

TITLE: Canadian Zinc Corporation (CZN) Information Request

ISSUE: Information Request for CZN Regarding the Environmental Impact of Alternative Water Treatment Methods

STATUS: The Review Board's work plan requires issuing an Information Request to CZN 13 calendar days after approving the work plan. That is, on October 11, 2002. A draft Information Request was issued on October 11, 2002. The work plan is 11 days behind schedule.

PREPARED BY: Luciano Azzolini

SUBJECT: CZN Information Request

BACKGROUND: The Review Board's staff and Executive Director prepared a draft Information request (IR) and then in counsel with John Donihee and the Chair determined to provide a draft IR for public comment to ensure the IR met the need of parties participating in the IR. This more inclusive process required about one week to complete.

Nahanni National Park Reserve (NNPR) and Environment Canada (EC) provided comments on the Draft IR. NNPR supported issuing the IR as prepared and provided reasons supporting its position in its legislation.

Environment Canada indicated that its main concern with the IR as drafted is with the implication in point (b) that treatment is to reduce the levels of various elements to those found in the document titled "Historical Water Quality of the Prairie Creek Project Area". To avoid this, EC suggested that the second bullet be deleted EC also added that point c) could be reworded to say "Identify concentrations of all effluent constituents that can..." and point (e) should specify that the other emissions would be those generated in connection with the proposed treatment alternatives.

The Department of Fisheries and Oceans has several suggestions for improving the Information Request

especially in matters pertaining to safety, flooding, cumulative water quality that could have a significant bearing on the water treatment method and their effectiveness used.

**ACTION/
DECISION:**

To adopt the following motions

1. To adopt the amended Information Request and Issue it to CZN.
2. That the Review Board adopts sliding milestones so that the trigger for moving onto the next steps in the work plan is the successful completion of tasks or milestones preceding it.

AMMENDED INFORMATION REQUEST

Canadian Zinc Corporation (CZN) Underground Decline/Exploratory Drilling and Metallurgical Pilot Plant Developments

Review Board Information Request No. 1 Effluent Water Treatment

Reference: Sept. 3, 2002 letter to the Review Board from Robert Nault, the Minister of Indian and Northern Affairs Canada (INAC).

ToR Line: Not Applicable

To: Canadian Zinc Corporation

Preamble: In his Sept. 3rd letter, Minister Nault stated:

"Canadian Zinc Corporation has not provided a detailed description of its alternative proposal to treat (if necessary) and discharge all effluent (from plant to decline) to the receiving environment if the integrity of the tailings facility is not proven, and the use of the tailings pond is subsequently removed from the development plan. If the Board's intent is that the geotechnical assessment of the tailings pond is to be provided at the regulatory stage, then CZN must be required to provide detail on any proposed treatment options at the assessment stage. The reviewers and the Board must have an opportunity to assess the adequacy of any proposed treatment options and associated impacts should the geotechnical assessment conclude that the use of the tailings pond is not appropriate."

Request: Please provide the following information:

- (a) Describe the equipment and procedures that will be used in the treatment of water effluent from the proposed development.
- (b) Identify concentrations of all effluent constituents that can be achieved by using the proposed treatment process. Provide all supporting evidence that the proposed treatment process will achieve these concentrations given any site-specific operating conditions and the nature of the raw effluent.
- (c) Provide an analysis of the environmental impacts, as defined in the MVRMA, including cumulative impacts, for the discharge of the treated effluent water directly to the environment.
- (d) Assess the impact on the environment of the discharge of any other solid, liquid or gaseous waste products or emissions in connection with the proposed treatment alternatives (e.g., solid content of waste sludge, flue gas of any incinerated materials.)
- (e) That CZN provide a geotechnical assessment and engineering certification as to the suitability of the tailings facility
- [(f) That CZN provide a geotechnical assessment and engineering certification as to the suitability of the tank farm facility]

- (g) That CZN update its Probable Maximum Flood (PMF) calculations for floor evaluations using at least the data available from 1975 to 1990, including data from the weather station at the Virginia hydrometric gauge.
- (h) That CZN provide an accurate verifiable estimate of the discharge volume from the 870m portal. }
- (i) That CZN have a professional engineer certified to practice in the Northwest Territories ascertain the report of the geotechnical stability of the tailings facility using the most recent and appropriate waters data from the Water Survey of Canada.

Environment Canada
Prairie and Northern Region
#301 - 5204 - 50th Ave
Yellowknife, NT X1A 1E2
Ph. (867) 669-4700

Oct. 15, 2002

Our File:

Luciano Azzolini
Mackenzie Valley Environmental Impact Review Board
P.O. Box 938,
Yellowknife, NT X1A 2N7

By email

Re: Draft Information Request (IR) to Canadian Zinc Corporation

On behalf of Environment Canada (EC) I have reviewed the draft IR which the Mackenzie Valley Environmental Review Board circulated for comments.

The main concern with the IR as drafted is with the implication in point (b) that treatment is to reduce the levels of various elements to those found in the document titled "Historical Water Quality of the Prairie Creek Project Area". To avoid this, it is suggested that the second bullet be deleted altogether, as (a) asks for details of treatment processes, and c) asks for target concentrations of treated effluent, which should cover all parameters. Point c) could be reworded to say "Identify concentrations of all effluent constituents that can...".

Point (e) should specify that the other emissions would be those generated in connection with the proposed treatment alternatives.

Please do not hesitate to contact me at (867) 669-4700 with any questions or comments regarding the foregoing.

Yours truly,

Anne Wilson
Water Pollution Specialist
Environmental Protection Branch

cc: Steve Harbicht (Head, Assessment & Monitoring, EPB)
Paula Pacholek (Northern Assessment Co-ordinator, EPB)



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

October 16, 2002
Luciano Azzolini
Mackenzie Valley Environmental Impact Review Board
P.O. Box 938
Yellowknife, NT
X1A 2N7

Dear Mr. Azzolini:

RE: Draft Information Request to Canadian Zinc Corporation

As requested in your letter dated October 11, 2002, Parks Canada has reviewed the draft IR for Canadian Zinc Corporation and offer the following comments for your consideration:

Parks Canada supports the requirement for CZN to describe the effectiveness of proposed treatment processes to reduce the concentrations of parameters in the recently published report entitled "Historical Water Quality of the Prairie Creek Project Area" (INAC, 2002). This requirement is consistent with the approved 1994 Nahanni National Park Management Plan which states (p.8): "Parks will establish management strategies that ensure rivers within the park remain free-flowing, unpolluted wilderness waterways, and that no unnatural change in park water quality results from the water flow into the park."

Furthermore, this requirement would support the water quality monitoring that Parks Canada has carried out co-operatively with Environment Canada from 1988-1991, and in a follow-up study from 1992-1997. The objectives for these studies included the following:

1. Characterize variability of water quality variables associated with the mining industry.
2. Develop water quality objectives for major streams entering the Park (note: includes Prairie Creek).
3. Design an on-going water quality monitoring program for monitoring compliance with the water quality objectives.
4. Supply development proponents and environmental impact assessment responsible agencies with baseline information to assist them in the design of multi-year baseline aquatic quality monitoring programs and water licences throughout the entire life of a mine or other development.

The information to be provided by CZN on the effectiveness of the treatment processes is essential in assessing the significance of Canadian Zinc activities on the water quality of Prairie Creek, based on historic water quality values as identified in the INAC report.

Furthermore, Parks Canada supports the IR to assess the impact of the discharge of other solid, liquid or gaseous waste products or emissions. This is consistent with concerns that we had addressed earlier with respect to discharges from the tank farm facilities and minewater discharges from the existing portal, the new decline and site runoff to Harrison Creek.

If you have any questions or concerns, please do not hesitate to call me at (867) 695-3151.

Yours sincerely,

Signed by Suzanne Therrien-Richards

**Canadian Zinc Corporation (CZN)
Underground Decline/Exploratory Drilling and
Metallurgical Pilot Plant Developments**

Review Board Information Request No. 1

Effluent Water Treatment

Reference: Sept. 3, 2002 letter to the Review Board from Robert Nault, the Minister of Indian and Northern Affairs Canada (INAC).

ToR Line: Not Applicable

To: Canadian Zinc Corporation

Preamble: In his Sept. 3rd letter, Minister Nault stated:

“Canadian Zinc Corporation has not provided a detailed description of its alternative proposal to treat (if necessary) and discharge all effluent (from plant to decline) to the receiving environment if the integrity of the tailings facility is not proven, and the use of the tailings pond is subsequently removed from the development plan. If the Board’s intent is that the geotechnical assessment of the tailings pond is to be provided at the regulatory stage, then CZN must be required to provide detail on any proposed treatment options at the assessment stage. The reviewers and the Board must have an opportunity to assess the adequacy of any proposed treatment options and associated impacts should the geotechnical assessment conclude that the use of the tailings pond is not appropriate.”

Request: Please provide the following information:

- (a) Describe the equipment and procedures that will be used in the treatment of water effluent from the proposed development.
- (b) Describe the effectiveness of any proposed treatment process to reduce the parameter concentrations referenced in the recently published *Historical Water Quality of the Prairie Creek Project Area*¹, and in regulations, guidelines and Acts that may be applicable.
- (c) Identify parameter concentrations of treated effluent water that can be achieved by using the proposed treatment

¹ Indian and Northern Affairs Canada. (2002). Historical Water Quality of the Prairie Creek Project Area. An analysis of water quality data available for the Prairie Creek area from 1980 to 1999.

process. Provide all supporting evidence that the proposed treatment process will achieve these concentrations given any site-specific operating conditions and the nature of the raw effluent.

- (d) Provide an analysis of the environmental impacts, as defined in the MVRMA, including cumulative impacts, for the discharge of the treated effluent water directly to the environment.
- (e) Assess the impact on the environment of the discharge of any other solid, liquid or gaseous waste products or emissions (e.g., solid content of waste sludge, flue gas of any incinerated materials.)



Fisheries
and Oceans

Pêches
et Océans

Fish Habitat Management
Suite 101, 5204-50th Avenue
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Territories
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Your file / *Votre référence*
EA01-002/003

Our file / *Notre référence*
SC00188

16 October, 2002

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

Attention: Todd Burlingame

**RE: Mackenzie Valley Environmental Impact Review Board – Draft
Information Request, Environmental Assessment on the Canadian Zinc
Corporation Underground Decline/Exploratory Drilling and Metallurgical
Pilot Plant Developments**

Dear Mr. Burlingame:

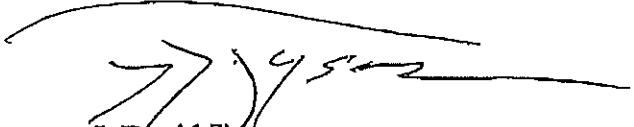
The Department of Fisheries and Oceans (DFO) has reviewed the draft Information Request (IR) submitted by the Mackenzie Valley Environmental Impact Review Board (MVEIRB) for comment.

In the original Report on the Environmental Assessment, the MVEIRB recommended preventative and remedial measures (Recommended Measures) it felt necessary to prevent and mitigate significant adverse impacts (SAI). A number of DFO's concerns raised in our 10 June, 2002, letter to DIAND and copied to MVEIRB regarding the Recommended Measures pertaining to water and waste management have been incorporated into the draft IR. However, DFO notes that the draft IR is limited to the consideration of alternate effluent treatment. DFO maintains, however, that a number of the Recommended Measures were identified by DFO as IRs and that this requested information is pertinent to the Environmental Assessment of the proposed project. DFO therefore recommends that the following additions be made to the draft IR:

- That CZN provide the MVEIRB a geotechnical assessment and engineering certification as to the suitability of the tailings facility
- That CZN provide the MVEIRB a geotechnical assessment and engineering certification as to the suitability of the tank farm facility

- CZN update its Probable Maximum Flood (PMF) calculations for floor evaluations using at least the data available from 1975 to 1990, including data from the weather station at the Virginia hydrometric gauge
- That CZN provide the MVEIRB an accurate verifiable estimate of the discharge volume from the 870m portal.
- CZN have a professional engineer certified to practice in the Northwest Territories ascertain and report on the geotechnical stability of the tailings facility using the most recent and appropriate waters data from the Water Survey of Canada

If you have any questions, please feel free to contact the me at (867) 669-4919 or by fax at (867) 669-4919.



J. David Tyson
Area Habitat Biologist
Fish Habitat Management - Western Arctic Area
Department of Fisheries and Oceans

cc: Julie Dahl - Area Chief, Habitat, DFO