United States Department of the Interior

FISH AND WILDLIFE SERVICE
1011 E. Tudor Road
Anchorage, Alaska 99503-6199

IN REPLY REFER TO:

AFES/MMM

JUN 01 2012

Ms. Susan Childs
Alaska Venture Support Integrator, Manager
Shell Exploration and Production Company
3601 C Street, Suite 1334
Anchorage, Alaska 99503

Dear Ms. Childs:

This responds to your May 4, 2011, May 12, 2011, March 14, 2012, and April 11, 2012, requests for Letters of Authorization (LOA) for the incidental and intentional take of polar bears and Pacific walruses in relation to the Shell Exploration and Production Co. (Shell) 2012 Proposed Outer Continental Shelf Lease Exploration Plan for the Beaufort and Chukchi Seas; and the Shell 2012 Proposed Coastal Marine and Onshore Environmental Baseline Study Activities Program.

Enclosed are six individual LOAs that describe incidental or intentional take associated with the various planned activities in the Beaufort and Chukchi Sea regions:

- LOA 12-13 (Beaufort Sea exploration drilling incidental take);
- LOA 12-CS-02 (Chukchi Sea exploration drilling incidental take);
- LOA 12-CS-03 (Chukchi Sea onshore baseline studies incidental take);
- LOA 12-14 (Beaufort Sea onshore baseline studies incidental take);
- LOA 12-INT-11 (Beaufort Sea intentional take);
- LOA 12-INT-12 (Chukchi Sea intentional take).

The enclosed LOA 12-13 and LOA 12-CS-02 authorize the anticipated incidental take of small numbers of polar bears and Pacific walruses associated with Shell's planned oil and gas open-water exploration drilling activities planned in the Beaufort and Chukchi Seas that will occur from July 2012 through October 2012. Detailed descriptions of the authorized exploration activities are provided in Shell's May 4, 2011, *Request for Letter of Authorization (LOA) for the Incidental Take of Polar Bears and Pacific Walrus, and the Intentional Take of Polar Bears by Harassment; Revised Outer Continental Shelf Lease Exploration Plan, Camden Bay, Alaska*, and May 12, 2011, *Request for Letter of Authorization (LOA) for the Incidental Take of Polar Bears and Pacific Walrus, and the Intentional Take of Polar Bears by Harassment; Revised Outer Continental Shelf Lease Exploration Plan, Chukchi Sea, Alaska.*

The enclosed LOA 12-14 and LOA 12-CS-03 authorize the anticipated incidental take of small numbers of polar bears and Pacific walruses associated with Shell's planned coastal marine and

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onshore environmental baseline studies in the Beaufort and Chukchi Seas respectfully. Beginning in the summer, Shell plans to conduct hydrology and hydraulics surveys; habitat assessment; and wildlife, fisheries, and cultural resource surveys throughout the north slope of Alaska. All provisions contained within Shell's Polar Bear Interaction Plan are incorporated by reference into these LOAs.

The four aforementioned incidental take authorizations are issued in accordance with Marine Mammal Protection Act (MMPA) Incidental Take Regulations published in the *Federal Register* (76 FR 47010), dated August 3, 2011, for the Beaufort Sea and published in the *Federal Register* (73 FR 33212), dated June 11, 2008, for the Chukchi Sea. Please review these regulations.

The enclosed LOA 12-INT-11 and LOA 12-INT-12 describe Shell's authority to take polar bears and Pacific walrus by harassment using non-lethal deterrence activities for the protection of human life, property, and/or the protection or welfare of the mammal while conducting activities in polar bear and walrus habitat. These LOAs are issued consistent with non-lethal take authorized under Sections 101(a)(4)(A), 109(h), and 112(c) of the MMPA. The LAO 12-INT-11 encompasses two intentional take requests from Shell; one for drilling operations in the Beaufort Sea, dated May 4, 2011, and another for the Beaufort Sea Coastal Marine and Onshore Environmental Baseline Study, dated April 11, 2012. The LOA 12-INT-12 encompasses two intentional take requests from Shell; one for drilling operations in the Chukchi Sea, dated May 12, 2011, and another for the Chukchi Sea Coastal Marine and Onshore Environmental Baseline Study, dated March 14, 2012.

These two intentional take authorizations are limited to the non-lethal harassment or deterrence of polar bears and walruses and do not authorize lethal take of either species. These authorizations are issued specifically to Shell employees who are responsible for ensuring that trained and qualified personnel are assigned the task of harassing (deterring) polar bears and walruses. All deterrent events are to be reported to the U.S. Fish and Wildlife Service (Service), Marine Mammal Management Office within 24 hours. Observation forms can be sent by fax or electronic mail to our office. A final report of all encounters and deterrence events is due 60 days from the expiration of these authorizations. These authorizations are effective from the date of issuance to November 30, 2012.

Any situations where the application of deterrents involves a safety risk to personnel should be avoided. If a polar bear interaction escalates into a life threatening situation, Section 101(c) of the MMPA allows, without the need for separate authorization, the take (including lethal take) of a polar bear if such taking is imminently necessary for self-defense or to save the life of a person in immediate danger, and such taking is reported to the Marine Mammal Management Office within 24 hours.

An additional requirement of all six of these LOAs is for Shell to provide observational data of polar bears throughout the project and a complete report of all observations at the conclusion of the project to document take. This final report must be provided to the Marine Mammals Management Office within 90 days after completion of the project.

Polar bear conservation has benefited from monitoring programs associated with the Incidental Take program since 1993. Monitoring serves to assess the effect of industrial activities on polar bears by evaluating bear encounter rates, take frequency, as well as the location and timing of encounters. The Service believes that monitoring and protection measures for marine mammals described in Shell's *Polar Bear, Pacific Walrus, and Grizzly Bear Avoidance and Human Encounter/Interaction Plan 2011 to 2016 Program Activity, Beaufort Sea and Adjacent Northern Coast of Alaska, October 2011* are appropriate. If questions or concerns arise during the project period, Service biologists are available for consultation at the phone numbers listed below and noted in your Interaction Plan.

If any changes develop in your project during the 2012 exploration drilling operation, such as activities or location, the Marine Mammals Management Office must be notified prior to the planned operation. This will allow us to evaluate the activity and, if appropriate, amend the appropriate LOA(s).

The Service has completed intra-Service consultation under the Endangered Species Act of 1973, as amended (ESA), on the issuance of these LOAs and has determined that the issuance of these LOAs to Shell is not likely to jeopardize the continuing existence of the polar bear or the Pacific walrus and is not likely to destroy or adversely modify polar bear critical habitat. No additional authorization under the ESA is required.

If you have any further questions, please contact Mr. Craig Perham or Mr. Christopher Putnam of our Marine Mammals Management Office, at (907) 786-3810 or (907) 786-3844, respectively.

Sincerely,

Deborah Pierce Williams
Chief, Marine Mammals Management

Enclosures

cc: Mr. Walt Sandel, Shell Exploration and Production Company
Ms. Jana DaSilva Lage, Bureau of Ocean Energy Management (BOEM)
Ms. Mary Cody, BOEM
Mr. Richard Shideler, Alaska Department of Fish and Game
Ms. Donna Wixson, Bureau of Land Management
Fairbanks Fish and Wildlife Field Office
Office of Law Enforcement
North Slope Borough Department of Law

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1011 E. Tudor Road
Anchorage, Alaska 99503-6199

IN REPLY REFER TO:
AFES/MMM

U.S. Fish and Wildlife Service

LETTER OF AUTHORIZATION (12-13)

ISSUED: June 4, 2012
EXPIRES: November 30, 2012

Shell Exploration and Production Co. (Shell) is hereby authorized under Section 101(a)(5)(D) of the Marine Mammal Protection Act (16 U.S.C. 1371 (a)(5)(D)) to take, by Level B Harassment only, small numbers of polar bears and Pacific walruses incidental to activities occurring during the 2012 Outer Continental Shelf Lease Exploration Plan, Camden Bay, Alaska (2012 Beaufort Sea Exploration Program).

A detailed description of the authorized activities is provided in, Shell's *Request for Letter of Authorization (LOA) for the Incidental Take of Polar Bears and Pacific Walrus, and the Intentional Take of Polar Bears by Harassment; Revised Outer Continental Shelf Lease Exploration Plan, Camden Bay, Alaska*, sent to the U. S. Fish and Wildlife Service (Service) on May 4, 2011.

This Letter of Authorization (LOA) is valid from the date of issuance to November 30, 2012. This authorization and the required conditions below include contractors of Shell performing Shell-approved work under the scope of operations to be conducted. This authorization is subject to the following conditions:

1. Shell Operations Managers, or designees, must be fully aware, understand, and be capable of implementing the conditions of this authorization.

2. The species authorized for takings, by Level B Harassment only, are: Pacific walrus (*Odobenus rosmarus divergens*), and polar bear (*Ursus maritimus*). The taking of any walrus or polar bear in a manner prohibited under this authorization must be reported within 24 hours of the taking to the Service, Incidental Take Coordinator in Anchorage, Alaska at (907) 786-3800, or their designee.

3. This authorization is valid only for activities (including support vessels and aircraft) described in Shell's May 4, 2011, application. Changes in the timing, scope, or nature of project activities will require prior review and approval. If any changes develop in your project during

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the 2012 Exploratory Drilling Operation, such as activities or location, notify the Marine Mammals Management Office prior to the planned operation.

4. The holder of this LOA is required to cooperate with the Service and any other Federal, State or local agency monitoring the impacts of the activity on walruses and polar bears.

5. At the discretion of the Service, the operator will allow the Service to place an observer on site (vessels and aircraft) to monitor the impacts of the activity on Pacific walruses and polar bears.

6. The following documents are hereby approved, and all provisions unless specifically noted are incorporated into this authorization by reference:

(a) The Marine Mammal Monitoring and Mitigation Plan (*Marine Mammal Monitoring and Mitigation Plan for Exploration Drilling of Selected Lease Areas in Camden Bay in the Alaskan Beaufort Sea in 2012, May 2011*), received by the Service on May 4, 2011.

(b) The Polar Bear Interaction Plan (*Polar Bear, Pacific Walrus, and Grizzly Bear Avoidance and Human Encounter/Interaction Plan, Revised Outer Continental Shelf Lease Exploration Plan, Camden Bay, Alaska, May 2011*).

(c) The Plan of Cooperation and Addendum (*Plan of Cooperation* submitted May 7 2009, and the *Plan of Cooperation Addendum, Revised Outer Continental Shelf Lease Exploration Plan, Camden Bay, Alaska, May 2011).*

(d) The Ice Management Plan *(Ice Management Plan, May 2011, and the Revised Outer Continental Shelf Lease Exploration Plan, Chukchi Sea, Alaska - Adaptive Approach to Ice Management in Areas Occupied by Pacific Walruses)*, submitted to the Service April 6, 2012).

7. Prohibitions:

(a) The taking, by incidental Level B harassment only, is limited to the species listed under Condition 2, above. The taking by Level A harassment, serious injury, or death of these species is prohibited and may result in the modification, suspension or revocation of this LOA.

(b) The taking of any walrus or polar bear whenever the required marine mammal mitigation and monitoring measures have not been fully implemented as required by this authorization, is prohibited.

(c) Any take that fails to comply with 50 CFR part 18 subpart J or the terms and conditions of this LOA is prohibited and may result in the modification, suspension or revocation of this authorization.

8. Polar bear and walrus mitigation and monitoring must be conducted in accordance with 50 CFR Section 18.128, where Shell must comply with the following monitoring, mitigation, and reporting requirements:

The holder of this LOA is required to:

(a) Avoid concentrations or groups of walruses and polar bears hauled out onto land or ice by all vessels under the management of Shell. Operators of support vessels should, at all times, conduct their activities at the maximum distance possible from known or observed concentrations of animals. Under no circumstances, other than an emergency, should vessels operate within 800 meters (0.5 mile) of walruses or polar bears observed on land or ice.

(b) Take every precaution to avoid harassment of walruses or polar bears in water when a vessel is operated near these animals. Maintain an 800 meter distance. Vessels must reduce speed when walruses or polar bears are observed in water and vessels capable of steering around these animals must do so. Vessels may not be operated in such a way as to separate members of a group of walruses or polar bears from other members of the group. Vessels should avoid multiple changes in direction and speed when walruses or polar bears are present.

(c) Aircraft must avoid polar bears and walrus haul-out concentrations by at least 0.5 mile (800 meters) horizontal distance and 1,500 feet (457 meters) mean sea level vertical distance unless human safety dictates otherwise. However, when aircraft are operated at altitudes below 1,500 feet mean sea level because of weather or other conditions, the operator must take all precautions possible to avoid known walrus haulout or polar bear use areas and avoid flying directly over or within 0.5 mile lateral distance of observed polar bears and walruses. Due to their importance as polar bear summer resting habitat, flight paths for the surveys will be offset from the coastline of Beaufort Sea Barrier Islands (including the Jones Island group, Cross, Flaxman, and Tigvariak Islands) by at least 0.5 mile and 1,500 feet above ground level.

(d) Operate in full compliance with the terms identified in the approved documents identified in Condition 6, above.

(e) Restriction of walrus or polar bear movements, by any means, in sea or on land, is prohibited. Separation distances must be maintained until animals have left the area.

(f) The Plan of Cooperation submitted by Shell and approved by the Service must be implemented. This Plan describes the measures taken to inform the following communities of the proposed 2012 plans for exploration: Barrow, Nuiqsut, and Kaktovik.

9. Monitoring.

Vessel Monitoring:
For each walrus or polar bear sighting, a Marine Mammal Observer (MMO) or designated crew member will record the following:

(i) Species, group size, age/size/sex categories (if determinable), behavioral activity, heading (if consistent), bearing and distance from vessel, sighting cue, and apparent reaction of animals seen near the vessel;
(ii) Time, location, heading, speed, and activity of the vessel, along with sea state, visibility, cloud cover, and sun glare at any time a walrus or polar bear is sighted;
(iii) The identification of all vessels that are visible within 5 km (approximately 3 miles) of the vessel whenever a marine mammal is sighted, and the time observed, bearing, distance, heading, speed and activity of the other vessel(s).

10. Reporting:

(a) *Weekly summary of walrus and polar bear sightings.*
The operator must tabulate and report all walrus and polar bear sightings recorded by the MMOs from project vessels to the Service on a weekly basis. For each walrus or polar bear sighting include:

(i) A unique sighting identification number;
(ii) Species, group size, age/size/sex categories, and substrate (on ice, in water, both);
(iii) Date, time and location;
(iv) Environmental conditions including: water depth (meters), sea state (Beaufort scale), visibility 1 (#km), visibility 2 (light/dark), visibility 3 (glare: none, little, moderate, severe), ice condition 1 (estimated % ice cover in vicinity of sighting), ice condition 2 (estimated distance (km) to pack ice);
(v) Estimated range (meters) at first sighting, estimated range (meters) at closest approach;
(vi) The behavior of animals sighted (if determinable);
(vii) Whether animals appeared to react to the presence of the vessel (yes, no), if yes, describe the reaction of the animal(s);
(viii) Vessel activity at time of sighting including: vessel name; vessel speed (knots); vessel activity code; action taken by operator in response to sighting;
(ix) Vessel and company name;
(x) Any MMO comments or notes.

(b) *Notification of incident report.*
The operator must report any Level B harassment, incidental lethal take, or injury of a polar bear or walrus and observations of walruses or polar bears within the prescribed safety zones (the 0.5 mile vessel and aircraft offset distances) to the Service within 24

hours. Reports should include all information specified under 10(a) as well as a full written description of the encounter and any actions taken by the operator.

(c) *Post season monitoring report.*
A draft report will be submitted to the Service within 90 days after the end of the program. The report will describe in detail:

(i) The operations that were conducted;
(ii) The methods, results, and interpretation pertaining to all monitoring tasks;
(iii) The results of the 2012 shipboard marine mammal monitoring;
(iv) Marine mammal sightings (species, numbers, dates, times and locations; age/size/gender, environmental correlates, activities, associated survey activities);
(v) Estimates of the amount and nature of potential take (exposure) of walruses and polar bears (by species) by harassment or in other ways to industry sounds;
(vi) An analysis of the effects of survey operations (e.g., on sighting rates, sighting distances, behaviors, movement patterns of walruses and polar bears);
(vii) An analysis of factors influencing detectability of walruses and polar bears;
(viii) Summaries on communications with hunters and potential effects on subsistence uses;
(ix) Provide the raw data in electronic format (e.g., Excel spreadsheet).

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

(d) *Plan of Cooperation report*
A report on the Plan of Cooperation including the notification of the affected communities, measures taken to ensure that exploratory activities did not interfere with subsistence activities, and a follow-up notification after the season, shall be submitted to the Service 90 days after the end of exploration activities. A copy of the report shall be sent to affected local subsistence communities, the Alaska Nanuuq Commission, the Eskimo Walrus Commission, and the North Slope Borough Wildlife Department when submitted to the Service.

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. A copy of this LOA and the Service-approved Polar Bear Interaction Plan must be in the possession of the operator of all vessels and aircraft engaging in the activity operating under the authority of this LOA.

13. The Service has completed intra-Service consultation under the Endangered Species Act of 1973, as amended (ESA), on the issuance of these LOAs and has determined that the issuance these LOAs to Shell is not likely to jeopardize the continuing existence of the polar bear or the Pacific walrus and is not likely to destroy or adversely modify polar bear critical habitat. Issuance of this LOA also completes ESA requirements for authorization of incidental take of the polar bear. Compliance with the terms and conditions of this LOA insures that the LOA holder is also in compliance with the ESA. No additional authorization under the ESA is required.

14. This LOA is valid for the period indicated above, unless extended or terminated in writing by the Service.

Chief, Marine Mammals Management

6/4/12
Date

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1011 E. Tudor Road
Anchorage, Alaska 99503-6199

IN REPLY REFER TO:

AFES/MMM

U.S. Fish and Wildlife Service

LETTER OF AUTHORIZATION
(12-CS-02)

ISSUED: June 4, 2012
EXPIRES: November 30, 2012

Shell Exploration and Production Co. (Shell) is hereby authorized to take, by Level B Harassment only, small numbers of polar bears and Pacific walruses incidental to activities occurring during 2012 Revised Outer Continental Shelf Lease Exploration Plan, Chukchi Sea, Alaska (2012 Chukchi Sea program).

A detailed description of the authorized activities may be found in Shell's *Revised 2012 Outer Continental Shelf Lease Exploration Plan, Chukchi Sea, Alaska. Burger Prospect: Posey Area Blocks 6714, 6762, 6764, 6812, 6915; Chukchi Sea Lease Sale 193* (May 2011) (Exploration Plan), received by the U. S. Fish and Wildlife Service, Marine Mammals Management Office (Service) November 21, 2011. *Appendix D* of the Exploration Plan, titled *Marine Mammal Monitoring and Mitigation Plan*, will provide mitigation guidance for the 2012 Chukchi Sea program.

This Letter of Authorization (LOA) is valid from the date of issuance to November 30, 2012. This authorization and the required conditions below include contractors of Shell performing Shell-approved work under the scope of operations to be conducted. This authorization is subject to the following conditions:

1. Shell Operations Managers, or designees, must be fully aware, understand, and be capable of implementing the conditions of this authorization.

2. The species authorized for takings, by Level B Harassment only, are: Pacific walrus (*Odobenus rosmarus divergens*), and polar bear (*Ursus maritimus*). The taking of any walrus or polar bear in a manner prohibited under this authorization must be reported within 24 hours of the taking to the Service, Incidental Take Coordinator in Anchorage, Alaska at (907) 786-3800, or their designee.

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3. This authorization is valid only for activities (including support vessels and aircraft) described in Shell's May 12, 2011, request. Changes in the sighting, timing, scope or nature of project activities will require prior review and approval.

4. The holder of this LOA is required to cooperate with the Service and any other Federal, state or local agency monitoring the impacts of the activity on walruses and polar bears.

5. At the discretion of the Service, the operator will allow the Service to place an observer on site (vessels and aircraft) to monitor the impacts of the activity on Pacific walruses and polar bears.

6. The following documents are approved and all provisions, unless specifically noted, are incorporated into this authorization by reference. Full implementation of these plans is expected:

(a) Interaction Plan: *Polar Bear, Pacific Walrus, and Grizzly Bear Avoidance and Human Encounter/Interaction Plan Exploration Drilling Program Chukchi Sea, Alaska* (May 2011), including all attachments and addenda.

(b) Ice Management Plan: *Attachment A* of the Interaction Plan and *Adaptive Approach to Ice Management in Areas Occupied by Pacific Walruses*, dated April 6, 2012.

(c) Marine Mammal Monitoring and Mitigation Plan: *Attachment B* of the Interaction Plan.

(d) Plan of Cooperation: *Attachment H* of the Interaction Plan.

If any changes develop in your project during the 2012 Chukchi Sea program, such as activities or location, notify the Service prior to the planned operation.

7. Prohibitions:

(a) The taking, by incidental Level B harassment only, is limited to the species listed under Condition 2, above. The taking by Level A harassment, serious injury, or death of these species is prohibited and may result in the modification, suspension or revocation of this authorization.

(b) The taking of any walrus or polar bear whenever the required marine mammal mitigation and monitoring measures have not been fully implemented as required by this authorization, is prohibited.

(c) Any take that fails to comply with 50 CFR part 18 subpart I or the terms and conditions of this authorization is prohibited and may result in modification suspension or revocation of this authorization.

8. Polar bear and walrus monitoring and mitigation must be conducted in accordance with 50 CFR §18.118. Shell must comply with the following monitoring, mitigation, and reporting requirements:

(a) Avoid concentrations or groups of walruses and polar bears hauled out onto land or ice by all vessels and aircraft under the management of Shell. Operators of support vessels should, at all times, conduct their activities at the maximum distance possible from known or observed concentrations of animals. Under no circumstances, other than an emergency, should vessels operate within 800 meters (0.5 mile) of walruses or polar bears observed on land or ice.

(b) Take every precaution to avoid harassment of walruses or polar bears in water when a vessel is operated near these animals. Maintain an 800 meter (0.5 mile) distance. Vessels must reduce speed when walruses or polar bears are observed in water and vessels capable of steering around these animals must do so. Vessels may not be operated in such a way as to separate members of a group of walruses or polar bears from other members of the group. Vessels should avoid multiple changes in direction and speed when walruses or polar bears are present.

(c) Aircraft must avoid polar bears and walrus concentrations (haulout areas) by at least 0.5 mile horizontal distance and 1,500 feet (457 meters) unless human safety dictates otherwise. However, when aircraft are operated at altitudes below 1,500 feet vertical distance because of weather or other conditions, the operator must take all precautions possible to avoid known walrus haulout or polar bear use areas and avoid flying directly over or within 0.5 mile horizontal distance of observed polar bears and walruses. Due to their importance as polar bear summer resting habitat, flight paths for the surveys will be offset from the coastline of Chukchi Sea Barrier Islands by at least 0.5 mile horizontal distance and 1,500 feet horizontal distance.

(d) Operate in full compliance with the terms identified in the approved documents identified in Condition 6, above.

(e) Restriction of walrus or polar bear movements, by any means, in sea, on ice or on land, is prohibited. Separation distances must be maintained until animals have departed the area.

9. Monitoring.

Vessel Monitoring.
For each walrus or polar bear sighting, a Marine Mammal Observer (MMO) or designated crew member will record the following:

i. Species, group size, age/size/sex categories (if determinable), behavioral activity, heading (if consistent), bearing and distance from vessel, sighting cue

(what caught the observer's attention) and apparent reaction of animals seen near the vessel;

ii. Time, location, heading, speed, and activity of the vessel, along with sea state, visibility, cloud cover, and sun glare at any time a walrus or polar bear is sighted;

iii. The identification of all vessels that are visible within 5 km (approximately 3 miles) of the vessel whenever a marine mammal is sighted, and the time observed, bearing, distance, heading, speed and activity of the other vessel(s).

10. Reporting:

(a) *Weekly summary of walrus and polar bear sightings.*
The operator must tabulate and report all walrus and polar bear sightings recorded by the MMOs (or designated observers) from project vessels to the Service on a weekly basis. For each walrus or polar bear sighting include:

i. A unique sighting identification number;
ii. Species, group size, age/size/sex categories (if determinable), and substrate (water, ice, land or combination of these);
iii. Date, time and location;
iv. Environmental conditions including: water depth (meters), sea state (Beaufort scale), visibility 1 (#km), visibility 2 (light/dark), visibility 3 (glare: none, little, moderate, severe), ice condition 1 (estimated % ice cover in vicinity of sighting), ice condition 2 (estimated distance (km) to pack ice);
v. Estimated range (meters) at first sighting, estimated range (meters) at closest approach;
vi. The behavior of animals sighted (if determinable);
vii. Whether animals appeared to react to the presence of the ship (yes, no), if yes, describe the reaction of the animal(s);
viii. Vessel activity at time of sighting including: vessel name; vessel speed (knots); vessel activity code; action taken by operator in response to sighting;
ix. Vessel and company name; and
x. Any MMO comments or notes.

(b) *Notification of incident report.* The operator must report any Level B harassment, incidental lethal take, or injury of a polar bear or walrus and observations of walruses or polar bears within the prescribed safety zones (the 0.5 mile vessel and aircraft offset distances) to the Service within 24 hours. Reports should include all information specified under 10(a) as well as a full written description of the encounter and any actions taken by the operator.

(c) *Post season monitoring report.* A draft report will be submitted to the Service no later than 90 days after the end of the 2012 Chukchi Sea program. The report will describe in detail:

i. The operations that were conducted;
ii. The methods, results, and interpretation pertaining to all monitoring tasks;
iii. The results of the marine mammal monitoring;
iv. Marine mammal sightings (species, numbers, dates, times and locations; age/size/gender (as determinable), environmental correlates (particularly ice conditions), animal activities and associated survey activities);
v. Estimates of the amount and nature of potential take (exposure) of walruses and polar bears (by species) by harassment or in other ways to project activities;
vi. An analysis of the effects of survey operations (e.g., on sighting rates, sighting distances, behaviors, movement patterns of walruses and polar bears);
vii. Provide an analysis of factors influencing detectability of walruses and polar bears;
viii. Provide summaries on communications with hunters, local communities and potential effects on subsistence uses or walruses and polar bears; and,
ix. Provide the raw data in electronic format (e.g., Excel spreadsheet).

The draft report will be subject to review and comment by the Service. Any recommendations made by the Service must be addressed in the final report prior to acceptance by the Service. The draft report will be considered the final report for this activity under this LOA if the Service has not provided comments and recommendations no later than 90 days of receipt of the draft report.

(d) A report on the Plan of Cooperation, as identified in Condition 6 above, including the notification of the affected communities, measures taken to ensure that exploratory activities did not interfere with subsistence activities, and follow-up notification after the season, shall be submitted to the Service no later than 90 days after the end of 2012 Chukchi Sea program. A copy of the report shall be sent to affected local subsistence communities, the Alaska Nanuuq Commission, the Eskimo Walrus Commission and the North Slope Borough Wildlife Department as well as to the Service.

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. A copy of this LOA and the Service-approved Polar Bear Interaction Plan must be in the possession of the operator of all vessels and aircraft engaged in any activity operating under the authority of this LOA.

13. The Service has completed intra-Service consultation under the Endangered Species Act of 1973, as amended (ESA), on the issuance of these LOAs and has determined that the issuance these LOAs to Shell is not likely to jeopardize the continuing existence of the polar bear or the Pacific walrus and is not likely to destroy or adversely modify polar bear critical habitat. Issuance of this LOA also completes ESA requirements for authorization of incidental take of the

polar bear. Compliance with the terms and conditions of this LOA insures that the LOA holder is also in compliance with the ESA. No additional authorization under the ESA is required.

14. This LOA is valid for the period indicated above, unless extended or terminated in writing by the Service.

Chief, Marine Mammals Management

6/4/12
Date

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1011 E. Tudor Road
Anchorage, Alaska 99503-6199

IN REPLY REFER TO:

AFES/MMM

U.S. Fish and Wildlife Service

LETTER OF AUTHORIZATION
(12-14)

ISSUED: June 4, 2012
EXPIRES: November 30, 2012

Shell Exploration and Production (Shell) is hereby authorized to take small numbers of polar bears incidental to activities occurring during the 2012 Proposed Coastal Marine and Onshore Environmental Baseline Study Activities Program. Shell plans to conduct hydrology and hydraulics surveys; habitat assessment; and wildlife, fisheries, and cultural resource surveys throughout the north slope of Alaska. This program will occur in both the geographic regions of the Chukchi Sea and Beaufort Sea. This authorization is for those activities occurring in the geographic region of the Beaufort Sea Incidental Take Regulations (76 FR 47010).

This Letter of Authorization (LOA) is valid from the date of issuance to November 30, 2012. This LOA and the required conditions below include contractors of Shell performing Shell-approved work under the scope of operations to be conducted. The LOA is subject to the following conditions:

1. The *Polar Bear, Pacific Walrus, and Grizzly Bear Avoidance and Human Encounter/Interaction Plan 2011 to 2016 Program Activity, Beaufort Sea and Adjacent Northern Coast of Alaska, October 2011*, is approved. All provisions must be complied with unless specifically noted otherwise in this LOA. A copy of the Polar Bear Interaction Plans must be available on site for all personnel.

2. Shell Operations Managers, or designees, must be fully aware, understand, and be capable of implementing the conditions of this LOA.

3. Intentional take is prohibited under this LOA.

4. This authorization is valid only for those activities identified in the request for a Letter of Authorization dated April 11, 2012, and outlined in the *Request for Letter of Authorization (LOA) for the Incidental Take of Polar Bears and Pacific Walrus and the Intentional Take of Polar Bears by Harassment; 2012 Proposed Coastal Marine and*

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Onshore Environmental Baseline Study Activities, Beaufort Sea Onshore ("2012 Beaufort Sea onshore program").

5. Polar bear monitoring, reporting, and survey activities must be conducted in accordance with 50 CFR Section 18.128. In addition, Shell must comply with the following monitoring, mitigation, and reporting requirements:

   a) Shell must cooperate with the U.S. Fish and Wildlife Service (Service), and other designated Federal, State, or local agencies to monitor the impacts of oil and gas exploration activities on polar bears.

   b) Shell must not conduct activities that operate nor pass within one mile (1.6 km.) of known polar bear dens, and all observed dens must be reported to the Service's Marine Mammals Management Office immediately. Should occupied dens be identified within one mile of activities, Shell must cease work in the immediate area and contact the Marine Mammals Management Office for guidance. The Marine Mammals Management Office will evaluate these instances on a case-by-case basis to determine the appropriate action. Potential actions may range from cessation or modification of work to conducting additional monitoring, and Shell must comply with any additional measures specified.

   c) If any changes develop in Shell's project during the 2012 field season, such as flight paths, activities or location, Shell must notify the Service prior to the planned operation.

   d) Shell must designate a qualified individual or individuals to observe, record, and report the effects of the activity on polar bears to the Service within 24 hours of visual observation.

   e) Every polar bear observed must be recorded on a Polar Bear Observation Form. The observation report must include, but is not limited to:

      i. Date;
      ii. Time;
      iii. Observer and company name;
      iv. Contact number/email;
      v. Location, with latitude, longitude, and datum, if applicable;
      vi. Weather conditions at time of observation;
      vii. Temperature;
      viii. Visibility;
      ix. Number of bears: sex and age;
      x. Estimated closest point of bears from personnel and facilities;
      xi. Possible attractants present;
      xii. Bear behavior;
      xiii. A description of the encounter;
      xiv. Duration of the encounter;

xv. Type of deterrents used and distance from bear when used; and
xvi. Agency/Contacts.

a) Evidence of polar bears, such as tracks, carcass, or dens, must also be reported.

b) At the discretion of the Service, Shell must allow the Service to have an observer on the site to monitor the impacts of the activity on polar bears.

c) Shell must submit a monitoring report to the Marine Mammals Management Office as required under 18 CFR 18.128(f), which will be received within 90 days after completion of the project.

6. The Service has completed intra-Service consultation under the Endangered Species Act of 1973, as amended (ESA), on the issuance of these LOAs and has determined that the issuance these LOAs to Shell is not likely to jeopardize the continuing existence of the polar bear or the Pacific walrus and is not likely to destroy or adversely modify polar bear critical habitat. Issuance of this LOA also completes ESA requirements for authorization of incidental take of the polar bear. Compliance with the terms and conditions of this LOA insures that the LOA holder is also in compliance with the ESA. No additional authorization under the ESA is required.

7. This LOA is valid for the period indicated on this authorization, unless extended or terminated in writing by the U.S. Fish and Wildlife Service, Marine Mammals Management Office.

Chief, Marine Mammals Management
U.S. Fish and Wildlife Service

6/4/12
Date

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1011 E. Tudor Road
Anchorage, Alaska 99503-6199

IN REPLY REFER TO:
AFES/MMM

U.S. Fish and Wildlife Service

LETTER OF AUTHORIZATION
(12-CS-03)

ISSUED: June 4, 2012
EXPIRES: November 30, 2012

Shell Exploration and Production (Shell) is hereby authorized to take small numbers of polar bears incidental to activities occurring during the 2012 Proposed Coastal Marine and Onshore Environmental Baseline Study Activities Program. Shell plans to conduct hydrology and hydraulics surveys; habitat assessment; and wildlife, fisheries, and cultural resource surveys throughout the north slope of Alaska. This program will occur in both the geographic regions of the Chukchi Sea and Beaufort Sea. This authorization is for those activities occurring in the geographic region of the Chukchi Sea Incidental Take Regulations (73 FR 33212).

The Letter of Authorization (LOA) is valid from the date of issuance to November 30, 2012. This LOA and the required conditions below include contractors of Shell performing Shell-approved work under the scope of operations to be conducted. The LOA is subject to the following conditions:

1. The *Polar Bear, Pacific Walrus, and Grizzly Bear Avoidance and Human Encounter/Interaction Plan 2011 to 2016 Program Activity, Beaufort Sea and Adjacent Northern Coast of Alaska, October 2011* and the *Polar Bear and Pacific Walrus Awareness and Interaction Plan, North Slope and Chukchi Sea, April 2008*, are approved. All provisions must be complied with unless specifically noted otherwise in this LOA. A copy of the Polar Bear Interaction Plans must be available on site for all personnel.

2. Shell Operations Managers, or designees, must be fully aware, understand, and be capable of implementing the conditions of this LOA.

3. Intentional take is prohibited under this LOA.

4. This authorization is valid only for those activities identified in the request for a Letter of Authorization dated March 14, 2012, and outlined in the *Request for Letter of Authorization (LOA) for the Incidental Take of Polar Bears and Pacific Walrus and the Intentional Take of Polar Bears by Harassment; 2012 Proposed Coastal Marine and*

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Onshore Environmental Baseline Study Activities, Chukchi Sea and Onshore ("2012 Chukchi Sea program").

5. Polar bear and Pacific walrus monitoring, reporting, and survey activities must be conducted in accordance with 50 CFR Section 18.118. In addition, Shell must comply with the following monitoring, mitigation, and reporting requirements:

   a) Shell must cooperate with the U.S. Fish and Wildlife Service (Service), and other designated Federal, State, or local agencies to monitor the impacts of oil and gas exploration activities on polar bears.

   b) Shell must not conduct activities that operate nor pass within one mile (1.6 km.) of known polar bear dens, and all observed dens must be reported to the Service's Marine Mammals Management Office immediately. Should occupied dens be identified within one mile of activities, Shell must cease work in the immediate area and contact the Marine Mammals Management Office for guidance. The Marine Mammals Management Office will evaluate these instances on a case-by-case basis to determine the appropriate action. Potential actions may range from cessation or modification of work to conducting additional monitoring, and Shell must comply with any additional measures specified.

   c) Due to the importance of some coastal bluffs as polar bear denning habitat, flight paths for the surveys will be offset from the coastline of the Chukchi Sea by at least ½ mile (800 meters) and 1,500 feet (457 meters) above ground level.

   d) If requested, Shell must make flight paths of the reconnaissance surveys available to the Service.

   e) If any changes develop in Shell's project during the 2012 field season, such as flight paths, activities or location, Shell must notify the Service prior to the planned operation.

   f) Shell must designate a qualified individual or individuals to observe, record, and report the effects of the activity on polar bears to the Service within 24 hours of visual observation.

   g) Every polar bear observed must be recorded on a Polar Bear Observation Form. The observation report should include, but is not limited to:

      i. Date;
      ii. Time;
      iii. Observer and company name;
      iv. Contact number/email.
      v. Location, with latitude, longitude, and datum, if applicable;
      vi. Weather conditions at time of observation;
      vii. Temperature;

viii. Visibility;
ix. Number of bears: sex and age;
x. Estimated closest point of bears from personnel and facilities;
xi. Possible attractants present;
xii. Bear behavior;
xiii. A description of the encounter;
xiv. Duration of the encounter;
xv. Type of deterrents used and distance from bear when used; and
xvi. Agency/Contacts.

h) Evidence of polar bears, such as tracks, carcass, or dens, must also be reported.

i) Every Pacific walrus observed must be recorded on a walrus Observation Form. The observation report should include, but is not limited to:

a. A unique sighting identification number;
b. Species, group size, age/size/sex categories (if determinable), and substrate (water, ice, land or combination of these);
c. Date, time and location;
d. Environmental conditions including: water depth (meters), sea state (Beaufort scale), visibility 1 (#km), visibility 2 (light/dark), visibility 3 (glare: none, little, moderate, severe), ice condition 1 (estimated % ice cover in vicinity of sighting), ice condition 2 (estimated distance (km) to pack ice);
e. Estimated range (meters) at first sighting, estimated range (meters) at closest approach;
f. The behavior of animals sighted (if determinable);
g. Whether animals appeared to react to the presence of personnel (yes, no), if yes, describe the reaction of the animal(s);
h. Duration of the encounter;
i. Any MMO comments or notes.

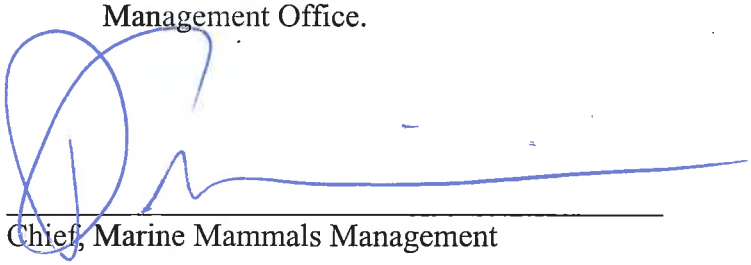
j) At the discretion of the Service, Shell must allow the Service to have an observer on the site to monitor the impacts of the activity on polar bears and Pacific walrus.

k) Shell must submit a monitoring report to the Marine Mammals Management Office as required under 18 CFR 18.118(f), which will be received within 90 days after completion of the project.

6. The Service has completed intra-Service consultation under the Endangered Species Act of 1973, as amended (ESA), on the issuance of these LOAs and has determined that the issuance these LOAs to Shell is not likely to jeopardize the continuing existence of the polar bear or the Pacific walrus and is not likely to destroy or adversely modify polar bear critical habitat. Issuance of this LOA also completes ESA requirements for authorization of incidental take of the polar bear. Compliance with the terms and conditions of this

LOA insures that the LOA holder is also in compliance with the ESA. No additional authorization under the ESA is required.

7. This LOA is valid for the period indicated on this authorization, unless extended or terminated in writing by the U.S. Fish and Wildlife Service, Marine Mammals Management Office.



Chief, Marine Mammals Management

6/4/12

Date

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1011 E. Tudor Road
Anchorage, Alaska 99503-6199

IN REPLY REFER TO:

AFES/MMM

U.S. Fish and Wildlife Service

AUTHORIZATION TO TAKE, BY HARASSMENT, POLAR BEARS (12-INT-11)

ISSUED: June 4, 2012
EXPIRES: November 30, 2012

Under Sections 101 (a)(4)(A), 109(h), and 112(c) of the Marine Mammal Protection Act of 1972, as amended, Shell Exploration and Production Co. (Shell) is authorized to take, using non-lethal deterrence, small numbers of polar bears during the 2012 Beaufort Sea operations. This includes the Outer Continental Shelf Lease Exploration Plan, Camden Bay, Alaska (2012 Beaufort Sea Exploration Program) and the Coastal Marine and Onshore Environmental Baseline Study Activities, Beaufort Sea Onshore (2012 Beaufort Sea onshore program).

A detailed description of the authorized drilling activities is provided in Shell's *Request for Letter of Authorization (LOA) for the Incidental Take of Polar Bears and Pacific Walrus, and the Intentional Take of Polar Bears by Harassment; Revised Outer Continental Shelf Lease Exploration Plan, Camden Bay, Alaska*, sent to the U. S. Fish and Wildlife Service (Service) on May 4, 2011. Further, a detailed description of the authorized drilling activities is provided in Shell's *Request for Letter of Authorization (LOA) for the Incidental Take of Polar Bears and Pacific Walrus and the Intentional Take of Polar Bears by Harassment; 2012 Proposed Coastal Marine and Onshore Environmental Baseline Study Activities, Beaufort Sea Onshore ("2012 Beaufort Sea onshore program")* sent to the U. S. Fish and Wildlife Service (Service) on April 11, 2012.

Section 101(a)(4)(A) states that, "Except as provided in subparagraphs (B) and (C), the provisions of this chapter shall not apply to the use of measures:

1. By the owner of fishing gear or catch, or an employee or agent of such owner, to deter a marine mammal from damaging the gear or catch.

2. By the owner of other private property, or an agent, bailee, or employee of such owner, to deter a marine mammal from damaging private property.

3. By any person, to deter a marine mammal from endangering personal safety.

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4. By a government employee, to deter a marine mammal from damaging public property, so long as such measures do not result in the death or serious injury of a marine mammal.

Section 109(h)(1) states that, "nothing in this title (Conservation and Protection of Marine Mammals) shall prevent a Federal, State, or local government official or employee or a person designated under Section 112(c) from taking, in the course of his or her duties as an official, employee, or designee, a marine mammal in a humane manner (including euthanasia) if such taking is for:

1. The protection or welfare of the mammal.

2. The protection of the public health and welfare.

3. The non-lethal removal of nuisance animals."

The purpose of authorizing taking by harassment, or deterrence, is to maintain human and bear safety and welfare in polar bear habitat. Authorizing Level B harassment take reduces the likelihood of death or injury of polar bears. This is accomplished by the following objectives:

- Prevent bears from associating food with humans and facilities;
- "Condition" bears to avoid people;
- Allow bears to use travel routes (natural and man-made) to move along the coast;
- Prevent bears from extended use of areas around facilities.

Harassment authorization is subject to the following conditions:

1. The Polar Bear Interaction Plans (*Polar Bear, Pacific Walrus, and Grizzly Bear Avoidance and Human Encounter/Interaction Plan, Revised Outer Continental Shelf Lease Exploration Plan, Camden Bay, Alaska, May 2011*) and *Polar Bear and Pacific Walrus Awareness and Interaction Plan, Beaufort Sea and the adjacent northern coast of Alaska, October 2011)* are approved and all provisions must be complied with unless specifically noted otherwise in this Letter of Authorization (LOA). A copy of this polar bear interaction plan must be available on site for all personnel.

2. Shell Operations Managers, or designees, must be fully aware of, understand, and be capable of implementing the conditions of this authorization.

3. This authorization is valid only for those activities identified in the request for a LOA dated May 4, 2011 and April 11, 2012.

4. This authorization is restricted to harassment or deterrent activities.

5. Authorized individuals are responsible for documenting and reporting to the U.S. Fish and Wildlife Service (Service), Marine Mammals Management Office (MMM), at (907) 786-3800, all instances involving harassment activities as soon as possible and not later than 24 hours after the occurrence.

6. This authorization is issued specifically to Shell who is responsible for ensuring that **trained and qualified** personnel are assigned the task to harass (deter) polar bears. A list of trained personnel responsible for deterrence will be on file prior to initiation of activities with the Service Incidental Take Coordinator.

7. Shell is solely responsible for ensuring that their personnel operating under this authorization meet all Federal and State laws and regulations regarding the use and carry of firearms should firearms be used for bear deterrence.

8. Hazing techniques must not cause the injury or death of a bear. Types of hazing techniques may include, but are not limited to:

    - Bear Monitors;
    - Air horns;
    - Electric fences;
    - Chemical repellents;
    - Acoustic recordings;
    - Vehicles;
    - Projectiles: cracker shells, bean bags, rubber bullets, and screamers.

9. Prior to conducting a harassment activity, operators must:

    - Reduce/eliminate attractants;
    - Secure site; notify supervisor; move personnel to safety;
    - Ensure bear has escape route(s);
    - Ensure communication with all personnel.

10. When conducting a harassment activity, operators must:

    - Chose the method that will have the least effect on the bear and increase the intensity of the method or use additional methods only if necessary;
    - Shout at the bear before using projectile (avoidance conditioning);
    - Move the bear in proper direction; continue with minimally necessary deterrents to receive the desired result.

11. After a harassment event has occurred, operators must:

    - Monitor bear movement (to ensure no return);
    - Notify supervisor and personnel to resume work;
    - Fill out report to be sent to the Service as required under condition five, above (within 24 hours).

12. This Letter of Authorization is valid for the period indicated on this authorization, unless extended or terminated in writing by the U.S. Fish and Wildlife Service, Marine Mammals Management Office.

13. A final report of all encounters and hazing events must be submitted to the U.S. Fish and Wildlife Service, Marine Mammals Management Office within 60 days from the expiration date of this authorization.

Chief, Marine Mammals Management

6/4/12
Date

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1011 E. Tudor Road
Anchorage, Alaska 99503-6199

IN REPLY REFER TO:
AFES/MMM

U.S. Fish and Wildlife Service

AUTHORIZATION TO TAKE, BY HARASSMENT, POLAR BEARS AND PACIFIC WALRUSES (12-INT-12)

ISSUED: June 4, 2012
EXPIRES: November 30, 2012

Under Sections 101 (a)(4)(A), 109(h), and 112(c) of the Marine Mammal Protection Act of 1972, as amended, Shell Exploration and Production Co. (Shell) is authorized to take, using non-lethal deterrence, small numbers of polar bears and Pacific walruses during the 2012 Chukchi Sea operations. This includes the Outer Continental Shelf Lease Exploration Plan, Chukchi Sea, Alaska (2012 Chukchi Sea Exploration Program) and the Coastal Marine and Onshore Environmental Baseline Study Activities, Chukchi Sea and Onshore (2012 Chukchi Sea Program)

A detailed description of the authorized activities is provided in Shell's *Request for Letter of Authorization (LOA) for the Incidental Take of Polar Bears and Pacific Walrus, and the Intentional Take of Polar bears by Harassment; Revised Outer Continental Shelf Lease Exploration Plan, Chukchi Sea, Alaska*, sent to the U. S. Fish and Wildlife Service (Service) on May 12, 2011. Further, a detailed description of the authorized drilling activities is provided in Shell's *Request for Letter of Authorization (LOA) for the Incidental Take of Polar Bears and Pacific Walrus and the Intentional Take of Polar Bears by Harassment; 2012 Proposed Coastal Marine and Onshore Environmental Baseline Study Activities, Chukchi Sea and Onshore* (2012 Chukchi Sea program) sent to the Service on March 14, 2012.

Section 101(a)(4)(A) states that, "Except as provided in subparagraphs (B) and (C), the provisions of this chapter shall not apply to the use of measures:

1. By the owner of fishing gear or catch, or an employee or agent of such owner, to deter a marine mammal from damaging the gear or catch.

2. By the owner of other private property, or an agent, bailee, or employee of such owner, to deter a marine mammal from damaging private property.

3. By any person, to deter a marine mammal from endangering personal safety.

TAKE PRIDE IN AMERICA

4. By a government employee, to deter a marine mammal from damaging public property, so long as such measures do not result in the death or serious injury of a marine mammal.

Section 109(h)(1) states that "nothing in this title (Conservation and Protection of Marine Mammals) shall prevent a Federal, State, or local government official or employee or a person designated under Section 112(c) from taking, in the course of his or her duties as an official, employee, or designee, a marine mammal in a humane manner (including euthanasia) if such taking is for:

1. The protection or welfare of the mammal.

2. The protection of the public health and welfare.

3. The non-lethal removal of nuisance animals."

The purpose of authorizing taking by harassment, or deterrence, is to maintain human and bear safety and welfare in polar bear habitat. Authorizing Level B harassment take reduces the likelihood of death or injury to polar bears or Pacific walruses. This is accomplished by the following objectives:

- Prevent animals from associating rewards, food or otherwise, with humans and facilities;
- "Condition" animals to avoid people, if necessary;
- Allow animals to use travel routes (natural and man-made) to move along the coast;
- Prevent animals from extended use of areas around facilities.

Harassment authorization is subject to the following conditions:

1. The Wildlife Interaction Plans, *Polar Bear, Pacific Walrus, and Grizzly Bear Avoidance and Human Encounter/Interaction Plan, Exploration Drilling Program Chukchi Sea, Alaska, May 2011* and *Polar Bear and Pacific Walrus Awareness and Interaction Plan, North Slope and Chukchi Sea, April 2008, are* approved and all provisions must be complied with unless specifically noted otherwise in this Letter of Authorization (LOA). A copy of the wildlife interaction plans must be available on the specific sites for all personnel.

2. The document, *Adaptive Approach to Ice Management in Areas Occupied by Pacific Walruses,* presented to the Service on April 6, 2012, is approved and all provisions must be complied with unless specifically noted otherwise in this Letter of Authorization (LOA). A copy of this document must be available on all vessels that have the potential to deter walruses through ice management practices.

3. Shell Operations Managers, or designees, must be fully aware of, understand, and be capable of implementing the conditions of this authorization.

4. This authorization is valid only for those activities identified in the request for a LOA dated May 12, 2011 and March 14, 2012.

5. This authorization is restricted to harassment or deterrent activities.

6. Authorized individuals are responsible for documenting and reporting to the Service, Marine Mammals Management Office (MMM), at (907) 786-3800, all instances involving harassment activities as soon as possible and not later than 24 hours after the occurrence.

7. This authorization is issued specifically to Shell who is responsible for ensuring that **trained and qualified** personnel are assigned the task to harass (deter) polar bears. A list of trained personnel responsible for deterrence will be on file prior to initiation of activities with the Service Incidental Take Coordinator.

8. Shell is solely responsible for ensuring that their personnel operating under this authorization meet all Federal and State laws and regulations regarding the use and carry of firearms should firearms be used for deterrence purposes.

9. Deterrence techniques must not cause the injury or death of an animal. Types of deterrents may include, but are not limited to:

   For polar bears:
   - Marine mammal observers or monitors;
   - Air horns;
   - Electric fences;
   - Chemical repellents;
   - Acoustic recordings;
   - Vehicles/vessels;
   - Projectiles: cracker shells, bean bags, rubber bullets, and screamers.

   For Pacific walruses:
   - Vessels.

10. Prior to conducting a harassment activity, operators must:

    - Reduce/eliminate attractants;
    - Secure site; notify supervisor; move personnel to safety;
    - Ensure the animal has escape route(s);
    - Ensure communication with all personnel.

11. When conducting a harassment activity, operators must:

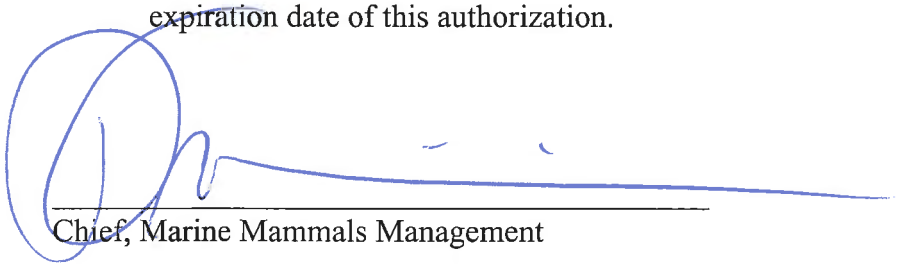
    - Chose the method that will have the least effect on the animal and increase the intensity of the method or use additional methods only if necessary;
    - Shout at the animal before using projectile (avoidance conditioning);
    - Move the animal in a safe direction for personnel and the animal; continue with minimally necessary deterrents to receive the desired result.

12. After a harassment event has occurred, operators must:

- Monitor animal movement (to ensure no return);
- Notify supervisor and personnel when it is safe to resume work;
- Fill out report to be sent to the Service as required under condition six, above (within 24 hours).

13. This Letter of Authorization is valid for the period indicated on this authorization, unless extended or terminated in writing by the U.S. Fish and Wildlife Service, Marine Mammals Management Office.

14. A final report of all encounters and hazing events must be submitted to the U.S. Fish and Wildlife Service, Marine Mammals Management Office within 60 days from the expiration date of this authorization.



Chief, Marine Mammals Management

6/4/12

Date