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Nahanni National Park Reserve /

Reserve de parc national Nahanni

P.O. Box 348/ C.P. 348

Fort Simpson, NT, X0E 0N0

Telephone/Téléphone: 867- 695- 3151

Facsimile/Télocopieur: 867- 695- 2446

To / À

Mr. Alan Ehrlich

Tel / Tél.

Fax / Téléc.

1.867.766.7074

From / De

Michael Grande

Date

03/02/17

Pages

(4)

Message

Following pages contain Park's Canada's comments
on CZN's Decline & Metallurgical Pilot Plant.

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MACKENZIE VALLEY
ENVIRONMENTAL IMPACT
REVIEW BOARD

Mike G





Parks Canada - Parcs Canada

Nahanni National Park Reserve
P.O. Box 348
Fort Simpson, NT
X0E 0N0

February 17, 2003

Mr. Alan Ehrlich
A/Manager, EIA
Mackenzie Valley Environmental Impact Review Board
Box 938
5102 – 50th Avenue
Yellowknife, NT X1A 2N7

Dear Mr. Ehrlich:

RE: Canadian Zinc Corporation Decline and Metallurgical Pilot Plant

Parks Canada has reviewed the information that you provided pertaining to Canadian Zinc Corporation's proposed water treatment and water quality issues at the Prairie Creek Mine Site. This information was presented to the MVEIRB in response to the Review Board's questions of December 24th, 2002. We have organized our comments in three sections, the first dealing with issues to be dealt with before the regulatory stage, the second, with issues to be addressed at the regulatory stage and the third section with unresolved issues.

1. Issues to be Dealt with Before the Regulatory Stage**Information Request No. 1**

CZN introduces a new element in its water handling system that has not been discussed previously – the construction of a polishing pond in the mill yard. The last paragraph of CZN's response to question one states:

"In the event that mine water, following underground settling, was found to be of such quality likely to make the site catchment pond water unsuitable for discharge to the receiving water, treatment would be initiated as proposed. The suitability of the catchment pond water for discharge to the receiving environment would then be confirmed by routine monitoring as mentioned above."

This paragraph makes two things clear: firstly, it is possible that water in the catchment pond will be of a quality that exceeds MMER levels and secondly, that treatment would occur in the catchment pond (no mention is given of pumping the water elsewhere for treatment). Parks Canada recommends that CZN ensure that both the channel that would take water from the polishing pond to the catchment pond and the catchment pond itself be geotechnically certified impermeable, for the same reasons the polishing pond is required to be impermeable. This would be a critical measure given the porous nature of the rock in the area, the high water table and the short distance to Harrison and Prairie Creek.

Recommendation:

- CZN provide an engineering design and geotechnical certification for the entire water handling system, including the polishing pond, transfer mechanism and catchment pond that will ensure that the entire system is impermeable, before the proposed development is

approved. This would be inline with what CZN suggested for the polishing pond and previous requests from Parks Canada.

Information Request No. 3

The proposal by CZN to construct a wetland is not feasible considering the location of the Prairie Creek Mine. The physical characteristics of the valley downstream are not conducive to wetland creation. Furthermore, this technology is untested in a northern climate and may be inappropriate. The "Precautionary Principle" would not indicate the use of such experimental mitigation in this geographic setting, particularly given the proximity of Nahanni National Park Reserve.

Recommendation:

- CZN needs to provide a viable alternative should additional residence times be required for enhanced treatment of minewater. Since CZN has not advanced a feasible alternative, Parks Canada recommends that, prior to approval for the development to proceed, CZN be required to make improvements to the tailings pond to ensure its structural integrity and confirm its stability with a geotechnical certification.

Information Request No. 4 and 5

CZN will need to revise the cumulative effects assessment of their mining activity to include the increased footprint of their development with the addition of the polishing pond. As stated earlier, engineering information on the design of the polishing pond needs to be provided.

Recommendation:

- The cumulative effects analysis is revised to reflect the increased footprint of the development.
- Engineering details of the polishing pond are provided before the development receives approval to proceed.

Information Request No. 8

The alternative of the tailings pond could not be put in place in time, if required, once the pilot plant has been put into operation. In CZN's response to Question 8, they state that the decline will, "...provide storage for at least 190 hours in the event of a pump failure.", that is 8 days, and that's once the entire decline has been completed. This storage time would be lower if pump failure occurs prior to the completion of the decline. Given this, the alternative of the tailings pond, or other viable alternatives, have to be in place prior to the plant going into operation. Parks Canada is concerned that the geotechnical certification of the tailings pond has yet to be obtained.

Recommendation:

- Geotechnical certification of the tailings pond must be provided by CZN before the development receives approval to proceed.

2. Issues to be Dealt with at the Regulatory Stage**Information Request No. 1**

CZN proposes to undertake monitoring to confirm the quality of the minewater prior to discharge on a monthly basis during operation, with more frequent sampling initially. Due to past monitoring results, Parks Canada recommends that water quality sampling be conducted once per week until steady state conditions are confirmed, as prescribed by the Metal Mining Liquid Effluent Regulations, for new mines, and to return to weekly sampling when run-off from the site is expected to be high.

Recommendation:

- The monitoring requirements for water quality sampling be established at a frequency of once per week until steady state conditions are confirmed and that this be required through the licencing process. Of particular importance would be the requirement to maintain the weekly sampling for a longer period of time or return to weekly sampling during key periods of the season such as spring melt or high water events, when there is considerable run-off from the mine site and the 870m portal in particular.

Information Request No. 2

Contrary to indications in CZN's response, Roxanne Beavers clearly indicated in her report "Historical Water Quality of the Prairie Creek Project Area" (July 2002) that there were, "...violations of the limits established under the old water license and in some cases the MMLER's." These violations occurred at the final discharge point into Harrison Creek. Beavers concluded that contaminated water was being discharged from the site and, "...that the minewater is a significant source of metals, ammonia and TSS. These inputs may be adversely affecting the aquatic life of Harrison and Prairie Creek." Beavers further stated that the sampling site, "Prairie Creek at the Mouth is too far downstream (48 km) to clearly capture effects of the minewater discharge."

Recommendation:

- Parks Canada recommends that the water licence be updated to reflect more stringent environmental requirements (i.e. the Guidelines for the Protection of Freshwater Aquatic Life) to protect the aquatic life of Harrison and Prairie creeks.
- Parks Canada supports both the recommendations by Gartner Lee Ltd. (peer review of the Beavers report (2003)) as follows:
 1. that an additional sampling station be established downstream of the mine site, but upstream of the confluence of major tributaries to properly assess the impacts to the receiving water; and
 2. that follow-up surveys including benthic community assessment and trace metal in fish tissue, be conducted to assess the significance of the water quality.

3. Issues that are Unresolved

Finally, Parks Canada has some unresolved concerns which were not addressed in these information requests. In particular, the stability of the tank farm remains a concern; this issue was raised in a letter to Mr. Todd Burlingame by Minister Nault dated September 3, 2002, and has yet to be resolved satisfactorily. Will the Mackenzie Valley Environmental Impact Review Board address this concern prior to development approval?

If you have any questions or require additional clarification, please do not hesitate to contact me at (867) 695-3151.

Yours sincerely,



Chuck Blyth
Superintendent
Nahanni National Park Reserve