



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

Letter of Authorization

Hilcorp Alaska LLC (Hilcorp), is hereby authorized to take marine mammals incidental to construction and operation of the Liberty Drilling and Production Island, Beaufort Sea, Alaska, in accordance with 50 CFR 217, Subpart D-- Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to Construction and Operation of the Liberty Drilling and Production Island, subject to the provisions of the Marine Mammal Protection Act (16 U.S.C. 1361 *et seq.*; MMPA) and the following conditions:

1. This Letter of Authorization (LOA) is effective from December 1, 2021 through November 30, 2026.
2. This Authorization is valid only for construction and operation of the LDPI, Beaufort Sea, Alaska.
3. General Conditions
 - (a) A copy of this LOA must be in the possession of Hilcorp, its designees, and personnel operating under the authority of this LOA.
 - (b) The species authorized for taking by incidental harassment, mortality, and/or serious injury are provided in Table 1.
 - (c) The taking, by mortality, serious injury, Level A harassment and Level B harassment, is limited to the species listed in condition 3(b). See Table 1 (attached) for numbers of take authorized.
 - (d) The taking of any marine mammal species not provided in Table 1 is prohibited and may result in the modification, suspension, or revocation of this LOA.
 - (e) Hilcorp must renew, on an annual basis, the Plan of Cooperation (POC).
 - (f) Hilcorp must conduct briefings for construction and ice road supervisors and crews, and the marine mammal and acoustic monitoring teams prior to the start of annual ice road or LDPI construction, and when new personnel join the work, in order to explain responsibilities, communication procedures, the marine mammal monitoring protocol, and operational procedures.
 - (g) Hilcorp must allow subsistence hunters to use the LDPI for safe harbor during severe storms, if requested by hunters.



- (h) In the unanticipated event of an oil spill during LDPI operational years, Hilcorp must notify NMFS of the spill within 48 hours, regardless of size, and implement measures contained within the Liberty Oil Spill Response Plan.

4. Mitigation Measures. The holder of this Authorization is required to implement the following mitigation measures:

(a) Ice road construction, Maintenance, and Operation

- i. Hilcorp must implement the NMFS-approved Ice Road and Ice Trail Best Management Practices (BMPs) and the Wildlife Action Plan. These documents may be updated as needed throughout the life of the regulations in this subpart, in consultation with NMFS.
- ii. Hilcorp must not approach ringed seal structures (*i.e.*, lairs or breathing holes) within 150 meters (m) or ringed seals within 50 m.

(b) Liberty Drilling Production Island Construction

- i. Hilcorp must strive to complete pile driving and pipeline installation during the ice-covered season.
- ii. Hilcorp must use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of strikes at reduced energy, followed by a thirty-second waiting period, then two subsequent reduced energy strike sets. A soft start must be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of thirty minutes or longer.
- iii. All pipe- and pile-driving activities (impact and vibratory) and LDPI support vessel traffic outside the barrier islands must cease by August 1, annually, and not resume until the official end of the hunt or until the quota has been met, whichever occurs first. Hilcorp must coordinate annually with subsistence users on the dates of these hunts.
- iv. For all pile driving and construction activities involving heavy equipment, Hilcorp must implement a minimum shutdown zone of 10 m from any marine mammal in water or seals on land. If a marine mammal comes within or is about to enter the shutdown zone, operations must cease immediately. NMFS may adjust the shutdown zones pending review and approval of an acoustic monitoring report.
- v. Hilcorp must employ NMFS approved protected species observers (PSOs) and designate monitoring zones with radial distances as identified in Table 2. NMFS may adjust the monitoring zones pending review and approval of an acoustic monitoring report.

- vi. For all pile driving activity, Hilcorp must implement shutdown zones with radial distances as identified in Table 3. If a marine mammal comes within or is about to enter the shutdown zone, operations must cease immediately. NMFS may adjust the shutdown zones pending review and approval of an acoustic monitoring report.
- vii. If a bowhead whale or other low frequency cetacean enters the Level A harassment zone, pile or pipe driving must be shut down immediately.
- viii. If a beluga whale or pinniped enters the Level A harassment zone while pile driving is ongoing, work may continue until the pile is completed (estimated to require approximately 15–20 minutes), but additional pile driving must not be initiated until the animal has left the Level A harassment zone. During this time, PSOs must monitor the animal and record behavior.
- ix. If a marine mammal is approaching a Level A harassment zone and pile driving has not commenced, pile driving must be delayed. Pile driving may not commence or resume until either the animal has voluntarily left and been visually confirmed beyond the shutdown zone; 15 minutes have passed without subsequent detections of small cetaceans and pinnipeds; or 30 minutes have passed without subsequent detections of large cetaceans.
- x. If a species for which authorization has not been granted, or a species for which authorization has been granted but the authorized takes are met, is observed approaching or within the monitoring zone (which equates to the Level B harassment zone), pile driving and removal activities must shut down immediately using delay and shut-down procedures. Activities must not resume until the animal has been confirmed to have left the area or the observation time period.
- xi. Should an ice seal be observed on or near the LDPI by any Hilcorp personnel, during construction or operation, the sighting must be reported to Hilcorp's Environmental Specialist. No construction activity should occur within 10 m of an ice seal and any vehicles used should use precaution and not approach any ice seal within 10 m.

(c) Vessel Operation

- i. When operating vessels, Hilcorp must: (1) Reduce vessel speed to 5 knots (kn) if a whale is observed within 500 m (1641 feet (ft)) of the vessel and is on a potential collision course with the vessel, or if a vessel is within 275 m (902 ft) of whales, regardless of course relative to the vessel; (2) Avoid multiple changes in vessel direction; (3) Not approach within 800 m (2,624 ft) of a North Pacific right whale or within 5.6 km (3 nautical miles) of Steller sea lion rookeries or major haulouts; and (4) Avoid North Pacific right whale critical

habitat or, if critical habitat cannot be avoided, reduce vessel speed during transit.

(d) Aircraft mitigation.

- i. Except during takeoff and landing and in emergency situations, aircraft must maintain an altitude of at least 457 m (1,500 ft). If a marine mammal is observed, then a horizontal distance of 305 m (100 ft) of whales or seals will be maintained between the aircraft and the observed marine mammals.

5. Monitoring. The holder of this Authorization is required to conduct marine mammal monitoring and to conduct acoustic monitoring as described below:

- (a) All marine mammal and acoustic monitoring must be conducted in accordance to Hilcorp's Marine Mammal Mitigation and Monitoring Plan (4MP) and Acoustic Monitoring Plan, which includes acoustic monitoring during both the open-water and ice-covered seasons. These plans may be modified throughout the life of this LOA upon NMFS review and approval.
- (b) Monitoring must be conducted by NMFS-approved PSOs, who must have no other assigned tasks during monitoring periods and be equipped with, at minimum, binoculars and rangefinders. At minimum, two PSOs must be placed on elevated platforms on the island during the open-water season when island construction activities are occurring. These observers will monitor for marine mammals and implement shutdown or delay procedures when applicable through communication with the equipment operator.
- (c) One PSO will be placed on the side where construction activities are taking place and the other placed on the opposite side of the LDPI; both observers will be on elevated platforms. PSOs will rotate duties such that they will observe for no more than 4 hours at a time and no more than 12 hours in a 24-hour period.
- (d) An additional island-based PSO must work with an aviation specialist to use an unmanned aircraft system (UAS) to detect marine mammals in the monitoring zones during pile and pipe driving and slope shaping. Should UAS monitoring not be feasible or be deemed ineffective, a boat-based PSO must monitor for marine mammals during pile and pipe driving.
- (e) During the open-water season, marine mammal monitoring must take place from 30 minutes prior to initiation of pile and pipe driving activity through 30 minutes post-completion of pile driving activity. Pile driving may commence when observers have declared the shutdown zone clear of marine mammals. In the event of a delay or shutdown of activity resulting from marine mammals in the shutdown zone, animals must be allowed to remain in the shutdown zone (*i.e.*, must leave of their own volition) and their behavior must be monitored and documented.

- (f) After island construction is complete but drilling activities are occurring, a PSO must be stationed on the LDPI for approximately 4 weeks during the month of August to monitor for the presence of marine mammals around the island in the monitoring zone.
- (g) Marine mammal monitoring during pile driving and removal must be conducted by NMFS approved PSOs in a manner consistent with the following:
 - i. At least one observer must have prior experience working as an observer;
 - ii. Other observers may substitute education (degree in biological science or a related field) or training for experience;
 - iii. Where a team of three or more observers are required, one observer must be designated as lead observer or monitoring coordinator. The lead observer must have prior experience working as an observer; and
 - iv. Hilcorp must submit PSO curricula vitae (CVs) for approval by NMFS prior to the onset of pile driving.
 - v. PSOs must have the following additional qualifications:
 - 1. Ability to conduct field observations and collect data according to assigned protocols;
 - 2. Experience or training in the field identification of marine mammals, including the identification of behaviors;
 - 3. Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
 - 4. Writing skills sufficient to prepare a report of observations including, but not limited to, the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and
 - 5. Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.
- (h) Hilcorp must deploy autonomous sound recorders on the seabed to conduct underwater passive acoustic monitoring in the open-water season the first four years of the project such that island construction activities, including pile driving, and drilling operations are recorded. Acoustic monitoring will be conducted for the purposes of sound source verification to verify distances from noise sources at which underwater sound levels reach thresholds for potential marine mammal harassment.

6. Reporting. The holder of this Authorization is required to:

(a) Annual Reports:

- i. Hilcorp must submit a draft annual marine mammal and acoustic summary report to NMFS not later than 90 days following the end of each calendar year.

- ii. Hilcorp must provide a final report within 30 days after receipt of NMFS' comments on the draft report. The reports must contain, at a minimum, the following:
 1. Date and time that monitored activity begins or ends;
 2. Description of construction activities occurring during each observation period;
 3. Weather parameters (*e.g.*, wind speed, percent cloud cover, visibility);
 4. Water conditions (*e.g.*, sea state, tide state);
 5. Species, numbers, and, if possible, sex and age class of marine mammals observed;
 6. Description of any observable marine mammal behavior patterns, including bearing and direction of travel and distance from construction activity;
 7. Distance from construction activities to marine mammals and distance from the marine mammals to the observation point;
 8. An extrapolated total take estimate for each species based on the number of marine mammals observed and the extent of the harassment zones during the applicable construction activities;
 9. Histograms of the perpendicular distance at which marine mammals were sighted by the PSOs;
 10. Description of implementation of mitigation measures (*e.g.*, shutdown or delay);
 11. Locations of all marine mammal observations;
 12. An estimate of the effective strip width of the island-based PSOs and the UAS imagery; and
 13. Sightings and locations of marine mammals associated with acoustic detections.

- iii. Annually, Hilcorp must submit a report within 90 days of ice road decommissioning. The report must include the following:
 1. Date, time, location of observation;
 2. Ringed seal characteristics (*i.e.*, adult or pup, behavior (avoidance, resting, etc.));
 3. Activities occurring during observation, including equipment being used and its purpose, and approximate distance to ringed seal(s);
 4. Actions taken to mitigate the effects of interaction, emphasizing: which BMPs were successful; which BMPs may need to be improved to reduce interactions with ringed seals; the effectiveness and practicality of implementing BMPs; any issues or concerns regarding implementation of BMPs; and potential effects of interactions based on observation data; and
 5. Proposed updates (if any) to the NMFS-approved Wildlife Management Plan(s) or the ice-road BMPs.

(b) Final Report

- i. Hilcorp must submit a final 5-year comprehensive summary report to NMFS not later than 90 days following the expiration of 50 CFR 217, Subpart D and this LOA.

(c) Acoustic Report

- i. Hilcorp must submit acoustic monitoring reports per the Acoustic Monitoring Plan.

(d) Reporting of injured or dead marine mammals.

- i. In the unanticipated event that the activity defined in § 217.30 clearly causes the take of a marine mammal in a prohibited manner, Hilcorp must immediately cease such activity and report the incident to the Office of Protected Resources (OPR), NMFS, and to the Alaska Regional Stranding Coordinator, NMFS. Activities must not resume until NMFS is able to review the circumstances of the prohibited take and NMFS notifies Hilcorp that activities may resume. The report must include the following information:
 1. Time, date, and location (latitude/ longitude) of the incident;
 2. Description of the incident;
 3. Environmental conditions (*e.g.*, wind speed and direction, Beaufort sea state, cloud cover, visibility);
 4. Description of all marine mammal observations in the 24 hours preceding the incident;
 5. Species identification or description of the animal(s) involved;
 6. Fate of the animal(s); and
 7. Photographs or video footage of the animal(s). Photographs may be taken once the animal has been moved from the waterfront area.
- ii. In the event that Hilcorp discovers an injured or dead marine mammal and determines that the cause of the injury or death is unknown and the death is relatively recent (*e.g.*, in less than a moderate state of decomposition), Hilcorp must immediately report the incident to OPR and the Alaska Regional Stranding Coordinator, NMFS. The report must include the information identified in paragraph (i)(5)(i) of this section. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with Hilcorp to determine whether additional mitigation measures or modifications to the activities are appropriate.
- iii. In the event Hilcorp discovers an injured or dead marine mammal and determines that the injury or death is not associated with or related to the activities defined in § 217.30 (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, scavenger damage), Hilcorp must report the incident to OPR and the Alaska Regional Stranding Coordinator, NMFS, within 24 hours of the discovery. Hilcorp must

provide photographs or video footage or other documentation of the stranded animal sighting to NMFS. Photographs may be taken once the animal has been moved from the waterfront area.

iv. In the event of a ship strike of a marine mammal by any vessel involved in the survey activities, Hilcorp must report the incident to NMFS OPR and to regional stranding networks as soon as feasible. The report must include the following information:

1. Time, date, and location (latitude/longitude) of the incident;
2. Species identification (if known) or description of the animal(s) involved;
3. Vessel's speed during and leading up to the incident;
4. Vessel's course/heading and what operations were being conducted (if applicable);
5. Status of all sound sources in use; Description of avoidance measures/requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike;
6. Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, visibility) immediately preceding the strike;
7. Estimated size and length of animal that was struck;
8. Description of the behavior of the marine mammal immediately preceding and following the strike;
9. If available, description of the presence and behavior of any other marine mammals immediately preceding the strike;
10. Estimated fate of the animal (e.g., dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared); and
11. To the extent practicable, photographs or video footage of the animal(s)

v. This Authorization may be modified, suspended or withdrawn if Hilcorp 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.


Donna S. Wieting, Director
Office of Protected Resources

FEB 18 2020
Date

Table 1. Authorized takes, by species and harassment type, per year.

Year	Species (stock)					
	Bowhead (W. Arctic)	Gray (ENP)	Beluga (Beaufort)	Ringed seal (AK)	Bearded seal (AK)	Spotted seal (AK)
Level A harassment						
1	2	2	10	5	2	2
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
Total Level A harassment	2	2	10	5	2	2
Level B harassment						
1	6	2	40	336	58	58
2	5	2	20	9	1	1
3	5	2	20	23	1	1
4	5	2	20	23	1	1
5	5	2	20	20	1	1
Total Level B harassment	26	10	120	411	62	62
Mortality/Serious Injury						
1-5	0	0	0	2	0	0

Table 2. Radial Distances and Area of Monitoring Zones

Activity	Ice-Covered Season	Open-Water Season ¹	Airborne
Ice road construction and maintenance	170 m (0.09 km ²)	n/a	< 15 m (<0.001 km ²)
Pipeline construction	210 m (0.14km ²)	n/a	
Sheet pile driving-vibratory	390 m (0.48 km ²)	14,800 m (63.9 km ²) ²	
Sheet pile driving-impact	90 m (0.03 km ²)	2050 m (13.20 km ²)	100 m (0.031 km ²)
Conductor pipe/foundation pile driving- impact	11 m (< 0.01 km ²)	315 m (0.31 km ²)	
Slope shaping/armoring	n/a	1160 m (4.23 km ²)	<15 m (<0.001 km ²)

Helicopter (take-off/landing)	n/a	n/a	67 m (0.041 km ²)
Drilling and Production	230 m (0.17 km ²)	55 m (<0.01 km ²)	30 m (0.003 km ²)

Table 3. Level A Harassment Zones, by hearing group and activity.

Marine Mammal Hearing Group (species) ¹	Activity (duration) and Distance to Threshold (ensonified area)			
	Slope Shaping (9.6 hrs)	Vibratory Sheet Piling (2.5 hrs)	Impact Sheet Piling (40 min)	Impact Pipe Driving (2 hrs)
Low frequency cetaceans (bowhead, gray whales) ²	< 10 m (0 km ²)	50 m (164 ft)	1,940 (11.8 km ²)	87m (2.38 km ²)
Mid frequency cetaceans (belugas) ³	n/a	< 10 m (0 km ²)	60 m (0.01 km ²)	27 m (0.002 km ²)
Phocid Pinnipeds (bearded, ringed, spotted seals) ^{3,4}	< 10 m (0 km ²)	20 m (66 ft)	526 m (0.87 km ²)	240 m (0.18 km ²)

¹ For all marine mammal species, if a marine mammal is approaching a Level A harassment zone and pile driving has not commenced, pile driving must be delayed.

² For low frequency cetacean, the shutdown zones are equal to the Level A harassment zones provided here.

³ If a beluga whale or pinniped enters the Level A harassment zone while pile driving is ongoing, work may continue until the pile is completed (estimated to require approximately 15–20 minutes), but additional pile driving must not be initiated until the animal has left the Level A harassment zone.

⁴ These zones apply for island construction only. Ice road construction setbacks for ringed seals and ringed seal structures are provided in condition 4(a)2.