



Incidental Harassment Authorization

Shell Gulf of Mexico Inc., (Shell), 3601 C Street, Suite 1000, Anchorage, Alaska 99503, is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (16 U.S.C. 1371(a)(5)(D)) and 50 CFR 216.107 to take, by Level B harassment only, small numbers of marine mammals incidental to conducting an open-water marine surveys in the Chukchi Sea, contingent upon the following conditions:

1. This Authorization is valid from July 1 through October 31, 2013.
2. This Authorization is valid only for activities associated with open-water marine surveys and related activities in the Chukchi Sea. The specific areas where Shell's surveys will be conducted are within the Chukchi Sea, Alaska, as shown in Figures 1-1, 1-2, and 1-3 of Shell's IHA application.
3. (a) The species authorized for incidental harassment takings, Level B harassment only, are: beluga whales (*Delphinapterus leucas*); Narwhals (*Monodon monoceros*); harbor porpoises (*Phocoena phocoena*); killer whales (*Orcinus orca*); bowhead whales (*Balaena mysticetus*); gray whales (*Eschrichtius robustus*); humpback whales (*Megaptera novaeangliae*); fin whales (*Balaenoptera physalus*); minke whales (*B. acutorostrata*); bearded seals (*Erignathus barbatus*); spotted seals (*Phoca largha*); ringed seals (*P. hispida*); and ribbon seals (*P. fasciata*).

(b) The authorization for taking by harassment is limited to the following acoustic sources and from the following activities:

- (i) 40 in³ airgun arrays and other acoustic sources for site clearance and shallow hazards surveys;
- (ii) Non-airgun active acoustic sources for ice gouge surveys;
- (iii) Vessel activities related to open-water marine surveys listed in (i) and (ii); and
- (iv) Vessel activities related to equipment recovery and maintenance at Burger A well site.

(c) The taking of any marine mammal in a manner prohibited under this Authorization must be reported within 24 hours of the taking to the Alaska Regional Administrator



(907-586-7221) or his designee in Anchorage (907-271-3023), National Marine Fisheries Service (NMFS) and the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, at (301) 427-8401, or his designee (301-427-8418).

4. The holder of this Authorization must notify the Chief of the Permits and Conservation Division, Office of Protected Resources, at least 48 hours prior to the start of collecting seismic data (unless constrained by the date of issuance of this Authorization in which case notification shall be made as soon as possible).

5. Prohibitions

(a) The taking, by incidental harassment only, is limited to the species listed under condition 3(a) above and by the numbers listed in Table 1 (attached). The taking by Level A harassment, injury or death of these species or the taking by harassment, injury or death of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this Authorization.

(b) The taking of any marine mammal is prohibited whenever the required source vessel protected species observers (PSOs), required by condition 7(a)(i), are not onboard in conformance with condition 7(a)(i) of this Authorization.

6. Mitigation

(a) Establishing Exclusion and Disturbance Zones:

(i) Establish and monitor with trained PSOs a preliminary exclusion zone for cetaceans surrounding the airgun array on the source vessel where the received level would be 180 dB (rms) re 1 μ Pa. For purposes of the field verification test, described in condition 7(e)(i), this radius is estimated to be 160 m from the seismic source for the 40 in³ airgun arrays and 52 m for a single 10 in³ airgun for site clearance and shallow hazards surveys.

(ii) Establish and monitor with trained PSOs a preliminary exclusion zone for pinnipeds surrounding the airgun array on the source vessel where the received level would be 190 dB (rms) re 1 μ Pa. For purposes of the field verification test described in condition 7(e)(i), this radius is estimated to be 50 m from the seismic source for the 640 in³ airgun arrays and 23 m for the single 10 in³ airgun for site clearance and shallow hazards surveys.

(iii) Establish and monitor a zone of influence (ZOI) for cetaceans and pinnipeds surrounding the airgun array on the source vessel where the received level would be 160 dB (rms) re 1 μ Pa. For purposes of the field verification test described in condition 7(e)(i), this radius is estimated to be 1,800 m from the seismic source for the 40 in³ airgun arrays and 569 m for the single 10 in³ airgun for site clearance and shallow hazards surveys.

(iv) Establish a ZOI for cetaceans and pinnipeds surrounding the vessel while operating dynamic positioning (DP) thruster where the received level would be 120 dB (rms) re 1 μ Pa. For purposes of the field verification test described in condition 7(b)(i), this radius is estimated to be 13 km from the DP thruster source for equipment recovery and maintenance operations.

(v) Immediately upon completion of data analysis of the field verification measurements required under condition 7(e)(i) below, the new 120-dB, 160-dB, 180-dB, and 190-dB marine mammal ZOIs and exclusion zones shall be established based on the sound source verification.

(b) Vessel and Helicopter Movement Mitigation:

(i) Avoid concentrations or groups of whales by all vessels under the direction of Shell. Operators of support vessels should, at all times, conduct their activities at the maximum distance possible from such concentrations of whales.

(ii) Vessels in transit shall be operated at speeds necessary to ensure no physical contact with whales occurs. If any vessel approaches within 1.6 km (1 mi) of observed bowhead whales, except when providing emergency assistance to whalers or in other emergency situations, the vessel operator will take reasonable precautions to avoid potential interaction with the bowhead whales by taking one or more of the following actions, as appropriate:

(A) Reducing vessel speed to less than 5 knots within 300 yards (900 feet or 274 m) of the whale(s);

(B) Steering around the whale(s) if possible;

(C) Operating the vessel(s) in such a way as to avoid separating members of a group of whales from other members of the group;

(D) Operating the vessel(s) to avoid causing a whale to make multiple changes in direction; and

(E) Checking the waters immediately adjacent to the vessel(s) to ensure that no whales will be injured when the propellers are engaged.

(F) Reducing vessel speed to less than 9 knots when weather conditions reduce visibility.

(iii) When weather conditions require, such as when visibility drops, adjust vessel speed accordingly to avoid the likelihood of injury to whales.

(iv) In the event that any aircraft (such as helicopters) are used to support the planned survey, the mitigation measures below would apply:

(A) Under no circumstances, other than an emergency, shall aircraft be operated at an altitude lower than 1,000 feet above sea level (ASL) when within 0.3 mile (0.5 km) of groups of whales.

(B) Helicopters shall not hover or circle above or within 0.3 mile (0.5 km) of groups of whales.

(c) Mitigation Measures for Airgun Operations:

(i) Ramp-up:

(A) A ramp up, following a cold start, can be applied if the exclusion zone has been free of marine mammals for a consecutive 30-minute period. The entire exclusion zone must have been visible during these 30 minutes. If the entire exclusion zone is not visible, then ramp up from a cold start cannot begin.

(B) If a marine mammal(s) is sighted within the exclusion zone during the 30-minute watch prior to ramp up, ramp up will be delayed until the marine mammal(s) is sighted outside of the exclusion zone or the animal(s) is not sighted for at least 15-30 minutes: 15 minutes for small odontocetes (harbor porpoise) and pinnipeds, or 30 minutes for baleen whales and large odontocetes (including beluga and killer whales and narwhal).

(C) If, for any reason, electrical power to the airgun array has been discontinued for a period of 10 minutes or more, ramp-up procedures shall be implemented. Only if the PSO watch has been suspended, a 30-minute clearance of the exclusion zone is required prior to commencing ramp-up. Discontinuation of airgun activity for less than 10 minutes does not require a ramp-up.

(D) The seismic operator and PSOs shall maintain records of the times when ramp-ups start and when the airgun arrays reach full power.

(ii) Power-down/Shutdown:

(A) The airgun array shall be immediately powered down whenever a marine mammal is sighted approaching close to or within the applicable exclusion zone of the full array, but is outside the applicable exclusion zone of the single mitigation airgun.

(B) If a marine mammal is already within the exclusion zone when first detected, the airguns shall be powered down immediately.

(C) Following a power-down, firing of the full airgun array shall not resume until the marine mammal has cleared the exclusion. The animal will be considered to have cleared the exclusion zone if it is visually observed to have left the exclusion zone of the full array, or has not been seen within the zone for 15 minutes (pinnipeds or small toothed whales) or 30 minutes (baleen whales or large toothed whales).

(D) If a marine mammal is sighted within or about to enter the 190 or 180 dB (rms) applicable exclusion zone of the single mitigation airgun, the airgun array shall be shutdown.

(E) Firing of the full airgun array or the mitigation gun shall not resume until the marine mammal has cleared the exclusion zone of the full array or mitigation gun, respectively. The animal will be considered to have cleared the exclusion zone as described above under ramp up procedures.

(F) Power down and shutdown of airgun array requirements prescribed in 6(c)(ii)(A) also applies to situations when an aggregation of 12 or more bowhead whales or gray whales that appear to be engaged in a non-migratory, significant biological behavior (e.g., feeding, socializing) are observed during vessel monitoring within the 160-dB zone of disturbance.

(iii) Poor Visibility Conditions:

(A) If during foggy conditions, heavy snow or rain, or darkness, the full 180 dB exclusion zone is not visible, the airguns cannot commence a ramp-up procedure from a full shut-down.

(B) If one or more airguns have been operational before nightfall or before the onset of poor visibility conditions, they can remain operational throughout the night or poor visibility conditions. In this case ramp-up procedures can be initiated, even though the exclusion zone may not be visible, on the assumption that marine mammals will be alerted by the sounds from the single airgun and have moved away.

(iv) Use of a Small-Volume Airgun during Turns and Transits

(A) Throughout the seismic survey, particularly during turning movements, and short transits, Shell will employ the use of a small-volume airgun (i.e., 10 in³ “mitigation airgun”) to deter marine mammals from being within the immediate area of the seismic operations. The mitigation airgun would be operated at approximately one shot per minute and would not be operated for longer than three hours in duration (turns may last two to three hours for the proposed project).

(B) During turns or brief transits (e.g., less than three hours) between seismic tracklines, one mitigation airgun will continue operating. The ramp-up procedure will still be followed when increasing the source levels from one airgun to the full airgun array. However, keeping one airgun firing will avoid the prohibition of a “cold start” during darkness or other periods of poor visibility. Through use of this approach, site clearance and shallow hazards surveys using the full array may resume without the 30 minute observation period of the full exclusion zone required for a “cold start”. PSOs will be on duty whenever the airguns are firing during daylight, during the 30 minute periods prior to ramp-ups.

(d) Mitigation Measures for Subsistence Activities:

(i) Shell shall fully implement the following provisions, as described fully in the 2013 Conflict Avoidance Agreement (CAA) signed between Shell and the AEWC and its representing whaling communities of the Chukchi and Beaufort Seas:

(A) Section 202(a) and (c): Com-Center General Communication Scheme;

(B) Section 204: Standardized Log Books;

(C) Section 302: Barge and Transit Vessel Operations;

(D) Section 402: Sound Signature Tests;

(E) Section 501: General provisions for Avoiding Interference with Bowhead Whales or Subsistence Whale Hunting Activities;

(F) Section 502(b): Limitations on Geophysical Activity in the Chukchi Sea;

(G) Section 505: Termination of Operations and Transit Through the Bering Strait; and

(H) Title VI, Sections 601 and 602: Late Season Seismic Operations.

7. Monitoring:

(a) Vessel-based Visual Monitoring:

(i) Vessel-based visual monitoring for marine mammals shall be conducted by NMFS-approved protected species observers (PSOs) throughout the period of survey activities, and extends to 30 minutes after the survey is completed.

- (ii) PSOs shall be stationed aboard the marine survey vessel and the vessel used to facilitate equipment recovery and maintenance work at the Burger A exploratory well site through the duration of the projects.
- (iii) A sufficient number of PSOs shall be onboard the survey vessel to meet the following criteria:
 - (A) 100% monitoring coverage during all periods of survey operations in daylight;
 - (B) maximum of 4 consecutive hours on watch per PSO; and
 - (C) maximum of 12 hours of watch time per day per PSO.
- (iv) The vessel-based marine mammal monitoring shall provide the basis for real-time mitigation measures as described in (6)(c) above.
- (v) Results of the vessel-based marine mammal monitoring shall be used to calculate the estimation of the number of “takes” from the marine surveys and equipment recovery and maintenance program.

(b) Protected Species Observers and Training:

- (i) PSO teams shall consist of Inupiat observers and NMFS-approved field biologists.
- (ii) Experienced field crew leaders shall supervise the PSO teams in the field. New PSOs shall be paired with experienced observers to avoid situations where lack of experience impairs the quality of observations.
- (iii) Crew leaders and most other biologists serving as observers in 2013 shall be individuals with experience as observers during recent seismic or shallow hazards monitoring projects in Alaska, the Canadian Beaufort, or other offshore areas in recent years.
- (iv) Resumes for PSO candidates shall be provided to NMFS for review and acceptance of their qualifications. Inupiat observers shall be experienced in the region and familiar with the marine mammals of the area.
- (v) All observers shall complete a NMFS-approved observer training course designed to familiarize individuals with monitoring and data collection procedures. The training course shall be completed before the anticipated start of the 2013 open-water season. The training session(s) shall be conducted by qualified marine mammalogists with extensive crew-leader experience during previous vessel-based monitoring programs. A marine mammal observers’

handbook, adapted for the specifics of the planned survey program will be reviewed as part of the training.

(vi) Training for both Alaska native PSOs and biologist PSOs shall be conducted at the same time in the same room. There shall not be separate training courses for the different PSOs.

(vii) Crew members should not be used as primary PSOs because they have other duties and generally do not have the same level of expertise, experience, or training as PSOs, but they could be stationed on the fantail of the vessel to observe the near field, especially the area around the airgun array and implement a rampdown or shutdown if a marine mammal enters the exclusion zone.

(viii) If crew members are to be used as PSOs, they shall go through some basic training consistent with the functions they will be asked to perform. The best approach would be for crew members and PSOs to go through the same training together.

(ix) PSOs shall be trained using visual aids (e.g., videos, photos), to help them identify the species that they are likely to encounter in the conditions under which the animals will likely be seen.

(x) Shell shall train its PSOs to follow a scanning schedule that consistently distributes scanning effort according to the purpose and need for observations. All PSOs should follow the same schedule to ensure consistency in their scanning efforts.

(xi) PSOs shall be trained in documenting the behaviors of marine mammals. PSOs should simply record the primary behavioral state (i.e., traveling, socializing, feeding, resting, approaching or moving away from vessels) and relative location of the observed marine mammals.

(c) PSO Handbook: A PSO's Handbook shall be prepared for Shell's 2013 vessel-based monitoring program. Handbooks contain maps, illustrations, and photographs, as well as text, and are intended to provide guidance and reference information to trained individuals who will participate as PSOs. The following topics shall be covered in the PSO Handbook for the Shell project:

(i) summary overview descriptions of the project, marine mammals and underwater noise, the marine mammal monitoring program (vessel roles, responsibilities), and the Marine Mammal Protection Act;

(ii) monitoring and mitigation objectives and procedures, including radii for exclusion zones and zones of influence (ZOIs);

- (iii) responsibilities of staff and crew regarding the marine mammal monitoring plan;
- (iv) instructions for ship crew regarding the marine mammal monitoring plan;
- (v) data recording procedures: codes and coding instructions, PSO coding mistakes, electronic database; navigational, marine physical, field data sheet;
- (vi) list of species that might be encountered: identification, natural history;
- (vii) use of specialized field equipment (reticle binoculars, night vision devices, etc.);
- (viii) table of wind speed, Beaufort wind force, and sea state codes; and
- (ix) data quality-assurance/quality-control, delivery, storage, and backup procedures.

(d) Marine Mammal Observation Protocol:

- (i) PSOs shall watch for marine mammals from the best available vantage point on the survey vessels, typically the bridge.
- (ii) Observations by the PSOs on marine mammal presence and activity shall begin a minimum of 30 minutes prior to the estimated time that the seismic source is to be turned on and/or ramped-up.
- (iii) PSOs shall scan systematically with the unaided eye and 7 x 50 reticle binoculars, supplemented with 20 x 60 image-stabilized Zeiss Binoculars or Fujinon 25 x 150 “Big-eye” binoculars, and night-vision equipment when needed.
- (iv) Personnel on the bridge shall assist the marine mammal observer(s) in watching for marine mammals.
- (v) PSOs aboard the marine survey vessel shall give particular attention to the areas within the marine mammal exclusion zones around the source vessel, as noted in (6)(a)(i) and (ii). They shall avoid the tendency to spend too much time evaluating animal behavior or entering data on forms, both of which detract from their primary purpose of monitoring the exclusion zone.
- (vi) Monitoring shall consist of recording of the following information:
 - (A) the species, group size, age/size/sex categories (if determinable), the general behavioral activity, heading (if consistent), bearing and distance from seismic vessel, sighting cue, behavioral pace, and apparent reaction

of all marine mammals seen near the seismic vessel and/or its airgun array (e.g., none, avoidance, approach, paralleling, etc);

(B) the time, location, heading, speed, and activity of the vessel (shooting or not), along with sea state, visibility, cloud cover and sun glare at (I) any time a marine mammal is sighted (including pinnipeds hauled out on barrier islands), (II) at the start and end of each watch, and (III) during a watch (whenever there is a change in one or more variable);

(C) the identification of all vessels that are visible within 5 km of the seismic vessel whenever a marine mammal is sighted and the time observed;

(D) any identifiable marine mammal behavioral response (sighting data should be collected in a manner that will not detract from the PSO's ability to detect marine mammals);

(E) any adjustments made to operating procedures; and

(F) visibility during observation periods so that total estimates of take can be corrected accordingly.

(vii) Distances to nearby marine mammals will be estimated with binoculars (Fujinon 7 x 50 binoculars) containing a reticle to measure the vertical angle of the line of sight to the animal relative to the horizon. Observers may use a laser rangefinder to test and improve their abilities for visually estimating distances to objects in the water.

(viii) PSOs shall understand the importance of classifying marine mammals as "unknown" or "unidentified" if they cannot identify the animals to species with confidence. In those cases, they shall note any information that might aid in the identification of the marine mammal sighted. For example, for an unidentified mysticete whale, the observers should record whether the animal had a dorsal fin.

(ix) Additional details about unidentified marine mammal sightings, such as "blow only", mysticete with (or without) a dorsal fin, "seal splash", etc., shall be recorded.

(x) When a marine mammal is seen approaching or within the exclusion zone applicable to that species, the marine survey crew shall be notified immediately so that mitigation measures described in (6) can be promptly implemented.

(xi) Shell shall use of the best available technology to improve detection capability during periods of fog and other types of inclement weather. Such technology might include night-vision goggles or binoculars as well as other instruments that incorporate infrared technology.

(e) Field Data-Recording, Verification, Handling, and Security:

- (i) PSOs shall record their observations directly into computers running a custom designed software package. Paper datasheets shall be available as backup if necessary.
- (ii) The accuracy of the data entry shall be verified in the field by computerized validity checks as the data are entered, and by subsequent manual checking of the database printouts.
- (iii) Quality control of the data shall be facilitated by
 - (A) the start-of-season training session,
 - (B) subsequent supervision by the onboard field crew leader, and
 - (C) ongoing data checks during the field season.
- (iv) Data will be sent off of the ship to Anchorage each day and backed up regularly onto CDs and/or USB disks, and stored at separate locations on the vessel. Data shall be secured further by having data sheets and backup data CDs carried back to the Anchorage office during crew rotations.

(f) Passive Acoustic Monitoring:

- (i) Sound Source Measurements: Using a hydrophone system, the holder of this Authorization is required to conduct sound source verification tests for seismic airgun array(s) and other marine survey equipment that are involved in the open-water marine surveys.
 - (A) Sound source verification shall consist of distances where broadside and endfire directions at which broadband received levels reach 190, 180, 170, 160, and 120 dB re 1 μ Pa (rms) for the airgun array(s). The configurations of airgun arrays shall include at least the full array and the operation of a single source that will be used during power downs.
 - (B) The test results shall be reported to NMFS within 5 days of completing the test.
- (ii) Long-term Acoustic Monitoring
 - (A) Shell will use an acoustic net array to (I) collect information on the occurrence and distribution of marine mammals (including beluga whale, bowhead whale, walrus and other species) that may be available to subsistence hunters near villages located on the Chukchi Sea coast and to

document their relative abundance, habitat use, and migratory patterns; and (II) measure the ambient soundscape throughout the eastern Chukchi Sea and to record received levels of sounds from industry and other activities further offshore in the Chukchi Sea.

8. Data Analysis and Presentation in Reports:

(a) Estimation of potential takes or exposures shall be improved for times with low visibility (such as during fog or darkness) through interpolation or possibly using a probability approach. Those data could be used to interpolate possible takes during periods of restricted visibility.

(b) To better assess impacts to marine mammals, data analysis shall be separated into periods when a seismic airgun array (or a single mitigation airgun) is operating and when it is not. Final and report to NMFS should summarize and plot:

- (i) Data for periods when a seismic array is active and when it is not; and
- (ii) The respective predicted received sound conditions over fairly large areas (tens of km) around operations.

(c) To help evaluate the effectiveness of PSOs and more effectively estimate take, if appropriate data are available, Shell shall perform analysis of sightability curves (detection functions) for distance-based analyses.

(d) To better understand the potential effects of oil and gas activities on marine mammals and to facilitate integration among companies and other researchers, the following data should be obtained and provided electronically in the 90-day report:

- (i) the location and time of each vessel-based sighting or acoustic detection;
- (ii) position of the sighting or acoustic detection relative to ongoing operations (i.e., distance from sightings to seismic operation, DP operation, etc.), if known;
- (iii) the nature of activities at the time (e.g., seismic on/off);
- (iv) any identifiable marine mammal behavioral response (sighting data should be collected in a manner that will not detract from the PSO's ability to detect marine mammals); and
- (v) adjustments made to operating procedures.

(e) Shell shall provide useful summaries and interpretations of results of the various elements of the monitoring results, which shall include a clear timeline and spatial (map) representation/summary of operations and important observations. Any and all mitigation measures (e.g., vessel course deviations for animal avoidance, operational shut

down) should be summarized. Additionally, an assessment of the efficacy of monitoring methods should be provided.

(f) Shell shall provide data from net arrays supported in part, or in whole, by Shell and will participate in the integration of acoustic arrays to assess the sound field of the lease areas in the Chukchi and Beaufort seas for the purposes of assessing patterns of marine mammal distribution and behavior and for assessing the impacts of multiple activities/factors.

9. Reporting:

(a) Sound Source Verification Report: A report on the preliminary results of the sound source verification measurements, including the measured 190, 180, 160, and 120 dB (rms) radii of the airgun sources and other acoustic survey equipment, shall be submitted within 14 days after collection of those measurements at the start of the field season. This report will specify the distances of the exclusion zones that were adopted for the survey.

(b) Shell shall produce a weekly GIS application that would be available on the web for regulators to view for every observation and mitigation measure implemented.

(c) Seismic Vessel Monitoring Program: A draft report will be submitted to the Director, Office of Protected Resources, NMFS, within 90 days after the end of Shell's 2013 open-water marine surveys in the Chukchi Seas. The report will describe in detail:

(i) summaries of monitoring effort (e.g., total hours, total distances, and marine mammal distribution through the study period, accounting for sea state and other factors affecting visibility and detectability of marine mammals);

(ii) analyses of the effects of various factors influencing detectability of marine mammals (e.g., sea state, number of observers, and fog/glare);

(iii) species composition, occurrence, and distribution of marine mammal sightings, including date, water depth, numbers, age/size/gender categories (if determinable), group sizes, and ice cover;

(iv) to better assess impacts to marine mammals, data analysis should be separated into periods when an airgun array (or a single airgun) is operating and when it is not. Final and comprehensive reports to NMFS should summarize and plot:

(A) Data for periods when a seismic array is active and when it is not; and

(B) The respective predicted received sound conditions over fairly large areas (tens of km) around operations.

(v) sighting rates of marine mammals during periods with and without airgun activities (and other variables that could affect detectability), such as:

(A) initial sighting distances versus airgun activity state;

(B) closest point of approach versus airgun activity state;

(C) observed behaviors and types of movements versus airgun activity state;

(D) numbers of sightings/individuals seen versus airgun activity state;

(E) distribution around the survey vessel versus airgun activity state; and

(F) estimates of take by harassment.

(vi) reported results from all hypothesis tests should include estimates of the associated statistical power when practicable.

(vii) estimate and report uncertainty in all take estimates. Uncertainty could be expressed by the presentation of confidence limits, a minimum-maximum, posterior probability distribution, etc.; the exact approach would be selected based on the sampling method and data available.

(viii) The report should clearly compare authorized takes to the level of actual estimated takes.

(d) The draft report will be subject to review and comment by NMFS. Any recommendations made by NMFS must be addressed in the final report prior to acceptance by NMFS. The draft report will be considered the final report for this activity under this Authorization if NMFS has not provided comments and recommendations within 90 days of receipt of the draft report.

10. (a) In the unanticipated event that survey operations clearly cause the take of a marine mammal in a manner prohibited by this Authorization, such as an injury (Level A harassment), serious injury or mortality (e.g., ship-strike, gear interaction, and/or entanglement), Shell shall immediately cease survey operations and immediately report the incident to the Supervisor of Incidental Take Program, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401 and/or by email to Jolie.Harrison@noaa.gov and Shane.Guan@noaa.gov and the Alaska Regional Stranding Coordinators (Aleria.Jensen@noaa.gov and Barbara.Mahoney@noaa.gov). The report must include the following information:

(i) time, date, and location (latitude/longitude) of the incident;

(ii) the name and type of vessel involved;

- (iii) the vessel's speed during and leading up to the incident;
- (iv) description of the incident;
- (v) status of all sound source use in the 24 hours preceding the incident;
- (vi) water depth;
- (vii) environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- (viii) description of marine mammal observations in the 24 hours preceding the incident;
- (ix) species identification or description of the animal(s) involved;
- (x) the fate of the animal(s); and
- (xi) photographs or video footage of the animal (if equipment is available).

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS shall work with Shell to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. Shell may not resume their activities until notified by NMFS via letter, email, or telephone.

(b) In the event that Shell discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (i.e., in less than a moderate state of decomposition as described in the next paragraph), Shell will immediately report the incident to the Supervisor of the Incidental Take Program, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401, and/or by email to Jolie.Harrison@noaa.gov and Shane.Guan@noaa.gov and the NMFS Alaska Stranding Hotline (1-877-925-7773) and/or by email to the Alaska Regional Stranding Coordinators (Aleria.Jensen@noaa.gov and Barabara.Mahoney@noaa.gov). The report must include the same information identified in Condition 10(a) above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with Shell to determine whether modifications in the activities are appropriate.

(c). In the event that Shell discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in Condition 3 of this Authorization (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), Shell shall report the incident to the Supervisor of the Incidental Take Program, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401, and/or by email to Jolie.Harrison@noaa.gov and Shane.Guan@noaa.gov and the NMFS Alaska Stranding

Hotline (1-877-925-7773) and/or by email to the Alaska Regional Stranding Coordinators (Aleria.Jensen@noaa.gov and Barbara.Mahoney@noaa.gov), within 24 hours of the discovery. Shell shall provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network. Shell can continue its operations under such a case.

11. Activities related to the monitoring described in this Authorization do not require a separate scientific research permit issued under section 104 of the Marine Mammal Protection Act.

12. The Plan of Cooperation outlining the steps that will be taken to cooperate and communicate with the native communities to ensure the availability of marine mammals for subsistence uses, must be implemented.

13. This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein or if the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals, or if there is an unmitigable adverse impact on the availability of such species or stocks for subsistence uses.

14. A copy of this Authorization and the Incidental Take Statement must be in the possession of each seismic vessel operator taking marine mammals under the authority of this Incidental Harassment Authorization.

15. Shell is required to comply with the Terms and Conditions of the Incidental Take Statement corresponding to NMFS' Biological Opinion.



Donna S. Wieting, Director
Office of Protected Resources
National Marine Fisheries Service

JUL 15 2013
Date

Table 1. Species/stocks and numbers of marine mammals allowed to be taken incidental to under this IHA.

Species / Stocks	Take Allowed
Bowhead whale / Bering-Chukchi-Beaufort Sea	209
Gray whale / Eastern North Pacific	270
Fin whale / Northeast Pacific	10
Humpback whale / Western North Pacific	10
Minke whale / Alaska	10
Beluga whale / Eastern Chukchi Sea	53
Narwhal	4
Killer whale / Aleutian Island and Bering Sea	10
Harbor porpoise / Bering Sea	35
Ringed seal / Alaska	5,096
Bearded seal / Alaska	178
Spotted seal / Alaska	102
Ribbon seal / Alaska	12