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Oral Presentation

Exposé oral

Written submission from the Prince Albert Grand Council

Mémoire du Prince Albert Grand Council

In the Matter of

À l'égard de

**Regulatory Oversight Report for Uranium
Mines, Mills, Historic and Decommissioned
Sites in Canada: 2017**

**Rapport de surveillance réglementaire des
mines et usines de concentration d'uranium et
des sites historiques et déclassés au Canada :
2017**

Commission Meeting

Réunion de la Commission

December 12, 2018

Le 12 décembre 2018



Prince Albert Grand Council's written intervention regarding the Regulatory Oversight Report on Uranium Mines, Mills, Historic and Decommissioned Sites in Canada: 2017.

This backgrounder summarises the materials presented in the Regulatory Oversight Report (ROR) 2017 prepared by the staff of the Canadian Nuclear Safety Commission (CNSC). The ROR 2017 provides an update based on the assessment of licensee performance of uranium mine in Canada prepared by the CNSC staff. It includes information the Uranium Mines, Mills, historical and Decommissioned Sites in Canada with a particular focus on northern Saskatchewan. It also includes some options to further Aboriginal participation in mining such as job creation options, engaging elders and youth in habitat restoration initiative.

The purpose of the ROR informs that CNSC wants to keep the public informed of scientific, technical and regulatory activities concerning the operating and decommissioned mines including health and safety issues.

In this regard, The ROR contains a detail information on the monitoring activities concerning health and safety issues of uranium mines (radiation and environmental hazards connected to mining dust and leaching). In this regard, mine-specific monitoring results are presented. It confirms that the uranium mines in Canada are maintained all safety features needed to address health and environmental concerns.

Additionally, CNSC managed engagement activities are discussed in this report. Concerning engagement, a detailed accounting is provided. This includes public meetings, updating websites and supporting information booths, funding options, and coordination of meetings. As per the report, participants of the engagement activities have been several provincial bodies who support mining, Aboriginal Affairs, Environmental Quality Committee (EQC), community from greater northern Saskatchewan (32 communities) and students.

In addition to the engagement meeting and information sharing, funding for participation, the contribution in the employment of Aboriginal communities is highlighted in this report as a success of mining operation. Given employment is a significant challenge that FN communities face, this issue to be discussed further. As per the 2017 report, the northern mines employed over 2,400 people in direct and contract jobs. The mines maintain a high northern participation rate with 48 percent of mine employees classified as northerners. Northern mines are one of the largest employers of Indigenous peoples in Canada. However, several issues are unanswered in this regard. They are as follows:

- (i) How do the jobs in mining affect the Aboriginal livelihoods?
- (ii) Who actually can participate in mining jobs?

We are aware that the fly-in/fly out modes of jobs are an issue especially for the women workers in mines up north. This mode of job provision often separates the moms/dads (single parents?) working in mines from the rest of the family members. Not surprising that younger children suffer most due to the absence of either parent. We have examples of high-level suicides among Aboriginal youth.

We need to ask the questions to CNSC if they can share the information on this like:

- (i) Does the work mode at mines actually lead to more separation to the working families?
- (ii) Does the CNSC collect the statistics on the participation rates between men and women?
- (iii) What is the level of participation of women in the mining sector is an important question?

We have an understanding that mining is mostly a man's job.

Secondly, Absenteeism is a big issue in mining jobs considering Aboriginal communities. Absenteeism is not desired as skilled workforce is lost from job pools. We need to know about the following questions.

What are the dropout or absentee rates in mining jobs considering Aboriginal workers?
What are the impacts of layoffs or job loss to Aboriginal communities?

Also, if the Aboriginal workers are not willing to return in mining jobs, then the reasons behind it to be investigated.

In summary, it is important to know if the mining related jobs support the livelihoods and related community well-being or create more adverse livelihood conditions than FN member can handle.

Proposal: If those types of works have not been done yet, then it is a necessity for the CNSC to look into the matter on an urgent basis. To address the issue, the CNSC can make funds available for PAGC or FSIN to embark on a joint study in this regard through a partnership between the USASK and PAGC/FSIN where USASK can also take part to support the research component.

Decommissioning and First Nation participation:

The ROR indicates that licensees are required to develop preliminary decommissioning plans and associated financial guarantees to ensure work activities are covered financially and work is guaranteed for completion with no liability to the Government. Financial guarantee values for the operating mine and mill facilities range from approximately C\$48 million at the McArthur River operation to C\$218 million at the Key Lake operation (page-16). The ROR does not say in details if the FNs are engaged in planning phases of the decommissioning process. However, it confirms that the contractors collect the samples of waters, air and plants/animals from decommissioned and operating mines. Maybe the CanNorth is involved in this process. Also, there is a community-based monitoring program and therefore certain level of Aboriginal Engagement is ongoing (see below). CanNorth especially has programs related to ecosystem

monitoring in Blake Lake SK or similar regions up north. For more information see the link <https://cannorth.com/projects-2/>

Proposal: Can there be a long-term funding arrangement to train the Aboriginal youth/organizations so that they can take part in decommissioning and/or reclamation activities?)

Reclamation efforts and First Nation Participation: As per this report, Rabbit Lake Mine has an ongoing reclamation program and reclamation activities will continue throughout the care and maintenance period. Cameco manages the activity and it is responsible for notifying the CNSC of activities or timeline for decommissioning change based on the current operating status.

Questions: Can the CNSC or mining companies support Aboriginal control reclamation initiatives as a test case within a framework such as Species at Risk program including Woodland caribou?

Proposal: Supporting the reclamation program is vital for wildlife habitat recovery including woodland caribou conservation and it can also create employment. As per our information reclamation programs are not effective in most cases in Saskatchewan focusing the northern region and communities does not know about the extent of the programs and effectiveness of them.

Also, it is not yet done much say to conserve the woodland caribou in comparison to the other province nearby such as Alberta. Alberta has a reclamation funding for habitat recovery focusing woodland caribou through an industry-caribou project with a provision of Aboriginal community participation. For example, Cenovus Energy announces \$32 million caribou habitat initiative in 2016 (see this link: [https://www.cenovus.com/news/news-releases/2016/06-14-16-Cenovus-announces-\\$32-million-caribou-habitat-initiative.html](https://www.cenovus.com/news/news-releases/2016/06-14-16-Cenovus-announces-$32-million-caribou-habitat-initiative.html)). In this regard, road closure is an effective measure accompanied by tree plantation for wildlife conservation. It is not know if Cameco/AREVA will employ this approach. Funding needs to be arranged, then PAGC can engage community/youth to participate in this type of conservation program such as regeneration of trees and plants in disturbed areas. For proceeding with this type of initiative engaging traditional knowledge is a must. Also, performance monitoring study focusing this approach has to be ensured where FN youth and Elders are engaged.

Human health monitoring in northern First Nations communities:

The ROR indicates that uranium mine and mill licensees in Canada are required to implement and maintain health and environmental protection programs. In this regard, the CNSC uses Safety and Control Area (SCA) Framework where 14 different criteria (See Figure-xx, Ref. ROR page-17) need to meet to qualify the mining safety standards. The framework is subdivided into three major SCA including radiation protection, environmental protection, and conventional health and safety. The rating used to assess safety features include:

- Fully satisfactory (FS);
- satisfactory (SA);
- below expectations (BE); and
- unacceptable (UA).

In this regard, radiation protection is a key measure to protect human health. Under the radiation protection program, contamination levels and radiation doses received by individuals are monitored, controlled and maintained below regulatory limits and as low as reasonably achievable (ALARA). To maintain the safety of the workers, nuclear energy workers are issued optically stimulated luminescence dosimeters that measure external gamma radiation exposure and resulting doses. ROR reports that both the operating and decommissioned mines in Saskatchewan have been maintaining health and safety standards as per the SCAs.

Overall environmental health monitoring in the land, lakes and rivers....in the plants and terrestrial animals

Technical monitoring: Expert/scientist driven monitoring activities such as air or water chemistry of mining facilities or pits including tailings. The ROR indicates that environmental monitoring is done to identify, control and monitor releases of radioactive and hazardous substances and effects on the environment from facilities as a result of licensed activities.

Both CNSC and the licensees conduct the environmental monitoring. Also, community-based monitoring is ongoing for water, animal and plants to understand the impacts of mining on the ecosystem and human health (See below). The results from both types of monitoring (CNSC and Company directed) are compared for accuracy. For decommissioned mines, monitoring is done in two years and for operating mines, it is done on a yearly basis. The oversight report confirms that the 2017 performance of all five uranium mine and mill facilities for the environmental protection rating was “satisfactory” from environmental standpoints. The report also concludes that the licensee’s environmental protection programs were effectively implemented and met all regulatory requirements. Environmental monitoring includes air, water, plants (blueberries and Labrador tea) and animal (white fish/northern pike) samples.

Below is an update on the four mines concerning environmental monitoring where the types of samples used and status of mine is also discussed.

Northern SK’s 37 abandoned mines issues

During the 1950s and 1960s, uranium mines and small prospecting sites were developed and operated across northern Saskatchewan by private exploration companies. The sites and mining operations were later abandoned with little consideration to environmental protection or aesthetics. At that time, there was insufficient environmental legislation in place to guide site decommissioning and reclamation. More than 50 years have passed and these abandoned mine sites have deteriorated, creating conditions that pose risks to local residents and the environment. In 2006, the governments of Canada and Saskatchewan contracted SRC to manage the cleanup of 37 abandoned uranium mine sites (Project CLEANS), near Uranium City. (Source: <https://www.src.sk.ca/project-cleans/mine-and-mill-sites>)

Question: Does CNSC have any information on safety issues related to human and ecosystem to share about the 35 mines? The ROR includes the updates on the environmental safety issues of the Gunnar and Lorado sites that are abandoned too.

Flooding issue: Gunnar and other mines

ROR says there is no liquid effluent at the Gunnar site; however, there is overland flow and seepage from the site into local water bodies. (Page -115 of ROR)

Questions: What is the risk of flooding of this and other mines of the Black Lake, SK area? Do they have any flood mapping (**flood hazard risk assessment**) of the 37 uranium mines to measure the risk of overspill of mine pits or flooding of tailing ponds? Research says rainfall/precipitation rates may increase in Arctic and Mid-Arctic Canada) with the warming up of weather (See <https://www.enr.gov.nt.ca/en/state-environment/13-projected-trends-temperature-and-precipitation-arctic>)

Anticipation: We need to worry about the abandoned mines that did not go through any decommissioning processes and regulations were not strict as is the case for operating mines.

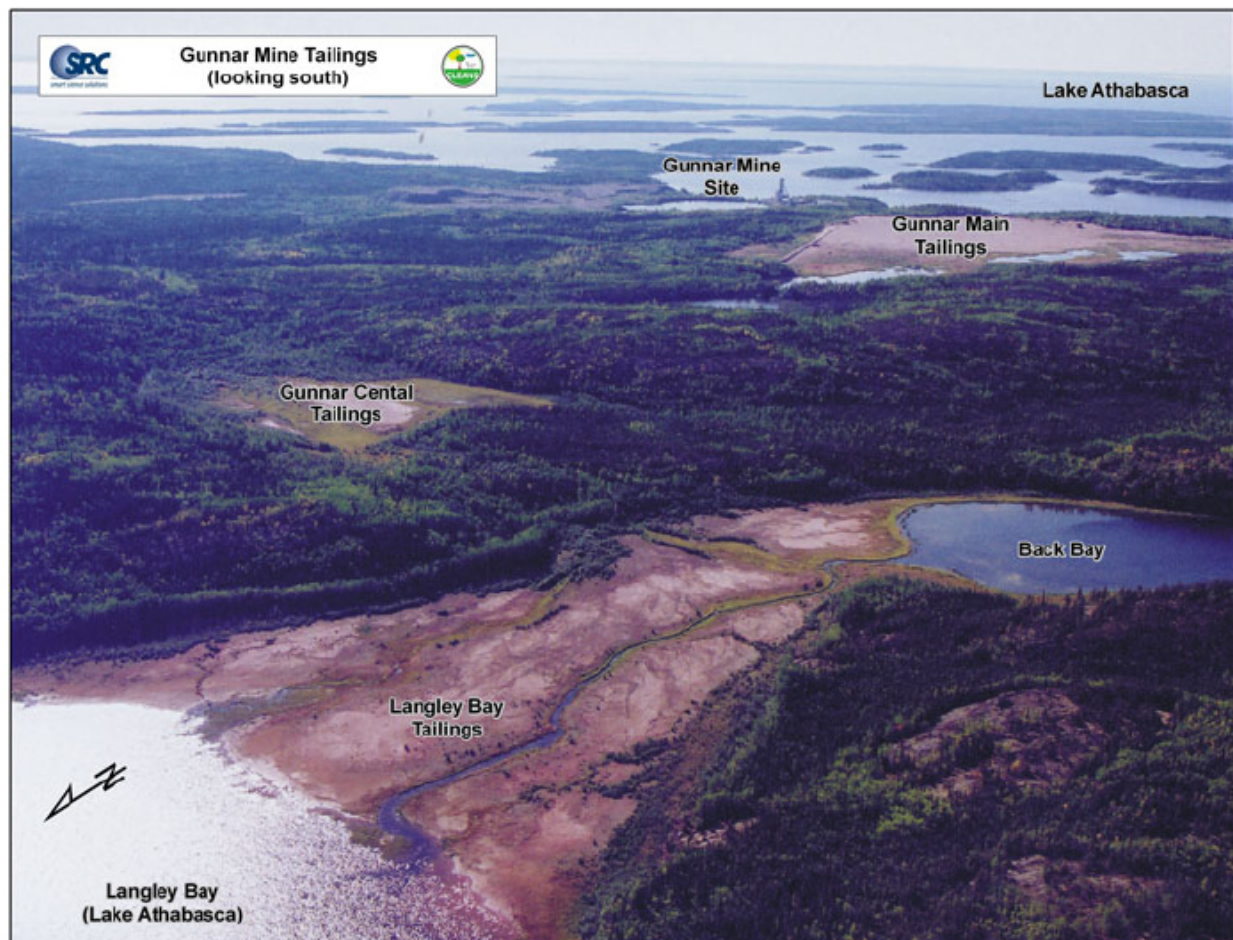


Photo of Gunnar Mine Site

Source: <https://www.nrcan.gc.ca/evaluation/reports/2012/790>

1. **Lorado Mine:**

- a) **Revegetation:** The Lorado uranium mill operated from 1957 to 1960 and was abandoned in the 1960s without any decommissioning or remedial work. The Saskatchewan Research Council (SRC) oversees the ongoing management and remediation of the Lorado site. The CNSC report says, in 2017, SRC continued to monitor the local environment and the progress of the **revegetation of the cover.**

Question: Do they use TEK here or just the science to understand the revegetation process?



Lorado Mill Site, SK (Source: SRC <https://www.src.sk.ca/project-cleans/lorado-mill-site>)

b) **Fish advisory due to elevated selenium levels:**

The public has also been advised of those water bodies where fish consumption should be limited due to **elevated selenium levels** as a result of past mining and milling activities at the Beaverlodge site and milling at the nearby Lorado site (page 118 of ROR)

Question: Do they compensate the loss or any long term compensation for the works loss related to fishing and subsistence? If they don't, do they offer an alternative source to fishing, I think this point should be discussed

2. **Fire protection:** Fire is a serious hazard in mines and outbreaks of fire underground can be particularly dangerous due to entrapment, smoke inhalation, serious or fatal burns, asphyxiation and other serious consequences such as explosions. The ROR says fire protection is part of the operating performance measurements of the CNSC for the facility/mines and it applies to both decommissioned and operating mines. Fire emergency preparedness and response. No information was available in ROR on the fire incidences.

1. **Key Lake Mill Point-** 44 entries (2014)- Surface waters- Public and the environment around the Key Lake mill are safe and there are no health impact.
URL: http://nuclearsafety.gc.ca/eng/resources/maps-of-nuclear-facilities/iemp/key_lake.cfm

2. **McArthur River**- 22 entries- Surface waters- Public and the environment around the mine are safe and there are no health impacts. URL- <http://nuclearsafety.gc.ca/eng/resources/maps-of-nuclear-facilities/iemp/mcarthur.cfm>
3. **MacClean Lake** (2016)- 714 entries. (i) Air, (ii) fish (Northern pike/Lake white fish) and (iii) plants (blue berry/Labrador tea). URL: <http://nuclearsafety.gc.ca/eng/resources/maps-of-nuclear-facilities/iemp/mcclean-lake.cfm>
4. **Cluff Lake closed mine** (2017): It has 696 entries. Surface waters and food samples (i) Fish (Lake white fish and northern pike), (ii) Plants-(Blue Berry, Labrador Tea). Public and the environment are protected and here is no unreasonable risk to health and the environment. <http://nuclearsafety.gc.ca/eng/resources/maps-of-nuclear-facilities/iemp/cluff-lake.cfm>

Community-based environmental monitoring: The ROR indicates about a community-based monitoring called the Eastern Athabasca Regional Monitoring Program (EARMP). The program was established by the province of Saskatchewan in 2011. It monitors the safety of traditionally harvested country foods through analysis of water, fish, berries and wild meat.

Under this programs the following data is collected:

- Water chemistry samples from each community sampling area;*
- Large-body fish flesh chemistry (lake trout and lake whitefish) from each community sampling area;*
- Berry chemistry (bog cranberry or blueberry chemistry from each community sampling area);*
- *Soil chemistry and characterization from each berry sampling location;*
- Moose and/or barren-ground caribou chemistry from each community sampling area; and*
- Mammal organ chemistry (livers and kidneys) from community sampling areas.*

As per the ROR, the contractor of this program is a northern Saskatchewan Indigenous-owned business, but it does not say who. Communities involved in the EARMP include Black Lake, Camsell Portage, Fond du Lac, Stony Rapids, Wollaston Lake/Hatchet Lake, and Uranium City. As per the ROR, this program has demonstrated that concentrations of chemicals of interest have been relatively consistent over time and generally within the regional reference range (usual range found in natural systems) indicating little evidence of long-range transport of contaminants associated with uranium mining. It also confirms that operating uranium mines and mills are not affecting the safety of country foods at nearby communities. This report confirms that CNSC staff continue to support the EARMP and are working to collaborate opportunities for this valuable program further. This information indicates that a CNSC-Community collaboration on environmental monitoring exists at this point. For more information on this program, see the

link: <http://earmp.ca/community.html>; for sampling locations and the types of samples see the link: <http://earmp.ca/maps.html>

Questions: Does the CNSC or Licensee of mine test the samples in several labs to verify the accuracy of results or the single lab is used? Also, what is the level of traditional knowledge used in this regard such in monitoring the health of animals and ecosystems in a disturbed landscape?

Caribou migration routes and the species at risk issue: The oversight report 2017, does not provide any information on the impacts of mines on migration routes of caribou or any other deer species. But it is understandable there is a large amount of research focusing barren ground caribou monitoring in connection with migration routes, loss of habitats, population. Several studies have confirmed that open access mines have certain impacts on caribou. Previous research on Caribou declines also confirms that caribou shy away from roads and avoid the dust from those roads that cover the vegetation the animals forage on. Caribou is sensitive to noise and tend to avoid noise from industry, and cleared lands from mining and drilling operations. These types of stresses to animals, interfere the feeding, the reproduction and calf productions, and ultimately cause their numbers to decline.

An Elder from Southend SK confirmed (during an interview conducted for the woodland caribou traditional knowledge research organized by USASK what PAGC supported) that he saw a dead caribou near a McLean Lake operation. A recent study by Jean Polfus from the University of Manitoba has confirmed that woodland caribou avoid mines for noise and other disturbances. Her study confirms that caribou avoids around 8 km radius from the center of mine.

A second Elder from the Southend SK community confirmed during the caribou traditional knowledge project that it is likely that the small animals like foxes and lynx can be entrapped in mine pits from steep slopes. It can happen the same with moose and caribou if they accidentally fall in the mine pits say a wolf pack chases them.

Proposal: Although there is a requirement to conserve all animals and plants for ecosystem management, woodland caribou has been central to this end. Given woodland caribou has been given much attention nowadays, this provides a unique opportunity for PAGC to make the CNSC know about exact partnership model with PAGC communities such as direct funding for caribou monitoring to Aboriginal members. The ongoing aircraft based control under the Environment Canada/Wildlife management program of Saskatchewan has no ability to track the records of Caribou habitat uses or population changes that happened historically. Engaging traditional knowledge can help in this regard. As it is, mining companies pay the University researchers for the Radio-color study. PAGC should be overly concerned about the data collection process through radio-colors and interpretation of data. As it is said, the radio-colors do not cover the historical records such as habitat use by caribou say 20 years from now. So, the data collection is not adequate through radio-colors.

If that is the case that Aboriginal members are not involved in caribou migration or disturbance research (such through a traditional knowledge project or in any other research), the initiatives can be taken to engage FN Elders and youth. If funds can be made available, PAGC can engage the University of Saskatchewan to train their youth through a tripartite engagement (PAGC-USASK-CNSC project) to support the program. Such as train the youth to collect scientific data and engage traditional knowledge for woodland caribou migration and other related monitoring needed to understand the impacts of disturbances in caribou ranges. PAGC has an ongoing relationship with the University of Saskatchewan for the Aboriginal Climate Adaption project.

Some relevant questions/options for improvements

1. As per the ROR, changes to compliance plans (health and environmental safety) are made on an ongoing basis by CNSC in response to events, facility modifications and changes in licensee performance are also done by them. (ref. page-9 of ROR)

Q-Is PAGC/FNs being made aware of the changes or communicated properly about it?

2. ROR says noncompliance exists in some cases with health and environmental inspections but as they are considered as low significance impacts, mining facilities are still okay to get a satisfactory rating.

Q-May CNSC provide the details on this like what are the criteria used for saying a low safety significance for the mining is satisfactory?

3. It is said in the report that when logistically reasonable, joint inspections are conducted with other federal, provincial or territorial regulatory agencies? (page-10)

Q-Do they take members from Aboriginal communities in Joint inspection team such as site visits?

4. **Long-term monitoring proposal:** PAGC can propose CNSC for a long-term Aboriginal community driven wildlife population monitoring programs using hunter's knowledge/ traditional ecological knowledge. PAGC can create a data repository under the control of PAGC where access can be available for funders including AREVA and CAMECO. They can use the data at need, but the owner of the data would be PAGC First Nations. At this point, only caribou traditional ecological knowledge (TEK) based available as per our record that is recent but there are hundreds of animals left unrecorded using TEK based research. Many animals and plants (foods, medicines) have strong cultural and ecological significance. An elder passed away means an important TEK holder or truly a library is lost forever if he/she is not able to pass his eco-cultural knowledge gather through social memories to a new generation.