



Water Resources Division  
Resource Management Directorate  
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Your file - Votre référence  
2BE-NUP----  
Our file - Notre référence  
GCDOCS#105818850

September 14, 2022

Richard Dwyer  
Manager of Licensing  
Nunavut Water Board  
P.O. Box 119  
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E-mail: [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca)

**Re: Crown-Indigenous Relations and Northern Affairs Canada's Review of Water Licence Application 2BE-NUP---- for Forum Energy Metals Corporation's Nunavut Uranium Project in Kivalliq Region of Nunavut**

Dear Mr. Dwyer,

Thank you for the August 19, 2022 invitation to review the above-referenced new water licence application, submitted by Forum Energy Metals Corporation for its Nunavut Uranium Project in the Kivalliq Region of Nunavut.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the application pursuant to its mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*. Please find CIRNAC comments and recommendations in the attached Technical Memorandum.

If there are any questions or concerns, please contact me at [david.zhong@rcaanc-cirnac.gc.ca](mailto:david.zhong@rcaanc-cirnac.gc.ca) or Andrew Keim at [andrew.keim@rcaanc-cirnac.gc.ca](mailto:andrew.keim@rcaanc-cirnac.gc.ca).

Sincerely,

David Zhong,  
Regulatory & Science Advisor



## **Technical Review Memorandum**

**Date:** September 14, 2022

**To:** Richard Dwyer, Manager of Licensing, Nunavut Water Board

**From:** David Zhong, Regulatory & Science Advisor, CIRNAC

**Subject:** **Crown-Indigenous Relations and Northern Affairs Canada's Review of Water Licence Application 2BE-NUP--- for Forum Energy Metals Corporation's Nunavut Uranium Project in Kivalliq Region of Nunavut**

**Region:** Kivalliq

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### **A. BACKGROUND**

On August 19, 2022, the Nunavut Water Board (NWB) invited interested parties to make representations on a new water licence application, submitted by Forum Energy Metals Corporation (FEMC or Applicant), for its Nunavut Uranium Project (the Project), located approximately 90 km west of Baker Lake in the Kivalliq Region of Nunavut. The general geographical coordinates of the extents of the Project are: NW: 64°24'06"N - 98°29'02"W; NE: 64°25'47"N - 98°19'42"W; SE: 64°10'43"N - 98°35'14"W; and SW: 64°07'02"N - 98°15'00"W.

The scope of the proposed Project activities includes conducting airborne and ground geophysical surveys, examining historic core, determining a preferred location for a 20-30-person temporary camp, and bringing in supplies, equipment and fuel by barge to Baker Lake in 2022 and transporting supplies to the preferred campsite, constructing the campsite, and commencing mineral exploration activities including diamond drilling and/or reverse circulation drill campaign, as well as further ground geophysics, geological mapping, prospecting, and rock sampling in 2023.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) provides the following comments and recommendations pertaining to the application. A summary of the subjects of recommendations can be found in Table 1. Documents reviewed as part of this submission can be found in Table 2 of Section B. Detailed technical review comments can be found in Section C.



**Table 1: Summary of Recommendations**

Recommendation Number	Subject
R-01	Drill Cutting Disposal
R-02	Secondary Containment for Petroleum and Chemical Product Storage and Handling
R-03	Minimum Distance from High-water Marks of Natural Water Bodies

## B. DOCUMENTS REVIEWED AND REFERENCED

The following table (Table 2) provides a list of the documents reviewed under the submission and reference during the review.

**Table 2: Documents Reviewed and Referenced**

Document Title	Author, File No., Rev., Date
Water Licence Application	Rich Mazur, Forum Energy Metals Corp., 2022-08-15
Updated Summary English	Forum Energy Metals Corp., 2022-08-19
Summary English	Forum Energy Metals Corp., 2022-08-15
NPC File #149824	NPC, 2022-06-13
Cover Ltr Re Screening Decision Report	NIRB, 2022-08-03
Screening Decision Report	NIRB, 2022-08-03
Forum Map for NIRB 071422	Forum Energy Metals Corp., 2022
Waste Management Plan	Forum Energy Metals Corp., 2020-05
Uranium Exploration Plan	Forum Energy Metals Corp., 2020-05
Spill Contingency Plan	Forum Energy Metals Corp., 2020-05-30
Abandonment & Restoration Plan	Forum Energy Metals Corp., 2020-05
Wildlife Monitoring and Mitigation Plan	Forum Energy Metals Corp., 2020-07
Possible Water Source	Forum Energy Metals Corp.
Potential Camp and Water Source	Forum Energy Metals Corp.
Exploration-Remote Camp Questionnaire	Forum Energy Metals Corp.
MSDS Sheets	Forum Energy Metals Corp.
FEMC consultation log	Forum Energy Metals Corp., 2022-06-05
Business Registry 2021 annual report	Forum Energy Metals Corp., 2021-06-14
Denis Lockett Authorization Letter	Forum Energy Metals Corp., 2022-02-16
Forum Certs of Inc Name Change and Articles	Registrar of Companies, BC., 2018-02-27
FEMC NWB-MM1-MineralExplorationRemoteCamp	Forum Energy Metals Corp.
FMC_Q22022_FS_Final	Forum Energy Metals Corp., 2022-05-31
FMC_Q22022_MDA_Final	Forum Energy Metals Corp., 2022-05-31
NWB application signature page 080922	Forum Energy Metals Corp., 2022-08-09



## C. RESULTS OF REVIEW

### 1. Drill Cutting Disposal

#### **Comment:**

The issue of drill cutting disposal is discussed in the Waste Management Plan, the Abandonment & Restoration Plan, and the Uranium Exploration Plan.

In the Waste Management Plan, it is stated that:

*“Sump located adjacent to drillhole; allowed to percolate into overburden; minimum distance of 30 m from nearby water sources. If uranium mineralization is intersected, cuttings in sumps will be scanned to ensure that the gamma radiation is  $<1 \mu\text{Sv/h}$  at a height of 1 m. Cuttings  $>1 \mu\text{Sv/h}$  will be collected and shipped to an appropriate place for disposal.”*

In the Abandonment & Restoration Plan, it is stated that:

*“If uranium mineralization is encountered in a drill hole and down hole conditions are such that drill return circulation persists, a drill cuttings separator will be employed to remove the radioactive material from the drilling fluids. Drill mud solids or cuttings with uranium concentration greater than 0.05 per cent must be collected pending completion of the hole at which time they will be disposed down the drill hole and sealed by grouting the upper 30 metres of bedrock.”*

In the Uranium Exploration Plan, it is stated that:

*“Sumps will be constructed to collect the drill waste including water, cuttings, and drilling additives. Where they are deemed necessary, mud tanks will be used to collect the majority of the cuttings prior to draining into the natural sumps. The sumps will be kept greater than 30 m from the normal high-water mark of water bodies. Upon completion of the hole, cuttings will be backfilled into the drill holes or the sumps. Sumps will be scanned to ensure that gamma radiation is  $<1 \mu\text{Sv/h}$ . The sumps will then be filled and levelled.*

*Drill mud solids and cuttings with a uranium concentration greater than 0.05%  $\text{U}_3\text{O}_8$  will be collected using a recycling system (discussed below) or collected and backfilled down the drill hole..... If high-grade mineralization is encountered, a cuttings collection, recycling system may be used to collect the radioactive cuttings, which will then be shipped to the Saskatchewan Research Council laboratory in Saskatoon.*



*Uncontrolled or accidental release of radioactive materials such as radioactive muds and cuttings is considered a spill. If a radioactive spill takes place the materials will be collected, and the site remediated to reduce the radioactivity to 1  $\mu\text{Sv/h}$  above background at a height of 1 m.”*

It appears that there are inconsistencies in how exactly drill cuttings will be managed among these three management plans.

**Recommendation:**

(R-01) CIRNAC recommends that the applicant clarify how exactly drilling cuttings will be managed and update all the relevant management plans accordingly so that potential confusing can be avoided.

**2. Secondary Containment for Petroleum and Chemical Product Storage and Handling**

**Comment:**

The Spill Contingency Plan details how petroleum and chemical products will be stored and handled. It appears, however, that no secondary containment is proposed or planned for petroleum and chemical product storage and handling.

**Recommendation:**

(R-02) CIRNAC recommends that the Spill Contingency Plan include secondary containment for petroleum and chemical product storage and handling.

**3. Minimum Distance from High-water Marks of Natural Water Bodies**

**Comment:**

CIRNAC notes that the Applicant has stated in a number of application documents that project facilities or activities “*will be kept greater than 30 m from the normal high-water mark of water bodies.*”

CIRNAC wishes to point out that the minimum distance of any project facilities or activities from the high-water mark of any natural surface water bodies is 31 meters.

**Recommendation:**

(R-03) CIRNAC recommends that the Applicant be aware of and implement the requirement that project facilities or activities be at least 31 meters away from the high-watermark of any natural water bodies.