

May 26, 2017

Mackenzie Valley Environmental Impact Review Board
200 Scotia Centre
Box 938, 5102-50th Ave
Yellowknife, NT X1A 2N7

Attention: Chuck Hubert, Senior Environmental Assessment Officer

Dear Mr. Hubert:

**Re: CANADIAN ZINC CORPORATION - PRAIRIE CREEK ALL SEASON
ROAD - EA1415-01 [2014]
Liidlii Kue First Nation - Closing Arguments**

Liidlii Kue First Nation (LKFN) shares the following positions and makes the following recommendations to the Board in respect of the proposed Canadian Zinc Prairie Creek All Season Road Project.

Karst and Permafrost erosion

LKFN's remains concerned that high volume traffic increases the potential for significant adverse impacts to permafrost and karst areas.

There is a lack of evidence on which to assess the full significance of these impacts or the adequacy of mitigation, as CNZ has not provided a detailed design of the proposed road and the road alignment. Accordingly, the impacts to karst and permafrost cannot be properly assessed, and precautionary measures are required.

Fine grain soils affected by thawing permafrost could potentially result in road degradation causing significant adverse impacts. Tetra Tech gives an example in their report that "[s]nowdrifts tend to reduce cooling of the ground in winter, thus gradually allowing the permafrost to warm and eventually thaw, starting at the toe of the embankment. Such thaw tends to result in undesirable ponding of water, contributing to further thermal erosion."

Kevin Jones of Tetra Tech stated during the public hearing that

The issues of permafrost and degradation are certainly typically more challenging in the finer grain soils, of which there does not appear to be a great extent of the fine-grain soils.

The above statement does not appear to be made in reference to any evidence on the record supporting that there “does not appear to be a great extent of the fine-grain soils”. The Tetra Tech mapping summary report makes reference to fine-grain soils being present but does not indicate how much of the mapped road is affected by fine grain soils.

As such it is not clear how much of the roadway could result in significant adverse impacts due to issues surrounding permafrost and thermokarst areas.

LKFN supports Tetra Techs recommendations to mitigate potential risks in an effort to “preserve ice-rich permafrost, thereby maintaining embankment integrity and reducing the likelihood of environmental impacts associated with permafrost thaw.”

Recommendations

- 1) The Review Board should consider measure that the detailed road design be independently reviewed prior to the approval of construction, and that the proponent be given specific directions to obtain adequate site-specific data respecting ground composition, soil structure, etc., to ensure the adequacy and effectiveness of the design to mitigate impacts to karst and permafrost, maintain embankment integrity, and avoid other environmental impacts associated with permafrost thawing.
- 2) The Review Board should also consider measures consistent with Tetra Tech’s recommendations in their summary report specifically:
 - selecting suitable embankment design and construction techniques where there is the potential for differential settlement of embankment material due to bog peat.
 - natural surface water drainage paths should be preserved and diverted if/where necessary to avoid water from pooling along road embankments.
 - drainage structures designed to reduce the likelihood of thermokarst development.
 - diversions should direct surface water toward and along existing natural drainage paths.
 - flatter fill slope gradients need to be considered to reduce the likelihood of snow drifting against the road embankment resulting in the thawing of permafrost.
- 3) LKFN also recommends the Review Board establish measures that require affected First Nations, including LKFN, to be included in the review of the road design and monitoring during construction.

Water Quality

LKFN’s has ongoing concerns regarding the potential for significant adverse impacts to the water ecosystem resulting from, but not limited to, acid road drainage and metal leaching; sediment; spills; blasting; resulting from road construction and operations.

Recommendations

- 4) LKFN supports the recommendations of Environment and Climate Change Canada as outlined in their report.
- 5) LKFN requests Review Board to require measures to ensure that baseline studies on TSS and turbidity be completed before construction and throughout the permitting phase.
- 6) The Review Board should further require that First Nations, including LKFN, be involved in the studies and monitoring of the vegetation.

Vegetation

LKFN's concerns regarding the viability of offsetting to address impacts to vegetation. There is the potential that the project will have significant adverse impacts on rare, valued and protected plants and assemblages. Also, there is the potential for significant adverse impacts to result from invasive species.

LKFN supports Parks Canada's position that there is a lack of evidence on the potential impacts to vegetation, and notes that without further evidence it would be difficult to ascertain if there would be any significant adverse impacts to vegetation.

Recommendations

- 7) LKFN supports Parks Canada's recommendations as outlined in their report.
- 8) LKFN requests the Board to require that studies be conducted on vegetation along the final road alignment prior to construction, and that such studies include assessments of the potential for significant adverse impacts from invasive species on riparian habitat within the project.
- 9) LKFN further recommends that the Board require a measure for an ongoing monitoring of vegetation and impacts to vegetation in the area of final alignment during construction and operations;
- 10) LKFN requests the Board to recommend that First Nations, including LKFN, be involved in the above studies and monitoring of the vegetation.

Impacts to Wildlife

LKFN's remains concerned that there is the potential for significant adverse impacts to mountain caribou, both sentinel and migratory herds, and that CNZ's conclusions on trace occurrences of mountain caribou is inconsistent with the evidence.

It is LKFN's position that without proper wildlife baseline studies and ongoing monitoring is it impossible to determine the extent or severity of impacts to the wildlife.

Parks Canada points out the data relied on in the DAR supporting the assertion that the project area is outside the caribou species defined range is both incorrect and outdated.

LKFN accepts Parks Canada's findings that there is the potential for significant adverse impact to mountain caribou resulting from the proposed road. Potential impacts "include, but are not necessarily limited to, avoidance of the road (resulting in fragmentation/loss of habitat effectiveness), noise disturbance, increase in predation risk, and direct mortality."

The LKFN did not find the Government of the Northwest Territories 2012 Boreal Caribou Species Status Report relevant to the assessment of the project, as it provided little information concerning the mountain caribou, sentinel caribou and the migratory herds that are known to live in the project area.

Recommendations

11) LKFN strongly supports Parks Canada's recommendation that CZN develop a caribou monitoring program, and recommends that the Review Board to require a measure to ensure that studies on the presence of sentinel and migratory mountain caribou herds within the project area are carried out prior to road construction.

12) LKFN also requests the Review Board to require measures that CNZ develop a monitoring program to address potential impacts to the caribou from the construction and operation of the all-season road throughout the project area.

LKFN supports the Parks Canada recommendation that the monitoring program "must include annual aerial surveys to provide a population index and composition during rut and additional seasonal ungulate surveys as required.

Track and scat surveys or the use of a camera trap design could also be implemented. Monitoring that would include local Denendeh Resource monitors".

13) The Review Board should also require a measure that local resources monitors from the affected First Nations, including LKFN, be involved in the development of a monitoring program and throughout the monitoring program.

Impacts to Fish and Fish Habitat

LKFN's remains concerned that the proposed road construction, realignment, and traffic will have significant adverse impacts to the arctic grayling and trout in fish bearing streams.

LKFN notes that the Fisheries and Oceans Canada defines serious harm to fish as including the death of fish; permanent alterations to the fish habitat; or destruction of fish habitat.

Fisheries and Oceans Canada confirmed on the record during the hearing that the road realignment will result in serious harm to fish and fish habitat and that this is a significant adverse impact.

The evidence supports that the project will cause serious adverse impacts to the fish and fish habitat.

Recommendations

- 14) LKFN supports the Fisheries and Oceans recommendations outlined in their report.
- 15) LKFN requests the Board require a measure to ensure that baseline studies are completed by the proponent in advance of construction to quantify fish and fish habitat along the proposed alignment.
- 16) LKFN requests the Review Board require the proponent to conduct an independent review of proposed methods to mitigate the risk for significant adverse impacts to the fish and fish habitat prior to approval of the final road design.
- 17) The Review Board should establish a measure requiring First Nations, including LKFN, be involved in all studies, review and monitoring relating to fish and fish habitat.

All season road driver safety

LKFN remains concerned that the risk of accidents resulting in injury and/or death to persons and/or causing environmental damage has the potential to cause significant adverse impacts without proper measures in place.

Specifically, LKFN has concerns regarding:

- the extreme traversing of terrain along the ROW including the risk of incidents occurring on passes; the narrow bridge and road width; increased high traffic of an all-season road; risk of approaches; and potential for low visibility of signage during winter weather conditions
- the risk of avalanches occurring with lack of proper avalanche response procedures in place
- the compounding of risks (passes, terrain, driver speed, weather, darkness, load weight, etc.) resulting in higher risk situations

LKFN does not believe that these concerns have been adequately addressed during the hearing, and that further work is required to address our concerns on the basis of evidence. Neither the Oboni Riskope Risk Assessment Technical Report or the proponent's studies provide an adequate evidentiary basis on which our concerns can be addressed.

Mr. Alan Taylor, COO of Canadian Zinc (CNZ), recognized the lack of evidentiary basis and made a commitment on day 3 of the public hearing that CNZ would develop an independent technical review panel to assess the potential risks of the all-season road:

CNZ is proposing to form an independent technical review panel, referred to as the panel, whose mandate would be to recommend road design principles and evaluate. And if necessary, improve the current status of risk assessment relating to the all-season road to ensure that impacts to the safety of the people and environment are minimized satisfactorily.

The panel members' selection process leading to a committee would include the development of a short list of potential candidates who are professional engineers who have worked on previous projects in the North and submit their report to the regulatory authorities prior to construction of the road. (page 242, April 28, 2017 transcripts)

CNZ's response to the public hearing undertakings provided an updated risk assessment table which indicates that 21.6% of the proposed road currently falls within the high to very high range for risk. This is equivalent to 37.7 kilometres of the road.

It is LKFN's position that 21.6% high to very high risk should be viewed as a significant adverse impact increasing the risk of injury, death or environmental damage.

Recommendations

- 18) LKFN recommends the Review Board to consider measures, consistent with CNZ's commitment above, to require an independent technical review panel to assess the risks and consequences of the proposed road prior to approval of construction.
- 19) The Review Board should further require the proponent to generate additional data prior to road construction, particularly in the portions of the road noted as having high potential for significant adverse impacts, and provide such data to the independent technical review panel.

Heritage Resources

LKFN considers the Nah?a Dehe to be a special sacred area, and remains extremely concerned about potential impacts to heritage resources.

Park Canada states in their report that "Incorporating traditional knowledge from all Indigenous groups that may have knowledge of the project area is a critical component of an AIA prior to commencing field work".

During the public hearing evidence was provided by LKFN members that they have traditional knowledge and still maintain their way of life, including their aboriginal rights of hunting, trapping and fishing in the proposed project area.

Recommendations

LKFN supports Parks Canada's recommendations outlined in their report in regards to archeological impacts.

- 20) The Review Board should require a measure under which the proponent will undertake detailed heritage resources field surveys of the final road alignment prior to construction, and develop mitigation measures in respect of any heritage resources identified during those studies.
- 21) The Review Board should establish a measure requiring First Nations, including LKFN, be involved in all studies and in the review of any proposed mitigation and monitoring relating to heritage resources.

Cultural Traditions

LKFN's position is that the project will cause a disruption to the Dene way of life, including significant adverse impacts on the fish and wildlife. The impacts could result in diminished supply of culturally important resources.

LKFN also believes that the project has the potential to have significant adverse impacts on the Dene beliefs, values and practices.

LKFN notes that the proponent has previously committed to funding a traditional knowledge study with LKFN, but that this commitment has not yet been fulfilled.

Recommendations

- 22) LKFN recommends that the Review Board establish a measure requiring the proponent to fund and support a study by LKFN on the impacts of the proposed development on the Dene way of life prior to construction, and to engage in discussions with LKFN to identify mitigation measures in respect of such impacts.

Respectfully yours,



Gerald Antoine
Chief
Liidlii Kue First Nation

c.c. Larry Innes
c.c. Magnolia Unka-Wool