Thank you for the opportunity to submit my comments regarding the EA for the proposed Marsh Creek East Seismic Exploration project (the Project).

I am opposed to this proposed seismic project on the basis of many considerations. The most overwhelming of this is that oil and gas exploration does not belong on the North Slope coastal plain, and particularly within the confines of the Arctic National Wildlife Refuge. I understand that “an oil and gas program on the coastal plain” was added on to the purpose statement of the Refuge in the 2017 Job and Tax Act (P.L. 115-97). However, I will continue to protest that any oil and gas exploration or development in the Refuge violates the human rights of nearby indigenous communities; threatens the already low Southern Bering Sea polar bear sub-population; endangers clean water and air; endangers the recreational value of the refuge (one of the original stated purposes); endangers bird, mammals, marine mammal and aquatic populations that live on or utilize the unique Coastal Plain habitat for breeding, denning, predator protection and other life needs; endangers many species of plant, lichen and moss growth and thereby threatens caribou populations through decline of nutrient rich forage; negates the wilderness value of the Wilderness designated parts of the refuge through noise, visual and possible air pollution; and is contrary to the original 4 purposes for which the Refuge was created. Additionally, it is of questionable economic benefit and will contribute to the warming of the Arctic and to the climate emergency.

The Gwich’in consider this whole area as sacred, as noted in the EA. The Gwich’in depend on the Porcupine Caribou Herd, which in turn depends on the coastal plain habitat for calving and post calving activities as well as predator escapement. They call this land “The Sacred Place Where Life Begins”. However, the EA did not address any way to reconcile seismic exploration and oil and gas development with this sacred land status. Former Senator and Governor Frank Murkowski addressed this concern (during public testimony before the AIDEA) by stating it was “just real estate”. The State of Alaska’s and present federal administration’s cavalier attitude about unceded lands that are particularly important to the culture and lifestyle of the indigenous peoples is a major violation of civil rights.

This EA reveals deficiencies in the Project operation. For one, the Project area abuts and even includes some of the area withdrawn from the current lease sale because of the caribou calving, as well as consideration of the polar bear and bird species that utilize the lands. The Porcupine Caribou Herd, muskoxen, polar bears and other larger mammals that utilize the coastal plain could be threatened by habitat fragmentation as the compacted roads create roadblocks in travel through the refuge. The polar bear dens (pregnant sow and sows with cubs) might also be significantly disturbed despite a protocol of creating an activity buffer of one mile in all direction from KNOWN den sites. The Southern Beaufort Sea polar bear sub-population is already low and the EA admits that the density of polar bear dens in the Project Area is significantly higher than in existing industrial areas, so there is a much greater likelihood of disturbance from seismic activities. The EA also notes that the SBS bears already tend to be more nutritionally deficient; loss of sea ice, and therefore proximity to the polar bears’ main food source of seals, will make this even more profound. Polar bears reproduce very slowly, and nutritionally deficient polar bears may not implant the fertilized egg at all or be limited to just one cub. All of this means that any disruption in the SBS polar bear’s reproductive cycle through disturbance of the dens could result in a long term effect on the SBS population numbers and viability. Although it is not as threatened a population, many of the same concerns apply to the grizzly bear that den and feed in the area.

Muskoxen disturbance is also noted, as muskoxen have been seen to react to seismic activity as far as 2.5 miles away. Muskoxen are particularly susceptible to disturbance during the winter months, when they survive by utilizing stored fat and moving as little as possible to preserve energy.

Water resources in the arctic are scarce. One of the original purposes of the Refuge is to ensure “water quality and necessary water quantity within the refuge” for the support and conservation of fish, wildlife and habitats. The Oil Leasing EIS did not do a new analysis of how much water is actually available on the Coastal Plain, nor did the EA address this factor. However, the operations plan calls for providing 2,000 to 3,000 gallons of water per day for camp use, by melting snow, transport from Kaktovik or Deadhorse, or if a low snow year from withdrawal from lakes. Snow in such cold and windy areas tends to be very dry and light and have a very low water content. Snow depth in the coastal plain is low and variable because of the dry climate and the channeled winds. Melting snow is a source of water for the existing lakes, as not a lot of it permeates into the ground due to the underlying permafrost. Withdrawal from tundra lakes presents its own problems. It can deplete already scarce oxygen reserves, leading to harmful effects to overwintering fish. This is especially true when the water is withdrawn from the upper zones of lakes where the oxygen supplies are most concentrated. Loss of available oxygen can induce what is known as ‘winterkill’ or mass mortality, which effects on fish populations can be permanent, and have extended effects to the ecosystem as a whole. Even if this worse case scenario does not happen, oxygen deprived fish can experience stress and serious effects which can affect reproduction, growth, and population long term viability. Lower water levels also cause deeper than normal freezing, which can affect invertebrate and aquatic plant communities and destroy fish eggs.

Grey water is proposed to be treated according to existing standards and then disposed of on the tundra, up to 5,000 gallons per day. This could create its own problems of infiltrating into and changing the make up of existing stream and lake water. It will also melt snow where it is discharged, and potentially cause icing, both of which will affect the underlying tundra and potentially change the permafrost conditions, which in turn will effect the plant life. Damage to tundra flora is slow to recover and can be noticed for many years. This could in turn effect caribou and other herbivore forage. It could also affect bird populations that need the area’s water sources.

A major effect of the Project will be the result of the the compacted roads, airstrips, and camp locations, which will be multiple and compose a grid of snow compaction disturbance. 50 trailers traveling over tundra on a 9 inch snow average, 300 X 400 foot camp areas, and airstrips that are 2,300 feet to 3,500 feet long and 75 to 100 feet wide will mean that a significant area of land will have compacted vegetation for 10 years or longer (especially for the camp areas). This will mean visual disturbances as the compacted areas show up first as dead vegetation and then as ‘greening areas’, visual from the nearby wilderness area mountains and partially visible from anyone rafting the rivers.

In addition, the EA acknowledges that “seismic impacts to tundra that lead to changes in forage quality and availability over the long term” could play a compounding role in caribou health and survival. One of the long term effects of vegetation compaction as well as of climate change is a decrease in lichen and moss cover, which would significantly impact caribou health.

Thermal change is expected under snow compacted areas as there will be less frost penetration during winter months. This will lead to “changes in the thermal regimes” of the active upper layers of soil, and melting or collapse of ground ice. In addition to contributing to a change in plant cover, melting of tundra would be a significant source of new methane release, contributing to the ozone layer damage and climate change. The EA notes that “…warming trends in the Arctic could significantly affect subsistence harvests and land use if warming trends continue as predicted, potentially impacting infrastructure, travel, landform integrity, sea ice, river navigability, habitat, availability of fresh water, and availability of terrestrial mammals, marine mammals, waterfowl, and fish, and ethnographic resources” however it doesn’t consider this further as it says the change would not be “universal or predictable across the Project Area”. It must be noted that the seismic activities by itself would contribute to the climate warming through tundra and vegetation damage, ground ice and permafrost melting and changes to water levels, as well as by the human activities and emissions of the large camp, its energy source, and the many camp vehicles. In addition, consider that the seismic activities are a precursor to oil and gas development, which would be even greater contributors to the warming of the arctic and the fundamental changes to Arctic flora, wildlife and community life in the area. This is in direct violation of the original stated purposes of the Refuge, which are:

1. to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to, the Porcupine caribou herd (including participation in coordinated ecological studies and management of this herd and the Western Arctic Caribou Herd), polar bears, grizzly bears, muskox, Dall’s sheep, wolves, wolverines, snow geese, peregrine falcons and other migratory birds and Arctic char and grayling;
2. to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;
3. to provide, in a manner consistent with the purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;
4. to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the Refuge;

The EA lays out the probable changes to the area from the warming climate, such as “far larger shifts in the composition of Arctic tundra toward increased shrub height and cover extent, tree encroachment north of the Brook Range and increased grass and sedge species…likely at the expense of lichen and moss cover”. Note that lichen and moss cover are a primary source of caribou nutrition. It also lists sea level inundation, increased salt marshes, and increased erosion of coastal buffs. However, it neglects to consider that this seismic activity, as well as the expected oil and gas development that will follow, are in themselves contributors to the climate change and therefore to it’s deleterious effects as noted. The original NEPA guidelines call for consideration of cumulative effects, and this is particularly important when considering the effects of climate change. No part of our biological world operates in isolation, and no effects to the ecosystem are without cumulative and extended effects. I therefore assert that this EA is significantly lacking in considering the effects of the Project’s change to the ecosystem through climate warming, and of taking the effects that the project research might lead to (oil and gas development) into consideration, and during a thorough study of the possibilities and whether or not any mitigating measures might be effective. Only then will the Project be able to be properly evaluated and its potential outcome weighed against it’s effects on the Arctic Refuge, the coastal plain, the arctic environment, the wildlife and the people who live there and/or depend on it for their survival.

As the Gwich’in communities of Arctic Village and Venetie, who depend on the Porcupine Caribou Herd for their subsistence needs and cultural identity, have large percentages of residents living below the poverty level, this Project cannot be considered without taking into account the environmental injustice that it could cause to these communities. The long term and cumulative effects of climate change would be felt by them, and must be part of the Project assessment.

Sincerely,

Loren J Karro

Co-Leader

Alaska Soles Broadband

Great Old Broads for Wilderness

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