



United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
1011 East Tudor Road
Anchorage, Alaska 99503-6199



IN REPLY REFER TO:

AFES/MMM

AUG 14 2014

Ms. Suzan Simonds
Permits and Regulatory Manager
SAExploration, Inc.
82040 Sandelewood Place, Suite 102
Anchorage, Alaska 99507

Dear Ms. Simonds:

We have received your request dated May 9, 2014, for a Letter of Authorization (LOA) for the incidental take of polar bears and Pacific walrus in association with the SAExploration, Inc. (SAE) 2014 summer three-dimensional (3D) seismic survey in the Colville River Delta and adjacent offshore areas on the North Slope of Alaska.

In response, and in accordance with regulations listed at 76 FR 47010, dated August 3, 2011, enclosed is LOA 14-12 that will allow SAE to take small numbers of polar bears and Pacific walrus incidental to activities associated with the SAE 2014 summer 3D seismic survey in the Colville River Delta and adjacent offshore areas on the North Slope of Alaska within the defined geographic region of the Incidental Take Regulations.

The proposed project is a 3D seismic survey of the offshore area north the Colville River Delta, including the transition areas from water onto land. The overall project is proposed as a multi-year, multi-client survey that will take place during the open water periods (July through October) from 2014 to 2016. In 2014, and for this LOA, project activities will take place from mid-August through mid-October. This survey will occur in an area of approximately 890 square miles (mi²) (approximately 2,305 square kilometers [km²]) consisting of approximately 266 mi² (689 km²) of state water, 440 mi² (1140 km²) of federal water and 184 mi² (477 km²) of onshore area. In 2014, seismic survey operations will occur in approximately 300 mi² (777 km²) of the larger area. The objective of this survey is to acquire high quality 3D seismic data to support the mapping of multiple reservoir targets. A detailed description of the proposed activities is provided in SAE's *Colville River 3D Seismic Survey Offshore and TZ Project Description / Plan of Operations 2014*.

All provisions contained within SAE's *Colville River 3D Seismic Survey Offshore and TZ Project Description / Plan of Operations 2014* and *Wildlife Interaction Plan / Procedure (2014)* are

incorporated by reference into this LOA. Project personnel can limit encounters with polar bears and Pacific walruses by being observant of approaching animals (i.e., the use of polar bear guards) and by allowing the animals to pass unhindered, when practicable. SAExploration, Inc. will also: 1) Provide copies of the observation form to all contractors operating under the LOA; 2) report any sightings of polar bears or Pacific walruses, or signs of polar bears, such as tracks or excavations, to this office using the polar bear observation form or email; and, 3) report any possible den locations that are found during work activities within 12 hours to our office. Biologists from the U.S. Fish and Wildlife Service (Service) are available at the phone numbers listed below and noted in your interaction plan if questions or concerns arise.

If a polar bear interaction escalates into a life threatening situation, section 101(c) of the Marine Mammal Protection Act allows, without specific authorization, the take (including lethal take) of a polar bear if such taking is necessary for self-defense or to save the life of a person in immediate danger, and such taking is reported to the Service within 24 hours.

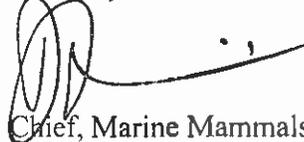
Polar bear and Pacific walrus conservation has benefited from monitoring programs associated with the Incidental Take Program since 1993. Monitoring serves to assess the effect of industrial activities by evaluating trends and effects of encounter rates, take frequency, as well as the location and timing of encounters.

If any changes develop during the project, such as activities or location, the Service must be notified prior to the planned operation. This will allow us to evaluate the activity and, if appropriate, amend the LOA.

The Service has completed intra-Service consultation under the Endangered Species Act of 1973, as amended (ESA), and has determined that the issuance this LOA is not likely to jeopardize the continuing existence of polar bears. 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,



Chief, Marine Mammals Management

Enclosure

cc: Mr. Richard Shideler, Alaska Department of Fish and Game (email)
U.S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office
U.S. Fish and Wildlife Service, Office of Law Enforcement
North Slope Borough, Department of Law (email)



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U.S. Fish and Wildlife Service

LETTER OF AUTHORIZATION (14-12)

ISSUED: August 15, 2014
EXPIRES: October 31, 2014

SAExploration, Inc. (SAE) is hereby authorized to take small numbers of polar bears and Pacific walrus incidental to activities associated with the SAE 2014 summer three-dimensional (3D) seismic survey in the Colville River Delta and adjacent offshore areas on the North Slope of Alaska that occur within the defined geographic region of the Incidental Take Regulations (76 FR 47010, dated August 3, 2011).

The proposed project is a 3D seismic survey of the offshore area north the Colville River Delta, including the transition areas from water onto land. The overall project is proposed as a multi-year, multi-client survey that will take place during the open water periods (July through October) from 2014 to 2016. In 2014, and for this LOA, project activities will take place from mid-August through mid-October. This survey will occur in an area of approximately 890 square miles (mi^2) (approximately 2,305 square kilometers [km^2]) consisting of approximately 266 mi^2 (689 km^2) of state water, 440 mi^2 (1140 km^2) of federal water and 184 mi^2 (477 km^2) of onshore area. In 2014, seismic survey operations will occur in approximately 300 mi^2 (777 km^2) of the larger area. The objective of this survey is to acquire high quality 3D seismic data to support the mapping of multiple reservoir targets. A detailed description of the proposed activities is provided in SAE's *Colville River 3D Seismic Survey Offshore and TZ Project Description / Plan of Operations 2014*.

This U.S. Fish & Wildlife Service (Service) Letter of Authorization (LOA) and the required conditions below apply to all employees, contractors, and personnel performing SAE-approved work under the scope of operations to be conducted. This authorization stipulates the following conditions:

1. Intentional take of polar bears and Pacific waluses is prohibited.
2. The SAE *Colville River 3D Seismic Survey Offshore and TZ Project Description / Plan of Operations 2014* and *Wildlife Interaction Plan / Procedure (2014)* are approved and all provisions must be complied with unless specifically noted otherwise in this LOA.
3. A copy of this LOA and the approved plans listed above must be posted and available for all personnel and in the possession of the operators of all vehicles and aircraft engaging in activities under the authority of this LOA.
4. Project operations managers, or designates, must be fully aware, understand and be capable of implementing the conditions of this LOA.
5. At the discretion of the Service, SAE must allow the Service to place an observer on site, including any facilities, aircraft, or vehicles, to monitor the impacts of the activity on marine mammals, when requested.
6. Polar bear and walrus monitoring, reporting, and survey activities must be conducted in accordance with 50 CFR Section 18.128 and must comply with the following monitoring, mitigation, and reporting requirements:
 - a. SAE must cooperate with the Service, and other designated Federal, State, or local agencies to monitor the impacts of oil and gas exploration activities on polar bears and walrus.
 - b. If any changes develop in the project during the period approved under this LOA, such as activities, location or methods, notify the Service, Marine Mammals Management Office (MMM) prior to the implementation of such changes.
 - c. Avoid concentrations or groups of walrus and individuals or groups of polar bears hauled out onto land or ice by all vessels under the management of SAE. Operators of vessels should, at all times, conduct their activities at the maximum distance possible from known or observed concentrations of marine mammals. Under no circumstances, other than an emergency, should vessels operate within 800 meters (½ mile) of walrus or polar bears observed on land or ice.
 - d. Take every precaution to avoid encroachment upon or harassment of walrus or polar bears in water when a vessel is operated near these animals. Maintain an 800 meter (½ mile) distance, when practicable. Vessels must reduce speed and steer around walrus or polar bears observed in water when able to do so. Vessels may not be operated in such a way as to separate members of a group of walrus or polar bears from other members of the group. Vessels will avoid multiple changes in direction and speed when walrus or polar bears are present.

- e. Restricting or affecting walrus or polar bear movements, by any means, in sea, on land or on ice, is prohibited. Separation distances will be enforced until animals have left the area of their own volition.
 - f. SAE must designate a qualified individual or individuals as Marine Mammal Observers (MMO) to observe, record, and report the effects of project activities on polar bears and walruses to the Service, MMM within 24 hours of visual observation.
 - g. For each walrus or polar bear sighting, an MMO or designated crew member will record at least the following:
 - i. a unique sighting identification number;
 - ii. LOA number, company name and vessel name;
 - iii. MMO's name and contact information (phone, email, etc.);
 - iv. time, location (with latitude, longitude, and datum), heading, speed, activity and identity of the observation vessel;
 - v. action taken by vessel operator in response to sighting (describe);
 - vi. for all other vessels visible within five km (approximately three miles) of the observation vessel, when polar bears or walruses are sighted, record the, identification, bearing, distance, heading, speed and activity of the other vessel(s);
 - vii. species (polar bear or walrus);
 - viii. group size (approximate number of individuals);
 - ix. age/size/sex categories (if determinable);
 - x. behavior or activity of animals sighted (describe);
 - xi. reaction of animal(s) to any vessel(s) (describe);
 - xii. substrate (water, ice and/or land);
 - xiii. heading (if determinable), bearing and distance from vessel of animal(s);
 - xiv. sighting cue (what caught MMOs attention);
 - xv. environmental conditions including:
 - weather;
 - air temperature;
 - visibility, provide: 1) distance (km, mi, or nm), 2) light/dark/twilight and 3) glare (none, little, moderate, severe);
 - water depth (meters, feet, or fathoms);
 - sea state (Beaufort scale);
 - ice condition, provide: 1) estimated % ice cover in vicinity of sighting (10% increments), 2) estimated distance to pack ice (km, mi, or nm);
 - xvi. estimated range (m, km, mi, or nm) at first sighting, estimated range (m, km, mi, or nm) at closest approach; and
 - xvii. MMO comments or notes.
7. Additional mitigation measures for offshore seismic surveys. Any offshore exploration activity expected to include the production of pulsed underwater sounds with sound source levels ≥ 160 dB re 1 μ Pa will be required to establish and monitor acoustic exclusion and disturbance zones and implement adaptive mitigation measures as follows:

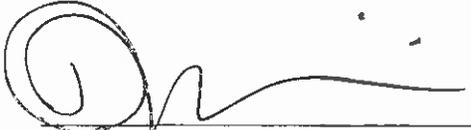
- a. Monitor zones. Establish and monitor with trained marine mammal observers an acoustically verified exclusion zone for walrus surrounding seismic airgun arrays where the received level would be ≥ 180 dB re 1 μ Pa; an acoustically verified exclusion zone for polar bear surrounding seismic airgun arrays where the received level would be ≥ 190 dB re 1 μ Pa; and an acoustically verified walrus disturbance zone ahead of and perpendicular to the seismic vessel track where the received level would be ≥ 160 dB re 1 μ Pa.
- b. Ramp-up procedures. For all seismic surveys, including airgun testing, use the following ramp-up procedures to allow marine mammals to depart the exclusion zone before seismic surveying begins:
 - i. Visually monitor the exclusion zone and adjacent waters for the absence of polar bears and walrus for at least 30 minutes before initiating ramp-up procedures. If no polar bears or walrus are detected, you may initiate ramp-up procedures. Do not initiate ramp-up procedures at night or when you cannot visually monitor the exclusion zone for marine mammals.
 - ii. Initiate ramp-up procedures by firing a single airgun. The preferred airgun to begin with should be the smallest airgun, in terms of energy output (dB) and volume (in^3).
 - iii. Continue ramp-up by gradually activating additional airguns over a period of at least 20 minutes, but no longer than 40 minutes, until the desired operating level of the airgun array is obtained.
- c. Power down/Shut down. Immediately power down or shut down the seismic airgun array and/or other acoustic sources whenever any walrus are sighted approaching close to or within the area delineated by the 180-dB re 1 μ Pa walrus exclusion zone, or polar bears are sighted approaching close to or within the area delineated by the 190-dB re 1 μ Pa polar bear exclusion zone. If the power down operation cannot reduce the received sound pressure level to 180-dB re 1 μ Pa (walrus) or 190-dB re 1 μ Pa (polar bears), the operator must immediately shut down the seismic airgun array and/or other acoustic sources.
- d. Emergency shutdown. If observations are made or credible reports are received that one or more walrus and/or polar bears are within the area of the seismic survey and are in an injured or mortal state, or are indicating acute distress due to seismic noise, the seismic airgun array will be immediately shut down and the Service contacted. The seismic airgun array will not be restarted until review and approval has been given by the Service. The ramp-up procedures provided in paragraph (a)(5)(ii) of this section must be followed when restarting.
- e. Adaptive response for walrus aggregations. Whenever an aggregation of 12 or more walrus are detected within an acoustically verified 160-dB re 1 μ Pa disturbance zone ahead of or perpendicular to the seismic vessel track, the holder of this Authorization must:

- i. Immediately power down or shutdown the seismic airgun array and/or other acoustic sources to ensure sound pressure levels at the shortest distance to the aggregation do not exceed 160-dB re 1 μ Pa; and
 - ii. Not proceed with powering up the seismic airgun array until it can be established that there are no walrus aggregations within the 160-dB zone based upon ship course, direction, and distance from last sighting. If shutdown was required, the ramp-up procedures provided in paragraph (a)(5)(ii) of this section must be followed when restarting.
8. Any incidental lethal take or injury of a polar bears or walruses must be reported to the Service immediately.
9. All evidence of polar bears and walruses, such as tracks, carcasses, dens, or haul out sites, if applicable, will also be reported.
10. SAExploration, Inc. must submit an annual monitoring report to the Service, MMM as required under 50 CFR 18.128(f), a draft of which will be received by MMM no later than 90 days after completion of the project. 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 report. The report will describe in detail:
 - a. The operations that were conducted;
 - b. The methods, results, and interpretation pertaining to all monitoring tasks;
 - c. The results of the marine mammal monitoring;
 - d. Marine mammal sightings (species, numbers, dates, times and locations, age/size/gender, environmental correlates, activities, associated survey activities);
 - e. Estimates of the amount and type of potential take (exposure) of walruses and polar bears (by species) to project activities;
 - f. Analysis of the effects of operations (e.g., on sighting rates, sighting distances, behaviors, movement patterns of walruses and polar bears);
 - g. An analysis of factors influencing detectability of walruses and polar bears during project operations. and
 - h. Summaries of communications with hunters and potential effects on subsistence uses.

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

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.

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.



Chief, Marine Mammals Management

8/14/14

Date