project area. We expect that affected sea otters would tolerate this exertion without measurable effects on health or reproduction. Most of the anticipated takes would be due to short-term Level B harassment in the form of TTS, startling reactions, or temporary displacement. Three instances of Level A take are expected to occur due to PTS. The effects of PTS in sea otters are unknown.

With the adoption of the measures proposed in the applicant's mitigation and monitoring plan and required by this proposed ITR, the amount and likelihood of Level A and Level B take will be reduced. The number of otters affected will be small relative to the stocks, and the overall effect on the stocks is expected to be negligible.

Potential Impacts on Subsistence Uses

The proposed activities will occur near marine subsistence harvest areas used by Alaska Natives from the villages of Ninilchik, Salamatof, Tyonek, Nanwalek, Seldovia, and Port Graham. Between 2013 and 2018, approximately 491 sea otters were harvested for subsistence use from Cook Inlet, averaging 98 per year. The large majority were taken in Kachemak Bay. Harvest occurs year-round, but peaks in April and May, with about 40 percent of the total taken at that time. February and March are also high harvest periods, with about 10 percent of the total annual harvest occurring in each of those months. The proposed project area will avoid Kachemak Bay and therefore avoid significant overlap with subsistence harvest areas. The applicant's activities will not preclude access to hunting areas or interfere in any way with individuals wishing to hunt. Vessels, aircraft, and project noise may displace otters, resulting in changes to availability of otters for subsistence use during the project period. Otters may be more vigilant during periods of disturbance, which could affect hunting success rates. The applicant will coordinate with Alaska Native villages and Tribal organizations to identify and avoid potential conflicts. If any conflicts are identified, the applicant will develop a POC specifying the particular steps that will be taken to address any effects the project might have on subsistence harvest.

Findings

Small Numbers

For small numbers analyses, the statute and legislative history do not expressly require a specific type of numerical analysis, leaving the determination of ''small'' to the agency's discretion. In this case, we propose a finding that the proposed project may result in approximately 1,666 takes of 94 otters, of which, 410 takes of 9

animals will be from the southwest stock and 1,256 takes of 85 otters will be from the southcentral stock. These numbers represent less than 1 percent of each stock (USFWS 2014a,b). Based on these numbers, we propose a finding that the applicant's proposed activities will take, by harassment, only a small number of animals.

Negligible Impact

We propose a finding that any incidental take by harassment resulting from the proposed project cannot be reasonably expected to, and is not reasonably likely to, adversely affect the sea otter through effects on annual rates of recruitment or survival and would, therefore, have no more than a negligible impact on the species or stocks. In making this finding, we considered the best available scientific information, including: the biological and behavioral characteristics of the species, the most recent information on species distribution and abundance within the area of the specified activities, the potential sources of disturbance caused by the project, and the potential responses of animals to this disturbance. In addition, we reviewed material supplied by the applicant, other operators in Alaska, our files and datasets, published reference materials, and species experts.

Sea otters are likely to respond to proposed activities with temporary behavioral modification or displacement. These reactions are unlikely to have consequences for the health, reproduction, or survival of most affected animals. Most animals will respond to disturbance by moving away from the source, which may cause temporary interruption of foraging, resting, or other natural behaviors. Affected animals are expected to resume normal behaviors soon after exposure, with no lasting consequences. Some animals may exhibit more severe responses typical of Level B harassment, such as fleeing, ceasing feeding, or flushing from a haulout. These responses could have significant biological impacts for affected individuals. One otter may experience Level A take from PTS. The effects to this individual are unknown, but lasting effects to survival and reproduction for this individual are possible. Thus, although the proposed activities may result in approximately 410 takes of 9 animals from the southwest stock and 1,256 takes of 85 otters from the southcentral stock, we do not expect this level of harassment to affect annual rates of recruitment or survival or result in adverse effects on the species or stocks.

Our proposed finding of negligible impact applies to incidental take associated with the proposed activities as mitigated by the avoidance and minimization measures identified in the applicant's mitigation and monitoring plan. Minimum flight altitudes will help operators avoid take from exposure to aircraft noise. Protected species observers and procedures implemented by PSOs will limit Level A take during seismic work and pile driving. Collision-avoidance measures, including speed reductions when otters are present, will ensure that boat strikes are unlikely. These mitigation measures are designed to minimize interactions with and impacts to sea otters and, together with the monitoring and reporting procedures, are required for the validity of our finding and are a necessary component of the proposed ITR. For these reasons, we propose a finding that the proposed activities will have a negligible impact on sea otters.

Impact on Subsistence

We propose a finding that the anticipated harassment caused by the applicant's activities would not have an unmitigable adverse impact on the availability of sea otters for taking for subsistence uses. In making this finding, we considered the timing and location of the proposed activities and the timing and location of subsistence harvest activities in the area of the proposed project. We also considered the applicant's consultation with subsistence communities, proposed measures for avoiding impacts to subsistence harvest, and commitment to development of a POC, should any adverse impacts be identified.

Request for Public Comments

If you wish to comment on this proposed regulation, the associated draft environmental assessment, or the information collection, you may submit your comments by any of the methods described in **ADDRESSES**. Please identify if you are commenting on the proposed regulation, draft environmental assessment, or the information collection, make your comments as specific as possible, confine them to issues pertinent to the proposed regulation, and explain the reason for any changes you recommend. Where possible, your comments should reference the specific section or paragraph that you are addressing. The Service will consider all comments that are received by the close of the comment period (see **DATES**).

Comments, including names and street addresses of respondents, will become part of the administrative record. Before including your address, telephone number, email address, or other personal identifying information in your comment, be advised that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comments to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

Required Determinations

National Environmental Policy Act (NEPA)

We have prepared a draft environmental assessment (EA) in accordance with the NEPA (42 U.S.C. 4321 *et seq.*). We have preliminarily concluded that issuance of an incidental take regulation for the nonlethal, incidental, unintentional take by harassment of small numbers of sea otters in Alaska during activities conducted by Hilcorp, Harvest, and AGDC in 2019 to 2024 would not significantly affect the quality of the human environment and that the preparation of an environmental impact statement is not required by section 102(2) of NEPA or its implementing regulations. A copy of the EA can be obtained from the locations described in **ADDRESSES**.

Endangered Species Act (ESA)

Under the ESA, all Federal agencies are required to ensure the actions they authorize are not likely to jeopardize the continued existence of any threatened or endangered species or result in destruction or adverse modification of critical habitat. The southwest DPS of sea otters is listed as threatened under the ESA at 50 CFR 17.11(h) (70 FR 46366, August 9, 2005). The proposed activities will occur within designated critical habitat found at 50 CFR 17.95(a). Prior to issuance of a final ITR, if warranted, the Service will complete intra-Service consultation under section 7 of the ESA on our proposed issuance of an ITR, which will consider whether the effects of the proposed project will adversely affect sea otters or adversely modify their critical habitat. These evaluations and findings will be made available on the Service's website and at *https://www.regulations.gov.*

Regulatory Planning and Review

Executive Order 12866 provides that the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget will review all significant rules. OIRA has determined that this rule is not significant.

Executive Order 13563 reaffirms the principles of Executive Order 12866 while calling for improvements in the nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. Executive Order 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

OIRA bases its determination upon the following four criteria: (a) Whether the rule will have an annual effect of $100 million or more on the economy or adversely affect an economic sector, productivity, jobs, the environment, or other units of the government; (b) Whether the rule will create inconsistencies with other Federal agencies' actions; (c) Whether the rule will materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients; (d) Whether the rule raises novel legal or policy issues.

Expenses will be related to, but not necessarily limited to: The development of applications for LOAs; monitoring, recordkeeping, and reporting activities conducted during oil and gas operations; development of activity- and species-specific marine mammal monitoring and mitigation plans; and coordination with Alaska Natives to minimize effects of operations on subsistence hunting. Realistically, costs of compliance with this proposed rule are minimal in comparison to those related to actual oil and gas exploration, development, production, and transport operations. The actual costs to develop the petition for promulgation of regulations and LOA requests probably do not exceed $200,000 per year, short of the ''major rule'' threshold that would require preparation of a regulatory impact analysis. As is presently the case, profits will accrue to the applicant; royalties and taxes will accrue to the Government; and the rule will have little or no impact on decisions by the applicant to relinquish tracts and write off bonus payments.

Small Business Regulatory Enforcement Fairness Act

We have determined that this rule is not a major rule under 5 U.S.C. 804(2), the Small Business Regulatory Enforcement Fairness Act. The rule is also not likely to result in a major increase in costs or prices for consumers, individual industries, or government agencies or have significant adverse effects on competition, employment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

Regulatory Flexibility Act

We have also determined that this rule will not have a significant economic effect on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). Companies and their contractors conducting exploration, development, production, and transportation of oil and gas in Alaska have been identified as the only likely applicants under the regulations, and these potential applicants have not been identified as small businesses. Therefore, neither a Regulatory Flexibility Analysis nor a Small Entity Compliance Guide is required.

Takings Implications

This rule does not have takings implications under Executive Order 12630 because it authorizes the nonlethal, incidental, but not intentional, take of sea otters by oil and gas industry companies and, thereby, exempts these companies from civil and criminal liability as long as they operate in compliance with the terms of their LOAs. Therefore, a takings implications assessment is not required.

Federalism Effects

This rule does not contain policies with Federalism implications sufficient to warrant preparation of a Federalism Assessment under Executive Order 13132. The MMPA gives the Service the authority and responsibility to protect sea otters.

Unfunded Mandates Reform Act

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), this rule will not ''significantly or uniquely'' affect small governments. A Small Government Agency Plan is not required. The Service has determined and certifies pursuant to the Unfunded Mandates Reform Act that this rulemaking will not impose a cost of $100 million or more in any given year on local or State governments or private entities. This rule will not produce a Federal mandate of $100 million or greater in any year, *i.e.,* it is not a ''significant regulatory action'' under the Unfunded Mandates Reform Act.

Government-to-Government Relationship With Native American Tribal Governments

It is our responsibility to communicate and work directly on a Government-to-Government basis with federally recognized Alaska Native tribes and corporations in developing programs for healthy ecosystems. We seek their full and meaningful participation in evaluating and addressing conservation concerns for protected species. It is our goal to remain sensitive to Alaska Native culture, and to make information available to Alaska Natives. Our efforts are guided by the following policies and directives: (1) The Native American Policy of the Service (January 20, 2016); (2) the Alaska Native Relations Policy (currently in draft form); (3) Executive Order 13175 (January 9, 2000); (4) Department of the Interior Secretarial Orders 3206 (June 5, 1997), 3225 (January 19, 2001), 3317 (December 1, 2011), and 3342 (October 21, 2016); (5) the Alaska Government-to-Government Policy (a departmental memorandum issued January 18, 2001); and (6) the Department of the Interior's policies on consultation with Alaska Native tribes and organizations.

We have evaluated possible effects of the proposed activities on federally recognized Alaska Native Tribes and corporations. Through the ITR process identified in the MMPA, the applicant has presented a communication process, culminating in a POC if needed, with the Native organizations and communities most likely to be affected by their work. The applicant has engaged these groups in informational communications. We invite continued discussion about the proposed ITR.

Civil Justice Reform

The Departmental Solicitor's Office has determined that this regulation does not unduly burden the judicial system and meets the applicable standards provided in sections 3(a) and 3(b)(2) of Executive Order 12988.

Paperwork Reduction Act

This rule requests a revision to an existing information collection. All information collections require approval under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). We may not conduct or sponsor, and you are not required to respond to, a collection of information unless it displays a

currently valid OMB control number. The OMB previously reviewed and approved the information collection requirements associated with incidental take of marine mammals in the Beaufort and Chukchi Seas and assigned OMB Control Number 1018–0070 (expires July 31, 2020).

The revised requirements reporting and/or recordkeeping requirements identified below require approval by OMB:

(1) Remove references to 50 CFR part 18, subpart I (expired); and

(2) Add references to 50 CFR part 18, subpart K.

Title of Collection: Incidental Take of Marine Mammals During Specified Activities, 50 CFR 18.27 and 50 CFR 18, Subparts J and K.

OMB Control Number: 1018–0070.

Form Numbers: None.

Type of Review: Revision of a currently approved collection.

Respondents/Affected Public: Oil and gas industry representatives, including applicants for ITRs and LOAs, operations managers, and environmental compliance personnel.

Total Estimated Number of Annual Respondents: 84.

Total Estimated Number of Annual Responses: 356.

Estimated Completion Time per Response: Varies from 1.5 hours to 150 hours, depending on activity.

Total Estimated Number of Annual Burden Hours: 1,800.

Respondent's Obligation: Required to obtain or retain a benefit.

Frequency of Collection: On occasion.

Total Estimated Annual Nonhour Burden Cost: $200,000.

As part of our continuing effort to reduce paperwork and respondent burdens, we invite the public and other Federal agencies to comment on any aspect of this information collection, including:

(1) Whether or not the collection of information is necessary, including whether or not the information will have practical utility;

(2) The accuracy of our estimate of the burden for this collection of information;

(3) Ways to enhance the quality, utility, and clarity of the information to be collected; and

(4) Ways to minimize the burden of the collection of information on respondents.

Send your comments and suggestions on this information collection by the date indicated in **DATES** to the Desk Officer for the Department of the Interior at OMB–OIRA at (202) 395–5806 (fax) or *OIRA_Submission@omb.eop.gov* (email). You may view the information collection request(s) at *http://www.reginfo.gov/public/do/PRAMain.* Please provide a copy of your comments to the Service Information Collection Clearance Officer, U.S. Fish and Wildlife Service, 5275 Leesburg Pike, MS: BPHC, Falls Church, VA 22041–3803 (mail); or *Info_Coll@fws.gov* (email). Please reference OMB Control Number 1018–0070 in the subject line of your comments.

Energy Effects

Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. This rule provides exceptions from the taking prohibitions of the MMPA for entities engaged in the exploration of oil and gas in Cook Inlet, Alaska. By providing certainty regarding compliance with the MMPA, this rule will have a positive effect on the oil and gas industry and its activities. Although the rule requires applicants to take a number of actions, these actions have been undertaken as part of oil and gas industry operations for many years as part of similar past regulations in Alaska. Therefore, this rule is not expected to significantly affect energy supplies, distribution, or use and does not constitute a significant energy action. No Statement of Energy Effects is required.

References

For a list of the references cited in this proposed rule, see Docket No. FWS–R7–ES–2019–0012, available at *https://www.regulations.gov.*

List of Subjects in 50 CFR Part 18

Administrative practice and procedure, Alaska, Imports, Indians, Marine mammals, Oil and gas exploration, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

For the reasons set forth in the preamble, the Service proposes to amend part 18, subchapter B of chapter 1, title 50 of the Code of Federal Regulations as set forth below.

PART 18—MARINE MAMMALS

■ 1. The authority citation of 50 CFR part 18 continues to read as follows:

Authority: 16 U.S.C. 1361 *et seq.*

■ 2. Add subpart K to read as follows:

Subpart K—Nonlethal Taking of Marine Mammals Incidental to Oil and Gas Activities in Cook Inlet, Alaska

Sec.

§ 18.130 Specified activities covered by this subpart.

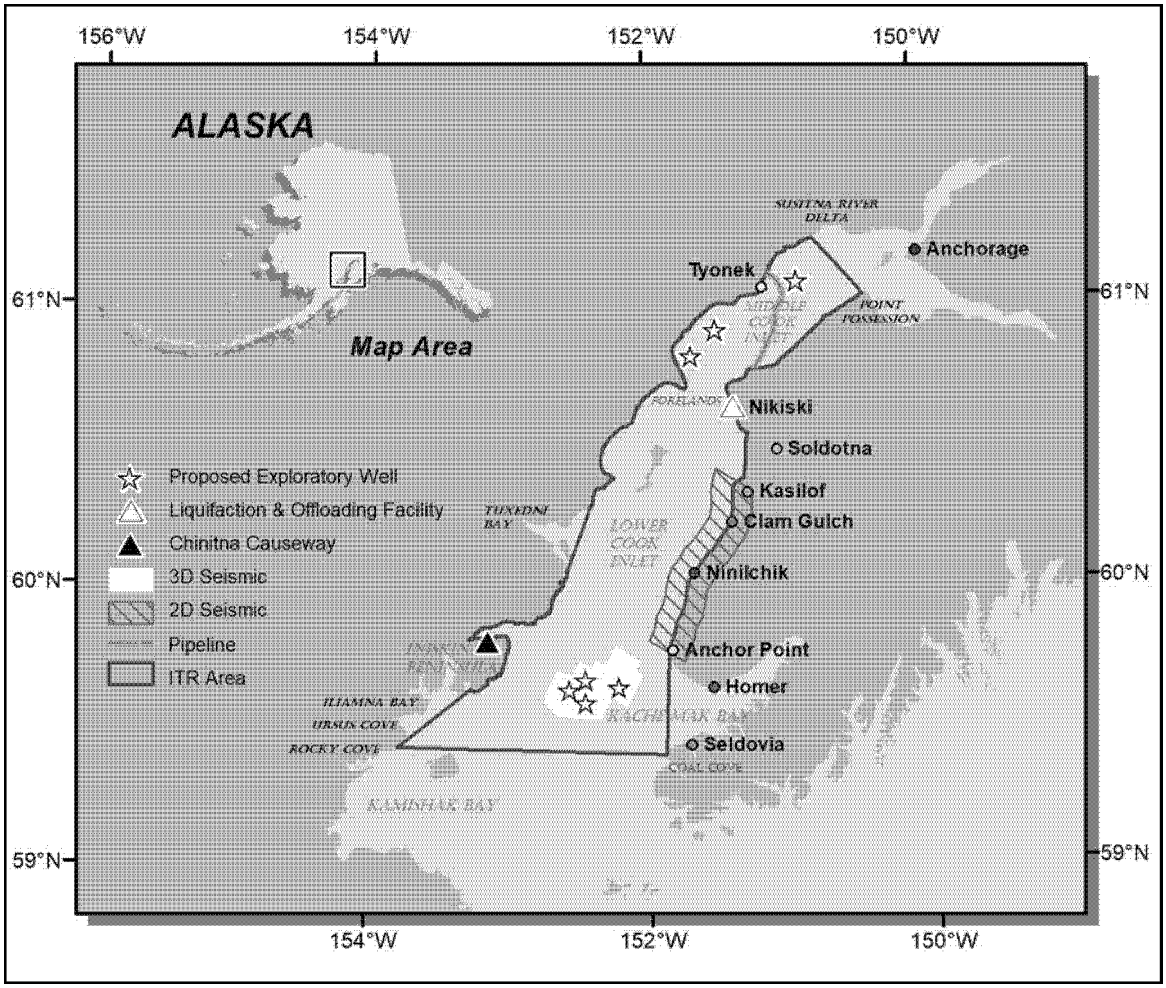
Regulations in this subpart apply to the nonlethal incidental, but not intentional, take, as defined in § 18.3 and under section 3 of the Marine Mammal Protection Act (16 U.S.C. 1371 *et seq.*), of small numbers of northern sea otters (*Enhydra lutris kenyoni;* hereafter ''otter,'' ''otters,'' or ''sea otters'') by Hilcorp Alaska, LLC, Harvest Alaska, LLC, and the Alaska Gasline Development Corporation while engaged in activities associated with or in support of oil and gas exploration, development, production, and transportation in Cook Inlet, Alaska.

§ 18.131 Specified geographic region where this subpart applies.

(a) The specified geographic region is Cook Inlet, Alaska, south of a line from the Susitna River Delta to Point Possession (approximately 61°15′54″ N, 150°41′07″ W, to 61°02′19″ N, 150°23′48″ W, WGS 1984) and north of a line from Rocky Cove to Coal Cove (approximately 59°25′56″ N, 153°44′25″ W and 59°23′48″ N, 151°54′28″ W, WGS 1984), excluding Ursus Cove, Iniskin Bay, Iliamna Bay, and Tuxedni Bay.

(b) The geographic area of these incidental take regulations (ITRs) includes all Alaska State waters and Outer Continental Shelf Federal waters within this area as well as all adjacent rivers, estuaries, and coastal lands where sea otters may occur, except for those areas explicitly excluded in paragraph (a) of this section.

(c) Map of the Cook Inlet ITR region follows:



§ 18.132 Dates this subpart is in effect.

Regulations in this subpart are effective from [EFFECTIVE DATE OF THE FINAL RULE] to [DATE 5 YEARS AFTER THE EFFECTIVE DATE OF THE FINAL RULE].

§ 18.133 Authorized take allowed under a Letter of Authorization (LOA).

(a) To incidentally take marine mammals pursuant to this subpart, Hilcorp Alaska, LLC, Harvest Alaska, LLC, or the Alaska Gasline Development Corporation (hereafter ''the applicant'') must apply for and obtain an LOA in accordance with §§ 18.27(f) and 18.134.

(b) An LOA allows for the nonlethal, incidental, but not intentional take by harassment of sea otters during activities specified in § 18.130 within the Cook Inlet ITR region described in § 18.131.

(c) Each LOA will set forth:

(1) Permissible methods of incidental take;

(2) Means of effecting the least practicable adverse impact (*i.e.,* mitigation) on the species, its habitat, and the availability of the species for subsistence uses; and

(3) Requirements for monitoring and reporting.

(d) Issuance of the LOA(s) must be based on a determination that the level of take will be consistent with the findings made for the total allowable take under this subpart.

§ 18.134 Procedure to obtain a Letter of Authorization (LOA).

(a) The applicant must be a U.S. citizen as defined in § 18.27(c) and must submit the request for authorization to the U.S. Fish and Wildlife Service (Service) Alaska Region Marine Mammals Management Office (MMM), MS 341, 1011 East Tudor Road, Anchorage, Alaska 99503, at least 90 days prior to the start of the proposed activity.

(b) The request for an LOA must comply with the requirements set forth in §§ 18.137 through 18.139 and must include the following information:

(1) A plan of operations that describes in detail the proposed activity (type of project, methods, and types and numbers of equipment and personnel, etc.), the dates and duration of the activity, and the specific locations of and areas affected by the activity. Changes to the proposed project without prior authorization may invalidate an LOA.

(2) A site-specific marine mammal monitoring and mitigation plan to monitor and mitigate the effects of the activity on sea otters.

(3) An assessment of potential effects of the proposed activity on subsistence hunting of sea otters.

(i) The applicant must communicate with potentially affected subsistence communities along the Cook Inlet coast and appropriate subsistence user organizations to discuss the location, timing, and methods of proposed activities and identify any potential conflicts with subsistence hunting activities.

(ii) The applicant must specifically inquire of relevant communities and organizations if the proposed activity will interfere with the availability of sea otters for the subsistence use of those groups.

(iii) The applicant must include documentation of consultations with potentially affected user groups. Documentation must include a list of

persons contacted, a summary of any concerns identified by community members and hunter organizations, and the applicant's responses to identified concerns.

(iv) If any concerns regarding effects of the activity on sea otter subsistence harvest are identified, the applicant will provide to the Service a Plan of Cooperation (POC) with specific steps for addressing those concerns.

§ 18.135 How the Service will evaluate a request for a Letter of Authorization (LOA).

(a) The Service will evaluate each request for an LOA based on the specific activity and the specific geographic location. We will determine whether the level of activity identified in the request is commensurate with the analysis and findings made for this subpart regarding the number of animals likely to be taken and evaluate whether there will be a negligible impact on sea otters or an adverse impact on the availability of sea otters for subsistence uses. Depending on the results of the evaluation, we may grant the authorization, add further conditions, or deny the authorization.

(b) Once issued, the Service may withdraw or suspend an LOA if the project activity is modified in a way that undermines the results of the previous evaluation, if the conditions of the regulations in this subpart are not being substantially complied with, or if the taking allowed is or may be having more than a negligible impact on the affected stock of sea otters or an unmitigable adverse impact on the availability of sea otters for subsistence uses.

(c) The Service will make decisions concerning withdrawals of an LOA, either on an individual or class basis, only after notice and opportunity for public comment in accordance with § 18.27(f)(5). The requirement for notice and public comment will not apply should we determine that an emergency exists that poses a significant risk to the well-being of the species or stocks of sea otters.

§ 18.136 Prohibited take under a Letter of Authorization (LOA).

(a) Except as otherwise provided in this subpart, prohibited taking is described in § 18.11 as well as: Intentional take, lethal incidental take of sea otters, and any take that fails to comply with this subpart or with the terms and conditions of an LOA.

(b) If project activities cause unauthorized take, the applicant must take the following actions:

(1) Cease activities immediately (or reduce activities to the minimum level necessary to maintain safety) and report the details of the incident to the Service MMM within 48 hours; and

(2) Suspend further activities until the Service has reviewed the circumstances, determined whether additional mitigation measures are necessary to avoid further unauthorized taking, and notified the applicant that it may resume project activities.

§ 18.137 Mitigation.

(a) *Mitigation measures for all LOAs.* The applicant, including all personnel operating under the applicant's authority (or ''operators,'' including contractors, subcontractors, and representatives) must undertake the following activities to avoid and minimize take of sea otters by harassment.

(1) Implement policies and procedures to avoid interactions with and minimize to the greatest extent practicable adverse impacts on sea otters, their habitat, and the availability of these marine mammals for subsistence uses.

(2) Develop avoidance and minimization policies and procedures, in cooperation with the Service, that include temporal or spatial activity restrictions to be used in response to the presence of sea otters engaged in a biologically significant activity (*e.g.,* resting, feeding, hauling out, mating, or nursing).

(3) Cooperate with the Service's MMM Office and other designated Federal, State, and local agencies to monitor and mitigate the impacts of oil and gas industry activities on sea otters.

(4) Allow Service personnel or the Service's designated representative to board project vessels or visit project work sites for the purpose of monitoring impacts to sea otters and subsistence uses of sea otters at any time throughout project activities so long as it is safe to do so.

(5) Designate trained and qualified protected species observers (PSOs) to monitor for the presence of sea otters, initiate mitigation measures, and monitor, record, and report the effects of the activities on sea otters. The applicant is responsible for providing training to PSOs to carry out mitigation and monitoring.

(6) Have an approved mitigation and monitoring plan on file with the Service MMM and onsite that includes the following information:

(i) The type of activity and where and when the activity will occur (*i.e.,* a summary of the plan of operation);

(ii) Personnel training policies, procedures, and materials;

(iii) Site-specific sea otter interaction risk evaluation and mitigation measures;

(iv) Sea otter avoidance and encounter procedures; and

(v) Sea otter observation and reporting procedures.

(7) Contact affected subsistence communities and hunter organizations to identify any potential conflicts that may be caused by the proposed activities and provide the Service documentation of communications as described in § 18.134.

(b) *Mitigation measures for in-water noise-generating work.* The applicant must carry out the following measures:

(1) *Mitigation zones.* Establish mitigation zones for project activities that generate underwater sound levels ≥160 decibels (dB) between 125 hertz (Hz) and 38 kilohertz (kHz) (hereafter ''noise-generating work'').

(i) All dB levels are referenced to 1 μPa for underwater sound. All dB levels herein are dB_{RMS} unless otherwise noted; dB_{RMS} refers to the root-mean-squared dB level, the square root of the average of the squared sound pressure level, typically measured over 1 second.

(ii) Mitigation zones must include all in-water areas where work-related sound received by sea otters will match the levels and frequencies in paragraph (b)(1) of this section. Mitigation zones will be designated as follows:

(A) An Exclusion Zone (EZ) will be established throughout all areas where sea otters may be exposed to sound levels capable of causing Level A take as shown in the table in paragraph (b)(1)(iii) of this section.

(B) The Safety Zone (SZ) is an area larger than the EZ and will include all areas within which sea otters may be exposed to noise levels that will likely result in Level B take as shown in the table in paragraph (b)(1)(iii) of this section.

(C) Both the EZ and SZ will be centered on the sound source. The method of estimation and minimum radius of each zone will be specified in any LOA issued under § 18.135 and will be based on the best available science.

(iii) Summary of acoustic exposure thresholds for take of sea otters from underwater sound in the frequency range 125 Hz–32 kHz:

Marine mammals	Injury (Level A) threshold [1]		Disturbance (Level B) threshold
	Impulsive	Non-impulsive	All
Sea otters	232 dB peak; 203; dB SELcum	219 dB SELcum	160 dB_{RMS}.

[1] Based on acoustic criteria for otariid pinnipeds from the National Marine Fisheries Service. Sound source types are separated into impulsive (*e.g.,* seismic, pipe driving, sub-bottom profiler) and non-impulsive (tugs, towing rigs, drilling, water jet, hydraulic grinder) and require estimation of the distance to the peak received sound pressure level (peak) and 24-hr cumulative sound exposure level (SELcum).

(2) *Monitoring.* Designate trained and qualified PSOs or ''observers'' to monitor for the presence of sea otters in mitigation zones, initiate mitigation measures, and record and report the effects of project work on otters for all noise-generating work.

(3) *Mitigation measures for sea otters in mitigation zones.* The following actions will be taken in response to otters in mitigation zones:

(i) Sea otters that are under no visible distress within the SZ must be monitored continuously. Power down, shut down, or maneuver away from the sea otter if practicable to reduce sound received by the animal. Maintain 100 m (301 ft) separation distance whenever possible. Exposures in this zone are counted as one Level B take per animal per day.

(ii) When sea otters are observed within or approaching the EZ, noise-generating work as defined in paragraph (b)(1) of this section must be immediately shut down or powered down to reduce the size of the zone sufficiently to exclude the animal from the zone. Vessel speed or course may be altered to achieve the same task. Exposures in this zone are counted as one Level A take per animal per day.

(iii) When sea otters are observed in visible distress (for example, vocalizing, repeatedly spy-hopping, or fleeing), noise-generating work as defined in paragraph (b)(1) of this section must be immediately shut down or powered down to reduce the size of the zone sufficiently to exclude the animal from the zone.

(iv) Following a shutdown, the noise-generating activity will not resume until the sea otter has cleared the EZ. The animal will be considered to have cleared the EZ if it is visually observed to have left the EZ or has not been seen within the EZ for 30 minutes or longer.

(4) *Ramp-up procedures.* Prior to noise-generating work, a ''ramp-up'' procedure must be used to increase the levels of underwater sound from noise-generating work at a gradual rate.

(i) *Seismic surveys.* A ramp-up will be used at the initial start of airgun operations and prior to restarting after any period greater than 10 minutes without airgun operations, including a power-down or shutdown event (described in paragraphs (b)(6) and (7) of this section). During geophysical work, the number and total volume of airguns will be increased incrementally until the full volume is achieved. The rate of ramp-up will be no more than 6 dB per 5-minute period. Ramp-up will begin with the smallest gun in the array that is being used for all airgun array configurations. During the ramp-up, the applicable mitigation zones (based on type of airgun and sound levels produced) must be maintained. If the complete applicable EZ has not been visible for at least 30 minutes prior to the start of operations, ramp-up will not start unless a 10-in^3 mitigation gun has been operating during the interruption of seismic survey operations. It will not be permissible to ramp up from a complete shutdown in thick fog or at other times when the outer part of the applicable EZ is not visible, unless the mitigation gun has been operating.

(ii) *Pile/pipe driving.* A ramp-up of the hammering will precede each day's pipe/pile driving activities or if pipe/pile driving has ceased for more than 1 hour. The EZ will be cleared 30 minutes prior to a ramp-up to ensure no sea otters are within or entering the EZ. Initial hammering starts will not begin during periods of poor visibility (*e.g.,* night, fog, wind) when the entire EZ is not visible. The ramp-up procedure involves initially starting with three soft strikes at 40 percent energy, followed by a 1-minute waiting period followed by two subsequent three-strike sets. Monitoring will occur during all hammering sessions.

(iii) *All activities.* Any shutdown due to sea otters sighted within the EZ must be followed by a 30-minute all-clear period and then a standard full ramp-up. Any shutdown for other reasons resulting in the cessation of the sound source for a period greater than 30 minutes must also be followed by full ramp-up procedures. If otters are observed during a ramp-up effort or prior to startup, a PSO must record the observation and monitor the animal's position until it moves out of visual range. Noise-generating work may commence if, after a full and gradual effort to ramp up the underwater sound level, the otter is outside of the EZ and does not show signs of visible distress (for example, vocalizing, repeatedly spy-hopping, or fleeing).

(5) *Startup procedures.* (i) Visual monitoring must begin at least 30 minutes prior to, and continue throughout, ramp-up efforts.

(ii) Visual monitoring must continue during all noise-generating work occurring in daylight hours.

(6) *Power-down procedures.* A power-down procedure involves reducing the volume of underwater sound generated to prevent an otter from entering the EZ.

(i) Whenever a sea otter is detected outside the EZ and, based on its position and motion relative to the noise-generating work, appears likely to enter the EZ but has not yet done so, operators may reduce power to noise-generating equipment as an alternative to a shutdown.

(ii) Whenever a sea otter is detected in the SZ, an operator may power down when practicable to reduce Level B take.

(iii) During a power-down of seismic work, the number of airguns in use may be reduced, such that the EZ is reduced, making the sea otters unlikely to enter the EZ. A mitigation airgun (airgun of small volume such as the 10-in^3 gun) will be operated continuously during a power-down of seismic work.

(iv) After a power down, noise-generating work will not resume until the sea otter has cleared the applicable EZ. The animal will be considered to have cleared the applicable zone if it is visually observed to have left the EZ and has not been seen within the zone for 30 minutes.

(7) *Shutdown procedure.* A shutdown occurs when all noise-generating work is suspended.

(i) Noise-generating work will be shut down completely if a sea otter enters the EZ.

(ii) The shutdown procedure will be accomplished within several seconds of the determination that a sea otter is either in or about to enter the EZ.

(iii) Noise-generating work will not proceed until all sea otters have cleared the EZ and the PSOs on duty are confident that no sea otters remain within the EZ. An otter will be considered to have cleared the EZ if it is visually observed to have left the EZ

or has not been seen within the zone for 30 minutes.

(iv) Visual monitoring must continue for 30 minutes after use of the acoustic source ceases or the sun sets, whichever is later.

(8) *Emergency shutdown.* If observations are made or credible reports are received that one or more sea otters are within the area of noise-generating work and are indicating acute distress associated with the work, such as any injury due to seismic noise or persistent vocalizations indicating separation of mother from pup, the work will be immediately shut down and the Service contacted. Work will not be restarted until review and approval by the Service.

(c) *Mitigation for all in-water construction and demolition activity.* (1) The applicant must implement a minimum EZ of a 10-m radius around the in-water construction and demolition. If a sea otter comes within or approaches the EZ, such operations must cease. A larger EZ may be required for some activities, such as blasting, and will be specified in the LOA.

(2) All in-water work along the shoreline shall be conducted during low tide when the site is dewatered to the maximum extent practicable.

(d) *Measures for vessel-based activities.* (1) Vessel operators must take every precaution to avoid harassment of sea otters when a vessel is operating near these animals.

(2) Vessels must remain at least 500 m from rafts of otters whenever possible.

(3) Vessels must reduce speed and maintain a distance of 100 m (328 ft) from all sea otters whenever possible.

(4) Vessels may not be operated in such a way as to separate members of a group of sea otters from other members of the group.

(5) When weather conditions require, such as when visibility drops, vessels must adjust speed accordingly to avoid the likelihood of injury to sea otters.

(6) Vessels in transit and support vessels must use established navigation channels or commonly recognized vessel traffic corridors, and must avoid alongshore travel in shallow water (<20 m) whenever practicable.

(7) All vessels must avoid areas of active or anticipated subsistence hunting for sea otters as determined through community consultations.

(8) Vessel operators must be provided written guidance for avoiding collisions and minimizing disturbances to sea otters. Guidance will include measures identified in paragraphs (d)(1) through (7) of this section.

(e) *Mitigation measures for aircraft activities.* (1) Aircraft must maintain a minimum altitude of 305 m (1,000 ft) to avoid unnecessary harassment of sea otters, except during takeoff and landing, and when a lower flight altitude is necessary for safety due to weather or restricted visibility.

(2) Aircraft may not be operated in such a way as to separate members of a group of sea otters from other members of the group.

(3) All aircraft must avoid areas of active or anticipated subsistence hunting for sea otters as determined through community consultations.

§ 18.138 Monitoring.

(a) Operators shall work with PSOs to apply mitigation measures, and shall recognize the authority of PSOs, up to and including stopping work, except where doing so poses a significant safety risk to personnel.

(b) Duties of PSOs include watching for and identifying sea otters, recording observation details, documenting presence in any applicable monitoring zone, identifying and documenting potential harassment, and working with operators to implement all appropriate mitigation measures.

(c) A sufficient number of PSOs will be available to meet the following criteria: 100 percent monitoring of EZs during all daytime periods of underwater noise-generating work; a maximum of 4 consecutive hours on watch per PSO; a maximum of approximately 12 hours on watch per day per PSO.

(d) All PSOs will complete a training course designed to familiarize individuals with monitoring and data collection procedures. A field crew leader with prior experience as a sea otter observer will supervise the PSO team. Initially, new or inexperienced PSOs will be paired with experienced PSOs so that the quality of marine mammal observations and data recording is kept consistent. Resumes for candidate PSOs will be made available for the Service to review.

(e) Observers will be provided with reticule binoculars (10×42), big-eye binoculars or spotting scopes (30×), inclinometers, and range finders. Field guides, instructional handbooks, maps and a contact list will also be made available.

(f) Observers will collect data using the following procedures:

(1) All data will be recorded onto a field form or database.

(2) Global positioning system data, sea state, wind force, and weather will be collected at the beginning and end of a monitoring period, every hour in between, at the change of an observer, and upon sightings of sea otters.

(3) Observation records of sea otters will include date; time; the observer's locations, heading, and speed (if moving); weather; visibility; number of animals; group size and composition (adults/juveniles); and the location of the animals (or distance and direction from the observer).

(4) Observation records will also include initial behaviors of the sea otters, descriptions of project activities and underwater sound levels being generated, the position of sea otters relative to applicable monitoring and mitigation zones, any mitigation measures applied, and any apparent reactions to the project activities before and after mitigation.

(5) For all otters in or near a mitigation zone, observers will record the distance from the vessel to the sea otter upon initial observation, the duration of the encounter, and the distance at last observation in order to monitor cumulative sound exposures.

(6) Observers will note any instances of animals lingering close to or traveling with vessels for prolonged periods of time.

§ 18.139 Reporting requirements.

(a) Operators must notify the Service at least 48 hours prior to commencement of activities.

(b) Weekly reports will be submitted to the Service during in-water seismic activities. The reports will summarize project activities, monitoring efforts conducted by PSOs, the number of sea otters detected, the number exposed to sound levels greater than 160 dB, and descriptions of all behavioral reactions of sea otters to project activities.

(c) Monthly reports will be submitted to the Service MMM for all months during which noise-generating work takes place. The monthly report will contain and summarize the following information: Dates, times, weather, and sea conditions (including Cook Inlet marine state and wind force) when sea otters were sighted; the number, location, distance from the sound source, and behavior of the otters; the associated project activities; and a description of the implementation and effectiveness of mitigation measures with a discussion of any specific behaviors the otters exhibited in response to mitigation.

(d) A final report will be submitted to the Service within 90 days after the expiration of each LOA. It will include the following items:

(1) Summary of monitoring efforts (hours of monitoring, activities monitored, number of PSOs, and, if

requested by the Service, the daily monitoring logs).

(2) All project activities will be described, along with any additional work yet to be done. Factors influencing visibility and detectability of marine mammals (*e.g.,* sea state, number of observers, and fog and glare) will be discussed.

(3) The report will also address factors affecting the presence and distribution of sea otters (*e.g.,* weather, sea state, and project activities). An estimate will be included of the number of sea otters exposed to noise at received levels greater than or equal to 160 dB (based on visual observation).

(4) The report will describe changes in sea otter behavior resulting from project activities and any specific behaviors of interest.

(5) It will provide a discussion of the mitigation measures implemented during project activities and their observed effectiveness for minimizing impacts to sea otters. Sea otter observation records will be provided to the Service in the form of electronic database or spreadsheet files.

(6) The report will also evaluate the effectiveness of the POC (if applicable) for preventing impacts to subsistence users of sea otters, and it will assess any effects the operations may have had on the availability of sea otters for subsistence harvest.

(e) All reports shall be submitted by email to *fw7_mmm_reports@fws.gov.*

(f) Injured, dead, or distressed sea otters that are not associated with project activities (*e.g.,* animals known to be from outside the project area, previously wounded animals, or carcasses with moderate to advanced decomposition or scavenger damage) must be reported to the Service within 48 hours of the discovery to either the Service MMM (1–800–362–5148, business hours); or the Alaska SeaLife Center in Seward (1–888–774–7325, 24 hrs.); or both. Photographs, video, location information, or any other available documentation shall be provided to the Service.

(g) Operators must notify the Service upon project completion or end of the work season.

§ 18.140 Measures to reduce impacts to subsistence users.

(a) Prior to conducting the work, the applicant will take the following steps to reduce potential effects on subsistence harvest of sea otters:

(1) Avoid work in areas of known sea otter subsistence harvest;

(2) Discuss the planned activities with subsistence stakeholders including Cook Inlet villages, traditional councils, and the Cook Inlet Regional Citizens Advisory Council; and

(3) Identify and work to resolve concerns of stakeholders regarding the project's effects on subsistence hunting of sea otters; and

(b) If any unresolved or ongoing concerns remain, develop a POC in consultation with the Service and subsistence stakeholders to address these concerns.

§ 18.141 Information collection requirements.

(a) We may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid Office of Management and Budget (OMB) control number. OMB has approved the collection of information contained in this subpart and assigned OMB control number 1018–0070. You must respond to this information collection request to obtain a benefit pursuant to section 101(a)(5) of the Marine Mammal Protection Act. We will use the information to:

(1) Evaluate the application and determine whether or not to issue specific LOAs; and

(2) Monitor impacts of activities and effectiveness of mitigation measures conducted under the LOAs.

(b) Comments regarding the burden estimate or any other aspect of the information collection and recordkeeping requirements in this subpart must be submitted to the Information Collection Clearance Officer, U.S. Fish and Wildlife Service, at the address listed in 50 CFR 2.1.

Dated: March 12, 2019.

Andrea Travnicek,

Principal Deputy Assistant Secretary for Fish and Wildlife and Parks, exercising the authority of the Assistant Secretary for Fish and Wildlife and Parks.

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