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November 06, 2020

Dear Ms. LaMarr:

Government of the Northwest Territories comments on the Marsh Creek East 3D Seismic Program on the Coastal Plain [DOI-BLM-AK-R000-2021-0001-EA]

The Government of the Northwest Territories (GNWT) promotes and supports a balanced and sustainable approach to development that supports our goal to manage and conserve wildlife, and protect and provide for the health and well-being of the people of the Northwest Territories (NWT). In addition, the GNWT is party to the Canadian *Porcupine Caribou Management Agreement*, and is represented on the *International Porcupine Caribou Board*. As such, the GNWT has a responsibility to support the stewardship and conservation of the Porcupine herd and protection of subsistence harvest by Gwich'in and Inuvialuit in the NWT.

These stewardship duties have informed the GNWT's comments on the Marsh Creek East Seismic Exploration Program (the Project) application posted by the Bureau of Land Management (BLM), Alaska on October 23, 2020 for a 14 day comment period.

The GNWT is of the understanding that any oil and gas programs, including 3D seismic exploration, occurring within the Arctic National Wildlife Refuge (ANWR) Coastal Plain area need to comply with the final Record of Decision (ROD) related to the Final Environmental Impact Statement (EIS) for the Coastal Plain Oil and Gas Leasing Program (September 12, 2019). The GNWT is on record that many of the concerns and issues raised in our March 12, 2019 submission on the draft EIS were not adequately addressed in the Final EIS or ROD. Some of those issues are relevant to this project.

The GNWT has reviewed the Project and has recommendations for the BLM (attached). To summarize, the GNWT has four key areas of concern with the Marsh Creek East 3D Seismic Exploration Program as posted on the BLM website:

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- Inadequate timing for public comment period;
- The spatial scope of the Project for one winter season raises concerns about potential impacts to wildlife and wildlife habitat;
- The temporal scope of the proposed Project will intersect with the Porcupine caribou herd calving period; and
- Potential underestimation of work required in the summer activities.

Inadequate timing for public comment period that does not allow for adequate review and enhances the perception of bias

The GNWT notes that 14 days is a very short time period to allow the public to comment on a project and understands the normal period to be ≥ 30 days. Due to the sensitive nature of the environment and substantial public concern about the impacts of oil and gas development in the Arctic National Wildlife Refuge, it is the GNWT's position that a shortened comment period only enhances the perception of a biased process.

The spatial scope of the Project for one winter season raises concerns about potential impacts to wildlife and wildlife habitat

The spatial scope of the project being proposed for one winter season raises concerns about the potential impacts. Based on the parameters provided in the project application for source and receiver lines only (NOT including the turning at the end of each line, access roads, camps or airstrips), a minimum of approximately 6% of the Project Area (554,436 acres) will be directly impacted by having machinery cross over that land. This activity will compact the snow cover making the snow melt slower and subsequently impacts phenology of vegetation in the spring. Sound and vibrations would extend past the 6% of the landscape that is directly travelled on, meaning an even greater area of impact is expected. Covering such a large percentage of the 1002 lands in one season means the potential for impacting wildlife is much higher than if smaller sections were conducted each year.

The GNWT also notes that there is a large amount of potential polar bear denning habitat identified in the Project Area (Durner et al 2006)¹. The Project Area map (Appendix A Plan of Operations) appears to identify slopes > 16 degrees with a 100 m buffer but this map, while not high resolution, appears to identify less areas than the analysis using slopes > 16 degrees and elevation 1.3m (Durner et al. 2006). The GNWT is concerned that with such a large project area, conducting a complete forward-looking infrared (FLIR) survey of the entire proposed area would

¹ Durner, G.M., Amstrup, S.C., and Ambrosius, K.J. 2006. Polar Bear Maternal Den Habitat in the Arctic National Wildlife Refuge, Alaska. *Arctic*. 59(1): 31-36.

require a very substantial effort that is not possible in the timeframe indicated. The GNWT suggests additional

mitigation that requires timing of the 3D work to be later in coastal areas, as compared to inland areas, when polar bears have already emerged or are closer to emerging from denning.

The temporal scope of the proposed Project will intersect with the Porcupine caribou herd calving period, and there is a potential underestimation of work required in the summer activities The Project end date of May 31 would have work continuing when the Porcupine caribou herd normally migrate to the area based on historic collar data. Science shows the herd does better when they calve in the 1002 area (Russel and Gunn 2019)² and activity on the landscape during the critical time period may cause the herd to alter its migration. A potential mitigation would be to set the Project end date to May 15 or have specific mitigations for caribou laid out in the plan of operations. The current operation plan describes summer cleanup activities as follows:

After all snow is gone, in the late-July to early-August 2021 timeframe, a single helicopter will be contracted to perform flyovers of the Program Area looking for any debris that may have been left behind in July or August. The cleanup crew will also land inspect all camp locations and any area that had an unplanned release or tundra disturbances. Source and receiver lines will be travelled and inspected. The aircraft will land and pick up any seen debris during the flight travels on the program area. Typically, each day of flyover inspections, there may be roughly 100 miles of flight time and approximately 30-40 landings. This phase of the project will require one helicopter for approximately 15 days, including possible weather days. The area of the cleanup will be determined by the completed portion from that winters acquisition and will not go beyond the Program Area inspect all camp locations and any area that had an unplanned release or tundra.

The documents also state there “would be approximately 6,459 miles of receiver lines and 3,237 miles of source lines in the Program Area.” It is difficult to understand how all these lines can be travelled in the time stated in the proposal based on the description above. The GNWT remains concerned that the activity levels in the summer, when the caribou are present, are being underestimated if an adequate cleanup is to be conducted.

² Russell, D., and A. Gunn. 2019. Vulnerability analysis of the Porcupine Caribou Herd to potential development of the 1002 lands in the Arctic National Wildlife Refuge, Alaska. Report prepared for: Environment Yukon, Canadian Wildlife Service, and GNWT Department of Environment and Natural Resources. 143 pp.

Reducing the spatial extent of the seismic work and corresponding cleanup would reduce the disturbance in the summer. Mitigations could also include specific actions to minimize sensory disturbance of caribou entering the area and these should be clearly identified in the plan of operations.

The GNWT remains committed to co-operatively managing the Porcupine Caribou herd and its habitat within Canada and across its range, in accordance with the formal agreement between Canada and the United States. The GNWT urges the BLM to ensure adequate project mitigations are clearly defined and strong enough to reduce the potential for significant impacts on the wildlife populations in the area.

Please contact Dr. Brett Elkin, Assistant Deputy Minister, Department of Environment and Natural Resources at brett.elkin@gov.nt.ca or 867-767-9055 ext. 53000 if you have any questions about this letter or the attached comments.

Sincerely,



Shane Thompson
Minister
Environment and Natural Resources

Attachment

c. Honourable Caroline Cochrane
Premier

Honourable Jonathan Wilkinson
Minister of Environment and Climate Change Canada

Honourable Pauline Frost
Yukon Minister of Environment

Ms. Shaleen Woodward
Principal Secretary

Mr. Martin Goldney, Secretary to Cabinet/Deputy Minister
Executive and Indigenous Affairs

Ms. Shawn McCann
A/Deputy Secretary Indigenous and Intergovernmental Affairs
Executive and Indigenous Affairs

Dr. Erin Kelly
Deputy Minister
Environment and Natural Resources

Dr. Brett Elkin
Assistant Deputy Minister
Environment and Natural Resources

Mr. David Bernhardt, Secretary of the Interior
US Department of the Interior

Mr. Kenny Smith, Grand Chief
Gwich'in Tribal Council

Mr. Jozef Carnogursky, Chair
Gwich'in Renewable Resources Board

Mr. Jim Elias, A/Chair
Inuvialuit Game Council

Mr. Duane Smith, Chair
Inuvialuit Regional Corporation

Mr. Dana Tizya-Tramm, Chief
Vuntut Gwitchin First Nation

Ms. Roberta Joseph, Chief
Tr'ondëk Hwëch'in First Nation

Mr. Simon Mervyn, Chief
First Nation of Na-Cho Nyak Dun

Mr. Joe Tetlich, Chair
Porcupine Caribou Management Board

Mr. James Thorbourne, Interim Chief Operating Officer
Gwich'in Tribal Council

Mr. Bob Simpson, Director, Government Affairs
Inuvialuit Regional Corporation

Hon. François-Philippe Champagne
Minister of Foreign Affairs

Ms. Kirsten Hillman
Ambassador of Canada to the United States

Table 1. Government of the Northwest Territories' Comments on *Marsh Creek East Program Plan of Operations Winter Seismic Survey*

Topic	Comment	Recommendation
Review timeline	The comment period for the proposed Project is two weeks (October 23-November 6, 2020), creating a rushed review period. While the documents to review are not overly lengthy they inform an important decision regarding seismic activities in a sensitive environment of enormous public concern that should be thoroughly evaluated.	<p>The Bureau of Land Management (BLM) should allow for longer reviews for future development applications in the Arctic National Wildlife Refuge (ANWR).</p> <p>The GNWT strongly urges the BLM to ensure adequate public consultation is undertaken for this Project.</p>
<p>Spatial scope of the Project</p> <p>2.0 Scope, page 3.</p>	The spatial scope of the project being proposed for one winter season raises concerns about the potential impacts. Based on the parameters provided in the project application for source and receiver lines only (NOT including the turning at the end of each line, access roads, camps or airstrips), a minimum of approximately 6% of the Project Area (554,436 acres) will be directly impacted by having machinery cross over that land. This activity will compact the snow cover making the snow melt slower and subsequently impacts phenology of vegetation in the spring. This also means that 6% of the landscape is actually directly travelled on and the sound and vibrations would extend past that. Covering such a large percentage of the 1002 lands in one season means the potential for impacting bears is much higher than if smaller sections	The spatial scope of the Project should be reduced.

Topic	Comment	Recommendation
<p>Feasibility of conducting forward-looking infrared (FLIR) surveys in the allotted time</p> <p>2.0 Scope, page 3.</p> <p>Appendix A: Project Area Maps, page 18.</p>	<p>were conducted each year.</p> <p>The GNWT also notes that there is a large amount of potential polar bear denning habitat identified in the Project Area (Durner et al 2006). The Project Area map (Appendix A) appear to identify slopes > 16 degrees with a 100 m buffer but this map, while not high resolution, appears to identify less areas than the analysis using slopes >16 degrees and elevation 1.3m (Durner et al. 2006). The GNWT is concerned that with such a large area conducting a complete forward-looking infrared (FLIR) survey of the entire proposed area would require a very significant effort that is not possible in the timeframe indicated.</p>	<p>The BLM should ensure that the proponent conducts robust FLIR surveys and that the proponent confirms that the FLIR surveys can be done properly within the Project's timeframe.</p> <p>The proponent should explain why it the Project Area map appears to identify less critical polar bear denning habitat than Durner et al.</p> <p>The GNWT also suggests additional mitigation that requires timing of the 3D work to be conducted on coastal areas later, as compared to inland areas, when polar bears have emerged or are closer to emerging from denning.</p>
<p>Timing of Project</p> <p>2.0 Scope, page 3.</p>	<p>The Project is proposed to run until May 31, 2020 or until tundra travel has been closed. The end date of May 31 would have work continuing when the Porcupine caribou herd normally migrates to the area based on historic collar data. Science shows the herd does better when they calve in the 1002 area and activity on the landscape during the critical time period may cause the herd to alter its migration.</p>	<p>The BLM should ensure that the Project end date occurs before May 15 to reduce impacts to caribou returning to the area or have specific mitigations for caribou laid out in the plan of operations. A specific mitigation could be the application of Lease Stipulation 7 from the ROD, meaning use of heavy equipment would cease on May 20 or sooner if Porcupine caribou arrive on the coastal plain earlier than May 20.</p>
<p>Scale of the Project</p> <p>3.0 Location, page</p>	<p>The document provides the size of the Project (542,595 acres) but it does not provide an estimate of the total amount of land disturbance that may occur from travel to the</p>	<p>The BLM should consider the scale of the Project and the potential to impact the ANWR when making decisions on approving the Project.</p>

Topic	Comment	Recommendation
4.	<p>Project Area, seismic lines, camps, airstrips nor does it frame this information in terms of the proportion of ANWR that will be disturbed.</p> <p>The GNWT has calculated that a minimum of approximately 6% of the Project Area (554,436 acres) will be directly impacted by having machinery cross over that land. This figure does not include access roads, camps or airstrips.</p> <p>This total disturbance footprint would be helpful to understand the scale of the Project on ANWR Coastal Plain, which has multiple conservation-based purposes in addition an oil and gas development-based purpose.</p>	
Timing of Project 9.0 Mobilization and Access, page 7.	<p>The proponent notes that mobilization will begin around December 31, 2020 but after the forward-looking infrared (FLIR) survey in December.</p> <p>A second FLIR is scheduled for January. It is unclear if the second FLIR will cover land that was not previously surveyed in December or if the intention is to verify the results of the first survey. It is unclear why work would begin before both the December and January FLIR surveys have been conducted.</p>	<p>The proponent should clarify the purpose of the second FLIR survey.</p> <p>If the purpose of the second FLIR survey is to verify the results of the first FLIR survey then the proponent should not being work on the land until both surveys have been conducted in order to take a precautionary approach.</p>
Snow depth and compliance with	The proponent plans to conduct snow surveys to substantiate snow depths and will deploy	The appropriate regulatory authority should monitor and provide oversight for compliance

Topic	Comment	Recommendation
<p>ROP 11.</p> <p>10.1 Survey and Ice check, page 8.</p>	<p>thermistors in the fall in representative locations near Kaktovik to gauge soil temperature. This work will be done to comply with ROP 11. The proponent states “If snow or ice conditions are not adequate, they will continue scouting an area for suitable snow cover. Areas not to be passable by the camp or vehicles will be lathed off for avoidance.”</p> <p>Walker et al¹ concluded that there is heterogeneous snow distribution in the 1002 area and “Generally, low amounts of winter snowfall, strong winter winds, and the hilly terrain in the 1002 Area combine to create substantial areas of very thin and unpredictable snow cover, such that much of this area would be damaged by seismic surveys.” These findings make it imperative that ROP 11 is complied with.</p>	<p>with ROP 11 to ensure damage to the tundra does not occur.</p> <p>The proponent should explain how snow depths near Kaktovik are representative of the Project Area, given the uneven distribution of snowfall. The proponent should also explain how snow survey crews will not damage terrain if snow depths in a particular area have not been confirmed.</p>
<p>Snow depth.</p> <p>10.1 Survey and Ice check, page 9.</p>	<p>The document states “Snow survey crews will move out ahead of the main crew by approximately 7-20 days, accessing the Program Area. The crew includes camp trailers, fuelers, Steigers, Tuckers, and support trailers and consists of three to four crews of two personnel per crew.”</p>	<p>The snow survey crews should ensure that they are not moving too far ahead of the main camp near the end of the tundra travel season to prevent unnecessary potential damage to ground cover if seismic testing cannot be completed due to weather or a lack of snow cover and frozen ground.</p>
<p>10.2 Willow protocol, page 9.</p>	<p>During ground truthing of willows, subsistence representatives would assist in identifying sensitive willow areas and defining the size of</p>	<p>Please explain how criteria will be developed to determine if an area is a sensitive willow area.</p>

¹ https://www.geobotany.uaf.edu/library/pubs/WalkerDA2019_seismic_exploration_whitepaper.pdf

Topic	Comment	Recommendation
	areas to be avoided. There is no mention of the criteria that are to be used when identifying a sensitive willow area.	
<p>Buffer around potential polar bear denning</p> <p>10.7 River Crossings, page 11.</p> <p>Mitigation 1a Appendix F: Polar Bear and Other Wildlife Interaction Plan, page 27.</p>	For areas that are defined denning critical habitat (16 degree slope and height of 1.6 m [5.2 feet]), a 100 m (328 feet) buffer will be used.	Durner et al (2006) ² identify polar bear habitat as 16 degree slope and height of 1.3 m. The proponent should explain the science behind changing this criterion to 1.6m.
<p>Buffer around potential polar bear denning</p> <p>10.7 River Crossings, page 11.</p>	The document noted that for areas that are defined denning critical habitat (16 degree slope and height of 1.6 m [5.2 feet]), a 100 m (328 feet) buffer will be used.	Durner et al (2006) ³ identify polar bear habitat as 16 degree slope and height of 1.3 m. The proponent should explain the science behind changing this criterion to 1.6 m.

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Topic	Comment	Recommendation
Mitigation 1a Appendix F: Polar Bear and Other Wildlife Interaction Plan, page 27.		
Caribou disturbance 13.0 Summer Cleanup Activities, page 15.	The document states “After all snow is gone, in the late-July to early-August 2021 timeframe, a single helicopter will be contracted to perform flyovers of the Program Area looking for any debris that may have been left behind in July or August” and “source and receiver lines will be travelled and inspected” The document also states that there “would be approximately 6,459 miles of receiver lines and 3,237 miles of source lines in the Program Area.” It is difficult to understand how all these lines can be travelled based on the description above. The GNWT remains concerned that the activity levels in the summer, when the caribou are present are being underestimated if an adequate cleanup is to be conducted.	Reducing the spatial extent of the seismic work and corresponding clean up would reduce the disturbance in the summer. Mitigations could also include specific actions to minimize sensory disturbance of caribou entering the area and these should be clearly identified in the plan of operations.
Timing of the Project 13.0 Summer Cleanup Activities, page	The document states “After all snow is gone, in the late-July to early-August 2021 timeframe, a single helicopter will be contracted to perform flyovers of the Program Area looking for any debris that may have been left behind in July or August.”	Please clarify if this is a typo or if there will be work on the land in July or August. If there is work other than cleanup activities being conducted in July or August additional provisions will need to be made to protect caribou (such as setback distances).

Topic	Comment	Recommendation
15.		
Appendix A: Project Area maps, page 18.	The text in the document identifies critical polar bear denning habitat as slopes of 16 degrees and a height of 1.6 m. Critical polar bear denning habitat is not clearly identified on the Project Area map in Appendix A. The Project Area map show slopes greater than 16 degrees and a 100 m buffer in yellow but does not explain why this is important, which potentially minimizes the reviewers ability to visualize the potential impact to polar bears.	The legend on the Project Area map should be updated to clearly label critical polar bear denning habitat.
Appendix F: Polar Bear and Other Wildlife Interaction Plan Wildlife Interaction Plan/ Mitigation Plan Mitigation 11 and 12, page 28.	Personnel will avoid any known polar bear den by at least a 1.6 kilometer (km; 1-mile [mi]) distance in all directions. Known dens with this exclusion zone will be logged into the Tiger-Nav system. SAE will observe a 1.6 km (1 mi) operational exclusion zone around all known polar bear dens during the denning season (November-April, or until the female and cubs abandon the area). An exclusion zone will not be removed without approval from USFWS. If an unknown den is discovered within 1.6 km (1 mi) of activities, work must cease, and the agency will be contacted for guidance.	All denning habitat as identified by Durner et al 2006 should be avoided unless crossing is required and then only after an adequate FLIR survey is conducted. It should be recognized FLIR surveys do not identify 100% of the dens in the area.
Appendix F: Polar Bear and Other Wildlife Interaction Plan	The document mentions that helicopters will not land within 805m of a polar bear. There is no mention of a similar setback for caribou but there is proposed helicopter work in July and	Recommend the setback distance for caribou and helicopters be clearly outlined in the plan of operations and mitigations be included, such as those outlined in the ROD (ex. ROP 34

Topic	Comment	Recommendation
Wildlife Interaction Plan/ Mitigation Plan Aircraft, page 28.	August.	requires aircraft to maintain an altitude of at least 1,500 feet above ground level within 0.5 miles over the caribou calving range).
Appendix F: Polar Bear and Other Wildlife Interaction Plan	The Wildlife Interaction Plan/Mitigation Plan contains provisions for polar bears and black bears but does not discuss grizzly bears. Grizzly bears also inhabit the general area in the Project but are likely to be inactive during the winter season. There is the potential for the Project to disturb grizzly bears.	Similar mitigations should be identified for grizzly bears as polar bears as dens are found. The GNWT recognizes FLIR surveys do not work for earth denning grizzly bears and has used fall denning surveys to identify and buffer grizzly dens in areas prior to winter seismic activities.

Table 2. Government of the Northwest Territories' Comments on the *Marsh Creek East Seismic Exploration*

Topic	Comment	Recommendation
<p>Use of snowmobiles</p> <p>Access and Advance Surveys, page 2.</p>	<p>The document states “Advance crews would travel from the base camp using Steigers, Tuckers or snow machines to conduct surveys and marking activities.” The purpose of this advanced work is to ensure ground and snow conditions are appropriate for equipment as well as to identify and mark hazards and avoidance areas and scout safe routes for seismic operations.</p> <p>Appendix H of the <i>Marsh Creek East Program Plan of Operations Winter Seismic Survey</i> notes that a Steiger with a winch is 55,000 pounds and a Tucker is 11,500 pounds. Appendix H does not list the weight of a snowmobile but a general estimate is 500 pounds.</p> <p>The need for lighter vehicles that will scout out snow conditions is important as Walker et al concluded “Snow conditions of the 1002 Area are too heterogeneous to allow for an extensive and regular grid of closely spaced seismic lines. Generally, low amounts of winter snowfall, strong winter winds, and the hilly terrain in the 1002 Area combine to create substantial areas of very thin and unpredictable snow cover, such that much of this area would be damaged by seismic surveys.”</p>	<p>Due to the weight differences a snow machine should be utilized instead of a Steiger or Tucker as often as possible for advance surveys to minimize ground disturbance.</p>

Topic	Comment	Recommendation
<p>Access and Advance Surveys, page 3.</p>	<p>To aid in identifying safe river crossings and reduce the number of vibroseis source lines crossing major drainages, a slope analysis tool would be used to map slopes in the Program Area. The advance survey crews would ground verify predicted steep slopes (greater than 10°) and map them as avoidance locations. Equipment would only cross drainages at areas of the lowest possible relief, as vibroseis vehicles are not able to operate on slopes greater than 10°. All slopes greater than 10-15° would also have an 82.5-foot avoidance buffer along the slopes for all source points.</p> <p>This identification of slopes would also include all polar bear (and likely grizzly bear) denning habitat.</p> <p>While snow ramps are not mentioned in this document on page 12 of the plan of operations it is mentioned the operator with make snow ramps.</p>	<p>The operator should ensure adequate FLIR surveys are conducted and minimize travel in these areas.</p>

Topic	Comment	Recommendation
Field operations, page 8.	There would be approximately 6,459 miles of receiver lines and 3,237 miles of source lines in the Program Area. Receiver lines would be traveled twice, once to lay out the receivers and again to pick up equipment after recording. Source lines would be traveled by the advance crew in Tuckers to identify hazards and conduct ice stability checks and then would be traveled by one vibroseis vehicle.	The plan of operations identifies that all source lines are scouted with vehicles equipped with FLIR. The proponent should either scout the receiver lines as well or explain why this mitigation is not required.