



Supplementary Information

Presentation from Northwatch

In the Matter of the

**Cameco Corporation,
Blind River Refinery**

**Application to renew licence for Cameco
Corporation's Blind River Refinery**

Commission Public Hearing

November 24, 2021

Renseignements supplémentaires

Présentation de Northwatch

À l'égard de

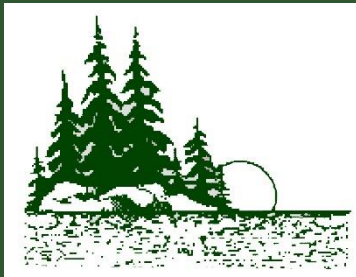
**Cameco Corporation,
Raffinerie de Blind River**

**Demande de renouvellement de permis pour
la raffinerie de Blind River appartenant à
Cameco Corporation**

Audience publique de la Commission

24 novembre 2021

CAMECO CORPORATION'S REQUEST FOR LICENSE RENEWAL FOR THE BLIND RIVER URANIUM REFINERY



Ref. 2021 – H-09

Northwatch

November 2021

Presentation to the Canadian Nuclear Safety Commission



LICENSE TERM

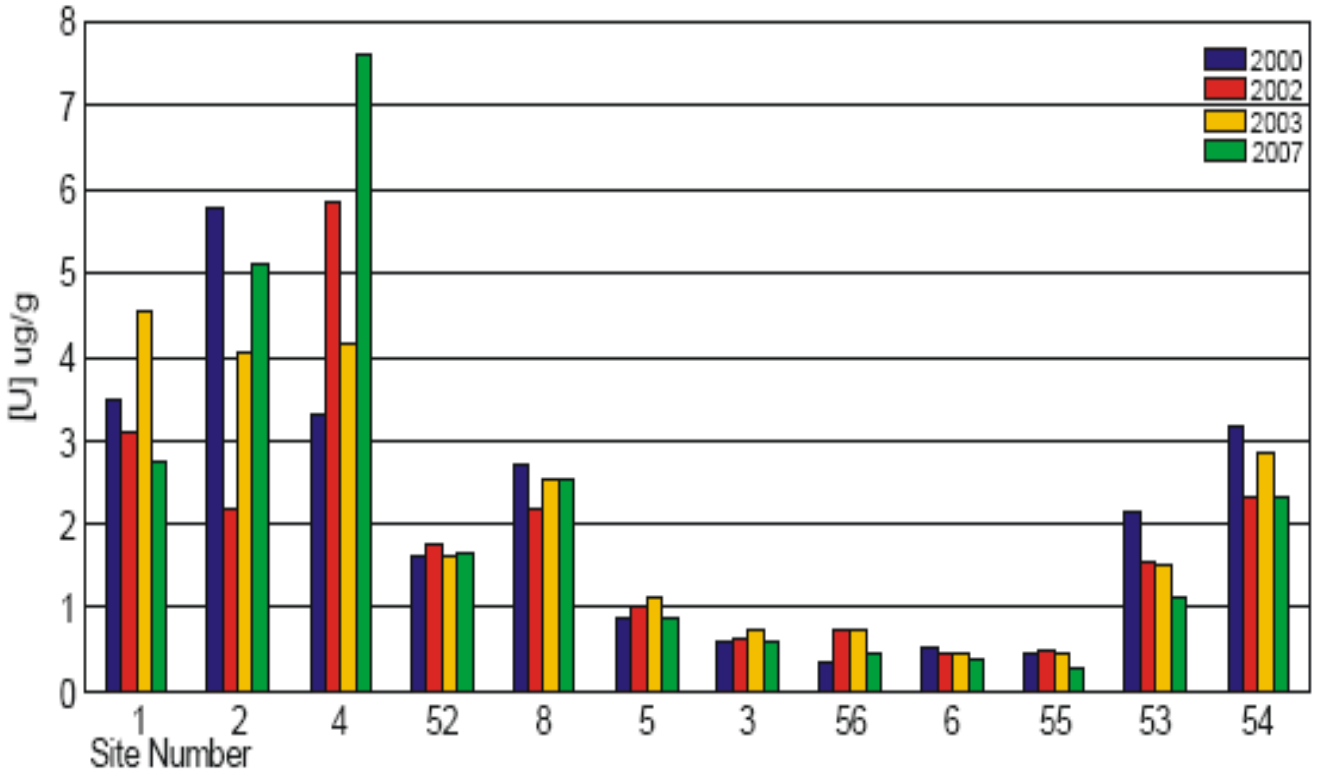
- **REQUEST:** That a licence condition be added that Cameco produce a mid-term performance report of sufficient detail to allow performance assessment on core criteria (e.g. protection of the environment, protection of human health, waste and transportation)
- **REQUEST:** That the mid-term performance report and review incorporate production and review of the Environmental Risk Assessment produced by Cameco and an Environmental Protection Report produced by CNSC staff
- **REQUEST:** That the Commission direct staff to organize the CNSC web page on Regulatory Oversight Reports to provide a complete listing of Regulatory Oversight Reports, including draft reports, and a calendar identifying upcoming comment opportunities on the same page.

URANIUM CONCENTRATIONS IN SOIL

- In support of Northwatch’s participation in the 2012 license review for Cameco’s uranium refinery near Blind River, the Elliot Lake Field Research Station personnel collected surface soil samples from 6 of the previously established OMOE locations in the vicinity of the Blind River facility on January 6, 2012. Site locations were found with assistance from Cameco staff and previous knowledge of the site locations. OMOE sites sampled were numbers 1, 2, 3, 4, 8 and 54. The details of the sampling program, sample results and analysis are included in the report “Soil Sampling Results, Cameco Site, Blind River, January 2012” which is attached to this report, as is the laboratory Certificate of Analysis.
- Due to winter conditions, the sampling was more limited than that which had been conducted by the Ontario Ministry of the Environment in years 2003, 2002, 2003 and 2007.
- Of the six sites which were sampled, four of the sites showed increases from the sample averages of 2007. Of those four sites, Sites 2 and 4 sampling results in 2007 had in turn indicated increases from the 2003 sampling results. These two sites also showed the most significant increase of uranium concentrations, with averages increased by close to 150% and 100% respectively. Two sites – Sites 1 and 8 – showed slight decreases in average concentrations of uranium in the soil samples.

URANIUM CONCENTRATIONS IN SOIL

Figure 3: Average Soil Uranium Concentrations (regular sampling) -2000, 2002, 2003, 2007



Source: Ontario Ministry of the Environment Report No.: Phyto-S5023-2007

URANIUM CONCENTRATIONS IN SOIL

Figure 2: Sampling Locations - Cameco Corporation, Fuel Services Division



URANIUM CONCENTRATIONS IN SOIL

Table 13: Average uranium in soil results, 2012 -20

| Parameter | Uranium (µg/g) | |
|------------------|------------------------------|-------------------------------|
| Location | Sampling sites within 1000 m | Sampling sites outside 1000 m |
| Depth | 0 – 5 cm | 0 – 5 cm |
| 2012 | 3.3 | 0.7 |
| 2013 | 4.3 | 0.4 |
| 2014 | 2.7 | 0.6 |
| 2015 | 3.8 | 1.4 |
| 2016 | 1.5 | 0.5 |
| 2017 | 1.6 | 0.6 |
| 2018 | 2.0 | 0.7 |
| 2019 | 2.1 | 1.0 |
| 2020 | 1.4 | 0.7 |
| Guideline | 23 ¹ | |

¹ Reference: Canadian Council of Ministers of the Environment, *Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health*, 1999.

Table 3.4: Soil monitoring results of uranium concentrations (µg/g) at the BRR facility (0-5 cm depth) [2-6]

| Parameter | 2015 | 2016 | 2017 | 2018 | 2019 | CCME guidelines [41] |
|---|------|------|------|------|------|----------------------|
| Average uranium concentration within 1,000 m | 3.8 | 1.5 | 1.6 | 2.0 | 2.1 | 23 |
| Average uranium concentration outside 1,000 m | 1.4 | 0.5 | 0.6 | 0.7 | 1.0 | |
| Maximum uranium concentration | 9.7 | 2.9 | 2.8 | 3.7 | 3.8 | |

URANIUM CONCENTRATIONS IN SOIL

- **REQUEST:** That the Commission direct CNSC staff to include a complete data set for soil monitoring at the Blind River refinery in future Regulatory Oversight Reports and licencing Commission Member Documents
- **REQUEST:** That a licence condition be added requiring Cameco to include a map of soil monitoring locations in their Annual Compliance Report
- **REQUEST:** That a licence condition be added requiring Cameco to provide results of monitoring for uranium concentrations in soil in their Annual Compliance Report, in addition to their current practice of providing average and range of results.

ENVIRONMENTAL PERFORMANCE

- A nitrate monitoring program in Lake Huron should be developed and included as a condition of the license;
- A monitoring program for the ditch outfall should be developed and included as a condition of the license;
- A trend analysis of groundwater quality during the current license period should be completed and reviewed by CNSC prior to license renewal;
- For the next licensing period, CNSC should supplement its current independent monitoring program with monitoring in deposition areas identified by air dispersion and aquatic transport and fate modelling; and,
- CNSC should confirm that it reviewed the methods and source data that supported Cameco's monitoring conclusions for the record, with substantiating evidence, during the upcoming Commission Public Hearing for the license renewal.

WASTE MANAGEMENT

- **REQUEST:** That the Commission require Cameco to meet the requirements of General Nuclear Safety and Control Regulations under paragraph 3(1)(j), and include “the name, quantity, form and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, including waste that may be stored, managed, processed, or disposed of at the site of the activity to be licensed, and the proposed method for managing and disposing of that waste”; this information should be provided prior to any further consideration of the Cameco application
- **REQUEST:** That the Commission invite independent legal opinion on the issue of whether the incinerator at Blind River should be separately and specifically licensed as a radioactive waste management facility and invite public and Indigenous comment on licensing options for the waste incinerator

CONCLUSIONS

- REQUEST: That a licence condition be added that Cameco produce a mid-term performance report of sufficient detail to allow performance assessment on core criteria (e.g. protection of the environment, protection of human health, waste and transportation)
- REQUEST: That the mid-term performance report and review incorporate production and review of the Environmental Risk Assessment produced by Cameco and an Environmental Protection Report produced by CNSC staff
- REQUEST: That the Commission direct staff to organize the CNSC web page on Regulatory Oversight Reports to provide a complete listing of Regulatory Oversight Reports, including draft reports, and a calendar identifying upcoming comment opportunities on the same page
- REQUEST: That the Commission direct CNSC staff to include all complete data set for soil monitoring at the Blind River refinery in future Regulatory Oversight Reports and licencing Commission Member Documents
- REQUEST: That a licence condition be added requiring Cameco to include a map of soil monitoring locations in their Annual Compliance Report
- REQUEST: That a licence condition be added requiring Cameco to provide results of monitoring for uranium concentrations in soil in their Annual Compliance Report, in addition to their current practice of providing average and range of results.
- REQUEST: That the Commission require Cameco to meet the requirements of General Nuclear Safety and Control Regulations under paragraph 3(1)(j), and include “the name, quantity, form and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, including waste that may be stored, managed, processed, or disposed of at the site of the activity to be licensed, and the proposed method for managing and disposing of that waste”; this information should be provided prior to any further consideration of the Cameco application
- REQUEST: That the Commission invite independent legal opinion on the issue of whether the incinerator at Blind River should be separately and specifically licensed as a radioactive waste management facility and invite public and Indigenous comment on licencing options for the waste incinerator
- REQUEST: That the Commission immediately direct Cameco to investigate alternative strategies for the management of decommissioning wastes from their Ontario fuel division facilities.