CANADIAN ZINC CORPORATION

Fax Cover Sheet

RECEIVED
NOV 0 1 2002
MACKENZIE VALLEY ENVIRONMENTAL IMPACT REVIEW BOARD

Date: November 01, 2002

To: **Joe Acorn - MVEIRB**

Fax: **1-867-766-7074**

From: Peter Campbell

Pages: 25 (including cover sheet)

Subject: **CZN Response to MVEIRB IR#1**

Joe:

Please find attached a copy of CZN's response to MVEIRB Information Request No. 1 issued October 18, 2002.

An electronic version of this document is also being forwarded by email in *.pdf format.

Regards,

Peter

Suite 1202-700 West Pender Street
Vancouver, BC V6C 1G8
Tel: (604) 688-2001 Fax: (604) 688-2043
E-mail: peter@canadianzinc.com, Website: www.canadianzinc.com

CANADIAN ZINC CORPORATION

November 01, 2002

By Fax: 1-867-766-7074

Mr. Joe Acorn
Environmental Assessment Officer
Mackenzie Valley Environmental Impact Review Board
PO Box 938, 200 Scotia Centre, 5102 – 50th Ave.
Yellowknife, NT
X1A 2N7

Dear Mr. Acorn:

Re: Responses to Information Request – MVEIRB IR #1
Underground Decline/Exploration Drilling and Metallurgical Pilot Plant Program
MVEIRB File EA01-002

Further to your letter of October 18, 2002, please find attached Canadian Zinc's response to the Review Board Information Request No. 1 issued the same date.

We trust all will be in order with respect to these submissions. Should you have any questions or require any additional information please feel free to contact me at your convenience.

Yours very truly,

CANADIAN ZINC CORPORATION

J. Peter Campbell
A/VP Project Affairs

Suite 1202-700 West Pender Street
Vancouver, BC V6C 1G8
Tel: (604) 688-2001 Fax: (604) 688-2043
E-mail: peter@canadianzinc.com, Website: www.canadianzinc.com

November 01, 2002

Canadian Zinc Corporation
Underground Decline/Exploratory Drilling and Metallurgical Pilot Plant Environmental Assessments

Response to Information Request

Information Request:

Date: *October 18, 2001*

From: *MVEIRB Information Request No. 1*

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

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 concentrations of the constituents referenced in the report entitled Historical Water Quality of the Prairie Creek Project Area[1], and in regulations, guidelines and Acts that may be applicable.
(c) Identify concentrations of all treated effluent constituents that can be achieved by using the proposed treatment process.

[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.

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 generated in connection with the proposed water treatment process (e.g., solid content of waste sludge, flue gas of any incinerated materials.)

(f) Provide an accurate verifiable estimate of the discharge volume from the 870 m portal.

Response to MVEIRB Information Request No. 1 (October 18, 2002)

Water Treatment Plan
Underground Decline/Exploratory Drilling and Metallurgical Pilot Plant

Introduction

At the early stages of project planning for both the Pilot Plant and Underground Decline developments, CZN considered two basic waste management options for mitigating water quality impacts. The first was to treat the process and mine water at source using standard proven technology and discharge directly to the receiving environment after meeting discharge limits set in the development's water licence. (1) The second, a somewhat unique opportunity afforded by the presence of an existing tailings pond at Prairie Creek, was to contain discharges in the tailings pond as a mitigation measure to eliminate the need for a direct discharge of effluent from the proposed developments and any associated loadings to the receiving environment. (2)

Normally properties undergoing advanced exploration activity, such as that proposed by CZN, do not have the advantage of an existing tailings pond to serve this purpose, as such facilities are typically not constructed until much later on in the development process. As a result, the standard mitigation practice for such advanced exploration activity is normally to discharge to the environment following treatment to meet appropriate discharge criteria.

After evaluating the potential water quality issues associated with the two separate developments, CZN concluded that groundwater expected to be encountered in the decline (minewater) would likely be of good quality due to the nature of the rock in which it was being developed and suitable for discharge following settling, while the process water from the pilot plant would likely require further treatment prior to discharge. As a result, CZN proposed to use the existing tailings pond to contain all process water from the pilot plant, estimated at up to 4000 m^3, and as a contingency measure for minewater from the decline, estimated by INAC at up to 67,000 m^3, in the event that the quality of this water did not meet expectations.

The decision to propose the use of the tailings pond was made as it was judged to be the most environmentally responsible option, providing for complete containment and no direct discharges of any water to the environment.

Over the course of the EA, however, concerns were raised by regulatory authorities and expert advisors as to the integrity of the tailings pond given that it was constructed 20 years ago and subject to ongoing natural erosion effects over that time, and that instabilities which were evident at the time of construction have not since been rehabilitated.

Despite assurances from the Company's geotechnical engineers that the tailings impoundment facility was stable and suitable for the intended purpose and commitments from the Company to have a geotechnical inspection of the tailings facility conducted prior to use, concerns continued to be expressed.

In view of these circumstances, CZN has indicated that it is prepared to proceed with the developments without using the tailings pond. All flows on site will be directed to the site settling pond as the last point of control prior to discharging to the receiving environment. Impacts to water quality will be mitigated by treating flows as necessary using proven technology and discharging from the settling pond to Harrison Creek to meet appropriate discharge limits as set under the Water Licence. * CZN COMMITMENT

Metallurgical Pilot Plant Development Description

The pilot plant is essentially a miniature, scaled-down version of the proposed full-scale mill gravity pre-concentration, grinding, flotation and concentrate filtration process capable of operating in batches of approximately 1.5 tonnes per hour, as compared to full-scale milling at a design rate of 72 tonnes per hour. The pilot plant will be totally contained and operated within the existing mill building and will utilize existing mill equipment to store fresh water, process water and tailings solids.

It is expected that the plant will be operated up to several days in a row on a one shift per day basis of up to about 10 hours per day over a period of four to five months. Because of the limited size of the pilot plant, only one circuit can be imitated at a time. This will result in a batch type process where the pilot plant is started up and shut down regularly over the test period.

Process water requirements for the pilot plant will be about 2 m^3 of water per tonne of ore. Of this amount, approximately 50% would be fresh and 50% reclaim. On a continuous operating basis, therefore, the pilot plant would use about 3 m^3 of water per hour. As half of this amount would be reclaimed process water, this would be equivalent to an incremental increase of process water requiring storage and treatment in the amount of 1.5 m^3 per hour. Assuming continuous operation over a 10 hour operating day, this would equate to 15 m^3 of additional process water per day.

Process water would be stored in one of the two existing 35 foot thickeners, each of which has a volume of some 270 m^3, equivalent to available storage capacity for continuous operation over 9 - 10 hour operating days. When the first thickener is filled to capacity, discharge will commence to the second thickener while using the first as a source of reclaim water to simulate tailings production and recycling of process water under operating conditions in order to study the changes in water chemistry brought about by the milling process. This would have the effect of drawing down the first thickener at the rate of 15m^3 per day while the second thickener is being filled.

Fresh water will be acquired from the existing water well drawing from the Prairie Creek Valley aquifer. Fresh water would be pumped into additional existing tankage in the mill for storage as feed for the pilot plant.

The total tonnage to be processed is expected to be in the region of 1,000 - 2,000 tonnes of ore. Total water use over the whole of the pilot plant program will therefore be in the range of 2000 – 4000 m^3 of which half or 1000 – 2000 m^3 will be fresh and half or 1000 – 2000 m^3 will be reclaimed process water. The total amount of process water requiring storage, treatment and discharge over the course of the 4 to 5 month pilot plant program will therefore be in the range of 1000 – 2000 m^3.

Underground Decline/Exploratory Drilling Development Description

The decline, at 600m in length, will be driven almost in its entirety through the dolostone/limestone host rock, only intersecting the vein near its terminus at the 825m elevation.

Estimates of de-watering volumes are very difficult to make in advance of underground development. Experience on the property to date has shown the dolostone/limestone formations in which the decline will be developed to be very watertight. The mineralized quartz vein however is known to be a conduit for water flow. The existing 930 and 970 m levels are relatively dry with no portal discharge. The 870 m level is wetter, with a seasonally variable portal discharge ranging from around 1 – 7 lps during the summer, and no flow through the winter when the portal is frozen.

DIAND, in its technical review comments of July 20, 2001, projected potential minewater discharge volumes from the decline at 67,500 m^3 or more over a 6 month period based on past reported flow estimates from the 870m portal.

CZN, however, has not used discharge volumes from the 870m level to estimate de-watering volumes for the decline because of fundamental differences between the two developments. The 870m level is over 1000m in length, intersecting the vein on a number of occasions. The 870m level is also interconnected to the 930m level through a series of ore passes, manways and vent raises which could allow drainage from the upper level to report to the lower 870m level. As a result, the decline is expected to produce significantly less water than the 870m level and the DIAND estimate of 67,500 m^3 is considered a worst case.

It is possible that the decline development could intersect water filled cavities in the limestone/dolostone formation. In such a case, mine water flows would be expected to increase substantially, although such increase would be of a short duration as such cavities would be expected to drain fairly quickly

Similarly, CZN did not use minewater chemistry data from the 870m level in an attempt to predict the expected chemistry of the minewater from the decline development. The 870 m level is a horizontal adit developed in the late 1960's early 1970's to access vein mineralization. The level is over 1000m in length with numerous crosscuts and draw points exposing vein ore. As a result minewater discharging from the 870 portal has been closely associated with highly mineralized vein ore exposed to the atmosphere for many years.

The decline will be developed almost entirely within the un-mineralized dolostone/limestone host rock. As a result, minewater quality is expected to be alkaline (pH ~ 8.0 – 8.5), relatively hard due to the dissolution of calcium and magnesium from the carbonate rock types and low in dissolved and total metals due to the absence of mineralization in the development rock. While the vein structure is known to act as a water conduit, minewater encountered in the decline will only have been in contact with unexposed and unoxidized sulphide vein mineralisation at depth which should be relatively insoluble under such conditions. As a result the 870m discharge is not considered to be representative of the chemistry of the minewater expected to be encountered in the decline, which is expected to be significantly lower in metal content than that experienced at the 870 portal.

Minewater produced during decline development and underground exploration will be handled through the use of collection sumps and pumps. The underground drainage collection system would consist of a series of excavated collection sumps equipped with pumps located at intervals along the length of the decline, the positioning of which will be determined based on the lift capacity of the pumps and the vertical head between sumps. A final excavated sump would be located underground near the portal entrance where minewater could be treated, if necessary, prior to discharge. Minewater would then be piped down to a polishing pond to be constructed adjacent to the mill prior to release to the site settling pond which then discharges to Harrison Creek. The polishing pond would also serve as a treatment pond for the 870 portal discharge which would be piped to it. * NEW CZN COMMITMENT

Sizing of the sumps and pumps will be a function of water volumes encountered during driving of the decline.

In the absence of any other influences on its quality, minewater will reflect the nature of the local groundwater regime from which it originates. Typical influences on minewater quality as a result of decline development include: sedimentation due to the physical impact of vehicle and equipment activity, hydrocarbons due to the use of fuels and lubricants in vehicles and equipment and nitrogen compounds due to the use of explosives.

Water usage during decline development and exploration drilling will be restricted to that used by the drills as a circulation fluid for cooling and lubrication. It is estimated that water use by the air jumbo in driving the decline will be in the order of approximately 2 ipgm while the drill is operating, which will generally be only a few hours per day. Water use during underground exploration core drilling is estimated at up to 5 ipgm during active drilling.

Nitrogen compounds, such as nitrate, nitrite and ammonia, enter minewater through flushing of blasting residue from broken rock. At lower concentrations, nitrogen compounds are a nutrient, while at higher concentrations can become toxic to aquatic life. Nitrogen loadings in minewater are a function of the powder factor used in blasting which is in turn a function of the nature of the rock, contact of broken rock with water and the volume of minewater flow. Minimizing explosive use and proper handling procedures underground constitute the most practicable mitigation measures and typically are capable of reducing nitrogen loadings to acceptable levels. Additional treatment can be effected by dilution, increased residence times to allow for biological uptake and oxidation of the more toxic nitrite form to the less toxic nitrate, and/or by discharging minewater through organic systems, such a wetland areas, to allow for biological uptake prior to release to receiving waters.

Minewater from such underground exploration activity is typically discharged to a sump prior to release to the environment. Sedimentation is removed in the sump by settling, which is a function of particle settling velocity and residence time, which is in turn a function of sump capacity versus minewater flow. Any hydrocarbons contained in the minewater, being lighter than water, float on the surface and are therefore amenable to skimming off using absorbent pads or booms.

CZN's opinion based on its extensive knowledge of the geology and geochemistry of the host rock formations, as well as its experience in underground mining operations, that minewater quality will be suitable for discharge to the receiving environment following settling.

The provision for further treating and discharging minewater constitutes an additional mitigation measure should minewater at the sump be determined not to be suitable for discharge to the site settling pond and then to Harrison Creek.

Treatment Procedures and Equipment

Previous metallurgical testwork (Table 1) and minewater sampling (Table 2) have identified zinc as the primary metal of concern with respect to water quality impacts associated with Prairie Creek ores. To a lesser degree, other metals such as copper, lead, cadmium have also been shown to be slightly elevated.? Standard and proven technology for removal of such dissolved metals includes the addition of lime, soda ash or other neutralizing agents in order to raise pH and precipitate metal hydroxides.

Excess process water retained in the thickeners will be treated with the addition of lime or soda ash to approximately pH 9.5 to optimize precipitation of dissolved metals as hydroxides and subsequent settling within the existing tankage in the mill. There are a total of 22 tanks in the mill, ranging in size from 5 to 265 m^3, with a total capacity of 730 m^3, which can be used for storage of fresh water and for storage, treatment and settling of process water (Table 8). The pilot plant process can be suspended at any time to allow for refinement of the treatment process if necessary to meet discharge criteria, thus ensuring sufficient holding capacity in the mill to retain all process water. Testing will be undertaken to confirm discharge quality.

In the event that minewater was also determined to require treatment beyond the proposed settling, decanting and hydrocarbon capture, this would also be effected using lime addition, precipitation and settling. Lime would be added in batches to a mix tank located underground and metered into the minewater in a slurry form. In this case treatment would be effected in a series of holding/settling ponds constructed underground and in the plantsite area to which minewater would be piped. Design and sizing of the settling ponds would be based on expected and/or encountered flows and nature of the particles requiring settling, including provision for flood events, sediment removal, hydrocarbon capture and addition of settling aids, if required.

There are about 200 tonnes each of lime and soda ash currently stored at the minesite, which is considerably in excess of the amount required to effect treatment of all expected effluents associated with the proposed developments.

Projected Treatment Effectiveness

Total and dissolved metals removal from aqueous discharges through pH adjustment and settling using lime, soda ash or other alkaline treatments has been standard and proven technology for many years.

Previous benchscale testwork by Hardy and Associates in 1984 on Prairie Creek minewater showed both lime and soda ash to be very effective in reducing metal concentration below discharge limits set under the water licence. (Table 3)

In a very similar situation, minewater was treated using lime addition at the Silvertip underground lead/silver/zinc property in BC in 1999, also successfully reducing metal concentrations to well below discharge limits. (Table 4) Lime was added in a slurry form at a rate of 125 – 150 mg lime per litre of minewater directly to an underground sump from which minewater was then pumped to a surface settling pond prior to discharge. Flows up to 100 lps were successfully treated in this manner over the 4 month program.

Given that the Silvertip example represents actual field experience with treating minewater of similar chemistry to that seen at the 870 portal, it is considered to demonstrate very achievable treatment technology and water quality results to that which could be expected at Prairie Creek.

Environmental Impact Assessment

Water Quality Impacts

In order to assess the potential for impacts associated with the discharge of the treated effluent water directly to the environment a water quality projection model was developed in an Excel spreadsheet format. The model compares quality and volume of combined effluent discharges with average water quality and volume at various points in the receiving environment during the summer season (June to October) when the developments are proposed to be undertaken and when site discharges are at their maximum.

The model examines four scenarios:

- No treatment (Table 5-1)
- Treatment of development discharges to meet MMER standards; no treatment of historic 870 portal discharge (Table 5-2)
- Treatment of all site discharges to meet MMER standards (Table 5-3)
- Treatment of all site discharges to meet Water Licence N3L3-0932 standards (Table 5-4)

The model suggests that under all four scenarios, even the worst case no treatment scenario, Canadian water quality guidelines for the protection of freshwater aquatic life would be met downstream of the mine in Prairie Creek at Galena Creek, and that water quality in Prairie Creek at the mouth where it enters the South Nahanni River would remain virtually unchanged and have no effect on the quality of water in the South Nahanni River.

The model further suggests that treatment to meet MMER standards at the settling pond discharge point will result in adequate protection of the environment and that treatment to meet lower discharge standards as set under the original Water Licence provide little additional benefit in terms of downstream water quality. This is a function of the relatively small volumes of site discharges as compared to flows in the receiving environment.

Accidents and Malfunctions

The potential for impacts resulting from accidents and malfunctions associated with the proposed water treatment relate primarily to either:

- Overtopping or failure of containment structures or distribution systems, or
- Ineffective treatment resulting from failure of treatment works

In the case of the pilot plant, all containment and treatment will take place within the mill. Effluent will not be released until treatment is effected and confirmed. Any spillage resulting from overtopping or containment failure would be contained with the mill sumps. As a result the potential for impacts associated with accidents and malfunctions is considered to be very low.

In the case of the decline, all water reporting to underground sumps, underground treatment pond and the minewater polishing pond will be pumped from underground. In the event of any failure of the works, pumping would be stopped eliminating the potential for any continuous loss.

Overtopping of any underground sump would result in minewater reporting back into to the underground, as opposed to the receiving environment. Such water would be captured underground and pumped back for treatment through the minewater handling system.

Overtopping of the underground treatment pond near the portal could result in a release of partially treated minewater to Harrison Creek. The ability to halt such an uncontrolled release by discontinuing pumping limits the potential for impacts to a relatively small volume. Given the fact that such water will already have been at least partially treated, the potential for impacts associated with such an event are considered to be low.

Failure of the minewater distribution pipeline or surface minewater polishing pond would result in a release of treated minewater to the mill yard which would be captured in the site settling pond. Given the small volumes of water involved the potential for impacts associated with such an event are considered to be low.

The effectiveness of minewater treatment through lime addition will be gauged operationally by routine monitoring of pH, with confirmation by total metal analyses. Lime addition rates will be adjusted as necessary to achieve the optimum pH to effect metal precipitation. All effluent will be monitored in compliance with water licence requirements. A failure or malfunction of the treatment system would result in a release of untreated or partially treated minewater to the minewater polishing pond, site settling pond and Harrison Creek, in that order. Given the relatively small volume of water involved, the expected quality of the water, and the fact that the water would subsequently be mixed with treated water contained within the polishing and settling ponds, the potential for impacts associated with such an event is considered to be low.

Mitigation measures to prevent such failures and malfunctions as described above will include:

- Proper sizing of sumps, pipelines and settling ponds to handle expected flows
- Routine inspections of all effluent handling and treatment works by operating personnel
- Routine testing of treated minewater pH to confirm effectiveness of lime addition rate

Cumulative Effects

The potential for cumulative effects associated with the proposed developments in a treat and discharge scenario as opposed to discharging to the tailings pond, relate primarily to the addition of such treated effluents to the existing flow discharging from the property through the site settling pond which represents the last point of control prior to entering the receiving environment via Harrison Creek and then to Prairie Creek.

As suggested by the water quality projection model discussed previously, such combined discharges would not appear to have the potential for a significant cumulative effect on Prairie Creek or the South Nahanni River, even in the no treatment scenario.

The developments as proposed will realize the added benefit of minewater from the historic 870 portal being treated in conjunction with minewater from the decline prior to discharge to the settling pond and then to the receiving environment. This in effect will actually reduce the cumulative effects of the developments as compared to the historic conditions on the site by reducing loadings to the receiving environment.

Potential Impacts of Other Discharges

The only direct discharge during operation of the water treatment works as proposed is treated water as discussed in detail above. There are no gaseous emissions associated with the proposed water treatment.

A byproduct of the treatment process will be a sludge, which will be retained within the underground treatment pond, surface polishing pond and mill process water treatment tank. The sludge will be a combination of:

- sediment created by physical activity underground,
- metal hydroxide or carbonate precipitates, and
- excess lime or soda ash

The treatment and polishing ponds will be designed to retain the sludge without resuspension and to provide access in the event that the ponds are required to be cleaned out during operations. Given the short term nature of the proposed developments, it is expected that the ponds will be sized so as not to require cleaning out. Sufficient tankage is available in the mill to retain all sludge during operations of the pilot plant.

Sludge retained in the underground treatment pond, surface polishing pond and mill tanks can either be handled by:

- leaving in place, decanting water and backfilling the ponds
- being removed from the ponds and placed back underground, possibly in combination with tailings produced by the pilot plant
- being removed and buried, possibly in combination with the tailings produced by the pilot plant, or
- being retained and disposed of with tailings produced once the mine is in operation

870 Portal Discharge Volume Estimate

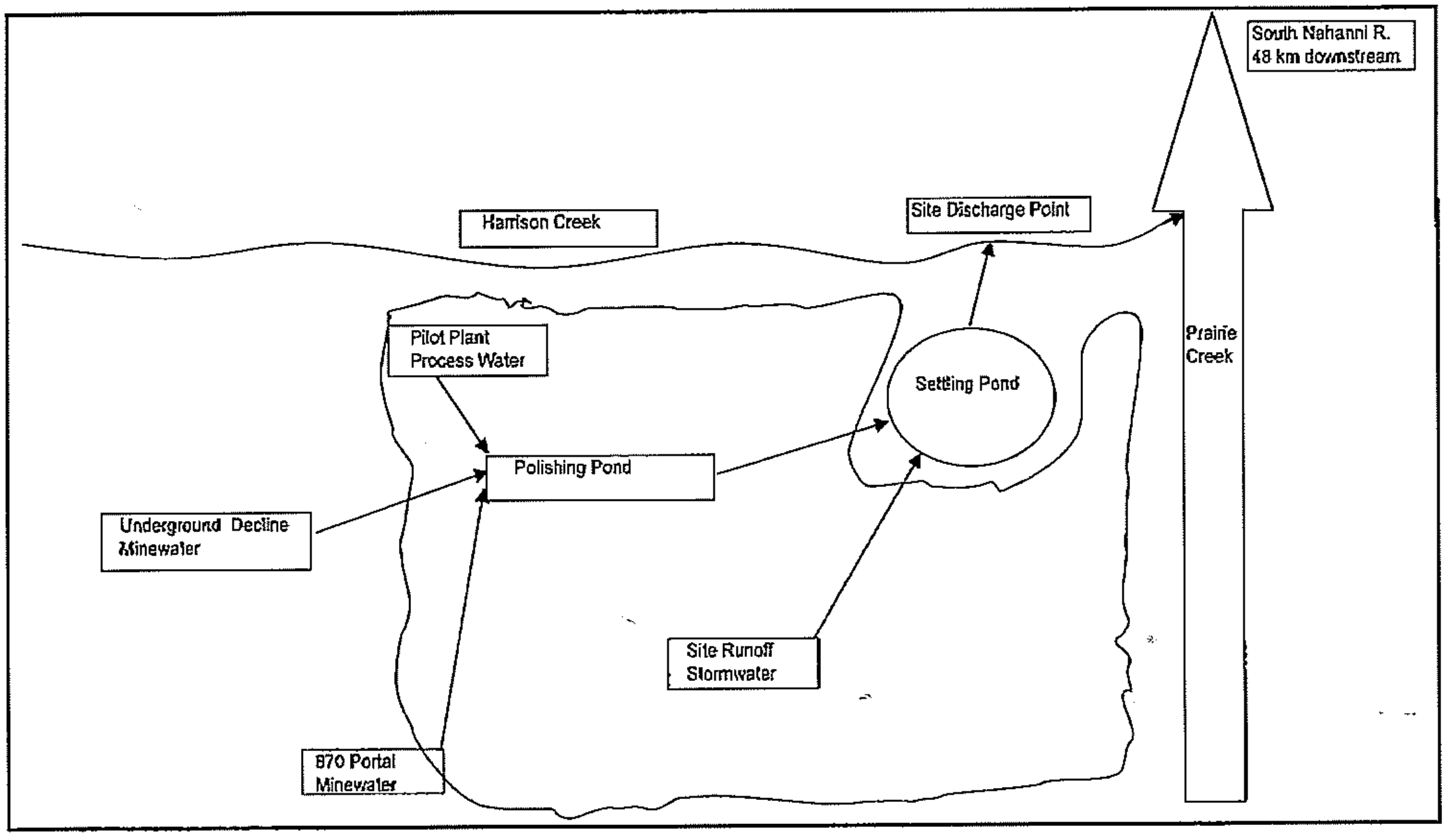
Discharges from the 870 portal were routinely measured by site personnel in each of 2001 and 2002. Measurements were taken by directing all surface flow into an 8 inch PVC pipe and measuring the time taken to fill a known volume.

In 2001, minewater flow from the 870 portal ranged from 28 to 96 and averaged 68 litres per minute. While in 2002, minewater flow from the 870 portal ranged from 48 to 400 and averaged 192 litres per minute. The difference between the two years is believed to be attributable to a much wetter summer in 2002, suggesting that flow from the 870 portal is influenced by precipitation.

Copies of the results from the 870 portal discharge monitoring in 2001 and 2002 are attached (Tables 6 & 7).

Figure 1

Prairie Creek Mine
Underground Decline/Exploratory Drilling and Metallurgical Pilot Plant Developments
Site Discharge Schematic



zation - Liquid Fraction

AL METALS (mg/l)													
Al	T-As	T-Cd	T-Cr	T-Cu	T-Fe	T-Hg	T-Pb	T-Mn	T-Mo	T-Ni	T-Se	T-Ag	T-Zn
20	< 0.20	0.051	< 0.015	0.117	0.038	0.108	0.168	0.19	< 0.030	< 0.020	< 0.20	0.069	0.881
20	< 0.20	< 0.010	< 0.015	< 0.010	< 0.030	0.001	0.507	< 0.005	0.043	< 0.020	< 0.20	< 0.015	0.164
20	< 0.20	0.012	< 0.015	0.026	< 0.030	0.010	0.120	0.008	< 0.030	< 0.020	< 0.20	< 0.015	0.159
20	0.2000	0.051	0.015	0.117	0.038	0.108	0.507	0.190	0.043	0.020	0.2000	0.069	0.881
20	0.2000	0.010	0.015	0.010	0.030	0.001	0.120	0.005	0.030	0.020	0.2000	0.015	0.159
20	0.2000	0.024	0.015	0.051	0.033	0.040	0.265	0.068	0.034	0.020	0.2000	0.033	0.401

Table 1

Prairie Creek Mine

Tailings Effluent Characteri

DATE	Sample ID	TO T-
1994	474-1	< 0.2
1994	474-2	.2
1994	474-5	< 0.2
MAXIMUM		0.
MINIMUM		0.
AVERAGE		0.

:O4	NH3-N	NO2/NO3	T-As	T-Cd	T-Cr	T-Cu	T-Fe	T-Hg	T-Pb	T-Mn	T-Mo	T-Ni	T-Se	T-Ag	T-Zn
180			0.024	< 0.005	< 0.01	0.005	< 0.01		< 0.01		< 0.05	0.007			0.15
220		1.9	0.002	0.031	< 0.01	0.086	4.2	0.0035	0.27		< 0.02	0.057			7.7
60	<0.5		0.01	0.02		0.04	0.2		0.06			0.05			5.5
59	0.7		0.01	< 0.01		0.04	0.38		0.1			0.05			2.5
		1.9	< 0.01	< 0.01		0.02	0.04		0.06			0.02			5.4
	1.5	1.9	< 0.01	0.014	< 0.01	0.06	0.07	0.00027	0.13			< 0.02			6.3
	1.7	2	< 0.01	0.03		0.04	0.06	0.0016	0.05			< 0.05			3.7
	0.88	1		0.098		0.001		0.00028	0.013			< 0.005			7.3
		0.16	0.0025	0.020	< 0.0005	0.050	< 0.005		0.0075			0.001			6.9
		0.07	0.0063	0.009	0.0015	0.061	0.051	0.0001	0.013			0.012			10.0
220			0.0058	0.0095		0.0225	0.0269		0.0091			0.0111			6.0
									0.0272						10.8
240			0.0042	0.0088		0.0166	0.02		0.08			0.094			3.2
			0.0024	< 0.001		0.009	0.01		0.045						0.3
			0.0008	0.075	0.010	0.098	0.048		0.027			0.017			15.2
			< 0.0003	0.0169	0.0001	0.047	0.028		0.0253			0.017			9.1
			< 0.20	0.043	< 0.015	0.012	< 0.030		< 0.050	0.028	< 0.030	< 0.20	< 0.20	< 0.015	1.9
			< 0.20	0.041	< 0.015	< 0.010	< 0.030		< 0.050	0.008	< 0.030	< 0.20	< 0.20	< 0.015	1.2
				0.041	0.0034	0.021	0.032		0.014	0.005		0.02			7.2
240		0.03	0.00	0.084	0.00025	0.062	0.005	0.00004	0.040	0.00855	0.002	0.02	0.00	0.00	15.8
302			0.00	0.038	0.0031	0.033	< 0.020		0.020	0.0057		0.01			8.0
320			0.0011	0.0416	< 0.0002	0.0230	0.019		0.0213	0.0048		0.0169			8.4
287			0.0028			0.0846	0.005		0.0397	0.0095		0.0173			16.0
407			0.0021	0.0679	0.0032	0.0489	0.006		0.0272	0.0076		0.0162			12.4
		0.19	0.0013	0.0638	< 0.003	0.0345	< 0.030	< 0.00001	0.0254	0.0061		0.0147			9.8
365	<0.005	0.20	0.0006	0.0384	< 0.001	0.0133	< 0.030	< 0.00005	0.0140	0.0060	0.002	0.0100	0.006	< 0.00	7.1
197	0.027	0.27	0.0004	0.0446	< 0.001	0.0121	< 0.030	< 0.00005	0.0107	0.0018	0.002	0.0120	0.009	< 0.00	5.7
238	**0.96**	**0.87**	**0.0213**	**0.0345**	**0.005**	**0.037**	**0.215**	**0.001**	**0.046**	**0.008**	**0.019**	**0.038**	**0.0836**	**0.006**	**7.17**
407	1.70	2.00	0.2000	0.0980	0.015	0.098	4.200	0.004	0.270	0.028	0.050	0.200	0.2000	0.015	16.00
59	0.03	0.03	0.0003	0.0010	0.000	0.001	0.005	0.000	0.008	0.002	0.002	0.001	0.0030	0.000	0.15
13	5	11	24	25	17	26	25	9	27	11	7	25	5	5	27

Table 2

Prairie Creek Mine
Mine Water Quality - 870m (2850') Portal - Stn. 932-

DATE	pH	Alk	Cond	Hard	TSS
04/18/80	8.3	262	752		4
07/22/80	8.0	262	831		386
04/30/81	7.9	290	990	530	< 5
04/30/81	8.0	260	910	470	19
05/20/81	7.8	270	950	510	
02/02/82	7.8	260	850	404	18
04/07/82	7.9	260	910	860	< 5
08/27/82	7.8	250	800	440	< 5
06/27/83	8.0		850		< 5
08/23/83	7.8		900		< 5
02/25/84					
05/24/84	8.3		940		< 5
07/06/84	8.0				< 5
09/13/84	8.8	310	1000	373	5
12/27/84	7.98			433	
07/26/85					
06/30/92	7.5	248	950	557	< 3
09/15/93	7.7	254	936	540	< 3
07/31/94					
07/31/94					
06/23/94	8.0	266	943		
07/31/94	7.7	280	1100	390	5
10/18/94	8.0	260	963	1102	
06/15/95	7.7	275	1010	567	
08/03/95	7.8	283	1030	612	< 3
09/28/95	7.9	290	1020	575	
08/18/99	7.9	271	1110		12
08/30/01	8.2	321	1090	687	< 3
06/28/02	8.1	288	1070	681	< 3
AVERAGE	**8.0**	**273**	952	**572**	25
MAXIMUM	8.8	321	1110	1102	386
MINIMUM	7.5	248	752	373	3
N	25	20	23	17	20

CANADIAN ZINC
CORPORATION

Table 3

Prairie Creek Mine
Raw and Treated Mine Discharge
Total Metal Concentrations

Parameter	Raw Mine Discharge (mg/l)	Treated Mine Discharge 100 mg Na_2CO_3/100ml (mg/l)	Discharge Limits Lic. #N3L3-0932 Avg	Grab	MMER Limits (total) Avg	Grab
Zinc	4.5	0.09	0.30	0.60	0.5	1.0
Cadmium	0.005	0.002	0.015	0.03	n/a	n/a
Chromium	<0.10	<0.10	0.15	0.30	n/a	n/a
Copper	<0.04	<0.04	0.075	0.15	0.3	0.6
Iron	<0.05	<0.05	n/a	n/a	n/a	n/a
Mercury	0.0011	<0.0002	0.0015	0.0030	n/a	n/a
Nickel	<0.10	<0.10	0.20	0.40	0.5	1.0
Arsenic	<0.01	<0.01	0.15	0.30	0.5	1.0

*Hardy & Associates - 1984

Table 4

Silvertip Project
Raw and Treated Mine Discharge
Mean Heavy Metal Concentrations

Parameter	Raw Mine Discharge (mg/l)	Treated Mine Discharge 125 mg $Ca(OH)_2$/ l (mg/l)	Discharge Limit Permit PE-7337 (mg/l)	MMER Limits (total) Avg mg/l.	Grab mg/l
Zinc – Total	14.0	0.39	0.8	0.5	1.0
Zinc – Diss.	1.87	0.14	n/a	n/a	n/a
Cadmium Diss.	0.010	0.001	0.01	n/a	n/a
Chromium - Diss.	<0.010	<0.010	0.05	n/a	n/a
Copper - Diss.	0.003	0.002	0.05	0.3	0.6
Iron - Diss.	1.49	0.05	1.0	n/a	n/a
Lead - Diss.	0.26	0.003	0.05	0.2	0.4

*Silvertip Mining Corporation – 1999

Suite 1202-700 West Pender Street
Vancouver, BC V6C 1G8
Tel: (604) 688-2001 Fax: (604) 688-2043
E-mail: peter@canadianzinc.com, Website: www.canadianzinc.com

t Plant

le Creek Mine, July 1, 1982
Freshwater Aquatic Life
e from site

ce equivalent to 870 portal; actual decline minewater expected to be of much better quality and less volume
ictice flow would only occur over about a 6 hour period once every 10 days or so.
meet minimum treatment requirements
om Prairie Creek upstream of the minesite
data from July 1988 to present in order to eliminate effect of earlier high detection limits and certain outliers

:. Nahanni Clausen Cr	Prairie Creek at Mouth	Prairie Creek drainage area	(sq. km)
1330	32.5	880	total
815	21.0	495	above mine
899	16.5		
716	11.2		
318	5.0		
816	17.2		

Prairie Creek Mine
Underground Decline and Metallurgical Pilo
Water Quality Projection Model

Terms & Assumptions

MMER - Metal Mining Effluent Regulations
N3L3-0932 - Water Licence issued for original operations of Prair
CWQG FAL - Canadian Water Quality Gidelines for protection of
Dilution Ratio - Ratio of streamflow to combined effluent discharg

Water quality and volume of minewater from decline assumed to l
Pilot Plant effluent assumed to be a continuous flow; In actual pra
Red/italized numbers represent effluent water quality changes to
For South Nahanni River - No LTO's for Hg or Sb - used values fr
Background concentrations for Prairie Creek upstream based on

Flow estimates

m3/s	Prairie Creek at mine	S Nahanni at Virginia Falls	S at
June	18.3	911	
July	11.8	466	
August	9.3	445	
Sept	6.3	506	
Oct	2.8	214	
Avg	9.7	508	

No treatment

Table 5-1

Prairie Creek Mine
Underground Decline and Metallurgical Pilot Plant
Water Quality Projection Model - Base/Worst Case (No Treatment of Site Discharges)

	Discharge Criteria			Discharge and Upstream Receiving Water Quality						Predicted Downstream Receiving Water Quality			
Flow m3/s Dilution Ratio	MMER	N3L3-0932	CWQG FAL	Pilot Plant 0.008	Decline 0.006	870 Portal 0.006	Prairie Cr. u/s 9.7	Harrison Cr. u/s 0.1	S. Nahanni River at Virginia Falls 508	Predicted Conc.(mg/l) Harrison Creek @ mouth 0.12 5	Predicted Conc.(mg/l) Prairie Creek d/s @ Galena Creek 9.8 490	Predicted Conc.(mg/l) Prairie Creek d/s @ Mouth 17 850	Predicted Conc.(mg/l) South Nahanni River d/s Prairie Creek 816 40800
Parameters	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	LTO mg/l	mg/l	mg/l	mg/l	mg/l
Ag			0.0001	0.033	0.006	0.006	0.00001	0.00002	0.0001	0.0028	0.0000	0.00003	0.0001
Al				0.2	0.08	0.08	0.01	0.01	0.8729	0.0297	0.0103	0.0101	0.8549
As	0.5-1.0	0.15-0.30	0.005	0.2	0.0213	0.0213	0.0004	0.006	0.0006	0.0205	0.0006	0.0005	0.0006
Ca				212	126	126	51	60.1	46.1	76.8	51.4	51.2	46.2
Cd		0.015-0.03	0.000063	0.024	0.0345	0.0345	0.0002	0.0022	0.0004	0.0069	0.0003	0.0002	0.0004
Cu	0.30-0.60	0.075-0.15	0.004	0.051	0.037	0.037	0.0009	0.0002	0.0027	0.0071	0.0010	0.0009	0.0027
Cr		0.15-0.30		0.015	0.005	0.005	0.0017	0.006	0.0012	0.0064	0.0018	0.0017	0.0012
Fe			0.3	0.033	0.215	0.215	0.0704	0.29	1.42	0.2610	0.073	0.072	1.39
Hg		0.0015-0.003	0.0001	0.04	0.001	0.001	0.00004	0.0009	0.00004	0.0035	0.0001	0.0001	0.00004
Mg				4.93	59.3	59.3	19.8	33.9	11.8	33.9	20.0	19.9	12.0
Mn				0.068	0.008	0.008	0.001	0.007	0.365	0.0110	0.001	0.001	0.3574
Mo			0.073	0.034	0.019	0.019	0.003	0.031	0.0014	0.0295	0.003	0.003	0.0014
Ni	0.50-1.00	0.20-0.40	0.15	0.02	0.038	0.038	0.0014	0.003	0.0089	0.0075	0.001	0.001	0.0087
Pb	0.20-0.40	0.15-0.30	0.007	0.265	0.046	0.046	0.001	0.0086	0.001	0.0290	0.001	0.001	0.0010
Sb				0.2	0.12	0.12	0.0002	0.002	0.0002	0.0266	0.001	0.0004	0.0002
Se			0.001	0.2	0.0836	0.0836	0.001	0.002	0.0005	0.0230	0.001	0.001	0.0005
Zn	0.50-1.00	0.30-0.60	0.03	0.401	7.17	7.17	0.005	0.063	0.031	0.7832	0.015	0.010	0.0306

Table 5-2

Prairie Creek Mine
Underground Decline and Metallurgical Pilot Plant
Water Quality Projection Model - MMER Case 1 (Treatment of Development Discharges;No Treatment of Historic 870 Portal Discharge)

	Discharge Criteria			Discharge and Upstream Receiving Water Quality						Predicted Downstream Receiving Water Quality			
	MMER	N3L3-0932	CWQG FAL	Pilot Plant	Decline	870 Portal	Prairie Cr. u/s	Harrison Cr. u/s	S. Nahanni River at Virginia Falls	Predicted Conc.(mg/l) Harrison Creek @ Mouth	Predicted Conc.(mg/l) Prairie Creek d/s @ Galena Creek	Predicted Conc.(mg/l) Prairie Creek d/s @ Mouth	Predicted Conc.(mg/l) South Nahanni River d/s Prairie Creek
Flow m3/s				0.008	0.006	0.006	9.7	0.1	508	0.12	9.8	17	816
Dilution Ratio										5	490	850	40800
Parameters	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	LTO mg/l	mg/l	mg/l	mg/l	mg/l
Ag			0.0001	0.033	0.006	0.006	0.00001	0.00002	0.0001	0.0028	0.0000	0.00003	0.0001
Al				0.2	0.08	0.08	0.01	0.01	0.8729	0.0297	0.0103	0.0101	0.8549
As	0.5-1.0	0.15-0.30	0.005	0.2	0.0213	0.0213	0.0004	0.006	0.0006	0.0205	0.0006	0.0005	0.0006
Ca				212	126	126	51	60.1	46.1	76.8	51.4	51.2	46.2
Cd		0.015-0.03	0.000063	0.024	0.0345	0.0345	0.0002	0.0022	0.0004	0.0069	0.0003	0.0002	0.0004
Cu	0.30-0.60	0.075-0.15	0.004	0.051	0.037	0.037	0.0009	0.0002	0.0027	0.0073	0.0010	0.0009	0.0027
Cr		0.15-0.30		0.015	0.005	0.005	0.0017	0.006	0.0012	0.0065	0.0018	0.0017	0.0012
Fe			0.3	0.033	0.215	0.215	0.0704	0.29	1.42	0.2654	0.073	0.072	1.39
Hg		0.0015-0.003	0.0001	0.04	0.001	0.001	0.00004	0.0009	0.00004	0.0035	0.0001	0.0001	0.00004
Mg				4.93	59.3	59.3	19.8	33.9	11.8	34.5	20.0	19.9	12.0
Mn				0.068	0.008	0.008	0.001	0.007	0.365	0.0112	0.0011	0.0011	0.3574
Mo			0.073	0.034	0.019	0.019	0.003	0.031	0.0014	0.0300	0.0033	0.0032	0.0014
Ni	0.50-1.00	0.20-0.40	0.15	0.02	0.038	0.038	0.0014	0.003	0.0089	0.0076	0.0015	0.0014	0.0087
Pb	0.20-0.40	0.15-0.30	0.007	0.20	0.046	0.046	0.001	0.0086	0.001	0.0251	0.0013	0.0012	0.0010
Sb				0.2	0.12	0.12	0.0002	0.002	0.0002	0.0270	0.0005	0.0004	0.0002
Se			0.001	0.2	0.0836	0.0836	0.001	0.002	0.0005	0.0234	0.0013	0.0012	0.0005
Zn	0.50-1.00	0.30-0.60	0.03	0.401	0.5	7.17	0.005	0.063	0.031	0.4627	0.0106	0.0082	0.0305

Table 5-3

Prairie Creek Mine
Underground Decline and Metallurgical Pilot Plant
Water Quality Projection Model - MMER Case 2 (Treatment of All Site Discharges)

	Discharge Criteria			Discharge and Upstream Receiving Water Quality						Predicted Downstream Receiving Water Quality			
Flow m3/s Dilution Ratio	MMER	N3L3-0932	CWQG FAL	Pilot Plant 0.008	Decline 0.006	870 Portal 0.006	Prairie Cr. u/s 9.7	Harrison Cr. u/s 0.1	S. Nahanni River at Virginia Falls 508	Predicted Conc.(mg/l) Harrison Creek @ Mouth 0.12 5	Predicted Conc.(mg/l) Prairie Creek d/s @ Galena Creek 9.8 490	Predicted Conc.(mg/l) Prairie Creek d/s @ Mouth 17 850	Predicted Conc.(mg/l) South Nahanni River d/s Prairie Creek 816 40800
Parameters	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	LTO mg/l	mg/l	mg/l	mg/l	mg/l
Ag			0.0001	0.033	0.006	0.006	0.00001	0.00002	0.0001	0.0028	0.0000	0.00003	0.0001
Al				0.2	0.08	0.08	0.01	0.01	0.8729	0.0297	0.0103	0.0101	0.8549
As	0.5-1.0	0.15-0.30	0.005	0.2	0.0213	0.0213	0.0004	0.006	0.0006	0.0205	0.0006	0.0005	0.0006
Ca				212	126	126	51	60.1	46.1	76.8	51.4	51.2	46.2
Cd		0.015-0.03	0.000063	0.024	0.0345	0.0345	0.0002	0.0022	0.0004	0.0069	0.0003	0.0002	0.0004
Cu	0.30-0.60	0.075-0.15	0.004	0.061	0.037	0.037	0.0009	0.0002	0.0027	0.0071	0.0010	0.0009	0.0027
Cr		0.15-0.30		0.015	0.005	0.005	0.0017	0.006	0.0012	0.0064	0.0018	0.0017	0.0012
Fe			0.3	0.033	0.215	0.215	0.0704	0.29	1.42	0.2610	0.0729	0.0717	1.39
Hg		0.0015-0.003	0.0001	0.04	0.001	0.001	0.00004	0.0009	0.00004	0.0035	0.0001	0.0001	0.00004
Mg				4.93	59.3	59.3	19.8	33.9	11.8	33.9	20.0	19.9	12.0
Mn				0.068	0.008	0.008	0.001	0.007	0.365	0.0110	0.0011	0.0011	0.3574
Mo			0.073	0.034	0.019	0.019	0.003	0.031	0.0014	0.0295	0.0033	0.0032	0.0014
Ni	0.50-1.00	0.20-0.40	0.15	0.02	0.038	0.038	0.0014	0.003	0.0089	0.0075	0.0015	0.0014	0.0087
Pb	0.20-0.40	0.15-0.30	0.007	*0.20*	0.046	0.046	0.001	0.0086	0.001	0.0247	0.0013	0.0012	0.0010
Sb				0.2	0.12	0.12	0.0002	0.002	0.0002	0.0266	0.0005	0.0004	0.0002
Se			0.001	0.2	0.0836	0.0836	0.001	0.002	0.0005	0.0230	0.0013	0.0012	0.0005
Zn	0.50-1.00	0.30-0.60	0.03	0.401	*0.5*	*0.5*	0.005	0.063	0.031	0.1271	0.0065	0.0059	0.0305

Table 5-4

Prairie Creek Mine
Underground Decline and Metallurgical Pilot Plant
Water Quality Projection Model - N3L30932 Case (Treatment of All Site Discharges)

	Discharge Criteria			Discharge and Upstream Receiving Water Quality						Predicted Downstream Receiving Water Quality			
	MMER	N3L3-0932	CWQG FAL	PilotPlant	Decline	870 Portal	Prairie Cr. u/s	Harrison Cr. u/s	S. Nahanni River at Virginia Falls	Predicted Conc.(mg/l) @ Harrison Creek	Predicted Conc.(mg/l) Prairie Creek d/s @ Galena Creek	Predicted Conc.(mg/l) @ Prairie Creek d/s @ Mouth	Predicted Conc.(mg/l) South Nahanni River d/s Prairie Creek
Flow m3/s				0.008	0.006	0.006	9.7	0.1	508	0.12	9.8	17	816
Dilution Ratio										5	490	850	40800
Parameters	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	LTO mg/l	mg/l	mg/l	mg/l	mg/l
Ag			0.0001	0.033	0.006	0.006	0.00001	0.00002	0.0001	0.0028	0.0000	0.00003	0.0001
Al				0.2	0.08	0.08	0.01	0.01	0.8729	0.0297	0.0103	0.0101	0.8549
As	0.5-1.0	0.15-0.30	0.005	0.15	0.0213	0.0213	0.0004	0.006	0.0005	0.0171	0.0006	0.0005	0.0005
Ca				212	126	126	51	60.1	46.1	76.8	51.4	51.2	46.2
Cd		0.015-0.03	0.000063	0.015	0.015	0.015	0.0002	0.0022	0.0004	0.0043	0.0003	0.0002	0.0004
Cu	0.30-0.60	0.075-0.15	0.004	0.051	0.037	0.037	0.0009	0.0002	0.0027	0.0071	0.0010	0.0009	0.0027
Cr		0.15-0.30		0.015	0.005	0.005	0.0017	0.006	0.0012	0.0064	0.0018	0.0017	0.0012
Fe			0.3	0.033	0.215	0.215	0.0704	0.29	1.42	0.2610	0.073	0.072	1.39
Hg		0.0015-0.003	0.0001	0.0015	0.001	0.001	0.00004	0.0009	0.00004	0.0009	0.0001	0.0000	0.00004
Mg				4.93	59.3	59.3	19.8	33.9	11.8	33.9	20.0	19.9	12.0
Mn				0.068	0.008	0.008	0.001	0.007	0.365	0.0110	0.0011	0.0011	0.3574
Mo			0.073	0.034	0.019	0.019	0.003	0.031	0.0014	0.0295	0.0033	0.0032	0.0014
Ni	0.50-1.00	0.20-0.40	0.15	0.02	0.038	0.038	0.0014	0.003	0.0089	0.0075	0.0015	0.0014	0.0087
Pb	0.20-0.40	0.15-0.30	0.007	0.15	0.046	0.046	0.001	0.0086	0.001	0.0214	0.0013	0.0011	0.0010
Sb				0.2	0.12	0.12	0.0002	0.002	0.0002	0.0266	0.0005	0.0004	0.0002
Se			0.001	0.2	0.0836	0.0836	0.001	0.002	0.0005	0.0230	0.0013	0.0012	0.0005
Zn	0.50-1.00	0.30-0.60	0.03	0.3	0.3	0.3	0.005	0.063	0.031	0.1008	0.0062	0.0057	0.0305

CANADIAN ZINC CORPORATION

Table 6

Prairie Creek Mine 2001
WATER FLOW FROM 870M PORTAL

DATE	TIME	LITRES/MIN	M3/SEC	WEATHER/COMMENTS
July 5, 2001	15:00			Ice Plug opened
July 14, 2001	9:00	28	0.0005	cool/cloudy
July 17, 2001	11:00	80	0.0013	hot/sunny (heavy rain yesterday)
July 18, 2001	11:30	95	0.0016	warm/rain
July 19, 2001	13:00	96	0.0016	sunny/hot
July 20, 2001	9:30	90	0.0015	sunny/hot
July 21, 2001	9:30	82	0.0014	sunny/hot
July 22, 2001	9:45	87	0.0014	sunny/hot
July 23, 2001	8:45	80	0.0013	sunny/hot
July 24, 2001	16:45	80	0.0013	cloudy/sprinkles
July 25, 2001	9:40	70	0.0012	cloudy/sprinkles
July 26, 2001	9:20	60	0.0010	cloudy
July 27, 2001	10:25	60	0.0010	cloudy
July 28, 2001	10:25	55	0.0009	sunny
July 29, 2001	9:45	60	0.0010	sunny
July 30, 2001	9:50	50	0.0008	sunny
July 31, 2001	13:30	52	0.0009	sunny
August 1, 2001	13:50	50	0.0008	sunny
August 2, 2001	13:20	55	0.0009	sunny
August 3, 2001	14:30	55	0.0009	sunny
August 4, 2001	13:00	50	0.0008	sunny/clouds
August 5, 2001	15:45	50	0.0008	sunny/clouds
August 6, 2001	13:55	45	0.0007	sunny/clouds
August 7, 2001	19:20	40	0.0007	cloudy
August 8, 2001	19:55	40	0.0007	sunny
August 9, 2001	19:40	40	0.0007	sunny
August 10, 2001	12:00	40	0.0007	sunny/hot
August 11, 2001	8:45	40	0.0007	sunny/hot
August 12, 2001	8:40	38	0.0006	sunny
August 13, 2001	7:15	40	0.0007	sunny/clear
August 14, 2001	10:25	40	0.0007	sunny/clear
August 15, 2001	14:00	75	0.0012	sunny/hot

Suite 1202-700 West Pender Street
Vancouver, BC V6C 1G8
Tel: (604) 688-2001 Fax: (604) 688-2043
E-mail: peter@canadianzinc.com, Website: www.canadianzinc.com

CANADIAN ZINC CORPORATION

August 16, 2001	13:00	70	0.0012	sunny/hot
August 17, 2001	15:00	84	0.0014	sunny/hot
August 18, 2001	14:00	72	0.0012	rain
August 19, 2001	14:00	82	0.0014	cold/wet
August 20, 2001	11:00	78	0.0013	cool/wet
August 21, 2001	15:30	70	0.0012	cloudy
August 22, 2001		75	0.0012	cloudy
August 23, 2001	16:00	78	0.0013	cool/cloudy
August 24, 2001	15:30	70	0.0012	cool/cloudy
August 25, 2001	10:30	70	0.0012	cool/sunny
August 26, 2001	10:30	62	0.0010	cool/cloudy
August 27, 2001	13:25	76	0.0013	cool/light rain
August 28, 2001	16:30	78	0.0013	sunny/warm
August 29, 2001	11:00	78	0.0013	sunny/warm
August 30, 2001	16:30	80	0.0013	sunny
August 31, 2001	11:00	82	0.0014	sun/clouds
September 1, 2001	15:15	86	0.0014	rain/fog
September 2, 2001				
September 3, 2001	12:00	76	0.0013	cool/cloudy
September 4, 2001		72	0.0012	rain
September 5, 2001	10:00	66	0.0011	cool/sunny
September 6, 2001	11:00	70	0.0012	rain
September 7, 2001	9:00	72	0.0012	rain
September 8, 2001	9:00	74	0.0012	cool/cloudy
September 9, 2001	11:00	72	0.0012	cool/cloudy
September 10, 2001	14:00	76	0.0013	
September 11, 2001	14:00	80	0.0013	
September 12, 2001	8:00	80	0.0013	
September 13, 2001		76	0.0013	
September 14, 2001		78	0.0013	sunny/warm
September 15, 2001		80	0.0013	cloudy/warm
September 16, 2001		78	0.0013	
September 17, 2001		80	0.0013	
September 18, 2001		82	0.0014	cool/cloudy
Mean		**68**	**0.0011**	
Max		96	0.0016	
Min		28	0.0005	

Suite 1202-700 West Pender Street
Vancouver, BC V6C 1G8
Tel: (604) 688-2001 Fax: (604) 688-2043
E-mail: peter@canadianzinc.com, Website: www.canadianzinc.com

CANADIAN ZINC CORPORATION

Table 7

Prairie Creek Mine 2002
WATER FLOW FROM 870M PORTAL

DATE	TIME	LITRES/MIN	M3/SEC	WEATHER/COMMENTS
27-Jun-02	16:30	55	0.0009	sunny
28-Jun-02	16:00	55	0.0009	cloudy
29-Jun-02	16:00	55	0.0009	cloudy
30-Jun-02	15:35	48	0.0008	cloudy
1-Jul-02	15:30	55	0.0009	cloudy
2-Jul-02	15:30	56	0.0009	sunny
3-Jul-02	15:30	61	0.0010	sunny
4-Jul-02	15:30	63	0.0010	cloudy, sun & wind
5-Jul-02	15:30	60	0.0010	rain & cloud
6-Jul-02	15:30	70	0.0012	cloudy
7-Jul-02	15:30	72	0.0012	sunny
8-Jul-02	15:30	80	0.0013	sunny
9-Jul-02	15:30	95	0.0016	rain, sun & cloud
10-Jul-02	15:30	170	0.0028	sun & cloud
11-Jul-02	15:30	220	0.0037	thunder showers
12-Jul-02	15:30	220	0.0037	sunny
13-Jul-02	15:30	220	0.0037	rain
14-Jul-02	15:30	220	0.0037	rain
15-Jul-02	15:30	220	0.0037	sun
16-Jul-02	15:30	230	0.0038	sun
17-Jul-02	15:30	260	0.0043	sun
18-Jul-02	15:30	300	0.0050	cloudy
19-Jul-02	15:30	280	0.0046	cloudy
20-Jul-02	15:30	280	0.0046	sunny
21-Jul-02	15:30	200	0.0033	hot, clear & windy
22-Jul-02	17:00	170	0.0028	hot, clear & windy
23-Jul-02	15:30	170	0.0028	hot, clear & windy
24-Jul-02	15:30	150	0.0025	hot, clear & windy
25-Jul-02	17:00	150	0.0025	hot, clear & windy
26-Jul-02	11:00	170	0.0028	sunny (heavy rain overnight)
27-Jul-02	15:30	180	0.0030	cloudy
28-Jul-02	17:00	240	0.0040	rain
29-Jul-02	17:00	300	0.0050	rain
30-Jul-02	17:00	400	0.0066	clear
31-Jul-02	17:00	400	0.0066	light rain
1-Aug-02	17:00	380	0.0063	clear & cold
2-Aug-02	15:30	300	0.0050	clear & sunny

Suite 1202-700 West Pender Street
Vancouver, BC V6C 1G8
Tel: (604) 688-2001 Fax: (604) 688-2043
E-mail: peter@canadianzinc.com, Website: www.canadianzinc.com

CANADIAN ZINC CORPORATION

3-Aug-02	16:30	300	0.0050	cloudy with showers
4-Aug-02	16:30	300	0.0050	clear & sunny
5-Aug-02	16:30	300	0.0050	clear & sunny
6-Aug-02	16:30	260	0.0043	smoke, hot, sunny, thunderstorm in evening
7-Aug-02	16:30	240	0.0040	hot & sunny
8-Aug-02				
Mean		192	**0.0032**	
Max		400	0.0066	
Min		48	0.0008	

Table 8

Prairie Creek Mill - Available Storage Capacity of In-Place Tankage

No.	Tank Description	Tank Dimensions D x H (ft)	Tank Dimensions D x H (m)	Tank Storage Capacity (m3)
1	Thickener No. 1	35 x 10	10.7 x 3.1	270
2	Thickener No. 2	35 x 10	10.7 x 3.1	270
3	Surge Tank No. 1	12 x 11.5	3.7 x 3.5	35
4	Surge Tank No. 2	12 x 11.5	3.7 x 3.5	35
5	Concentrate Stock Tank	10 x 18	3.1 x 5.5	40
6	Conditioner No. 1	8 x 9	2.4 x 2.7	12
7	Conditioner No. 2	7 x 7	2.1 x 2.1	7.5
8	Conditioner No. 3	6 x 6	1.8 x 1.8	5.0
9	Conditioner No. 4	4 x 4	1.2 x 1.2	1.5
10	Reagent Stock Tank No. 1	8 x 8	2.4 x 2.4	11
11	Reagent Stock Tank No. 2	8 x 8	2.4 x 2.4	11
12	Reagent Stock Tank No. 3	6 x 6	1.8 x 1.8	5.0
13	Reagent Stock Tank No. 4	6 x 6	1.8 x 1.8	5.0
14	Reagent Stock Tank No. 5	6 x 6	1.8 x 1.8	5.0
15	Reagent Stock Tank No. 6	6 x 6	1.8 x 1.8	5.0
16	Reagent Stock Tank No. 7	6 x 6	1.8 x 1.8	5.0
17	Reagent Mix Tank No. 1	4 x 4	1.2 x 1.2	1.5
18	Reagent Mix Tank No. 2	4 x 4	1.2 x 1.2	1.5
19	Reagent Mix Tank No. 3	4 x 4	1.2 x 1.2	1.5
20	Reagent Mix Tank No. 4	4 x 4	1.2 x 1.2	1.5
21	Reagent Mix Tank No. 5	4 x 4	1.2 x 1.2	1.5
22	Reagent Mix Tank No. 6	4 x 4	1.2 x 1.2	1.5
	Total			732

Suite 1202-700 West Pender Street
Vancouver, BC V6C 1G8
Tel: (604) 688-2001 Fax: (604) 688-2043
E-mail: peter@canadianzinc.com, Website: www.canadianzinc.com

Facsimile
Mackenzie Valley Environmental Impact Review Board

To:

Peter Campbell, Canadian Zinc Corp., Vancouver	(604)	688-2043
Pauline Campbell, Nahanni Butte Dene Band, Nahanni Butte	(867)	602-2910
Sharon Pellissey, Pehdzeh Ki FN.	(867)	581-3229
Rita Cli, Liidli Koe First Nation, Fort Simpson	(867)	695-2665
Bruce Leclaire, SAO, Village of Fort Simpson	(867)	695-2005
Deh Cho First Nations, Fort Simpson	(867)	695-2038
Greg Yeoman, CPAWS, Yellowknife		873-9593
Alexandra Borowiecka, Ecology North, Yellowknife		920-2986
Paula Pacholek, EC		873-8185
David Tyson, DFO		669-4941
Iannick Lamirande, NRCan, Ottawa	(613)	995-5719
Doug Tate, Nahanni National Park Reserve	(867)	695-2446
Jane McMullen, GNWT		873-0114 and 873-0293
Mary Tapsell, INAC marie adams		669-2701
Bob Wooley, Executive Director, MVLWB, Yellowknife		873-6610
David H. Searle Fasten Martineau		(604) 632-4861

From Louie Azzolini, EOA
Pages: 26 including this cover
Date: Friday, November 15, 2002
File: EA01-003 Decline and Metallurgical Pilot Plant

Subject: **Canadian Zinc Response to the Review Boards most recent information request.**

Please see the attached.

From.....

MVEIRB
P.O. Box 938
Yellowknife, NT X1A 2N7
Phone (867) 873-9189
Fax (867) 920-4761