



**CANADIAN PARKS AND
WILDERNESS SOCIETY
NWT CHAPTER**

Box 1934, Yellowknife, NT X1A 2P4
Phone: (867) 873-9893 Fax: (867) 873-9593 e-mail: cpawsnwt@theedge.ca

Louie Azzolini, Environmental Assessment Officer,
Mackenzie Valley Environmental Impact Review Board,
Box 938, Yellowknife, NT. X1A 2N7
Phone (867) 873-9189; Fax 920-4761
ea01@mveirb.nt.ca

December 5, 2002

**RE: Canadian Zinc Corporation Land Use Permit Applications MV2001C0023
Underground Decline and Water Licence Application MV2001L2-0003 Metallurgical Pilot
Plant Program
MVEIRB File 01-002**

Dear Mr. Azzolini,

Please accept the following as comments of the Canadian Parks and Wilderness Society – Northwest Territories chapter on the above noted application.

In our previous submissions regarding this environmental assessment, we have outlined the unique ecological values and designations of the Nahanni region, which is the source of our interest and concern over the proposed Prairie Creek project. It is because of the wilderness values of this area that CPAWS is opposing this application. Mining activity at the Prairie Creek site will put these values at risk, and therefore is not an appropriate land use in the area. Section 117 (2) (e) allows the Board to take the unique natural context in which this application is set into consideration when making a recommendation to the Minister.

Specific concerns of CPAWS-NWT in this assessment include:

- Mitigation of existing site problems
- Requirement for enhanced water monitoring regime
- Potential for acid rock drainage
- Dilution
- Scope of water license
- Water movement through the site
- Settling pond

Mitigation of existing site problems

The DIAND Inspection reports of the Prairie Creek mine site, recently made available to the public and used as source documents for the Historical Water Quality of the Prairie Creek Project Area report, highlight three long term, ongoing issues:

1. The high heavy metal content of the water issuing from the 870m portal (which is addressed in the CZN IR response);
2. What appears to be a slow diesel leak of unknown origin which has stained the rocks on the edge of Prairie Creek; and
3. The presence of scrap metal in Harrison Creek.

Other past concerns noted in the inspection reports have included inadequate waste oil and chemical reagent storage. CPAWS-NWT strongly urges that any new permitting or licencing of activities at the site be conditional on the mitigation of these existing concerns.

Requirement for enhanced water monitoring regime

Water quality monitoring data is incomplete and inconsistent, as documented in the Historical Water Quality of the Prairie Creek Project Area report. The report identifies a need for the creation of a water quality monitoring regime in relation to the Prairie Creek project. Such a system should have frequent, regularly scheduled and standardized monitoring and reporting requirements, include hydrocarbon testing, be developed in conjunction with the Nahanni National Park Reserve, and be paid for by the project proponent. Figures identifying the location of monitoring stations, and of how water flows through the mine site should also be required.

There have been at least three diesel spills at the mine site, (as reported in the DIAND inspection reports). With the large quantity of hydrocarbons stored and handled on site, the monitoring of the full suite of hydrocarbons should be a requirement of the water monitoring regime.

Addressing the potential for acid rock drainage

The ore body at Prairie Creek is made up of vein massive sulphides and stratiform massive sulphides. If oxidized, sulphides will result in acid rock drainage, also known as acid mine drainage (AMD). As CZN describes it, the 870 portal was developed more than 20 years ago, and has numerous points exposing highly mineralized vein ore to the atmosphere for many years. The 'Historical Water Quality of the Prairie Creek Project Area' report states that "if sulphide oxidation is occurring, it is likely that there is increased potential for metal leaching and increased levels of metals in the portal drainage." This statement is supported by the conductivity findings of the report. The report also states that the high sulfate levels in the 870 portal, mine water and settling pond measurements suggest a need for further study.

AMD can be toxic to aquatic life, and can be difficult and expensive to mitigate (see attached document 'Acid Mine Drainage – Mining and Water Pollution Issues in BC'). Although the report states "CZN state that there is negligible potential for acid rock drainage due to the high neutralization potential of the surrounding [carbonate] rock formations" the simple presence of carbonate host rock cannot be assumed to be enough to prevent AMD. For instance, AMD has been and continues to be generated in the Leadville, Colorado mining district despite the abundance of carbonate rocks which host the ores (personal communication, Steve Blodgett, Center for Science in Public Participation, 2002). The high levels of zinc and sulfates in the portal water are an indicator that AMD may already be occurring.

Information on the exact composition of the waste rock and tailings that will be generated during the proposed developments, especially the pyrite content, is needed in order to be sure that acid mine drainage will not occur at the site, and be mitigated if it is. Further information, such as

independent geochemical analysis and modelling, is required to provide a clear answer on the potential AMD on the site prior to any permitting.

Dilution

All water flowing from the mine site into the receiving environment should meet or exceed accepted effluent standards and regulations and have no impact on the receiving environment. Relying on dilution of mine water through mixing with waters in the receiving environment is not a responsible method of water management.

Scope of water licence

According to the DIAND site inspection reports and the 'Historical Water Quality of the Prairie Creek Project Area' report, mine water flowing from the 870 portal is a source high levels of metals and contaminants including zinc, cadmium, copper, and sulphates, and has been a problem for 20 years. Given the importance of maintaining water quality in the region, and the history of waste water releases from the mine site, it is crucial that all of the water which flows through or originates from the site be the subject of a water licence.

Water movement through the site

CZN states that if the underground treatment pond (sump at mouth of the proposed decline) overflows, the overflowing water could report to Harrison Creek, highlighting that not all water from the site feeds into the settling pond. Is there other water which may go through the site and report to Harrison or Prairie Creek? If so, from what sources and how will CZN ensure this water will meet effluent standards. Again, a figure outlining how water flows through the site would be very useful.

Settling pond

The DIAND site inspection reports from the early 1980s suggest the settling pond is permeable and recommended that it be lined. It should be clarified whether or not the settling pond has been lined and is impermeable, and if it is not, what impact this would have on the proposed water treatment program.

In conclusion, the Minister highlighted water treatment in his September 3, 2002 letter to the Board, and the Board's IR has requested further information specific to water treatment issues. However, additional concerns were expressed by the Minister and other responsible agencies, and for the purposes of ensuring a comprehensive environmental assessment, we respectfully submit that these concerns be addressed by the Board prior to the completion of this assessment.

Sincerely,

Greg Yeoman
Conservation Director
CPAWS-NWT