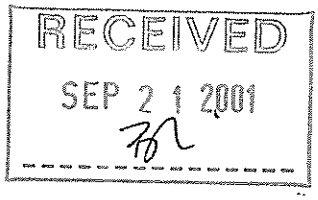

Fax Cover Sheet

Date: September 21, 2001

To: **Louie Azzolini - MVEIRB**

Fax: **1-867-920-4761**

From: Peter Campbell

Pages: 17 (including cover sheet)

Subject: **Response to Technical and Public Review Comments**

Louie:

Please find attached a letter document dated September 21, 2001 providing CZN's response to technical review and public comments on the EA01-002 and EA01-003.

An electronic version is also coming via email.

Regards,

Peter

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CANADIAN ZINC
CORPORATION

September 21, 2001

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

By Fax: 1-867-920-4761

Dear Mr. Azzolini:

Re: Responses to Technical Review and Public Comments of Environmental Assessment Reports - Prairie Creek Mine

- **Phase II Mineral Exploration Drilling Program**
  (Land Use Application MV 2001C0022; MVEIRB File EA01-003)
- **Metallurgical Pilot Plant Program**
  (Water Licence Application MV2001L2-0003; MVEIRB File EA01-002)
- **Underground Decline and Exploration Drilling**
  (Land Use Application MV2001C0023; MVEIRB File EA01-002)

We are pleased to provide Canadian Zinc's responses to technical review and public comments on the Environmental Assessment Reports for the above-noted developments.

Several key issues appear to be common to a number of the review comments and CZN's response to these is summarized below, while specific responses to each of the technical and public review submissions on an individual basis are appended.

Tailings Dam Integrity

In response to concerns reiterated in the technical review comments concerning the integrity and use of the tailings pond, CZN has undertaken additional information gathering to clarify these concerns in order to facilitate movement of the applications through the regulatory stage. The following have been completed:

- The water in the pond was sampled on August 30, 2001. Water quality data for the pond is appended. The water quality data indicate that the concentrations of key parameters of interest are actually lower in the pond than the average values for Prairie Creek used in the tailings pond chemistry model provided in response to the information requests. This in turn indicates that the model was conservative and confirms the projections of the model as presented in CZN's response to GNWT-RWED IR#3.

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- The level of the pond was surveyed on September 8, 2001. The pond level was found to be at 869.5 m, the same as that determined by BGC in 1994. This supports the observation that pond level has not changed significantly over the intervening period and that the clay liner remains intact and significant seepage is not occurring. The pond water level estimate of 868m as provided in the EA Report was taken from an earlier report (Hardy, 1983) on the tailings facility. This level was used to provide a conservative estimate of the contained volume of water in the pond for the purposes of calculating available dilution ratios for discharges to the pond. Confirmation of the pond level at 869.5m equates to an additional 150,000 m^3 of water to the previous estimate of 225, 000 m^3, increasing the available dilution ratio for the pilot plant process effluent from over 50:1 to almost 100:1. This also confirms that the pond can accept all potential discharges associated with the developments and remain within the "safe" level of 1m as evidenced by historical fluctuations.

- CZN scheduled a geotechnical site assessment of the tailings impoundment by BGC Engineering on September 19, 2000. Unfortunately weather conditions forced cancellation of the fight into the site and rescheduling has not been possible. As an alternative, CZN personnel inspected the tailings impoundment facility and have reviewed their findings with BGC. Erosion of the riprap berm along the toe of the dam adjacent to Prairie Creek was observed not to have changed significantly in recent years. Significant quantities of riprap protection remain in place and continue to provide adequate protection along the length of the dam including at the point of maximum deflection of Prairie Creek where additional and coarser rip rap protection was provided at the time of construction.

CZN and its geotechnical engineering consultants (BGC) remain confident that tailings facility is stable in its present form and suitable for the intended use. The amount of water proposed for discharge to the impoundment is minor in comparison to the existing volume of water in the pond and the resultant increase in water level insignificant in terms of the capacity of the pond. Such proposed use in no way prejudices the stability of the impoundment or the rehabilitation of the facility in support of future operations.

However, in view of the concerns expressed by the respective parties during the review, and in spite of the foregoing, CZN is prepared to commit to engaging our geotechnical consultants to complete the site inspection of the facility prior to commencement of discharges to the impoundment associated with the proposed developments in order to ensure that the condition of the facility remains suitable for these purposes.

Discharge to the tailings pond was proposed 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. The resultant water quality in the pond is expected to meet discharge standards and therefore pose no hazard to the environment either in the short term or over the longer term. The alternative to this proposal would be for CZN to treat the water at source and discharge directly to the receiving environment after meeting discharge limits to be set at the regulatory stage.

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Water Quality Monitoring
CZN appreciates the need to set reasonable discharge limits and design a monitoring program to ensure the protection of water quality in Prairie Creek and the South Nahanni River. CZN is prepared to participate with the MVLWB and regulatory authorities at the regulatory stage to achieve these objectives.

Fuel Storage Facility
Contrary to that implied by many of the review comments, the fuel storage tank facility does comply with current legislation.

The fuel storage tank systems were registered on May 21, 1998 in accordance with the Registration of Storage Tank Systems for Petroleum Products and Allied Petroleum Products on Federal Lands Regulations promulgated pursuant to the Canadian Environmental Protection Act.

The fuel storage tank systems were in existence prior to the CCME Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products being published in August, 1994. The Code requires existing systems to be upgraded to meet the requirements for new systems within 15 years from the date the authority having jurisdiction adopts the, giving CZN until at least 2008 to upgrade the facility.

The fuel storage tank facility is part of the existing infrastructure at the Prairie Creek minesite. The applications before the Board request no alterations or additions to these facilities. CZN continues to monitor the condition of the fuel storage tank facility in conjunction with routine care and maintenance activity, and will do so as well in conjunction with the proposed developments. The facility will be upgraded in conjunction with mine re-development. In the meantime, CZN believes it would be inappropriate to override existing legislation and require upgrading of the facility at this time for the purposes of undertaking the proposed developments.

Thank you for the opportunity to comment on these matters. We trust our thoughts are constructive.

Yours very truly,

CANADIAN ZINC CORPORATION

Original Signed By

J. Peter Campbell
VP Project Affairs

/attach

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Responses to Technical Review and Public Comments on EA Reports

Environment Canada **August 31, 2001**

- Spills and Spill Contingency Plans

CZN will submit updates to the Spill Contingency Plan as required and will seek input from EC at that time

- Monitoring

CZN supports consideration of monitoring of discharges to the receiving environment and of the receiving environment, including locations, frequency, parameters, QA/QC & discharge limits at the regulatory stage. CZN will make itself available as well to provide input to the setting of discharge limits and design of a monitoring program to ensure protection of the water quality in Prairie Creek and the South Nahanni River.

- Minewater

CZN appreciates that limits for ammonia may be required in addition to other components of nitrogen loading. CZN notes that settling of minewater prior to discharge without further treatment has been and continues to be standard industry practice and is optimistic that with proper explosive handling practices minewater will be able to achieve reasonable limits set to protect the receiving environment. As stated in the EA report, alternative treatment and/or handling in the form of discharging to the tailings or catchment pond has been planned for.

- Drilling Waste Management

While not specifically discussed, drilling wastes were assumed to be a component of the minewater discharge as dewatering will be ongoing during active drilling. Underground drilling waste will be similar to surface drilling wastes, which are typically discharged after settling in surface sumps, with the exception that the volume of return water from underground drilling is typically greater than surface drilling since a proportion of underground holes are drilled horizontally or in an upwards direction facilitating the return flow.

- Effluent Quality

As a point of clarification, CZN did not defer predicting effluent quality as being beyond the scope of the EA. DIAND IR #4 requested additional details on the testwork planned as part of the follow-up program to the proposed pilot plant development. As this information is part of the outcome of the development it was not considered relevant to an assessment of the potential impacts of the development itself. Effluent quality predictions were provided in response to GNWT IR #3 and DIAND IR #8.

- Camp Wastewater Management

CZN practices proper handling of waste products and actively discourages disposal of solvents, oils or other such substances to sewage or greywater. These practices will be continued.

Hydrocarbon staining within the fuel storage facility berm resulted from historical waste oil barrel storage practices, the majority of which has been cleaned up by CZN in recent years. This staining did not result from leakage from the bulk storage tanks, which remain in good shape and perfectly usable. The decanting of water from the fuel storage containment berm is conducted on the same principle as any standard oil/water separator, which allows for discharge of the underlying clean water and retention of the minor amounts of hydrocarbon

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product floating on the surface. This constitutes standard practice elsewhere as well. CZN takes care in these procedures to ensure that the decant system functions effectively as intended. CZN supports consideration of monitoring requirements and limits for this discharge consistent with regulatory practice at the regulatory stage.

- Tailings Pond

As noted by EC, consideration of erosion of the riprap berm by Prairie Creek along the outside toe of the impoundment dam was part of the assessment of the facility undertaken by BGC in 1994, and was taken into account in their determination that the dam was stable in its present configuration and suitable for the intended purposes. CZN has continued to monitor the condition of the tailings impoundment facility in conjunction with ongoing care and maintenance activity. CZN personnel inspected the tailings impoundment facility most recently in September, 2001 and have reviewed their findings with BGC. Erosion of the riprap berm along the toe of the dam adjacent to Prairie Creek was observed not to have changed significantly in recent years. Significant quantities of riprap protection remain in place and continue to provide adequate protection along the length of the dam including at the point of maximum deflection of Prairie Creek where additional and coarser riprap protection was provided at the time of construction. CZN and its geotechnical engineering consultants (BGC) remain confident that tailings facility is stable in its present form and suitable for the intended use.

CZN agrees that further consideration of the need for additional armouring will be needed to support full-scale use of the facility for tailings disposal over the long term. Such work will be done in conjunction with the rehabilitation engineering studies as part of project feasibility and for inclusion in the EA Report to be prepared in support of an application for full-scale operations. Tailings pond rehabilitation will then be undertaken in conjunction with mine re-development.

- Tailings Management

CZN's proposal for discharging process effluent to the tailings pond was not presented as a means of simply diluting process water to meet discharge criteria. It was chosen on the basis of it allowing for complete containment of the process effluent with no discharge and therefore no loadings to the receiving environment, as opposed to treating and discharging directly to the receiving environment within set discharge limits which would still result in some level of loadings. CZN does not believe that discharge limits to the tailings pond, an engineered containment facility, are necessary or appropriate.

- Abandonment and Restoration

CZN agrees that A& R plans and considerations should be restricted to activities relating to the proposed developments and not to the entire site and existing infrastructure.

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Responses to Technical Review and Public Comments on EA Reports

Nahanni National Park Reserve August 31, 2001

- Issue 1 Fuel Storage Facility

Recommendation #1: CZN supports consideration of monitoring requirements and reasonable limits for this discharge at the regulatory stage. CZN does not believe that a zero discharge limit as proposed by NNPR is reasonable. Any such limit should be scientifically based and consistent with regulatory practice elsewhere.

Recommendation #2: The tank farm facility at Prairie Creek does comply with the CCME Environmental Code of Practice. The Code requires that tank farms in existence at the time the Code was adopted be upgraded within 15 years. The Code was developed in 1994, and CZN therefore has until at least 2008 to upgrade the tank farm to standards which currently apply to the construction of new tank farms. CZN feels it would be inappropriate for the MVEIRB to recommend overriding existing legislation and require upgrading of the facility at this time for the purposes of undertaking the proposed developments, particularly as the applications do not request any changes or additions to these existing facilities.

- Issue 2 Wildlife and Water Quality Monitoring

Recommendation #1: As stated in each of the EA Reports and again in the information responses, the Prairie Creek Safety and Procedures Guidelines contain provisions for bear safety training and attack response. The lack of any incidents of human/wildlife interactions since CZN began its involvement with the Prairie Creek property in 1992, are a testimony to the successful implementation of these Guidelines. The Guidelines for example specifically state that garbage cans are to be used at drill sites and emptied after each shift so as not to attract animals. Garbage is stored in a manner so as not to attract wildlife and incinerated on an as required basis as determined by the number of personnel and level of activity on site. CZN believes that the standard clause typically contained in Land Use Permits "to use food handling and garbage disposal procedures that do not attract bears" constitutes sufficient regulation of this matter.

Recommendation #2: Responsibility for wildlife matters in the NWT outside of National Park Reserves rests with GNWT-RWED. As the Prairie Creek Mine is located well outside the boundaries of NNPR, standard procedures for dealing with problem wildlife involves contact with the local Renewable Resource officer. Again, the standard Land Use Permit clause to this effect is considered sufficient.

Recommendation #3: CZN concurs with EC that consideration of monitoring of discharges to the receiving environment and of the receiving environment, including locations, frequency, parameters, QA/QC & discharge limits is best addressed at the regulatory stage. CZN will make itself available as well to provide input to the design of the monitoring program. The monitoring program should be specific to the Prairie Creek Mine and the determining the effects of the proposed developments, and not part of a broader regional program focused on NNPR. It would be inappropriate for the Water Licence to require CZN to conduct such a program jointly with NNPR and EC.

Baseline information on Prairie Creek water quality was provided in response to the information requests. There is certainly a sufficient database, that additional monitoring as proposed by NNPR need not be conducted prior to the issuance of the Water Licence.

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- Issue 3 Tailings Impoundment

Recommendation #1: The tailings impoundment dam was designed and constructed to withstand the Probable Maximum Flood (PMF). The PMF is a theoretical calculated flood event that assumes a Probable Maximum Precipitation (PMP) event over the entire area of the drainage basin over a specified period of time. The PMF calculation does not rely on or require streamflow measurements. The PMP would have been determined from long term regional climatological data. The PMF is a worst case event, several times the flood level of a 1 in 100 or even a 1 in 200 year event, and is generally considered unlikely to occur. The riprap berm along the toe of the dam was constructed to an elevation 3 feet above this calculated PMF level for Prairie Creek. The impoundment has clearly withstood all flood events over the past 20 years. Based on the foregoing, revised flood estimate calculations based on additional streamflow data available from 1982 to 1990 are not considered to be necessary or warranted prior to issuance of the water licence for the current developments.

Recommendation #2: CZN proposes discharging process effluent from the pilot plant to the tailings pond in order to ensure containment and avoid any loadings to the receiving environment. At 1 m^3 per tonne of ore, the maximum amount of process water generated would be 4000 m^3. Since the plant will be operated on approximately half reclaim and half fresh water, the actual amount of process water to be discharged will likely be closer to 2000 m^3. CZN proposed discharging minewater from the decline to Harrison Creek following settling in a sump developed at the portal, if of acceptable quality. The option of discharging minewater to the tailings pond was in fact discussed on page 11 of the Decline EA Report as a mitigation measure should the minewater not be suitable for direct discharge to the receiving environment. Based on information provided by CZN on minewater flows from the 870m portal, DIAND estimated potential flows from the decline at 67,000 m^3 over the period of the development. Due to differences in the rock formations in which the decline will be developed, CZN believes this estimate to be a worst case, and actual minewater from the decline will be considerably less than this amount. It is important to appreciate that the proposal to use the tailings pond was a mitigation measure to ensure containment of these discharges within this engineered, impervious containment facility and eliminate the need for discharge to the receiving environment associated with these developments. The alternative to this proposal would be to set discharge limits and allow for direct discharges to the receiving environment meeting these limits.

Recommendation #3: BGC geotechnical engineers conducted a detailed assessment of the geotechnical stability of the tailings impoundment in 1994-95. CZN has continued to monitor the condition of the tailings impoundment facility since that time in conjunction with ongoing care and maintenance activity. Most recently CZN personnel inspected the tailings impoundment facility in September, 2001 and have reviewed their findings with BGC. CZN and its geotechnical engineering consultants (BGC) remain confident that tailings facility is stable in its present form and suitable for the intended use. As discussed previously, the impoundment dams were designed to withstand a Probable Maximum Flood which is several times that of a 1:100 year flood. The rehabilitation measures as outlined by BGC in their report of December, 18, 2001 are intended to upgrade the facility to support full-scale mining operations and filling of the impoundment with tailings solids to the maximum design elevation. Such measures are not appropriate nor warranted in support of the proposed developments.

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Responses to Technical Review and Public Comments on EA Reports

Fisheries and Oceans **August 31, 2001**

- Tailings dam stability

Varying degrees of erosion of the riprap berm along the toe of the tailings dam adjacent to Prairie Creek were noted and reported on by BGC during its detailed site assessment in 1994-95. CZN personnel have continued to monitor the condition of the tailings impoundment facility, including these areas, since that time in conjunction with ongoing care and maintenance activity. Most recently CZN personnel inspected the tailings impoundment facility in September, 2001 and have since reviewed their findings with BGC. Significant quantities of riprap protection remain in place and continue to provide adequate protection along the length of the dam including at the point of maximum deflection of Prairie Creek where additional and coarser rip rap protection was provided at the time of construction. CZN and its geotechnical engineering consultants (BGC) remain confident that tailings facility is stable in its present form and suitable for the intended use.

No significant changes in the condition of the riprap armour have been noted in recent years. And none of the erosion is considered significant enough to affect the stability of the dam or require any maintenance or enhancement at this time. The need for further assessment of possible remediation in these areas is not considered necessary until such time as a detailed rehabilitation assessment is to be undertaken in support of full-scale mining and milling operations. Necessary authorizations under the Fisheries Act will be sought at that time.

CZN personnel will continue to monitor the condition of the tailings impoundment as part of routine care and maintenance activity and in conjunction with the proposed developments. BGC will continue to provide geotechnical support in conjunction with the proposed developments and in the event of any observed changes in the condition of the impoundment will be consulted and if appropriate brought to site to provide first hand advice and direction. CZN wishes to reiterate that it and its geotechnical consultants remain confident that the dam continues to be stable in its present form, and cautions that casual observations by personnel not specifically trained in geotechnical engineering, while worthy of investigation, can be misleading and should not be substituted for that of the expertise and judgment of trained professional engineers such as represented by BGC.

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Responses to Technical Review and Public Comments on EA Reports

Deh Cho First Nations **No Date**

- Underground Decline

Given that the dewatering of the decline has been assessed in detail as part of the ongoing environmental assessments, it is assumed that a water licence will be issued to account for all discharges associated with the proposed developments, including minewater from the decline. Such conditions for discharge would be considered at the regulatory stage. Linking of water licences and land use permits will presumably be consistent with regulatory practice. CZN is prepared to work closely with the MVLWB and regulatory authorities to meet their needs in this regard.

- Tailings Pond

As stated previously, CZN and it's geotechnical engineers consider the dam to be stable and suitable for the proposed use. The 1 metre increase in level considered to be "safe" given visual evidence that levels had fluctuated this amount in the past, was presented as a conservative assessment in response to an information request. The current freeboard is 7.5 metres. A 1 metre rise would still leave a 6.5 metre freeboard. It is considered very likely that the level could be raised substantially beyond this without compromising the integrity of the facility. The proposed increase would not jeopardize or otherwise interfere with future rehabilitation measures as proposed by BGC. It should be noted that such rehabilitation measures are designed to upgrade the facility to accommodate full tailings disposal associated with commercial mining and milling operations, which would see the impoundment filled to its ultimate elevation with tailings solids. These are far beyond the scope of the proposed developments and are not considered warranted or necessary at this time. As an alternative, CZN would propose to treat, as necessary, and discharge directly to the receiving environment, subject to such limits as set under the water licence, rather than prematurely undertake such costly rehabilitation measures at this time.

- Fuel Storage

As stated previously, the hydrocarbon staining noted within the fuel storage facility berm resulted from historical waste oil barrel storage, the majority of which has been cleaned up by CZN in recent years. This staining did not result from leakage from the bulk storage tanks, which remain in good shape and perfectly usable. As also stated previously, the fuel storage facility does conform to the CCME Code of Practice for existing aboveground tank farms. CZN feels it would be inappropriate for the MVEIRB to recommend overriding existing legislation and require upgrading of the facility at this time for the purposes of undertaking the proposed developments.

- Cumulative Effects

CZN provided cumulative effects assessments within each EA Report. The cumulative effects assessments were deemed adequate by EC considering the scope of the developments. Considering the short duration and limited extent of the proposed developments, further cumulative effects assessments of the combined effects, including water quality and socioeconomics, of all potential mineral exploration and development projects in the South Nahanni Watershed is considered impractical and unwarranted.

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CZN proposed discharge of process water from the pilot plant to the tailings pond and minewater to Harrison Creek following settling in a sump at the portal, if of suitable quality. Discharge limits will be set at the regulatory stage to protect the receiving environment. Should both discharges be directed to the tailings pond they will remain contained within this engineered facility with no surface discharge to the receiving environment and therefore no cumulative effect. As a result, CZN considers further assessment of the cumulative effects of the combined discharges of minewater and process water to the tailings pond to be unwarranted.

For clarification purpose, the referenced response from CZN referred to as "puzzling" would read as follows without the benefit of the additional descriptive text: " ...the cumulative effect...of all three operations being conducted simultaneously..., would be expected to be negligible."

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Responses to Technical Review and Public Comments on EA Reports

GNWT – RWED **August 31, 2001**

- Water quality

As stated previously, CZN supports consideration of monitoring requirements and setting reasonable limits for site discharges consistent with regulatory practice at the regulatory stage. Baseline water quality data has been provided and is available for consideration at the regulatory stage. CZN will make itself available to provide input to the design of the monitoring program and provide such baseline information as is available and relevant to these efforts.

- Wildlife

As stated in each of the EA Reports and again in the information responses, the Prairie Creek Safety and Procedures Guidelines contain provisions for bear safety training and attack response. The lack of any incidents of human/wildlife interactions since CZN began its involvement with the Prairie Creek property in 1992, are a testimony to the successful implementation of these Guidelines. The Guidelines for example specifically state that garbage cans are to be used at drill sites and emptied after each shift so as not to attract animals. Garbage is stored in a manner so as not to attract wildlife and incinerated on an as required basis as determined by the number of personnel and level of activity on site.

A wildlife sighting log is maintained at site in conjunction with care and maintenance activity. A further wildlife monitoring program will be designed in conjunction with project feasibility studies and in support of permitting applications for full-scale mining and milling operations and road development. CZN anticipates seeking input from RWED into the design of such programs.

CZN believes that the standard clause typically contained in Land Use Permits "to use food handling and garbage disposal procedures that do not attract bears" constitutes sufficient regulation of this matter.

- Abandonment and Restoration

All historical stockpiles of reagents and other potentially hazardous materials left over from the previous operators are stored in a secure manner so as to minimize the potential for loss or contamination. CZN continues to routinely inspect and secure these materials as part of its ongoing care and maintenance activity. The chief consideration hampering removal of such materials, particularly those that would not be used in future operations, is the lack of road access. CZN believes the most practical means of effecting such clean-up would be in association with the recommencement of operations at the mine.

CZN believes that A&R considerations, and any associated financial security, in respect of the current applications should focus on the developments in question and not on the property as a whole, including the extensive existing infrastructure.

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Responses to Technical Review and Public Comments on EA Reports

DIAND **September 7, 2001**

1. Tailings Dam Integrity

The referred to BGC reports citing instabilities of the tailings facility are references to historical occurrences which took place shortly after construction in 1982. Since that time, the facility has remained stable and its condition has not significantly changed over the intervening period of close to 20 years. CZN's response is not at variance with BGC observations. Both CZN and BGC remain confident that the tailings facility is stable in its present form and suitable for the intended use. The need for further assessment of possible remediation in these areas is not considered necessary until such time as a detailed rehabilitation assessment is to be undertaken in support of full–scale mining and milling operations.

2. Tailings Pond Water Level

CZN staff surveyed the pond level on September 8, 2001 as being at 869.5 m, 7.5 m below survey point STA-102 at 877.01 m on the crest of the dam. This is the same level as that determined by BGC in 1994. This indicates that the tailings pond level has not changed significantly since 1994 and supports the conclusions that the integrity of the clay liner remains intact and significant seepage from the pond is not occurring.

The pond water level estimate of 868m as provided in the EA Report was taken from an earlier report (Hardy, 1983) on the tailings facility. This level was used to provide a conservative estimate of the contained volume for the purposes of calculating available dilution ratios for discharges to the pond. Confirmation of the pond level being at 869.5m provides an additional 150,000 m^3 of water to the previous estimate of 225,000 m^3 increasing the available dilution ratio for the pilot plant process effluent from over 50:1 to almost 100:1.

The sloughing on the interior side of the dam noted during the August 28, 2001 site visit dates back to 1982. It was assessed at the time by Golder and Hardy geotechnical engineers and again in 1994-95 by BGC, at which time it was determined to have achieved a stable configuration. CZN personnel continue to inspect the tailings facility on a routine basis as part of the ongoing care and maintenance activity at the site. The condition of the facility has remained fundamentally unchanged since the BGC site investigation of 1994-95.

As stated previously, varying degrees of erosion of the riprap berm along the toe of the tailings dam adjacent to Prairie Creek were noted and reported on by BGC during its detailed site assessment in 1994-95. CZN personnel have continued to monitor the condition of the tailings impoundment facility, including these areas, since that time in conjunction with ongoing care and maintenance activity. Most recently CZN personnel inspected the tailings impoundment facility in September, 2001 and have since reviewed their findings with BGC.

No significant changes in the condition of the riprap armour have been noted in recent years, and none of the erosion is considered significant enough to affect the stability of the dam or require any maintenance or enhancement at this time. Significant quantities of riprap protection remain in place and continue to provide adequate protection along the length of the dam including at the point of maximum deflection of Prairie Creek where additional and coarser rip rap protection was provided at the time of construction. The integrity of the dam itself has not been compromised by erosion at any of these locations.

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CZN and its geotechnical engineering consultants (BGC) remain confident that the tailings facility is stable in its present form and suitable for the intended use. The need for further assessment of possible remediation in these areas is not considered necessary until such time as a detailed rehabilitation assessment is to be undertaken in support of full–scale mining and milling operations.

CZN personnel will continue to monitor the condition of the tailings impoundment as part of routine care and maintenance activity and in conjunction with the proposed developments. BGC will continue to provide geotechnical support in conjunction with the proposed developments and in the event of any observed changes in the condition of the impoundment will be consulted and if appropriate brought to site to provide first hand advice and direction.

As stated previously, such rehabilitation measures as proposed by BGC are designed to upgrade the facility to accommodate full tailings disposal associated with commercial mining and milling operations, which would see the impoundment filled to its ultimate elevation with tailings solids. These measures are far beyond the scope of the proposed developments and are not considered warranted or necessary at this time. As an alternative, CZN would propose to treat, as necessary, and discharge directly to the receiving environment, subject to such limits as set under the water licence, rather than prematurely undertake such costly rehabilitation measures at this time.

3. Groundwater Monitoring

Confirmation that the water level in the pond has not changed significantly since 1994 supports the conclusion that the integrity of the clay liner remains intact and no significant seepage is occurring from the impoundment. As stated in response to GNWT IR#3, groundwater monitoring is considered to be unwarranted given the magnitude of the proposed development, including the relatively sort duration of the program, small volume of process water involved relative to the existing volume of water in the tailings facility, low contaminant levels predicted to be present in the pond and the absence of any detectable seepage from the pond to date, all of which combined result in a very limited potential for significant impacts to groundwater quality as a result of the proposed development. As well, any seepage from the pond would follow shallow pathways above the underlying clay layer. As the impoundment is immediately upgradiant from the plantsite area, all such shallow seepage would be expected to report to the plantsite catchment pond. Sampling of the discharge from this pond would suffice for capturing all site discharges, including such seepage, prior to release to the receiving environment.

4. PMF Re-calculation

As stated above, the tailings impoundment dam was designed and constructed to withstand the Probable Maximum Flood (PMF). The PMF is a theoretical calculated flood event that assumes a Probable Maximum Precipitation (PMP) event over the entire area of the drainage basin over a specified period of time. The PMF calculation does not rely on or require streamflow measurements. The PMP would have been determined from long term regional climatological data. The PMF is a worst case event, several times the flood level of a 1 in 100 or even a 1 in 200 year event, and is generally considered unlikely to occur. The riprap berm along the toe of the dam was constructed to an elevation 3 feet above this calculated PMF level for Prairie Creek. The impoundment has clearly withstood all flood events over the past 20 years. Based on the foregoing, revised flood estimate calculations based on additional

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streamflow data available after construction of the dam in 1982 up to 1990 are not considered to be necessary or warranted at this time in support of the current developments.
The hydrological station will be re-established on Prairie Creek and all streamflow will be used to assess design criteria as part of the baseline environmental and rehabilitation engineering programs as the Company moves into the feasibility stage.

5. Tailings Pond water quality

As stated in the cover letter, the water in the pond was sampled on August 30, 2001. Water quality data for the pond is appended. The water quality data indicate that the concentrations of key parameters of interest are actually lower in the pond than the average values for Prairie Creek used in the tailings pond chemistry model provided in response to the information requests. This in turn indicates that the model was conservative and confirms the projections of the model as presented in CZN's response to GNWT-RWED IR#3.

6. 870 Portal minewater discharge

Discharge estimates of 2 to 10 lps from the 870m portal as provided in the EA report and again response to DIAND IR #8 were taken from DIAND inspection and sampling reports in 1983 and are assumed to be representative of flows at that time. CZN initiated daily flow monitoring from the 870m portal this past season. Discharges have averaged about 80 lpm. This data will be compiled and available at the regulatory stage if needed. It should be noted however, that the existing 870m portal and associated workings are not related to the proposed developments under the current applications.

7. 870 Portal minewater quality

Contrary to DIAND's comment, CZN did in fact provide water quality data for discharges from the 870m portal in response to DIAND IR #5. Again, it should be noted that the 870m portal and associated workings are not associated with the current applications. As previously stated, CZN expects consideration of monitoring of discharges to the receiving environment associated with the proposed developments, including locations, frequency, parameters, QA/QC & discharge limits, to be addressed at the regulatory stage. CZN will make itself available to provide input to the setting of discharge limits and design of a monitoring program to ensure protection of the water quality in Prairie Creek and the South Nahanni River.

8. Decline discharge limits

As discussed previously, CZN supports setting of reasonable discharge limits consistent with regulatory practice and consideration of monitoring programs to ensure the protection of the receiving environment at the regulatory stage. CZN will abide by the terms and conditions of its water licence and such limits for discharges as set therein.

9. Decline minewater monitoring

As in the response to #8 above. CZN notes that the proposed monthly sampling of minewater from the decline was considered to be acceptable by EC. The decline EA Report did present a contingency plan should the settling pond not provide sufficient treatment which provided for discharge of the minewater to either the tailings or site catchment pond.

10. Pilot Plant Operation

As stated in the EA report, metal scans of liquid effluent will be conducted as part of the testwork program and process water will be discharged to the tailings pond. It is expected that process effluent will not require treatment prior to discharge to the pond since the pilot plant will be operated at pH 9.5 – 10, which should precipitate most metals. The Pilot Plant

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EA report also provided details on final disposal of waste products under the section on Abandonment and Restoration on page 44 as follows: "The tailings solids produced from the operation of the pilot plant, which are comprised of ground up rock the consistency of sand, will be stored in the mill thickeners. Upon commencement of operations, these solids will be combined with the mill tailings for disposal underground as paste backfill or in the tailings pond. In the event that operations do not recommence the tailings can remain in the thickeners, or be disposed in an acceptable manner underground, in the tailings pond or landfilled."

11. Waste Rock Management

As above, CZN supports consideration monitoring of site discharges at the regulatory stage. The catchment pond has been sampled by DIAND as a component of annual site inspections since 1983. CZN's proposed developments are considered to have little potential to significantly alter these levels. Provision for treatment of discharges associated with the proposed developments was included in the EA reports, including minewater from the decline and process water from the pilot plant. It should be noted that the ore stockpile has been in existence since 1981. Its presence is not related to the current applications. Consideration of the existing ore stockpile and drainage from the waste rock was further discussed in detail in response to DIAND IR#6.

12. Contingency Plan

As stated above, CZN expects consideration of monitoring of discharges associated with the proposed developments to be addressed at the regulatory stage. CZN will make itself available to provide input to the setting of discharge limits and design of a monitoring program to ensure protection of the water quality in Prairie Creek and the South Nahanni River. CZN will abide by the terms and conditions of its water licence and such limits for discharges as set therein, taking such actions as are necessary to meet these limits.

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Prairie Creek Mine
Tailings Impoundment Water Quality
August 30, 2001

Sample ID	**Tailings Pond**
Date Sampled	**8/30/01**
Time Sampled	**11:13**
ALS Sample ID	**2**
Nature	**Water**
Physical Tests	
Conductivity (umhos/cm)	204
Hardness CaCO3	89
pH	8.67
Total Suspended Solids	14
Dissolved Anions	
Alkalinity-Total CaCO3	68
Bromide Br	<0.5
Chloride Cl	<0.5
Fluoride F	0.05
Sulphate SO4	30
Nutrients	
Ammonia Nitrogen N	0.009
Nitrate Nitrogen N	<0.1
Nitrite Nitrogen N	<0.1

Dissolved Metals		**Mg/l**
Aluminum	D-Al	0.059
Antimony	D-Sb	0.0014
Arsenic	D-As	0.0011
Barium	D-Ba	0.0392
Beryllium	D-Be	<0.0005
Bismuth	D-Bi	<0.0005
Boron	D-B	0.01
Cadmium	D-Cd	0.00039
Calcium	D-Ca	14.7
Chromium	D-Cr	<0.0005
Cobalt	D-Co	<0.0001
Copper	D-Cu	0.0024
Iron	D-Fe	0.03
Lead	D-Pb	0.00184
Lithium	D-Li	<0.005
Magnesium	D-Mg	12.7
Manganese	D-Mn	0.00913
Mercury	D-Hg	<0.00005
Molybdenum	D-Mo	0.00373
Nickel	D-Ni	0.0014
Phosphorus	D-P	<0.3
Potassium	D-K	<2
Selenium	D-Se	<0.001
Silicon	D-Si	0.24
Silver	D-Ag	<0.00001
Sodium	D-Na	7
Strontium	D-Sr	0.102
Thallium	D-Tl	<0.0001
Tin	D-Sn	<0.0001
Titanium	D-Ti	<0.01
Uranium	D-U	0.00112
Vanadium	D-V	<0.001
Zinc	D-Zn	0.008

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