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BY EMAIL

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Dear Mr. MacDonald,

Re: DFN and CPAWS submissions on Request for Ruling Scoping Question #2
File: Canadian Zinc (CZN) Prairie Creek Mine, EA 0809-002

Please find attached submissions on behalf of the Dehcho First Nations (DFN) and the Canadian Parks and Wilderness Society (CPAWS and CPAWS-NWT) in response to question 2 of the Review Board's December 18, 2008 letter.

Please do not hesitate to contact me should you have any questions.

Yours truly,

A handwritten signature in black ink, appearing to read "K. Ferguson".

Keith Ferguson, Staff Lawyer
On behalf of DFN, CPAWS and CPAWS-NWT

cc: Laura Pitkanen, Dehcho representative (pitkanen@csolve.net)
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DFN and CPAWS submissions on Request for Ruling Scoping Question #2

The Review Board’s December 18, 2008 letter called on all interested parties to provide submissions on question 2 concerning the appropriate scope of development in relation to the mine site for the environmental assessment (‘EA’) of Canadian Zinc Corporation’s (CZN’s) proposed project. Question 2 reads:

Should the scope of development for EA0809-002 include all facilities and activities at the proposed mine site?

DFN and CPAWS submit the answer to this question is yes. The following pages provide our rationale. Please note our previous submissions¹ already provided some rationale and background supporting this answer, and we refer you to those previous submissions (in addition to some specific references below) to avoid undue duplication here.

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¹ These include the joint DFN/CPAWS Request for Ruling dated Nov 3, 2008; DFN’s scoping submission dated October 14, 2008; CPAWS’ scoping submission dated October 20, 2008; and CPAWS’ preliminary screening submission dated August 15, 2008.

Overview

By way of overview, after reviewing CZN's proposed piecemeal scope of development, the following will argue that:

- Part 5 of the *Mackenzie Valley Resource Management Act* ('MVRMA') applies to the applications for land use permit MV2008D0014 and water licence MV2008L2-0002 (the 'mine applications'). Indeed, that is why they are subject to the current EA. The proposed undertaking (full scale mine operations and delivery of product) is not grandfathered, and neither are individual bits and pieces of it.
- Given that Part 5 applies, s.117(1) of the MVRMA requires the scope of development to be determined subject to the Review Board's Guidelines². Those Guidelines note the dangers of project splitting and set out three tests for determining the scope of development: dependence, linkage and proximity.
- Applying those three tests to the various facilities and activities at the proposed mine site requires all those facilities and activities to be included in the scope of development. The facilities and activities are highly interrelated and need to be assessed as a whole. Further, while previous EAs might provide some useful information, they did not assess project components in the context of full scale mine operations, and so are not a reason to limit the scope of development in this current EA.
- We also note other important reasons for including all facilities and activities at the proposed mine site in the scope of development, such as: assessing water quality implications as a whole; promoting better consideration of species at risk; considering the implications of new information related to climate change and earthquakes on all facilities and activities; and facilitating better Aboriginal consultation.

While we answer question 2 as yes, we recognize that some facilities and activities at the mine site may not require as detailed assessment during the EA as others due to differences in potential impacts, but at this stage we submit the scope of development should include them all.

CZN's proposal for a piecemeal scope of development

In its letter dated Sept 18, 2008 entitled "A summary of Canadian Zinc's views regarding scope of development for the environmental assessment of the Prairie Creek Mine"³, CZN proposes that the scope of the current EA in relation to the mine site should focus on the specific changes proposed. CZN states this would include the Water Storage Pond, placement of mine and mill waste underground in a backfill mix, the Waste Rock Pile, and the water

² Mackenzie Valley Environmental Impact Review Board *Environmental Impact Assessment Guidelines*, March 2004.

³ See also CZN's letter dated Nov 3, 2008 letter *Re: Comments Regarding Scoping*.

treatment plant. CZN also notes that it is not opposed to the closure plan being included in the scope of this EA.

CZN states that the scope should not include aspects of the mine that were previously permitted, already built, or assessed and approved in past EAs. CZN states the scope of the EA should not therefore include the airstrip, mill, flood protection dikes, tank farm, power generation system, administrative building, accommodation trailers, sewage treatment plant and runoff collection system.

With respect, we submit this proposal by CZN to limit the scope of development would constitute project splitting and is thus directly counter to the Review Board's Guidelines on scoping and to what is needed for effective environmental assessment.

Part 5 of the MVRMA applies

Section 157.1 allows for grandfathering of an undertaking, not bits-and-pieces

The Northwest Territories Court of Appeal in *North American Tungsten Corp. Ltd. v. Mackenzie Valley Land and Water Board* ('Tungsten')⁴ considered whether MVRMA s.157.1 (the 'grandfathering' provision) applied to an application for a renewal of a water licence for the Cantung Tungsten Mine. The Court of Appeal held that it did, and stated:

- The question in issue, in essence, "comes down to whether s.157.1 of the MVRMA grandfathers a licence issued prior to June 22, 1984 or an undertaking licensed prior to June 22, 1984. We have concluded that it is the latter" (at paras. 11-12).
- "The selection of this common date under both CEAA and the MVRMA reflects Parliament's continuing intention that projects which pre-date June 22, 1984 (as defined under both statutes) are to be subjected to a full scale environmental assessment as prescribed under the applicable legislation only if they depart significantly from their approved mode of operation and engage in, for example, decommissioning, abandonment or significant alteration of the project" (at para. 29).
- "Both CEAA and the MVRMA require projects pre-dating June 22, 1984 to be subjected to a full scale environmental review if the licence renewal involves a decommissioning, abandonment or alteration to the project. While CEAA provides that a review is triggered by any alteration to the project, by contrast, the MVRMA provides that a review is required only if the licence involves a significant alteration to the project" (at para. 31).
- "Under s.157.1, the primary focus is on the undertaking itself" (at para. 32).

The Northwest Territories Supreme Court in *Canadian Zinc Corp. v. Mackenzie Valley Land and Water Board* commented on the decision in *Tungsten* as follows: "In *Tungsten*, the licence

⁴ *North American Tungsten Corp. Ltd. v. Mackenzie Valley Land and Water Board*, 2003 NWTCA 5, 1 C.E.L.R. (3d) 161, [2003] N.W.T.J. No. 28 (QL).

sought was for the use of water for the mining operation. The only undertaking that was relevant was, therefore, the entire mining operation”⁵.

Thus when considering the application of s.157.1, consideration must be given to whether the ‘undertaking’ (or ‘project’⁶) is grandfathered. The Court of Appeal in *Tungsten* noted that if the undertaking is not grandfathered, it should be “subjected to a full scale environmental review”. This does not envision bits and pieces of the undertaking being subjected to EA while other bits and pieces are grandfathered. Rather, the question is whether the undertaking as a whole is grandfathered, and thus whether as a whole it has been significantly altered.

CZN’s proposed undertaking is full scale mine operations and delivery of product

The undertaking being proposed by CZN at this time is full-scale mine operation and delivery of its product. In relation to the mine site, the *Project Description Report* that accompanied the mine applications⁷ stated: “CZN is applying for a Type “A” Water Licence and Type “A” Land Use Permit to reactivate the Mine for production”⁸. The Application for the land use permit summarized the operation as, “Underground mining of up to 1200 tonnes/day of lead-zinc mineralization using stick-type and/or ANFO explosives, followed by milling and flotation to produce mineral concentrates”⁹. Thus the undertaking currently proposed includes, in relation to the mine site, full-scale operation of the mine and everything that goes along with that, not just individual bits and pieces of the mine and its operation.

Significant alterations to the undertaking in relation to the mine site

One of the reasons CZN’s applications are currently subject to EA is Indian and Northern Affairs Canada’s (INAC’s) referral letter dated Aug 8, 2008, in which INAC stated:

“In reviewing the applications, INAC recognizes that Canadian Zinc is proposing several changes of use and additions to the existing in-place infrastructure at the Prairie Creek mine site constructed in 1982. In particular, we noted the changes to subsurface tailings disposal, use of the original surface tailings pond as a water management

⁵ *Canadian Zinc Corp. v. Mackenzie Valley Land and Water Board*, [2005] N.W.T.J. No. 41 (QL), 2005 NWTSC 48, at para. 46. In contrast, the undertaking proposed by CZN that was the subject of MV2003F0028 and the *Canadian Zinc Corp. v. Mackenzie Valley Land and Water Board* court case was limited to the rehabilitation and use of the winter road for clean-up operations and advanced exploration activity.

⁶ The Northwest Territories Supreme Court in *Canadian Zinc Corp. v. Mackenzie Valley Land and Water Board* at para. 43 noted that the terms ‘undertaking’ and ‘project’ in s.157.1 mean the same thing.

⁷ *Prairie Creek Mine Project Description Report*, submitted in support of: Type “A” Water Licence Application, Type “A” Land Use Permit Application, submitted by CZN, dated May 2008.

⁸ *Project Description Report* at page 3.

⁹ Application for Type A new land use permit, dated June 02 2008 and numbered Application #MV2008D0014, by MVLWB (see item 5, Summary of operation).

facility, waste rock management plans, sewage treatment plant, and power plant upgrade plans. It is the department's view that these changes should be examined through the environmental assessment process, taking into account information generated through previous environmental assessments related to this mine site."

In a little more detail, the changes to the undertaking with respect to the mine site include:

- CZN proposes a longer life span for the mine: "The current planned mine life is 14 years but is expected to continue for at least 20 years"¹⁰, and CZN notes further delineation infill drilling to "extend the mine life beyond what is currently outlined"¹¹.
- CZN proposes new mine development: CZN notes there is to be tunnel enlargement and extension, a new portal from which to drive a new decline access ramp, an underground ore transfer and shop facility, etc¹², that mine air will be heated when necessary¹³, and that alternative mine explosives may need to be used if ammonia concentrations in the mine discharge water become too high due to ANFO explosive use¹⁴.
- CZN proposes an ore stockpile: a prepared pad near the 870 portal will store approximately 20,000 tonnes of mined material during the start-up period (decreasing to 2,000 tonnes over time) to provide feed to the mill, with covered storage and runoff management¹⁵.
- CZN proposes a number of changes at the mill, including installation of a dense media separation ('DMS') circuit¹⁶, the use of different flotation reagents¹⁷ (note CZN has filed MSDS sheets for these proposed reagents¹⁸), and incorporation of a backfill paste plant¹⁹. The capacity is stated as 1,000 tonnes/day milled²⁰ and elsewhere as up to 1,200²¹.
- CZN proposes a storage pad for DMS rock to provide feed to the backfill mix process with provision for collection and management of leachate²².

¹⁰ *Project Description Report* at page 4.

¹¹ *Project Description Report* at page 66.

¹² *Project Description Report* at page 61.

¹³ *Project Description Report* at page 66.

¹⁴ *Project Description Report* at pages 89, 109.

¹⁵ *Project Description Report* at page 64.

¹⁶ *Project Description Report* at pages 23, 24, 67, 69.

¹⁷ *Project Description Report* at pages 24, 69, 70.

¹⁸ See CZN letter dated June 18, 2008 *Re: MV2008L2-0002, Class A Water Licence Application, Prairie Creek Mine* and attachments.

¹⁹ *Project Description Report* at pages 23, 69.

²⁰ *Project Description Report* at page 1.

²¹ Application for Type A new land use permit, dated June 02 2008 and numbered Application #MV2008D0014 by MVLWB (see item 5, Summary of operation).

²² *Project Description Report* at page 77.

- CZN proposes a new Waste Rock Pile (‘WRP’): un-mineralized development rock produced from underground development and approximately one quarter of the DMS rock from the Mill will be stored in an engineered facility in the Harrison Creek valley near the 930 level portal– this will include upslope runoff diversion and drainage collection during operations, though CZN notes additional work is in progress to determine its long-term leaching potential²³. At closure, CZN proposes to place a clay-rich soil cover over the WRP to promote runoff and limit infiltration²⁴.
- CZN proposes a solid waste landfill within the footprint of the proposed Waste Rock Pile, noting leachate should be collected by the WRP’s collection system²⁵. CZN notes it will place some inert solid waste in the WRP²⁶.
- CZN proposes a new bagging plant and concentrate storage shed²⁷ and notes it will expand its fuel spill response plan to cover the potential for spills of concentrates²⁸.
- CZN proposes an increased amount of process water that will come from different sources: the original 1982 water licence N3L3-0932²⁹ allowed up to 1,150 m³/day, whereas the current proposal appears to be for 1,900 m³/day of process water³⁰. N3L3-0932 also states that all fresh water shall come from the Prairie Creek Valley Aquifer unless other sources are approved by the Board³¹, whereas the current proposal is for mill process water to come from the first cell of the Water Storage Pond (which itself is fed from mine drainage, treated sewage water and WRP runoff)³². Other noted water uses include CZN’s intention to use groundwater inflows in the mine for drilling and blasting³³ and to draw from wells to provide potable water.
- CZN proposes a changed method of water treatment: CZN plans to reconfigure, reline and recertify the existing large pond originally intended for tailings disposal to form a two-celled Water Storage Pond (‘WSP’)³⁴. In response to concerns from MVEIRB

²³ *Project Description Report* at pages 26-27, 62, 77.

²⁴ *Project Description Report* at pages 5, 27.

²⁵ *Project Description Report* at page 81.

²⁶ *Project Description Report* at page 5.

²⁷ *Project Description Report* at page 70.

²⁸ *Project Description Report* at page 108.

²⁹ See cover page of N3L3-0932 (at page 117 of 405 of the *Project Description Report*, Appendix A), and Part B condition 3 (at page 123 of 405 of the *Project Description Report*, Appendix A).

³⁰ *Project Description Report* at page 84. See also CZN letter dated June 18, 2008 *Re: MV2008L2-0002, Class A Water Licence Application, Prairie Creek Mine* at page 3 which suggests ‘Mill In – Process Feed’ will increase from 1,770 to 2,055 m³/day after year 3.

³¹ See Part B condition 1 of N3L3-0932 (at page 123 of 405 of the *Project Description Report*, Appendix A).

³² *Project Description Report* at page 5.

³³ *Project Description Report* at page 67.

³⁴ *Project Description Report* at page 26, 84.

during the EA process for the underground decline/pilot plant project, CZN proposes to undertake further engineering investigation, physical buttressing of the pond backslope, and the placement of an additional synthetic liner³⁵. Water flows are also to change. Mine drainage/discharge, treated sewage water and WRP runoff (and apparently also ore stockpile runoff³⁶) will report to the first cell, from which water for the mill process will be taken. The second cell will receive excess waters from the first cell and used water from the Mill, and will feed a new water treatment plant³⁷. This will outflow to the settling Polishing Pond, then to the Catchment Pond, and then into Harrison Creek³⁸. The Catchment Pond will also receive other runoff from the site³⁹.

- CZN proposes a different method of disposal of fine tailings as backfill: CZN proposes to filter water from the tailings in the Mill and place all of the solids underground as backfill together with approximately three-quarters of the DMS rock and a cement binder, and “expects that this will curtail mine drainage and avoid a need for drainage management in perpetuity”⁴⁰. However, CZN notes that sometimes it is not possible to fill stopes or development headings completely and so CZN also proposes a number of underground bulkheads to help limit the movement of groundwater⁴¹. To progressively backfill as operations progress, CZN note they could make additional backfill material by processing rock through the Mill if necessary⁴². CZN also proposes to haul inert scrap material underground for encapsulation within the backfill material⁴³.
- CZN proposes two storage sites for tailings: since stopes may not always be available for backfilling (especially at start-up), CZN proposes a new heated building with capacity to store 10,000 tonnes of filtered tailings and a new lined storage pad on the north side of the Water Storage Pond to store up to 40,000 tonnes of filtered tailings⁴⁴.
- CZN is investigating the need for an on-site bioremediation cell to manage any contaminated soil from minor spills⁴⁵.
- CZN proposes to place one of the tanks in the tank farm on a 6" high footing⁴⁶, and CZN has filed a revised Spill Contingency Plan⁴⁷.

³⁵ *Project Description Report* at page 5, 84, 89.

³⁶ *Project Description Report* at page 89.

³⁷ *Project Description Report* at page 92.

³⁸ *Project Description Report* at page 87.

³⁹ *Project Description Report* at page 72.

⁴⁰ *Project Description Report* at pages 26, 27, 64, 66, 77, 79.

⁴¹ *Project Description Report* at page 5, 95.

⁴² *Project Description Report* at page 95.

⁴³ *Project Description Report* at page 95.

⁴⁴ *Project Description Report* at pages 26, 79.

⁴⁵ *Project Description Report* at page 81.

⁴⁶ *Project Description Report* at page 73.

- CZN proposes a number of other new facilities, including a kitchen/accommodation block (including demolition of the existing kitchen and some accommodation trailers), replaced power generation units, and an incinerator⁴⁸. CZN notes the need to check for asbestos in existing buildings, before demolition and at closure⁴⁹.

Please see CPAWS' scoping submission (Oct 20, 2008) at pages 11-12, CPAWS' preliminary screening submission (Aug 15, 2008) at pages 3-4, and DFN's scoping submission (Oct 14, 2008) for further discussion of alterations to the project.

The undertaking is not grandfathered and is now in EA

Changes such as those discussed above led INAC in its Aug 8, 2008 letter to refer CZN's applications to EA, and that EA is now ongoing. Therefore the undertaking is not grandfathered, and as discussed above, neither are individual bits and pieces of it. Indeed, in a letter dated July 21, 2008, the Mackenzie Valley Land and Water Board ('MVLWB') noted "that the Canadian Zinc Corporation did not apply for an exemption pursuant to section 157.1 of the *Mackenzie Valley Resource Management Act* (MVRMA)." This was in response to a July 18, 2008 letter from CZN to the MVLWB in which CZN stated it had not previously indicated a view that the applications should be exempt from Part 5 of the MVRMA, that they did not wish to incur the delay that would result from the MVLWB deciding whether they are, and requested that the MVLWB commence preliminary screening of the applications⁵⁰.

Therefore the undertaking is not grandfathered, s.157.1 has no application, Part 5 of the MVRMA applies, and so it is necessary to ask what Part 5 requires in respect to scoping the development.

Review Board's Guidelines provide the tests for determining the scope of development

As detailed in our Request for Ruling (Nov 3, 2008) at pages 8-9 and in CPAWS' scoping submission (Oct 20, 2008) at pages 3-5:

- Section 117(1) of the MVRMA requires the scope of development to be determined subject to the Review Board's Guidelines, which were passed pursuant to s.120.
- These Guidelines at pages 27-28 explain the danger and undesirable practice of project splitting, noting that it is both ineffective and inefficient to separately assess the many individual components of a large development, that it risks missing the bigger picture, and that it fails to recognize impacts related to scale and combined effects. Other benefits of avoiding project splitting include allowing mitigation measures to be designed

⁴⁷ See CZN letter dated June 18, 2008 *Re: MV2008L2-0002, Class A Water Licence Application, Prairie Creek Mine* and attachments.

⁴⁸ *Project Description Report* at page 5, 72.

⁴⁹ *Project Description Report* at page 81, 96.

⁵⁰ Similarly, see *Project Description Report* at page 110.

with the whole development in mind, to ensure the assessment is not unduly limited later on, and to promote trust in the EA process that it has fully considered the proposed project.

- The Guidelines therefore state the Review Board will ensure that the “entire development” undergoes environmental assessment.
- The Guidelines lay out three tests to determine what constitutes the “entire development”, namely:
 - dependence: if the principal development could not proceed without the undertaking of another physical work or activity, then that work or activity is considered part of the scoped development.
 - linkage: if a decision to undertake the principal development makes the decision to undertake another physical work inevitable, then the linked or interconnected physical work or activity will be considered part of the scoped development.
 - proximity: if the same developer is undertaking two physical works or activities in the same area, then the two may be considered to form one development.

The Review Board’s Guidelines make similar points with regard to scoping a preliminary screening. For example, at page 16 the Guidelines state: “It is essential that Preliminary Screeners consider the proposed development as a whole when conducting screenings, rather than focusing only on the aspects related to their regulatory responsibilities.” And at page 21 the Guidelines note that the Review Board would consider conducting an EA despite the decision on a preliminary screening if, for example, “the Preliminary Screening did not consider all components of the development.” The need to “consider the proposed development as a whole” and to “consider all components of the development” are even stronger in EAs, given that EAs are intended to undertake a more thorough assessment than preliminary screenings.

All mine facilities and activities should be included in the scope of development

All facilities/activities at the mine site are interrelated & need to be considered as a whole

As noted above, CZN proposes many changes including new or modified facilities and activities, each of which needs to be included in the scope of development and assessed. These explicit proposed changes also have the potential to change the operation and impacts of other facilities and activities. For example:

- The increased life span of the mine will increase the required life of all other facilities and activities, including operation of the airstrip⁵¹.

⁵¹ *Project Description Report* at pages 5, 19.

- The various changes will alter runoff – some runoff is proposed to go to the Water Storage Pond with other to the Catchment Pond, all of which will need to be assessed as a complete system.
- Changes to the water treatment process (such as changes to the Water Storage Pond, the new flows that will be directed into it such as from the sewage treatment plant, changes to the Mill including the increased amount of process water, construction of a new Water Treatment Plant, etc) require assessment of the water treatment process as a whole, including the Polishing Pond, all retention and treatment components, and related runoff management.
- The new accommodation block and the most recent data on personnel numbers⁵² might raise questions about the effectiveness of the sewage treatment system.
- The data on personnel numbers might also raise questions about the frequency of and impacts from flights in and out of the airstrip.
- The various new and changed facilities and activities require reconsideration of the role, duties and capacity of the Environmental Monitor⁵³.
- Etc.

While of course it does not make sense to now assess impacts from the construction of already-built facilities, it does make sense to assess impacts from the proposed modification, use, operation, and temporary and permanent closure plans for those facilities.

On the subject of closure plans, all of the proposed changes will require consideration in the development of closure plans, whether for temporary stoppages or permanent decommissioning⁵⁴. For example, careful consideration will need to be given to water flows (such as from the mine and from runoff and potential leachates from the various new and existing facilities) during temporary shutdowns and the capacity of the modified water treatment system to handle them collectively. Also recall that CZN does not oppose inclusion of the closure plan in the scope of development for this EA. But in order to carefully consider such a plan it is necessary to include in the scope all facilities and activities because the closure plan will relate to all of them and because it is necessary to understand the operation of those facilities, their potential condition at the time of closure, and thus the potential hazards they might pose.

Application of the three tests from the Guidelines

As discussed above, it is not reasonable to separate out some facilities and activities at the mine site to be included in the scope of development and attempt to leave out others, given that they

⁵² *Project Description Report* at pages 74-76.

⁵³ *Project Description Report* at page 6.

⁵⁴ *Project Description Report* at pages 95-97.

are all highly interrelated. This is further demonstrated by application of the three tests discussed above in the Review Board’s Guidelines:

- Presumably all of the proposed facilities and activities (including modification and operation of existing facilities) proposed by CZN are needed for overall mine operation, thus satisfying the dependence test.
- Presumably the decision to go ahead with the proposed mine operation will inevitably lead to all of the proposed modifications, operations and activities, thus satisfying the linkage test.
- And finally, all facilities and activities at the mine site are in close proximity to one another and are to be operated by the same developer, thus satisfying the proximity test.

Previous EAs may provide useful information but do not exempt things from this EA

As noted above, CZN proposes that mine site components that have been assessed in previous EAs should not be included in the scope of development of the current EA. However, none of these previous EAs assessed mine site facilities or activities in the context of an application for full-scale mine operations, as proposed in the current mine applications. Indeed, the *Project Description Report* notes, “To date, six of CZN’s applications to the MVLWB for exploration activities have been referred to EA” (emphasis added)⁵⁵. The six referenced EAs⁵⁶ relate to the following permits and licences:

- MV2000C0030: This was for the Phase 1 exploration drilling program consisting of 6 or 7 holes to locate further mineralization, and to re-establish the road from the mine site to the Cat Camp/fuel cache to transport a diesel fuel cache and equipment back to the mine – it appears the land use permit issued (dated June 14, 2001) only permitted the drilling⁵⁷.
- MV2001C0022: This was for the Phase 2 exploration drilling program consisting of 50-60 holes to further delineate mineralization⁵⁸.
- MV2001C0023 and MV2001L2-0003⁵⁹: The land use permit was for development of an underground decline from which delineation drilling would be conducted⁶⁰. The water

⁵⁵ *Project Description Report* at page 21.

⁵⁶ Listed in the *Project Description Report* at page 22.

⁵⁷ *Rfr 16 of 35 – Material Related to MV2000C003*.

⁵⁸ *Rfr 18 of 35 – Material Related to MV2001C0022 – March 2001*, and *Rfr 27 of 35 – Material related to Request for Extension of Phase 2 Drilling*.

⁵⁹ Referred to in the *Project Description Report* at pages 5, 21-22, 24-25, 73, 110.

⁶⁰ *Rfr 19 of 35 – Material related to MV2001C0023*, cover letter entitled “Prairie Creek Mine – Application for Type “A” Land Use Permit, Underground Decline Development and Exploration”, CZN, dated Mar 5, 2001. The Application describes the ‘Summary of operation’ as follows: “As part of the ongoing process of establishing, confirming and enhancing the known mineral resource at the Prairie Creek property, Canadian Zinc proposes to develop an exploration decline to permit access for underground exploration drilling of the stratabound deposit underlying the Zone 3 quartz vein

licence was “for operation of a small scale pilot plant” with an applied-for processing rate of 1.5 tonnes per hour (i.e. 36 tonnes/day) and the withdrawal of up to 75 m³/day of water from the aquifer⁶¹ (totalling 1,000-2,000 tonnes processed and 2,000-4,000 m³ water use for the entire project⁶²). This underground decline/pilot plant project is clearly a much smaller, shorter duration and very different project than the current proposal⁶³. The reports and plans provided by CZN in relation to this underground decline/pilot plant project were all developed, commented upon, considered and approved in the context of this much smaller, shorter duration and very different project. For example:

- The *Geotechnical Assessment of the Polishing Pond*⁶⁴: The MVLWB approved this assessment in the sense that the MVLWB found it met the requirements of a condition in MV2001L2-0003⁶⁵. Documents on which that approval was based clearly state this Polishing Pond was designed and assessed for the limited activities envisioned in the underground decline/pilot plant project⁶⁶.
- The *Probable Maximum Flood Profile Report*⁶⁷. This report generated much controversy, given that its opening paragraph read: “Hayco has carried out a very

mineralization... The main objective of the proposed decline development and underground drilling exploration program is to further delineate additional stratabound and vein mineralization that will add to the existing defined mineral resource...”

⁶¹ *Rfr 20 of 35 – Application for Type B Water Licence for Pilot Project, MV2001L2-0003*, cover letter entitled “Re: Prairie Creek Mine – Application for Type ‘B’ Water Licence, Metallurgical Pilot Plant Operation”, CZN, dated Mar 5, 2001. The ‘Description of the Undertaking’ (item 4 of the Application) states: “To operate a 1.5 tonne per hour pilot plant within the existing mill facilities at the Prairie Creek mine to confirm metallurgical and environmental performance. To obtain up to 75 m³/day of water from the Prairie Creek Valley Aquifer via the existing groundwater well servicing the minesite and use the water in the pilot plant operation. To discharge treated process water from the pilot plant operation to the existing tailings impoundment at the minesite.”

⁶² Mar 5, 2001 letter at page 6.

⁶³ Also note, for example, the differences between the proposed reagents for use in the pilot plant (see page 5 of the Project Description attached to the Application for MV2001L2-0003) and the reagents now proposed for full scale mining operations (see *Project Description Report* at pages 69-70).

⁶⁴ *Rfr 28 of 35 – Material related to Polishing Pond Construction and Geotechnical Assessment*.

⁶⁵ June 12, 2006 letter from MVLWB: *Board Decision – Geotechnical Assessment of the Polishing Pond*.

⁶⁶ See, for example, the *Activity Report Relating to the Construction of a Polishing Pond at the Prairie Creek Minesite, Northwest Territories*, Nov 2005, CZN. At page 3 of 33 this report states: “The Polishing Pond ... was designed to receive waters from a number of sources including: minewater effluent from the 870 meter underground level, a proposed mini-mill metallurgical Pilot Plant and waters emanating from a proposed new decline.” See also the May 30, 2006 Technical Memorandum by Golder Associates, *Quality Control for Construction of Polishing Pond, 2006 Construction Season*, which notes, for example, at page 1: “The purpose of the Polishing Pond is to provide a facility for sedimentation of water flowing out of the existing underground workings, at the 870-portal portal, ...”

⁶⁷ *Rfr 23 of 35 – Material related to Maximum Probable Flood Calculations, 2005*.

rough analysis of the flood flows in Prairie Creek, using the limited data that are available. Strictly speaking this is not a Probable Maximum Flood analysis, as such an analysis requires a lot of detailed data and some weeks of work”⁶⁸. Nevertheless, after a follow-up report was submitted, the MVLWB accepted it as satisfying the requirements of MV2001L2-0003⁶⁹. Whether such a report would be accepted for full-scale mine operations over a 14-20 year period as now proposed is questionable⁷⁰. In addition, this report emphasizes that data was limited⁷¹ (given that it was written some five years ago, newer data should now be incorporated), and as Parks Canada noted, “the analysis does not factor in the possible changes to precipitation as a result of global climate change”⁷². Also note that the geotechnical assessment of the flood protection works explicitly relied upon the limited scope of the activities being proposed (i.e. exploration only) in accepting the 200 year flood standard proposed in the Hayco report⁷³.

- The *Flood Protection and Tank Farm Facility Reports*⁷⁴. Again, these reports were approved by the MVLWB only in the context of water licence MV2001L2-0003 requirements. For example, the authors of the geotechnical evaluation report that considered the Flood Protection Works and the Tank Farm Facility explicitly noted that they had only assessed these components to a level that was appropriate for the scope of the water licence (i.e. advanced exploration activity and no use of the tailings pond, now to be the Water Storage Pond)⁷⁵, and that if the use of the

⁶⁸ 2004 March 10 letter from Hay and Company Consultants Inc. (‘Hayco’), Re: *Prairie Creek Mine Probable Maximum Flood Profile*, at page 1.

⁶⁹ See March 24, 2005 *Board Approval – Probable Maximum Flood Calculations*, and Staff Report prepared March 16, 2005, subject: *Probable Maximum Flood Profile Report (PMFP Report)*.

⁷⁰ As an example, Hayco note at page 4 of their 2004 July 6 letter *Re: Flood Calculations* that their recommended 200-year flood analysis produces a 0.5% chance of failure in any year. Over a 20 year period, this means there is a 10% chance of failure, a not-insignificant risk.

⁷¹ The 2004 March 10 letter notes at page 2 that there was only 14 years of data available at ‘Prairie Creek at Cadillac Mine’ and states: “One cannot reliably estimate the flood of a return period longer than about twice the record length.”

⁷² See above Staff Report prepared March 16, 2005 at page 2 of the Comment Summary Table.

⁷³ See the Staff Report prepared April 4, 2005 for meeting April 12, 2005, Subject: *Plan Approval – Prairie Creek Geotechnical Site Reconnaissance Report (Flood Protection Work and Tank Farm Facility)*, in *Rfr 34 of 35 – Material related to Tank Farm Inspections and Flood Erosion Protection*, at page 5 of 11, which states: “EBA recommended that the 200 year flood be used as the standard because: the scope of the licensed undertaking is limited to exploration activities only; ...”

⁷⁴ *Rfr 34 of 35 – Material related to Tank Farm Inspections and Flood Erosion Protection*.

⁷⁵ As noted in the Staff Report prepared April 4, 2005 for meeting April 12, 2005, Subject: *Plan Approval – Prairie Creek Geotechnical Site Reconnaissance Report (Flood Protection Work and Tank Farm Facility)* at page 5 of 11, “Another facet of the meaning of ‘certify’ is the project scope for which the Flood Protection Work and Tank Farm Facility were assessed. In this particular case, EBA conducted the geotechnical assessments to a level that, in their professional opinion, was appropriate for the scope of the water licence, that is, for advanced exploration activities. EBA also took into

tailings pond changes then the flood protection works would have to be reassessed⁷⁶.

- The *Effluent Treatment Options Plan*⁷⁷ and *Mine Water Contingency Plan*⁷⁸ were similarly submitted to satisfy requirements of MV2001L2-0003, and were both clearly developed and approved with the underground decline/pilot plant project in mind, not full-scale mining operations⁷⁹.
- The *Waste Rock and Ore Pile Monitoring Plan*⁸⁰. Again, the assessment of this plan explicitly relied upon the small-scale nature of the underground decline/pilot plant project⁸¹.
- MV2004C0030⁸²: This was for the Phase 3 exploration drilling program consisting of up to 60 holes to further delineate mineral resources⁸³. Again, the reports/plans submitted

consideration the fact that there are no tailings in the Tailings Pond and that under the current water licence the Tailings Pond is not to be used. EBA was careful to point out that the conclusions in their Geotechnical Report may need to be re-examined if the scope of the project changes or the use of the Tailings Pond changes.”

⁷⁶ The above Staff Report prepared April 4, 2005 at page 6 of 11 states: “EBA was also careful to point out that if the use of the Tailings Pond changes at some point in the future, the Flood Protection Works will have to be reassessed.” And at page 10 of 11: “If CZN ever proposed to use the Tailings Pond, the geotechnical evaluation of the Flood Protection Work should be redone.”

⁷⁷ Rfr 25 of 35 – Material related to *Effluent Treatment Options Plan*, 2006.

⁷⁸ Rfr 24 of 35 – Material related to *Mine Water Contingency Plan for MV2001L2-0003*.

⁷⁹ See, for example, the *Mine Water Contingency Plan for Water License MV2001L2-0003*, Nov 2005 (revised July 5, 2005), in Rfr 24 of 35, at page 6 of 41 (Introduction), which states: “there is expected to be up to three streams of wastewater for management during site operations, consisting of water from the existing 870 m level, water from the new 905 m portal, and effluent from the Pilot Plant when it is in operation... This Mine Water Contingency Plan explains how CZN plans to manage mine water while operating under Water License MV2001L2-0003.” As further example of the reliance on the small scale of this underground decline/pilot plant project, CZN in their Jan 13, 2006 letter *RE: Effluent Treatment Options Plan, MV2001L2-0003* at page 2 state that if explosives management does not avoid the liberation of ammonia at source, then affected water will be directed to the Mill for temporary storage – Environment Canada’s comments (dated Nov 21, 2005, attached to CZN’s letter) note the storage capacity in the mill tanks is only 732 m³.

⁸⁰ Rfr 30 of 35 – Material related to *Waste Rock and Ore Pile Monitoring Plan*, 2006.

⁸¹ This *Waste Rock and Ore Pile Monitoring Plan* was submitted to satisfy a requirement of MV2001L2-0003. AMEC’s review (letter dated 19 May 2006 at page 1) of the original version of the Plan notes the small total amount of ore and rock to be generated over the life of the project: “The development will generate an estimated 18 m³ of ore and 5,200 m³ of waste rock.” And Gartner Lee’s review of the revised plan (letter dated June 16, 2006 at page 1) notes, “I feel that the scope and approach proposed in the revised plan (May 28, 2006) is appropriate to the nature and scale of the work being undertaken (underground exploration)” (note the Staff Report prepared for the June 9, 2006 meeting of the MVLWB relies upon Gartner Lee’s previous verbal confirmation).

⁸² Referred to in the *Project Description Report* at pages 6, 21, 23, 107, 109, 110.

by CZN in relation to this project were developed, commented upon, considered and approved in the context of this Phase 3 drilling project, a smaller scale, shorter duration and very different project to what is now proposed. For example:

- The *Wildlife Survey*. This one day aerial survey flew over the Phase 3 drilling program areas, and the consultant explicitly noted that their conclusion of limited potential for wildlife conflicts was in the context of this drilling program⁸⁴.
- The *Flight Impact Management Plan*. This plan notes the presence of ewe-lamb groups (believed to be lambing areas) on peaks immediately east and west of the airstrip, and explicitly notes its objectives were in the context of the Phase 3 exploration program⁸⁵.

Please see DFN's scoping submission (Oct 14, 2008) for further discussion of the differences between the current undertaking proposed by CZN versus the previous underground decline/pilot plant project and the Phase 3 drilling program.

These previous EAs were clearly for very different, smaller-scale and shorter-duration projects than the applications under current consideration, with correspondingly very different potential for noise, wildlife and habitat disturbance, and impacts to surface and ground water quality. These previous EAs did not assess any facilities or activities in the context of full scale mine operations, and therefore did not assess the potential impacts or effectiveness of mitigation in such a context. Further, these previous EAs did not consider the numerous additions and changes to facilities and activities now being proposed by CZN. While information and plans produced during previous EAs might of course be useful in the current EA, these previous EAs are not a reason to exclude certain mine facilities and activities from the scope of development for the current EA.

Indeed, the Northwest Territories Supreme Court in *Chicot v. Paramount Res. Ltd.*⁸⁶ ruled that although information from a previous EA that included consideration of planned future development can be taken into account in the preliminary screening of the subsequent application for that future development, that previous EA does not exempt that subsequent

⁸³ *Rfr 26 of 35 – Issuance of Land Use Permit MV2004C0030.*

⁸⁴ *Rfr 31 of 35 – Material related to Wildlife Survey Phase 3 Drilling, 2006.* See letter entitled “RE: Wildlife Survey, Phase 3 Surface Exploration Drilling Project, Prairie Creek”, CZN, dated June 8, 2006, which describes a one-day pattern of flight paths flown over the Phase 3 drilling program areas, including a number of landings to view for wildlife and inspect vegetation, from which, the letter notes, “CZN’s consultant has concluded that there appears to be limited potential for conflict with wildlife resources from the Phase 3 exploration program.” The wildlife management plan developed during the EA of MV2004C0030 (Phase 3 drilling) was also submitted to satisfy a requirement of MV2001C0023 for the underground decline project, again a small scale, short duration and very different project to what is now proposed (see two page June 7, 2006 letter in *Rfr 29 of 35 – Material related to Wildlife Management Plan, Decline and Pilot Plant Operation*).

⁸⁵ The *Flight Impact Management Plan*, March 31, 2006 (attached to CZN’s October 17, 2008 letter ‘Re: Relevant Pre-Existing Materials for Scoping – Document Locations’).

⁸⁶ *Chicot v. Paramount Res. Ltd.*, [2006] N.W.T.J. No. 38, 22 C.E.L.R. (3d) 112, 2006 NWTSC 30.

application from consideration under Part 5 of the MVRMA⁸⁷. The court noted, for example, the need to consider whether there have been changes to the planned development since the previous EA and whether there have been changes to the environment or to wildlife or due to the lapse of time, so as to determine if the conclusions in the previous EA are still valid and to ensure careful consideration be given to the current application as required by MVRMA s.114(b)⁸⁸.

Additional reasons for including all mine site facilities and activities in the scope

There are a number of other important reasons for including all mine facilities and activities in the scope of development, such as:

- To promote the ‘careful consideration’ required by MVRMA s.114(b).
- To properly assess impacts of the proposed development on the environment, including the significance of such impacts, as required by MVRMA s.117(2).
- Assessment of potential malfunctions and accidents related to each facility and activity.
- Assessment of total water quality implications: CZN’s *Project Description Report* appears to show that a number of samples over the past few years have exceeded allowances under the water licence and/or the CCME aquatic life guides⁸⁹, and this is confirmed by Environment Canada⁹⁰. During full scale mine operations (and after closure of the mine), concerns about water quality impacts are likely to be greater. For example, the water flowing or being pumped out of the mine is expected to increase in volume as inflows to the mine increase due to the progress of mine workings and as further fractures are encountered⁹¹; the various new and altered facilities, such as the new storage piles for ore, DMS rock, waste rock, and tailings, will need to be considered in terms of runoff, sedimentation and leachate potential; the ability of the water treatment process to handle temporary shutdowns needs to be assessed; the integrity, capacity and effectiveness of the new Water Storage Pond needs to be considered as do

⁸⁷ See, for example, *Chicot v. Paramount Res. Ltd.* at para. 39.

⁸⁸ See, for example, *Chicot v. Paramount Res. Ltd.* at paras. 39-40.

⁸⁹ *Project Description Report* at pages 46-54. See, for example: the levels of zinc at the ‘3-5 Catchment pond discharge’ station in Table 3-3 on page 47; the levels of cadmium, lead, selenium and zinc at the ‘3-6 Harrison Creek at Prairie’ station in Table 3-3 on page 47; the levels of cadmium, lead and zinc at the ‘3-6 Harrison Creek at Prairie’ station in Table 3-5 on page 51; the zinc levels at the ‘3-11 PCD’ (Prairie Creek Downstream of mine site) station compared to those at the ‘3-10 PCU’ (Prairie Creek Upstream of mine site) station in Table 3-6 on page 52; and the zinc level at the ‘3-1 WH’ (Well House) station in Table 3-7 on page 54.

⁹⁰ Environment Canada in their Oct 20, 2008 Scoping Comments under the heading ‘Water Management’ write: “We note that the company has not been successful in consistently meeting the licence criteria to date for zinc, and has had periodic exceedances for a number of parameters, ...”

⁹¹ *Project Description Report* at page 45, 46, 67, 82, 83. See also CZN letter dated June 18, 2008 *Re: MV2008L2-0002, Class A Water Licence Application, Prairie Creek Mine*, item 4 at pages 2-3.

the new flows being directed into it (including the treated sewage). Only by considering all facilities and activities at the mine site can a complete picture of water quality impacts be determined and the total impacts assessed. And as the components in an operating mine are highly interconnected and the overall success of the waste water treatment system is dependent upon the integrity of the whole system, it is critical that all components are assessed together, as a whole. Please see CPAWS scoping submission (Oct 20, 2008) at pages 15-18 for further discussion on water quality issues.

- Assessment of total species at risk implications: The *Species at Risk Act* was passed by Parliament in 2002 and came into force in 2003 and 2004, and is thus a new law that was not in place in the 1980s. SARA s.79 requires environmental assessments conducted under an Act of Parliament (such as under the MVRMA) to identify the adverse effects of a project on listed species and their critical habitat and to ensure that mitigation and monitoring measures are taken if the project is carried out. Best practice requires that species assessed as at-risk by COSEWIC or GNWT also be considered and that a precautionary approach be applied, and a number of parties have already noted the need to consider potential adverse impacts of the mine on certain species⁹². A piecemeal EA of only some of the mine site facilities and activities could undermine effective identification and mitigation of adverse effects on species at risk. Please see CPAWS scoping submission (Oct 20, 2008) at pages 19-21 for further discussion on wildlife species of concern, and CPAWS' preliminary screening submission (Aug 15, 2008) at page 4 for further discussion of the precautionary approach.
- Consideration of new information such as on climate change and earthquake activity: There is evidence from 1980 to the present showing warming and increased precipitation in the region⁹³, and there are concerns that climate change could lead to permafrost melt and increased landscape instability⁹⁴. There is also evidence from 1985 and 1988 and

⁹² For example, Environment Canada and DFO in their preliminary screening comments dated Aug 8, 2008 stated: "Presence of SARA-listed species in the area (grizzly bears, wolverine, peregrine falcons, woodland caribou, wood bison) and the potential for effects on these species and their habitat needs to be assessed." GNWT similarly noted in its preliminary screening comments dated Aug 8, 2008 in relation to MV2008D0014 and MV2008L2-0002 (see page 4/14) concerns related to wolverines, and the need to assess the project's impacts on species listed under SARA or assessed as at-risk by COSEWIC. The *Revised Draft Review Board Guidelines for considering wildlife at risk (including SARA species) in environmental impact assessment in the Mackenzie Valley* (available at http://www.reviewboard.ca/reference_lib/) similarly note that consideration should be given to all 'wildlife at risk' including those listed under SARA or assessed as at-risk by either COSEWIC or ranked in the *NWT General Status Rankings*. These Draft Guidelines also state at page 7 that, "a precautionary approach requires treating [habitat that is known to be used by a species of wildlife at risk but whose importance is unknown] as important unless the balance of evidence suggests otherwise." The *Project Description Report* at pages 57-58 notes that species of 'wildlife at risk' that have been seen in the mine site area include grizzly bears, wolverine, and woodland caribou (boreal population).

⁹³ *Project Description Report* at page 41.

⁹⁴ See CPAWS scoping submission (Oct 20, 2008) at page 22.

studies reported in 1987 and 2005 showing the high risk of seismic activity (earthquakes) in the area⁹⁵. Inclusion of all mine site facilities and activities in the scope of development (including the flood protection dikes and tank farm) will allow assessment of whether, and to what extent, this evidence on climate change and seismic activity suggests modifications to facilities and activities.

- Preferable to include in the scope of development than relegate to cumulative effects: Equivalent arguments as raised in our Request for Ruling (Nov 3, 2008) at pages 10-11 concerning the need to include all the components of the proposed undertaking in the scope of development rather than relegating consideration of some components to the cumulative effects part of the EA apply to all the facilities and activities at the mine site.
- To allow for consideration of currently unanticipated interactions: At this stage of scoping in this EA, it is likely not possible to anticipate all interactions between the environment and the various facilities and activities at the mine site. Inclusion of all such facilities and activities in the scope of development will allow for all potential interactions to be considered as this EA progresses.
- Aboriginal consultation: Inclusion of all mine site facilities and activities in the scope of development will facilitate more effective Aboriginal consultation, in that a complete package of information about the mine site and its impacts will be generated allowing for all parties to engage in more meaningful discussions. This will similarly help ensure that concerns of Aboriginal people and the public are taken into account, as required by MVRMA s.114(c).

Attachments

Thank you for your consideration of our submissions. We attach the following documents referenced above which are not already on the public registry:

- *North American Tungsten Corp. Ltd. v. Mackenzie Valley Land and Water Board*, 2003 NWTCA 5, 1 C.E.L.R. (3d) 161, [2003] N.W.T.J. No. 28 (QL).
- *Chicot v. Paramount Res. Ltd.*, [2006] N.W.T.J. No. 38, 22 C.E.L.R. (3d) 112, 2006 NWTSC 30.
- *Revised Draft Review Board Guidelines for considering wildlife at risk (including SARA species) in environmental impact assessment in the Mackenzie Valley*, available at http://www.reviewboard.ca/reference_lib.

⁹⁵ See CPAWS scoping submission (Oct 20, 2008) at pages 21-22.