



Northwest Territories Resources, Wildlife and Economic Development

August 31, 2001

Mr. Luciano Azzolini
Environmental Assessment Officer
Mackenzie Valley Environmental Impact Review Board
P.O. Box 938
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YELLOWKNIFE NT X1A 2N7

Dear Mr. Azzolini:

Government of the Northwest Territories (GNWT) Technical Review of the Canadian Zinc Pilot Plant and Decline and Phase II Drilling Projects

Please find enclosed the comments submitted by the GNWT for the consideration of the Mackenzie Valley Environmental Impact Review Board with respect to the above environmental assessments.

If you require any further clarification of the information provided, do not hesitate to contact Mr. Brett Hudson, Environmental Assessment Analyst at 920-6392. Thank you for the opportunity to participate in this assessment. We look forward to receiving your recommendations respecting the project in the near future.

Sincerely,

For Robert McLeod
Deputy Minister

Enclosure

c: Mr. Brett Hudson
Environmental Assessment Analyst
RWED



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**TECHNICAL REVIEW OF THE ENVIRONMENTAL
ASSESSMENT REPORTS FOR CANADIAN ZINC
UNDERGROUND DECLINE AND DRILLING AND
METALURGICAL PILOT PLANT and PHASE II MINERAL
EXPLORATION PROGRAM AT PRAIRIE CREEK MINE**

Submission to:

**Mackenzie Valley Environmental Impact Review Board
Yellowknife, NT**

Submitted by:

Government of the Northwest Territories

August 31, 2001

Introduction

The Department of Resources, Wildlife and Economic Development (RWED) has conducted a technical review of the Environmental Assessment Reports submitted by Canadian Zinc Corporation for a proposal to develop a 600 meter underground decline, from which at least 9 drill holes will be driven. Also, the proponent plans to operate a bulk test metallurgical plant to process approximately 2000 tonnes of ore from both the decline and existing stockpiles. The Proponent also applied for permits to drill between 50 and 60 diamond drill holes from surface on the existing mine property. The purpose of the project is enhance knowledge of the mineral resource, leading to a production decision.

The proposal was referred to the Mackenzie Valley Environmental Impact Review Board (MVEIRB) for an environmental assessment on April 11, 2001. The following technical report will discuss the adequacy of the proponent's Environmental Assessment Report, including their responses to information requests that were submitted on August 17, 2001. The MVEIRB has elected to deal with the projects through two separate environmental assessments, one for the pilot plant and decline development, and one for the mineral exploration program. However, the comments in this report pertain to activity at the mine site in general that are an inherent part of both programs, rather than to the specific components under review. Therefore, this technical report will address both projects.

The Environmental Assessment Reports have been reviewed where project impacts have the potential to directly impact areas of GNWT responsibility, or where expert advice is available from GNWT staff. Accordingly, the following line items of the Terms of Reference issued by the MVEIRB on May 31, 2001 have been reviewed by the GNWT.

- 7.3 Environmental Considerations in the Development Design
- 7.4 Accidents and malfunctions
- 7.5 Alternatives
- 7.6 Air Quality and Climate
- 7.7 Terrain
- 7.8 Vegetation and Plant Communities
- 7.9 Water Quality and Quantity
- 7.11 Wildlife and Habitat
- 7.12 Cultural and Heritage Resources
- 7.13 Socio-Economics
- 7.14 Land and Resources Use
- 7.15 Noise
- 7.17 Cumulative Effects
- 7.18 Abandonment and Restoration
- 7.19 Environmental Management Plan

Although RWED has reviewed all the terms of reference lines noted above, the technical review will discuss only those items where the GNWT wishes to provide comment. Where no comments are provided, the Mackenzie Valley Environmental Impact Review Board may conclude that the GNWT is satisfied that the information provided by the proponent is sufficient to support their conclusions regarding environmental impacts. As a result of our technical review, the GNWT has concluded that the project is not likely to cause significant adverse socio-economic or environmental impacts with the implementation of the mitigation measures suggested below.

7.10 Water Quality and Quantity

Based on information obtained from an August 28, 2001 site visit, as well as that provided in the EAR and responses to information requests, RWED is concerned about the general water management practices at the Prairie Creek mine site.

RWED noted a number of project components that have the potential to lead to contamination of Prairie Creek or Harrison Creek. For example, used oil containers within the bermed tank farm have been leaking. Most of the oil in these containers has been transferred to a new tank, but some hydrocarbon contamination appears to have occurred. More generally, the water that fills the fuel containment berm during the spring is being pumped out to an adjacent area, which may lead to hydrocarbon contamination at the discharge point. No testing is being carried out to determine whether discharged water contains hydrocarbon residues. *general issue*

All water flowing across the project site reports to a settling pond on the Southern corner of the site. When the pond fills up, it discharges to Harrison Creek. No testing of the settling pond water is conducted prior to discharge to Harrison Creek. Mine water appears to be flowing out of Adit 870 and directly into either the settling pond or Harrison Creek. This water is also not tested to determine quality before it is released to the creek. *general issue*

RWED is also concerned about the potential impacts of the tailings pond on water quality in Prairie Creek. It is noted that the report provided by BCG Engineering Inc. included in the responses to information requests (August 17, 2001) concludes that the probability of seepage from the tailings pond to Prairie Creek is low. Nevertheless, RWED notes that a natural fluctuation in tailings pond levels of up to 1 meter has been observed. This leads to a continuing concern that water from the tailings pond is entering Prairie Creek. Testing of the water quality in the tailings pond would establish whether or not such a possible seepage is an issue of concern or not.

In light of these concerns, RWED feels that there is some uncertainty surrounding the impacts of the proposed projects on water quality. Therefore, RWED recommends that the proponent begin a program of water quality monitoring, including testing water quality in the tailings pond, at the settling pond, and at the point where Harrison Creek discharges to Prairie Creek. RWED anticipates that such a water quality monitoring program will be considered by the Mackenzie Valley Land and Water Board during the regulatory phase, should this project be permitted to proceed following environmental assessment.

7.11 Wildlife and Habitat

In general, RWED has no major concerns about the operation of the pilot plant or the drilling program given the existing infrastructure at the mine site and the limited scope of the operation. Rather, our concerns are related to the ancillary activities that will take place in support of the operations.

With an increased number of people on site to support the exploration program and the operation of the pilot plant, there is an increased risk for wildlife/human interactions. Although wildlife encounters have been low over recent years, an increased human population in the area may result in an increased number of carnivores frequenting the site.

The following mitigation measures are recommended:

- 1) The company should develop a bear response plan to enable personnel to adequately respond to problem bear situations. Designated personnel need to be trained, equipped and adequately prepared to deal with nuisance wildlife. Bear safety training is essential for all on-site personnel.
- 2) This pilot project should be used as a time to monitor wildlife, their movements, their interaction with mine activities and to refine mitigation techniques for the future operation of the mine. A wildlife monitoring program should be designed and implemented. As a minimum, a wildlife sightings log should be maintained.
- 3) Garbage needs to be incinerated daily. Contractors need to be educated about proper waste management, especially drillers who are working away from the mine site. Food wastes that attract wildlife will undoubtedly increase the number of wildlife/human interactions.
- 4) Chemicals such as reagents, and even old batteries can attract wildlife. Any attractants should be stored indoors in a secure facility.
- 5) The proponent should consider installing an electric bear fence around the main accommodation and kitchen complex to ensure worker and wildlife safety. The fenced in area could include an area for waste incineration.
- 6) The mineral lick located near the tailings pond is important habitat for Dalls sheep and possibly other wildlife. This area needs to be protected to ensure that wildlife can continue to use it with a minimum amount of disturbance from activities at the mine site.

- 7) Mine process water and tailings needs to be tested to ensure that it is not hazardous to wildlife.

7.18 Abandonment and Restoration

RWED appreciates that Canadian Zinc is making efforts to progressively reclaim the environmental liabilities bequeathed to them by the former owners, such as the relocation of used oil into newer tanks. However, RWED has noticed that some small scale hydrocarbon contamination of the ground has occurred, and that other items require prompt attention in order to ensure the sound operation of the site.

Paints and solvents are being stored in an abandoned trailer. If no longer required for site maintenance, these items should be removed from the site to an appropriate hazardous waste disposal facility. Similarly, a cache of chemical reagents, including some known to be toxic, such as sodium cyanide and copper sulphate, are stored outdoors under a tarp that appears to have formerly been part of the tailings pond liner. It appears likely that these reagents were exposed to the elements for some period of years. Some ground staining from the copper sulphate was observed. These chemicals should be removed from the site, and ground clean up initiated if required. Failing removal from the site, these chemicals should be stored in a secure building that prevents exposure to the elements.

Finally, RWED anticipates that the Mackenzie Valley Land and Water Board will consider the establishment of a security deposit of sufficient magnitude to finance the reclamation of the environmental liabilities on the site, should the project proceed to the regulatory phase.

Conclusion

Upon review of the materials provided by the proponent, RWED is of the opinion that these projects are not likely to cause significant adverse environmental or socio-economic impacts. However, there is some uncertainty associated with the impacts of the project on water quality, and RWED suggests that these be given full consideration by the Mackenzie Valley Land and Water Board, along with the matter of financial security, during the regulatory phase.

However, RWED wishes to emphasize that the opinions expressed here are applicable only to the projects as described in the EARs. Should the decision be made to proceed to production, RWED will expect to assess potential impacts in light of the characteristics of that development.