Canadian Zinc Corporation — Prairie Creek Mine EA01-002

Summary of Public Concern - August 2002

History of Region:

Considered by many naturalists to be Canada's most pristine wilderness river, the Nahanni River and its tributaries has become, in recent months, the centre of growing international public concern as a result of proposed mining development in the Nahanni watershed.

This region of the Northwest Territories, one of the most seismically active areas in North America, is known throughout the world for its unique geographical features. In the early 70's, conservationists began drawing attention to the regions rich diversity and rugged wilderness; from boreal forests and rare fauna to abundant wildlife and the deep canyons of Virginia Falls, and began lobbying the government to create a national park. Finally, under the direction of then Prime Minister Pierre Trudeau, whom had experienced the river firsthand, the area was decreed a national park in 1972. By 1976, one seventh of the South Nahanni watershed was legally protected as a national park reserve.

In 1978, Nahanni National Park Reserve was designated as the *first* natural World Heritage Site for "representing on-going biological evolution" and for being an "area of outstanding natural beauty". This designation brought with it, an international responsibility for the Canadian government to protect this area's ecological and geographical significance. Today, the rivers in the Nahanni watershed are considered Canada's top wilderness rafting and canoeing rivers, ensuring continued potential for increased tourism growth.

Current Situation:

Canadian Zinc Corporation has recently purchased an inactive zinc/silver mine located just outside the reserve's boundaries on Prairie Creek, with the intent of re-opening it. This news has caused alarm for both naturalists and Canadian environmental protection agencies. In fact Parks Canada has identified the need to re-evaluate and expand the park's boundaries, listing mining as the most significant threat to the ecological integrity of the park. When Canadian Zinc applied to the Mackenzie Valley Land and Water Board for permits to allow for the mine's operation, public concern resulted in the referral of the development to an Environmental Assessment (EA). The final Report of EA from the Mackenzie Valley Environmental Impact Review Board (MVEIRB) was submitted to the Minister of Indian and Northern Affairs Canada in -----. As of today's date, August 12, the Board has yet to receive a decision from the Minister.

Public Concern:

Since the fall of 2001, the MVEIRB has received over 80 copies of letters to Federal Ministers, and the Executive Director, expressing deep concern over proposed mining and oil and gas developments in the Nahanni watershed. The majority of these letters originated in Ontario and Quebec (76%), with 7% being received from countries outside Canada: USA, Australia, Germany and Switzerland. Most of the responses were from individuals although 6% of the letters came from Canadian corporations. It is interesting to note that while 76% of the letters requested a response to their concerns, the Review Board is aware of only 2% actually receiving one.

The letters expressed a wide range of concerns with the most specific ones noted by the 26% of whom actually experienced the rivers first hand: of these, 18% have rafted/canoed/hiked the Nahanni more than once (2-5 times)!

The top concern stated by 39% of the respondents is that the Canadian government has an obligation to *preserve this region's World Heritage status*: that the unspoiled wilderness of the area must be sustained for future generations. Respondents from outside Canada were particularly concerned regarding short term economic gain versus long term gain (i.e. ecotourist dollars), citing various examples of how pristine areas had been irreparably destroyed by development in their countries.

The second highest concern expressed (30%) was in regards to the general *expansion of the Nahanni National Park Reserve boundary*. Many stated that only the park reserve itself was protected from development, leaving the watershed vulnerable, and further requesting that buffer zones be established to protect newly identified areas of ecological importance (the boundaries have not been changed since the park was founded nearly 30 years ago).

Specific apprehensions with respect to the South Nahanni watershed were expressed in 20% of the letters. These concerns ranged from *water contamination* due to flash flooding to the cumulative effects of mining and other forms of development. Many also noted the on-going efforts of First Nations to have the *watershed protected as a national reserve* as well.

A significant percentage of letters (17%) addressed the issue of chemical pollution, namely *toxic tailings* that have and may again, leach into the river system. Concerns included the storage of toxic by-products and the unpredictability of flash flooding due to seismic activity in the area. It is also worth noting that 8% of the letters mentioned concerns with the building of an *all-weather road* through the ecologically sensitive Karst area: apparently this road would do irreversible damage to the fragile ecosystem.

Of particular relevance to the MVEIRB were concerns noted by 8% of river enthusiasts that the EA is not taking into consideration the *cumulative effects of various developments* in the Nahanni region; that the focus appears to be on individual components of mining applications. Many do not understand how CZN has been allowed to continue mining in the region despite a document released by Environment Canada in 1991 reporting of the potential adverse effects of doing so.

Other notable concerns included the lack of an adequate security deposit to ensure mine reclamation (7%), and the fact that surface leases for the mine site expired in 1997 and have yet to be renewed (6%).

It would be in the best interest of all parties to weigh these concerns against the short term profitability of the Prairie Creek mine development.

Sep 3 2002

Mr. Todd Burlingame Chair Mackenzie Valley Environmental Impact Review Board PO Box 938 YELLOWKNIFE NT X1A 2N7

Dear Mr. Burlingame:

Thank you for your letter of February 5, 2002, with the enclosed copy of the Report on the Environmental Assessment on the Canadian Zinc Corporation Underground Decline/Exploratory Drilling and Metallurgical Pilot Plant Developments. I regret the delay in my reply.

As permitted under Subsection 130 (1)(b)(i) of the *Mackenzie Valley Resource Management Act*, the report is being returned to the Board for further consideration, principally because there remains significant unresolved issues related to the use and integrity of the tailings facility, and water treatment in general. Specific concerns which require further consideration by the Board are identified below:

Canadian Zinc Corporation (CZN) has not provided a detailed description of its alternative proposal to treat (if necessary) and discharge all effluent (from plant and 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 <u>assessment stage</u>. 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.

In addition, the reviewers are of the opinion that some of the measures would be more appropriately dealt with as 'Information Requests' rather than as recommended 'measures', especially those dealing with the geotechnical assessment of the tailings facility and the stability of the tank farm.

If the Board would like additional information, or to discuss the reasons for referral, please contact Mr. David Livingstone, Director, Renewable Resources and Environment at (867) 669-2648.

The enclosed correspondence from the Department of Fisheries and Oceans, Environment Canada, Parks Canada, and the Government of the Northwest Territories' Resources, Wildlife and Economic Development, speaks to these and issues other than those dealing with the tailings facility which the Board may wish to take into account when planning its next steps in the process. I recommend that the Board contact the appropriate agency directly if clarification is required on these additional points raised by the various departments.

Regional staff are also available to consult further with the Board in whatever capacity the Board would like.

Yours sincerely, Original signed by a signé l'original

Robert D. Nault, PC, MP

Encl.

The Honourable Jim Antoine, MLA C.C.: The Honourable David Anderson, PC, MP The Honourable Sheila Copps, PC, MP The Honourable Robert G. Thibault, PC, MP

> Marie Adams/NWT-RRE /(867) 669-2591 July 5, 2002 Received in DS-CD1/July 15, 2002 R.: Faubert/DS-CD1/997-5436 July 16, 2002 MO return - July 17, 2002 Rec'd DS-CD1/July 19, 2002 R.: stgermain/ds-cd1/994-2368

c.c.: RDG, Northwest Territories

Outside addresses:

The Honourable Jim Antoine, MLA
Minister of Resources, Wildlife and
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PO Box 1320
YELLOWKNIFE NT X1A 2L9

The Honourable Sheila Copps, PC, MP Minister of Canadian Heritage House of Commons OTTAWA ON K1A 0A6

The Honourable David Anderson, PC, MP Minister of the Environment House of Commons, OTTAWA ON K1A DA6

The Honourable Robert G. Thibault, PC, MP Minister of Fisheries and Oceans House of Commons OTTAWA ON *K1A 0A6



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Fish Habitat Management Suite 101, 5204-50th Avenue Yallowknife, Northwest Territories X1A 1E2

Your Gip Foire reference

Our file Noire reference SC00188

June 10, 2002

Renewable Resources and Environment Indian and Northern Affairs Canada P.O. Box 1500 Yellowknife, NT X1A 2R3

Attention: David Livingstone

RE: Mackenzie Valley Environmental Impact Review Board - Report of Environmental Assessment on the Canadian Zinc Corporation Underground Decline/Exploratory Drilling and Metallurgical Pilot Plant Developments

Dear Mr. Livingstone:

The Department of Fisheries and Oceans (DFO) has reviewed the above-mentioned Report on Environmental Assessment (REA) and the Recommended Measures contained therein. In our review, we have explored different options to address our concerns with the report and have come to the conclusion that the REA be referred back to the Mackenzie Valley Environmental Impact Review Board (MVEIRB) for further consideration pursuant to subparagraph 130(1)(b)(i) of the Mackenzie Valley Resource Management Act.

The MVEIRB has recommended preventative and remedial measures it feels necessary to prevent and mitigate significant adverse impacts (SAI). DFO has considered each recommended measure in light of the SAI it is proposed to mitigate.

In general, DFO considers the additional information being requested of the proponent by the MVEIRB to be perinent to the Environmental Assessment of the proposed project. In addition, it is also unclear in many instances how the Recommended Measures, as written, will reduce the likelihood of significant adverse impacts. Specific comments are provided here to assist the MVEIRB in its reconsideration of the REA.

Tailings Facility

Recommended Measures 1 and 14 speak to the need to assess the geotechnical stability of the tailings facility. The recommended measures as such are requests for further information and do not prevent or mitigate an identified SAI. The MVEIRB refers to uncertainty with respect to the integrity of the tailings facility, hence its use



is regarded as a significant environmental risk until demonstrated otherwise. Based on the information before the MVEIRB, mitigation of such an identified SAI would be to refrain from using the facility and identify and assess an alternative approach. Also, requesting further information but not considering it at the EA phase, effectively defers the assessment of the environmental impacts related to the facility and the subsequent conclusion on its suitability for use, to the Mackenzie Valley Land and Water Board (MVLWB).

The MVEIRB also concludes that based on the uncertainties surrounding the tailings facility integrity that any releases to the facility must be treated in the same manner as releases directly to the environment. It is not clear whether the reference to "treated" is analogous to "handled" or "considered" or if it is meant to imply active water treatment to meet discharge criteria. If the latter interpretation applies, treatment options have not been addressed nor assessed in the REA.

Tank Farm

The MVEIRB's findings with respect to the tank farm do not specifically mention a SAI, however Recommended Measure 2 asks for a geotechnical assessment of the tank farm facility in order to prevent an SAI, and "suitability" is left undefined. Also, the measure pertaining to the tank farm is listed in the REA as required to address the SAI identified with use of the tailing facility (section 6.4.4). The two facilities are quite separate in location and function, hence a relationship between SAI and mitigation should not be assumed.

To address the concerns the MVEIRB did note with respect to the tank farm and similar to the comments made regarding the tailings facility, DFO maintains that this recommended measure does not prevent nor mitigate an SAI but is a request for further information that is not considered in the EA phase. The consideration of such information and the subsequent conclusion regarding the suitability of the tank farms is inappropriately deferred to the MVLWB.

Water and Waste Management

The MVEIRB concludes in the REA that general water management issues remain unresolved. Pertaining specifically to the wasterock/ore storage pile, the MVEIRB concludes that there was no evidence provided that current mine site waste management practices would prevent an SAI on water quality. Recommended Measure 3, proposed to address the SAI associated with the wasterock/ore storage pile does not directly address the SAI identified in the REA and defers all mitigation to the licensing phase.

General

Recommended Measure 6 is proposed as a means to prevent an adverse impact
from becoming significant, however, this measure is not a preventative nor
mitigative measure and is essentially an information request. DFO is of the
opinion that this information is pertinent to the assessment of the proposed
project. Although detailed characterisation of the waste generated will
ultimately dictate the final approach to the management of such waste,



treatment and disposal options for outputs from the pilot plant and the potential for environmental impacts need to be addressed during the EA Phase.

- Recommended Measure 8 is also presented as a measure to prevent an adverse impact from becoming significant. This measure is again an information request, the response to which is more appropriately considered in the EA phase.
- Recommended Measure 10 is an information request rather than a specific mitigation measure linked with an identified SAI. The request for CZN to demonstrate the financial ability to undertake the requirements of the Water License points to a risk of SAI not identified in the REA: that there is a significant concern that CZN may not be able to afford its commitments under a Water License.
- Recommended Measure 13 is an information request related to the tailings facility. The results of the updated calculations should be considered during the EA phase in the determination of significance related to the tailings facility and not deferred for consideration during the licensing phase.

DFO recognizes that it is imperative to give full consideration to environmental issues pertaining to a proposed development and it is in this spifit that our departmental concerns and rationale are provided here. DFO is available to assist the MVEIRB where clarification and approaches to resolution are concerned.

If you have any questions, please feel free to contact the undersigned or Julie Dahl at (867) 669-4911.

Ron Allen

Area Director- Western Arctic Area Department of Fisheries and Oceans

/jd

Julie Dahl - Area Chief, Habitat, DFO cc: Dave Tyson, Area Habitat Biologist, DFO





MR. DAVID LIVINGSTONE DIRECTOR INDIAN AND NORTHERN AFFAIRS CANADA

Report of Environmental Assessment on the Canadian Zinc Corporation Underground Decline/Exploratory Drilling and Metallurgical Pilot Plant Developments

The Department of Resources, Wildlife and Economic Development (RWED) of the Government of the Northwest Territories has reviewed the Mackenzie Valley Environmental Impact Review Board (MVEIRB) report (the Report) on the above noted proposed development and considered options under the Section 130 (1) (b) of the Mackenzie Valley Resource Management Act (MVRMA). RWED recommends that the Report be returned for further consideration as per Section 130 1 (b) (i).

The reasons for this decision relate to uncertainties that recommended measures will prevent significant adverse impacts in the case of water quality and protection of wildlife and people.

In the case of water quality, these uncertainties arise due to the location and integrity of the existing tailings management facilities and the use of the tank farm; associated actions for prevention of significant adverse impact occur in Measures two and three.

In the case of wildlife, and human safety, these uncertainties arise given the limited corridors for grizzlies in and around the mine site. Measure 12 instructs the proponent to develop and implement a bear response plan; however this is only one component of a comprehensive proactive plan.

In order to better address these aspects of the development's impacts, RWED offers the following comments:

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6.4 Water Quality (Measure Two and Three)

The likelihood of significant adverse impact to the downstream water quality below the site remains given Measure two to assess the geotechnical integrity of the tailing facility and report on this. There is no direction to examine alternative strategies to manage (contain and treat) tailings should the tailings facility not prove adequate. Therefore this does not allow a process within environmental assessment to look at the options. The regulatory process is not set up to look at alternatives, but to permit a pre-designated project. This measure should direct to Canadian Zinc Corporation (CZN) to present alternatives for tailings management as well.

Measure three instructs CZN to verify the sultability of the tank farm for use in fuel storage through engineering certification. This measure should refer to appropriate legislative standards namely the NWT Fire Prevention Act. Again, should the tank farm not be suitable, the measure should direct CZN to identify alternatives prior to regulation.

6.6 Wildlife and Wildlife Habitat (Measures 12)

In its Report the MVEIRB concluded that no significant adverse impact to wildlife and wildlife habitat would result from CZN's activities. However, the MVEIRB did acknowledge that the grizzly bear is listed as a species of special concern. Also of significant public concern is the safety of humans visiting the area, including CZN personnel. Therefore RWED concurs with MVEIRB's action to define a preventive measure to address risk from, or to, wildlife from CZN's activities. However, Measure 12 directs CZN to develop and implement a bear response plan. This measure must be combined with the other unenforceable suggestions made in the Report in order to reduce the likelihood of the unnecessary killing of wildlife, especially grizzlies, or the harming or killing of humans. Measure 12 should instruct CZN to develop and implement a wildlife risk management plan.

Measure 12, as modified or supplemented, is particularly important since presently there is no certainty in process to direct CZN to develop and implement a comprehensive plan that includes risk assessment; site planning and management, including if required an electric fence; the identification of who takes what action on site; and reporting and evaluation requirements. Presently standard terms and conditions in a land use permit do not provide for this measure.

In addition, while in this vicinity Parks Canada may offer insight to wildlife habitat management, RWED notes that any jurisdiction for wildlife in this area rests with RWED (Measures 12 and 13).

In conclusion, RWED supports the approach taken by the MVEIRB to promote the integrated resource management objectives of the MVRMA. However, RWED believes that there is a need to revisit the recommended measures noted above because the recommended measures do not define mitigative measures to address identified significant adverse impacts on the environment. Therefore, under Section 130 (1) (b) (i), RWED wishes to refer the Report back to the Review Board for further consideration. RWED would be pleased to work with other Ministers' representatives and the MVEIRB to further discuss the recommended actions for CZN's Prairie Creek program such that these protect our environment and promote sustainable development. You are welcome to contact Jane McMullen, Policy and Environmental Assessment Analyst at (867) 920 8069, or jane mcmullen@gov.nt.ca.

R Bouley Mr. Bob Balley

c. Mr. Robert McLeod, Deputy Minister, RWED Ms. Doris Eggers, Director, Policy, Legislation and Communications, RWED

Parks Parcs Canada Canada

David Livingstone
Director, Renewable Resources and Environment
Indian Affairs and Northern Development
PO Box 1500
Yellowknife, NT X1A 2R3

Dear Mr. Livingstone,

With this letter I wish to confirm that Parks Canada recommends that the Mackenzie Valley Environmental Impact Review Board Report of Environmental Assessment on the Canadian Zinc Corporation Underground Decline / Exploratory Drilling and Metallurgical Pilot Plant Developments be referred back to the MVEIRB for further consideration pursuant to Section 130(1)(b)(1) of the Mackenzie Valley Resource Management Act.

The Report of Environmental Assessment shows the results of hard and diligent work on the part of the MVEIRB. The Board has gone a long way in assessing a complex project proposal. However, there remain several areas of concern in the Report of Environmental Assessment that must be addressed in the environmental assessment of this pilot proposal.

Parks Canada believes that the Report of Environmental Assessment requires further consideration for the following reasons: information that should have been made available and used in the assessment is instead requested as a mitigation; no recommendations were made in some sections that require mitigation (e.g. Accidents and Malfunctions); and there is some uncertainty in the scope of the environmental assessment that arises from the proposed developments occurring within existing infrastructure.

Information Requirements

Half of the recommendations made in the Report of Environmental Assessment are information requests rather than recommendations for mitigation. Among these are recommendations which involve information vital to being able to assess the risk of failure of the tailings and tank farm facilities. This additional information is important for both the environmental assessment and the development of appropriate mitigating actions.

Accidents and Malfunctions

The potential for accidents and malfunctions will be poorly understood and appropriate risk assessment is impossible unless one takes into account the information relating to the seismic and flood regime and the present state of existing infrastructure. The information presented to the Board and presented in other parts of the report indicates that there is a significant level of risk of accidents or malfunction, and actions should be recommended to minimise these risks.



However, the *Report of Environmental Assessment* made no recommendations regarding potential accidents or malfunctions. A recent fuel spill at the CanTung mine serves as an example of what can happen and mitigation measures must be in place.

Cumulative Effects

The MVEIRB stated in its information request #2 to CZN on 20 October 2001, "there are concerns about the cumulative impact of minewater discharges from the existing portal, from the new decline, and from site runoff, all of which could be directed to Harrison Creek. Should the quality of this water be poor or marginal, the cumulative effect of all of these wastewater streams would have a significant impact on the water quality of Harrison Creek and Prairie Creek."

In section 6.4.3.1 of the Report of Environmental Assessment the Board states:

"The evidence available indicates that drainage from the minesite is likely to affect water quality. Given the pristine nature of the water resources in the vicinity of the minesite, the Review Board concludes that the proposed waste rock/ore pile is likely to result in a significant adverse impact on the environment and that measures are needed to prevent such Impacts."

"Cumulative environmental impact issues pertaining to water, and in particular the accumulation of discharges from previous developments, on-going care-and-maintenance activities, and the subject developments are addressed in the cumulative effects section of the REA."

However, these issues were not addressed in any detail in the Cumulative Impacts section.

Water Quality

Parks Canada is concerned about the potential for impacts resulting from the proposed developments on water quality in Prairie Creek and the South Nahanni River. We would like to see mitigation that would assure that populations and habitat of species at risk such as bull trout are not harmed.

Parks Canada and Environment Canada have collaborated on water quality monitoring for many years now, and have produced a study report that establishes the natural parameters of water quality entitled *Protecting the Aquatic Quality of Nahanni National Park Reserve, N.W.T.* We would expect that any water license granted would set effluent parameters at levels that would result in no significant change from these water quality standards.

Finally, the MVEIRB suggests that "MVLWB consider the imposition of a security deposit of sufficient magnitude to finance the reclamation of the present mine site." This is an important point and perhaps should be a recommendation. Canadian Zinc must ensure the clean up of the proposed development and of the existing mine site, and a security deposit seems warranted in this case.

If your department or the Mackenzie Valley Environmental Impact Review Board require further information or clarification, please do not hesitate to contact me at (867) 872-7943.

Yours sincerely,

Josie Weninger

Gosie Wenign

Field Unit Superintendent, Southwest NWT

Parks Canada

ENVIRONMENTAL PROTECTION BRANCH PRAIRIE AND NORTHERN REGION

Twin Atria #2, Room 200 4999 - 98 Avenue Edmonton, Alberta T6B 2X3

June 5, 2002

David Livingstone Director, Renewable Resources and Environment Indian & Northern Affairs Canada Box 1500, Yellowknife, NT X1A 2R3

Dear Mr. Livingstone:

RE: Response to the Report of Environmental Assessment on the Canadlan Zinc Corporation (CZN) Underground Decline/Exploratory Drilling and Metallurgical Pilot Plant Developments

Environment Canada has reviewed the issues arising in connection with the Mackenzie Valley Environmental Impact Review Board's (the Board) Report of Environmental Assessment (the Report) and supports sending the Report back for further consideration under section 130 of the Mackenzie Valley Resource Management Act.

As identified in recent discussions, the department's primary concern is with the treatment and disposal of the tailings generated in the pilot plant. There are two considerations underlying this concern, the first being that the tailings pond may not be suitable for use due to structural uncertainty and/or ongoing seepage. The second is that the final abandonment and restoration costs for the facility may be increased significantly if the untreated effluent is allowed to contaminate the existing pond. The department believes the proponent should identify alternative treatment options for the tailings liquids, *including release of treated effluents* to the receiving environment. The environmental assessment did not consider alternatives for treatment and discharge of the tailings supernatant.

Our review identified concerns with a number of the measures put forth by the Board, and while some of them were minor and administrative in nature, Environment Canada would like to flag the following issues:

1. It is unclear whether some of the issues and information gaps raised by the Board in the report must be addressed prior to the licensing or permitting process or whether they are to be addressed during these regulatory stages. For example, some measures identified, such as the need for spill contingency planning are routinely addressed during the regulatory process. Further precision from the Board on measures required, or the need to supply additional information, prior to licensing or permitting processes would clarify their intent.

- 2 -

- 2. Measures (#3 and #4), which deal with regulation of effluent quality, refer to the water quality monitoring objectives developed by Parks Canada and Environment Canada in the report "Protecting the Aquatic Quality of Nahanni National Park Reserve, N.W.T." and suggest the use of these parameters and objectives in the water licence. While this document may provide good monitoring objectives, it was not Intended that these numbers be used as end-of-pipe limits in the water licence. Environment Canada does not regulate or have monitoring requirements binding on other entities.
- 3. Links to Significant Adverse Impacts are imprecise in some areas and it is not clear whether the Board is recommending a measure or making a suggestion. We suggest that the Board review the suggestions made in the report to ensure that all areas where a concrete measure is needed, or an information gap must be filled, are explicitly worded to this effect.

Environment Canada would be pleased to discuss more specific concerns with the report, and is available to meet with other Ministers or the Board as needed. For further information please contact Stephen Harbicht, Head, Assessment and Monitoring. His telephone number is: 867-669-4733.

Yours truly,

(Original signed by Peter Blackall)

Peter J. Blackall, P.Eng. Regional Director