



March 5, 2009

To the EA0809-002 Distribution List

RE: Review Board Ruling on Scope of Development for EA0809-002, Prairie Creek Mine

Please find attached the Mackenzie Valley Environmental Impact Review Board's (Review Board) ruling on scope of development issues related to the Prairie Creek Mine environmental assessment.

The Review Board is in the process of developing a *Draft Terms of Reference* and *Draft Work Plan*, both of which will be distributed for public comment in the coming weeks. The Review Board will consider all comments before issuing *Final Terms of Reference* and a *Final Work Plan*. The *Terms of Reference* will give specific direction to the developer, Canadian Zinc Corporation, on what information should be included in its *Developer's Assessment Report*. The *Work Plan* will identify roles and responsibilities, work plan phases, milestones and estimated timelines for the completion of the environmental assessment.

Regards,

A handwritten signature in blue ink, appearing to read 'Alistair MacDonald'.

Alistair MacDonald
Environmental Assessment Officer

attachment

Mackenzie Valley Review Board



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EA 0809-002 Canadian Zinc Corporation, Prairie Creek Mine

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Frank Kotchea	Nahendeh Land & Environmental Services	867-770-4573

Alan Taylor	Canadian Zinc Corp.	alan@canadianzinc.com
Laura Pitkanen	Dehcho Representative	pitkanen@csolve.net
Mayor Wayne Newbury	Hamlet of Fort Liard	867-770-4004
Canadian Zinc Corporation	Corporate Office	604-688-2043
Lani Cooke	CPAWS	lani@cpaws.org
Krystal Thompson	INAC	thompsonkr@inac.gc.ca
Loretta Ransom	ENR-GNWT	Loretta_ransom@gov.nt.ca
Lorraine Sawdon	DFO	lorraine.sawdon@dfo-mpo.gc.ca
Kirby Groat	Chamber of Commerce-Fort Simpson	kwgroat@northwestel.net
Adrian Paradis	MVLWB	adrian@mvlwb.com

Anne Wilson	Environment Canada	anne.wilson@ec.gc.ca
Alison Woodley	CPAWS	awoodley@cpaws.org
David Harpley	Canadian Zinc Corp.	david@canadianzinc.com
Joe Acorn	Consultant to Nahanni Butte Dene Band	joeacorn@theedge.ca
Katherine Cumming	Parks Canada	katherine.cumming@pc.gc.ca
Neil Hartling	Canadian River Expeditions & Nahanni River Adventures	neil@nahanni.com

Peter Redvers	Cross Currant Associates	predvers@ssimicro.com
Sam Gargan	Dehcho First Nations	sam_gargan@dehchofirstnations.com
Ryan Silke	NWT & Chamber of Mines	silke@ssimicro.com



Mackenzie Valley Environmental Impact Review Board

IN THE MATTER OF: Environmental Assessment EA0809-002:
Canadian Zinc Corporation Prairie Creek Mine
pursuant to the *Mackenzie Valley Resource*
Management Act;

AND IN THE MATTER OF: A Request for Ruling by the Dehcho First Nations and the Canadian Parks and Wilderness Society that the scope of development for EA0809-002 include the winter access road.

BACKGROUND AND REGULATORY CONTEXT:

On August 8, 2008, Indian and Northern Affairs Canada referred the Prairie Creek Mine development proposed by the Canadian Zinc Corporation (Canadian Zinc, CZN or the developer) to environmental assessment on its own and on behalf of the Nahanni Butte Dene Band (pursuant to the *Settlement Agreement* between the Dehcho First Nations and the Government of Canada dated July 8, 2005). The Nahanni Butte Dene Band [NBDB] requested a referral on the basis of “concern[s] about the potential impacts of the Prairie Creek Mine on the environment and on the traditional rights and interests of [Nahanni Butte Dene Band] and its members”.¹

The Mackenzie Valley Environmental Impact Review Board (Review Board) started this environmental assessment August 11, 2008 pursuant to the requirements of the *Mackenzie Valley Resource Management Act (MVRMA or the Act)*.² During the start-up period for the environmental assessment, the Review Board also received letters of

¹ [NBDB request to INAC for referral to EA](#), September 22, 2008.

² The Review Board establishes a paper and website public registry for each environmental assessment it undertakes. All documents on the public registry (and all documents cited in this Ruling) are available at the Review Board’s website at www.reviewboard.ca. Citations from that public registry in footnotes to this Ruling list the name of the document and the date it was filed on the public registry for easy public access.

referral from Environment Canada and the Department of Fisheries and Oceans (jointly), and the Mackenzie Valley Land and Water Board.

The Prairie Creek Mine is located approximately 90 kilometres (km) northwest of the nearest Dehcho community of Nahanni Butte, in the southern Mackenzie Mountains on the eastern side of and adjacent to Prairie Creek. Prairie Creek is a tributary of the South Nahanni River; their confluence is 43 km south of the mine. The current boundaries of the Nahanni National Park Reserve are 32 km south of the mine site. A winter access road, originally established in 1981 and currently permitted under land use permit MV2003F0028 to support exploration and clean-up at and around the mine site, runs east from the mine approximately 175-180 km and meets the Liard Highway just north of Lindberg Landing.

Canadian Zinc proposes to conduct an underground mining and milling operation which includes transportation from its Prairie Creek lead-zinc mine to the railhead in Fort Nelson. The following applications to the Mackenzie Valley Land and Water Board in May and June of 2008 triggered a preliminary screening of this proposed development:

- a. MV2008L2-0002: Type A Water License, Prairie Creek Mine
- b. MV2008D0014: Type A Land Use Permit, Prairie Creek Mine
- c. MV2008T0012: Type A Land Use Permit, Liard Transfer Facility
- d. MV2008T0013: Type A Land Use Permit, Tetcela Transfer Facility

On November 3, 2008, the Review Board received a Request for Ruling from Ecojustice on behalf of the Dehcho First Nations and the Canadian Parks and Wilderness Society (the “applicants”). Specifically, the applicants asked the Review Board to make a determination that

1. “CZN’s current land use permit for the road (MV2003F0028) does not permit use of the winter road for the full-scale mine operations contemplated in the applications currently before the Review Board; and
2. either:
 - a. the Review Board’s scoping decision is postponed until after an application has been made for a new land use permit for the road and its use, and after that application has been considered; or
 - b. the road and its use are included in the scope of development, but most subsequent steps in this EA are postponed until after an application for a new land use permit for the road and its use has been submitted”.³

On November 27, 2008, the Review Board issued a determination that it does not have the jurisdiction under Part 5 of the *MVRMA* to make a ruling determining the activities which may or may not be authorized by land use permit MV2003F0028. Likewise, the Review Board does not have the authority to require any developer

³ [Request for Ruling from Dehcho First Nations and CPAWS](#), November 6, 2008, page 2, emphasis in original.

undergoing an environmental assessment to apply for new regulatory authorizations or to replace existing permits or licenses. The Review Board ruled that if there are questions about the validity of existing permits or licenses or about the need for new permits or licenses these matters should be addressed to the appropriate regulatory authority.

In its November 27, 2008 determination the Review Board noted that it must under s.117(1) of the *MVRMA* determine the scope of any development referred to it for environmental assessment. The Review Board decided to address the scope of development issues raised by the applicants' Request for Ruling in this context.

The Review Board also noted that the issue of the scope of development for the Prairie Creek Mine has been an important and contentious one since the outset of this environmental assessment. The Review Board was of the opinion that the determination of the appropriate scope of development for this environmental assessment is an issue of importance which must be dealt with before proceeding to the terms of reference stage of the environmental assessment.

The record in this proceeding indicates that the developer and some parties had fundamental disagreement over two key scope of development issues:

- Whether the winter road should be part of the scope of development, and
- Whether existing mine site infrastructure should be part of the scope of development.

Given that the applicants' Request for Ruling addressed only the question of whether the winter road should be part of the scope of development for the environmental assessment, the Request for Ruling was expanded by motion of the Review Board itself to address both of these scope of development issues. The Review Board's purpose in expanding the scope of the Request for Ruling was to allow interested parties the opportunity to speak to all the legal issues associated with the scope of development for the Canadian Zinc Prairie Creek Mine environmental assessment, with particular reference to s.157.1 of the *MVRMA*, which "grandfathers" certain undertakings permitted prior to June 22, 1984.

Consequently, the Review Board directed the parties to address the following questions in their submission(s) on the Request for Ruling (Request):

- 1. Should the scope of development for EA0809-002 include all physical works and activities associated with the proposed winter road?**
- 2. Should the scope of development for EA0809-002 include all facilities and activities at the proposed mine site?**

In order to rule on these questions and make an informed decision on the scope of development for the environmental assessment, the Review Board required additional evidence from the parties related to the Prairie Creek Mine's complex regulatory history. The Review Board therefore addressed information requests (IRs) to all interested parties (with emphasis on Canadian Zinc, the applicants, and Indian and Northern Affairs Canada) asking for the submission of any historic documents related to the Prairie Creek Mine that might be potentially relevant to the consideration of the appropriate scope of development. By December 16, 2008, the Review Board had received responses to its IRs from interested parties. These documents were grouped by subject matter and posted in "RfR" (Request for Ruling) packages onto the Review Board's public registry by December 19, 2008. Interested parties were invited to consider this evidence when developing their submissions on the Request.

The Review Board held a pre-hearing conference with interested parties on December 17, 2008. During this meeting, Review Board staff and legal counsel laid out the process for the forthcoming ruling. Parties suggested changes to the deadlines for submissions, and advised that the information on the public record was adequate for the purposes of the required ruling. The Review Board set January 14 and January 19, 2009 as the deadlines for initial and reply submissions.

Three parties made submissions: Justice Canada on behalf of Indian and Northern Affairs Canada, the Department of Fisheries and Oceans, Environment Canada, Parks Canada, and Natural Resources Canada (January 14 submission only); Ecojustice on behalf of the Dehcho First Nations and the Canadian Parks and Wilderness Society (January 14 and January 19); and Canadian Zinc, including correspondence from their legal counsel (January 14 and January 19).

The Review Board met on January 25, 2009 to consider the submissions on the Request. The Review Board met again on February 6, 2009 and February 26, 2009 to make its ruling and set out its reasons for decision.

The following document sets out the facts, frames the issues and how the Review Board considered them, summarizes legal and other arguments, and provides the Review Board's findings of fact and reasons for decision in this matter.

THE FACTS:

This ruling relies heavily on analysis of the regulatory history of the Prairie Creek Mine. The Review Board provides the following summary comparing what was applied for under the historic undertaking (the mine developed by Cadillac

Explorations Ltd. (Cadillac) in the early 1980s) with that currently proposed by Canadian Zinc.

Unless otherwise noted, the Review Board has only considered the evidence available in relation to the undertaking proposed prior to June 22, 1984 in its determination of the facts related to what was proposed and permitted at Cadillac's Prairie Creek Mine. The reason for this is that the key legal question is whether the current undertaking is grandfathered under s.157.1 of the *MVRMA*, and the June 22, 1984 date is the cutoff date under the Act for the applicability of the exemption from environmental assessment.

The Review Board notes that the record of historic materials is not complete, as Indian and Northern Affairs Canada and Canadian Zinc have both identified that some documents either were not transferred from the previous owners of the mine, or were destroyed after a set time period in accordance with government policy. The Review Board has made its findings of fact based on the best available information, using information provided to it by the interested parties and placed on the public registry for this environmental assessment. The Review Board also notes that the opportunity was afforded to all interested parties to provide additional information (via IRs #1-4) and no parties at the pre-hearing conference noted concerns about missing information.

1) THE HISTORIC UNDERTAKING

Prior to June 22, 1984, the Prairie Creek Mine was the subject of three licenses and permits, all of which were issued by Indian and Northern Affairs Canada to Cadillac:

- Land Use Permit N80F248 – for mine site activities, applied for in March, 1980, originally permitted on April 14, 1980 to expire April 13, 1982.
- Land Use Permit N80F249 – for the Winter Access Road, applied for in March, 1980, originally permitted on July 2, 1980, with extensions and amendments extending the permit to June 29, 1983.
- Water License N3L3-0932 – for “domestic and industrial use” at the mine site, applied for on June 30, 1980, originally permitted on July 1, 1982, and listed as expired on June 30, 1986⁴.

The Review Board has been provided with no evidence of any other permits or licenses issued prior to June 22, 1984 in relation to this undertaking. It has therefore limited its examination to the particulars of these three permits and their supporting documents in order to determine the nature and scope of the original project. The

⁴ As noted in [RfR 43 of 56- Correspondence related to N3L3-0932](#), December 19, 2008.

Review Board is of the view that the evidence in relation to the three permits/licenses identified above encompasses the full historical undertaking.

The 1980-2 material on the public record indicates the following facts in relation to the scope and scale of the then permitted Prairie Creek Mine:

- Six year mine life at 1000 tons per day, 350,000 tons of ore mined per year⁵.
- Approximately 2.0 million tons ore reserves proven, probable & possible⁶.
- A 1000 tons per day conventional crushing, grinding and selective flotation milling process incorporating sodium cyanide and other reagents to produce separate lead and zinc concentrates.⁷
- Minimal waste rock generation (18,000 tons per year) with no planned waste rock pile. Waste rock “would be used for fill in various locations around the property including roads and fill benches”.⁸
- Utilization of a tailings pond for subaqueous disposal of tailings as well as some backfill of tailings into the mine.⁹
- An approximately 175-180 kilometer winter access road from the Liard Highway to the Mine “useable for approximately 3 months a year” to bring equipment and supplies in to the mine and “to ship lead and zinc concentrates in trucks” out¹⁰. The winter access road was subject to a “shut-down” period from Mile 23.4/km 37 from the Mine onwards between March 31 and December 20¹¹.
- An estimated 40 heavy trucks per day hauling concentrate in winter for 100 days straight¹². This was later elaborated upon to mean that “in any 24 hour period approximately 40 trucks would have to pass in each direction of the winter road”¹³. If this statement was accurate, this would mean approximately 8000 transits along the winter road per winter road season¹⁴.

⁵ [RfR 37 of 56 - Preliminary environmental evaluation May 1980 by Ker Priestman](#), December 19, 2008, page 11.

⁶ [RfR 21 of 56 - Affidavit of Alan Taylor of Canadian Zinc Corporation, 2004](#), filed November 26, 2008, states the 1980 ore reserve stood at 1.99 million tons. [RfR 10 of 56- Correspondence Prior to San Andreas Mine Permits](#), November 26, 2008, indicates a pre-1992 ore reserve of 2.0 million metric tonnes.

⁷ [RfR 37 of 56 - Preliminary environmental evaluation May 1980 by Ker Priestman](#), December 19, 2008.

⁸ [RfR 37 of 56 - Preliminary environmental evaluation May 1980 by Ker Priestman](#), December 19, 2008.

⁹ [RfR 37 of 56 - Preliminary environmental evaluation May 1980 by Ker Priestman](#), December 19, 2008, at pages 12-14.

¹⁰ [RfR 5 of 56- Preliminary Evaluation for Winter Access Road - May 1981](#), November 26, 2008.

¹¹ [RfR 2 of 56 -LUP N80D248 to Cadillac Explorations for Winter Access Route- March 4, 1980](#), November 26, 2008.

¹² [RfR 38 \(1 of 3\) Final 1980 environmental assessment report - text only](#), December 19, 2008.

¹³ [RfR 44 of 56- NWT Water Board public hearing on application for Water License April 1981](#), page 41, December 19, 2008.

¹⁴ According to [RfR 37 of 56 - Preliminary environmental evaluation May 1980 by Ker Priestman](#), December 19, 2008, at page 23, the required 600 or so loads of fuel required at the mine site would be

- A marshalling and transfer yard was established on the south side of the Liard River near the winter road ice bridge and used during the 1981 and 1982 winter road seasons¹⁵.
- A mine workforce of 221, with some 159 on site at any given time¹⁶.
- A three generator 3450 kW diesel power plant¹⁷.
- 302,000 Imperial gallons (1.37 million litres) estimated daily minewater discharge.
- A water license (N3L3-0932) which limited the mine to use of 1150 cubic metres of water each day and 420,000 cubic metres of water per year¹⁸.
- Approximately three kilometres of underground workings in place¹⁹.

The Review Board also accepts as fact based on the evidence on the public registry that Cadillac intended to truck lead and zinc concentrates out on an annual basis along the winter access road and had informed the permitting authorities of that intention²⁰. The winter road was built and in operation over the winter road seasons from January to March in both 1981 and 1982, with some 800-1000 loads trucked into the mine site over that time period²¹. Mine infrastructure was approximately 90-95% complete when Cadillac went into receivership, but the mine never actually operated and no product was ever shipped to market.

To the Review Board's knowledge, all the aforementioned permits had expired by June 30, 1986. Eventually, San Andreas Resources (which later became Canadian Zinc) became the owner of the mineral rights, mineral and surface land leases and surface facilities originally operated by Cadillac, and the sole corporation controlling the Prairie Creek Mine and winter access road. Between the early 1990s and 2008, Canadian Zinc has conducted a variety of activities at and around the Prairie Creek Mine, largely limited to exploration and clean-up programs. During this period, the

backhauled on "concentrate trucks" and therefore not require additional truck trips. It is unknown but likely that other materials (e.g., reagents, cement) would have been backhauled in the same fashion.

¹⁵ As described by Canadian Zinc in the 2008 Liard Transfer Facility *Project Description Report*, page 6. Canadian Zinc identifies that the location of its transfer facility differs from the historic marshalling/transfer yard. No other information on this historic marshalling/transfer yard or any associated permits or licenses has been provided on the public registry for this environmental assessment.

¹⁶ [RfR 38 \(1 of 3\) Final 1980 environmental assessment report - text only](#), December 19, 2008.

¹⁷ [RfR 38 \(1 of 3\) Final 1980 environmental assessment report - text only](#), December 19, 2008. The Review Board notes that four generators with a 4.6 MW capacity were eventually installed, as reported at page 73 of the 2008 Prairie Creek Mine *Project Description Report*.

¹⁸ [RfR 8 of 56 - Water License N3L-0932-July 1982](#), November 26, 2008.

¹⁹ [RfR 10 of 56- Correspondence Prior to San Andreas Mine Permits](#), November 26, 2008.

²⁰ For example, references are made to this intent in RfRs #5, #37, #38, #44, #46. See the Review Board website public registry for details.

²¹ [RfR 32 of 56- Material related to Application for Winter Access Road](#), November 26, 2008.

defined mineral resource was expanded to some 10.7 million metric tonnes²². The Review Board finds as a fact that none of the permits and licenses granted during the time period between when Cadillac went into receivership and 2007 were intended to operate the mine for full production.

For the purposes of this ruling, however, one application made by Canadian Zinc in the interim is of particular note because it resulted in litigation. This was for a land use permit to re-open the winter access road in 2003 (MV2003F0028). The decision settling the litigation in relation to this permit has been cited in arguments about the appropriate scope of development for the environmental assessment of the Prairie Creek Mine in EA0809-002 and therefore some further information about this application and its treatment is warranted.

Land Use Permit MV2003F0028 (applied for on June 15, 2003, issued April 11, 2007 and in place until April 10, 2012) was for reactivation of the existing winter access road. Canadian Zinc provided the following rationale in its application materials for MV2003F0028:

“In order to continue with its site clean-up efforts, Canadian Zinc wishes to re-establish the existing winter road to provide access into the minesite. The road would be established in late December – early January and operated through to the end of March, at the latest, in each year of its use during the term of the Permit. Road access will allow the Company to proceed with the removal of aging equipment, stockpiled reagents which have outlived their shelf life, and other equipment and supplies which are not expected to be required in future mining operations”.²³

In its application materials for MV2003F0028, Canadian Zinc also noted a desire to do a final clean-up at Cat Camp and Grainger fuel cache sites, and stated that “...re-established road access will also provide a more economical means of transporting equipment and supplies necessary in support of the planned advanced exploration activity”. In applying for this permit the developer argued that “No new road development is required and activity will be restricted to the existing road corridor as originally permitted in 1980 with no significant alteration”. The developer applied for exemption of the winter road from environmental assessment under section 157.1 of the *MVRMA*.

The Mackenzie Valley Land and Water Board initially rejected this argument, stating that section 157.1 did not apply to the winter access road, but this decision was overturned in the NWT Supreme Court in 2005 (*Canadian Zinc Corporation vs. Mackenzie Valley Land and Water Board*) for reasons discussed further in the analysis

²² While [RfR 21 of 56 - Affidavit of Alan Taylor of Canadian Zinc Corporation, 2004](#), filed November 26, 2008, states a resource of 11.8 million tonnes, this was later adjusted to 10.7 million tonnes measured, indicated and inferred in the 2008 Prairie Creek Mine *Project Description Report*, pages 3-4.

²³ [RfR 32 of 56- Material related to Application for Winter Access Road](#), November 26, 2008.

section below. After the Court's decision the land use permit for the reconstruction and use of the winter access road was issued.

2) THE CURRENTLY PROPOSED UNDERTAKING

Unless otherwise noted, the Review Board bases its summary of the currently proposed undertaking on materials placed on the public record for EA0809-002 by Canadian Zinc, in particular the developer's May 2008 *Project Description Report* for the Prairie Creek Mine, and separate *Project Description Reports* for both the Tetcela Transfer Facility and the Liard Transfer Facility.

The 2008 applications are for an undertaking which includes, but is not limited to, the following characteristics:

- Maximum underground mining capacity of 1200 tonnes per day²⁴.
- Milling of separate lead and zinc concentrates with contained silver at an average ore throughput of 1000 tonnes per day (maximum 1200 tonnes per day), producing approximately 120,000 tonnes per year of concentrate²⁵.
- Alongside the existing mill structure, installation of a dense media separation circuit, development of a paste backfill plant, and a bagging plant to prepare concentrate for transport.
- 5.2 million tonnes measured and indicated resource, along with an open-ended inferred resource of 5.5 million tonnes²⁶.
- A mine life of a minimum 14 years but "expected to continue for at least 20 years"²⁷.
- A valley fill waste rock pile above Harrison Creek, housing approximately 440,000 cubic metres of waste rock and dense media separation (DMS) reject rock.
- Development of a solid waste landfill within the aforementioned waste rock pile.
- A new surface stockpile of ore near the 870 metre portal for 2,000 to 20,000 tonnes of ore.
- A storage pad for DMS rock in behind the mill.
- Cemented paste backfilling of the majority or all tailings over the life of the mine.
- Temporary surface storage of 40,000 tonnes of tailings on a lined storage pad near the Water Storage Pond, and a new heated building with capacity to store 10,000 tonnes of filtered tailings.

²⁴ Prairie Creek Mine *Project Description Report*, at page 4.

²⁵ Prairie Creek Mine *Project Description Report*, at page 4.

²⁶ Prairie Creek Mine *Project Description Report* at pages 3-4.

²⁷ Prairie Creek Mine *Project Description Report*, at page 4.

- Expanded underground workings and a new portal from which to drive a new decline access ramp.
- New storage pads and buildings at the mine site, including a large concentrate storage building and a kitchen/diner block and employee accommodations.
- Process water demand of somewhere between 1770 and 2055 cubic metres per day²⁸.
- Altered water treatment systems, including transformation of the tailings pond (never used) into a two-celled Water Storage Pond, and altered on site mine and process water flows, treatment systems (including a new water treatment plant) and release routing.
- New incinerator and power generation systems.
- A 175 kilometre by five metre winter access road following the same general route as that permitted in 1980-2, with proposed start-up from the mine site on the all-weather section as early as November 15 annually, running through approximately March 31.
- Approximately 9600 heavy truck transits per year along the winter road (approximately 4800 return trips of trucks with 25 tonnes of concentrate per load)²⁹.
- Two concentrate and materials storage and transfer facilities along the winter access road: The Tetcela Transfer facility located near the Tetcela River at km 84 from the Prairie Creek Mine, and the Liard Transfer Facility located on the east side of the Liard River, 500 metres west of the Liard Highway north of Lindberg Landing. Each transfer facility would have a storage capacity of 50,000 tonnes of lead and zinc concentrates in pre-fabricated tent structures. The Liard Transfer Facility will also have additional storage facilities to accommodate temporary storage of some of the approximately 15,000 tonnes of materials and 8.5 million litres of diesel that the Prairie Creek Mine requires annually. A 400,000 litre tank will be used for diesel storage at the Liard Transfer Facility.

3) COMPARISON OF THE HISTORIC AND PROPOSED UNDERTAKINGS

The Review Board finds as facts the following relationships between the 1980-2 undertaking and the currently proposed undertaking.

²⁸ The Prairie Creek Mine *Project Description Report*, at page 84, cites mill process water needs at 1900 cubic metres per day, while the developer's [Application & Supporting Materials for Water License](#), August 26, 2008, states the likely increase in process feed water from years 1-3 (1770 cubic metres per day) to 2055 cubic metres per day after year 3.

²⁹ This estimate is based on information at page 12 of the 2008 Liard Transfer Facility *Project Description Report*. At an average of 25 tonnes per load, it would take 4800 transits to transport the estimated 120,000 tonnes of concentrate per year. This assumes that the approximately 6.5 million litres of diesel fuel and 15,000 tonnes of other supplies per year going into the mine will be backhauled by trucks dropping concentrate at the Liard Transfer Facility.

1. The following components at the mine site were already in place and permitted between 1980-2 and are not proposed to be altered in any significant way³⁰:
 - The bulk of the milling infrastructure, including the building housing it, the primary and secondary crushers and the flotation circuits.
 - The airstrip, tank farm, administration/dry building, maintenance shops, explosive magazines and the bulk of the accommodation trailers.
 - The sewage treatment plant and the flood protection and all other onsite dyke systems.
2. The following components at the mine site as of 1982 are proposed to be removed – the coarse ore stockpile west of the mill facility, the kitchen/diner complex, and some of the existing accommodation trailers³¹.
3. The winter access road was already fully constructed and used for 800-1000 truck loads into the mine in 1981 and 1982. The winter access road currently permitted under MV2003F0028 follows essentially the same route as the previously permitted winter access road. Minor changes have been made to the routing near the mine site due to changes in the Prairie Creek channel over the past 25 years³². Canadian Zinc has filed no indication of any other need to alter the routing, location or style of water crossings or construction style of the winter access road from that permitted between 1980-2. Canadian Zinc has stated that the winter access road is required for use to haul new materials and supplies into the site, and backhaul concentrate out, and that the winter access road is the same structure permitted in 1980-2 and again as a result of MV2003F0028. No application for amendments to winter access road land use permit MV2003F0028 have been filed by the developer at the time of this Ruling.

FRAMING THE ISSUES:

The determination of the scope of a proposed development is a requirement of the Review Board in every environmental assessment. Section 117(1) of the *MVRMA* requires that “[e]very environmental assessment of a proposal for a development shall include a determination by the Review Board of the scope of the development, subject to any guidelines made under section 120”. Within the legal framework set out by the *MVRMA*, the

³⁰ Some of the following is based on the developer’s submission of October 6, 2008, [A list of Prairie Creek Mine Components](#).

³¹ The Review Board also notes that all sodium cyanide was removed from the site in the summer of 2008 and sodium cyanide is not part of the currently proposed milling complex.

³² [RfR 35 of 56- Material related to Type B Water License MV2007L8-0026](#), November 26, 2008.

Review Board is the only body empowered under Part 5³³ to determine the scope of a development for an environmental assessment and the Review Board is guided by its experience, the evidence on the public registry and the *Environmental Impact Assessment Guidelines* the Review Board issued in 2004³⁴.

In a case where section 157.1 of the *MVRMA* applies, however, Part 5 of the Act cannot be invoked and no environmental impact assessment of any kind is required. The intention of Parliament in drafting this exemption clause has been the subject of comment by the Courts³⁵ and has been interpreted as the avoidance of additional environmental assessment for projects which have already seen large investments and were subject to previous environmental impact assessment regimes. In the words of the NWT Court of Appeal in the “NATL” case

“some grandfathering of existing developments is required to balance competing interests. Those interests include the legitimate goal of protecting land and water resources in the Mackenzie Valley for the benefit of its citizens, on the one hand, while, at the same time, exempting from the full force of new environmental legislation undertakings developed under an earlier legislative regime” (para 24).

Argument in Request submissions from interested parties were largely focused on the applicability of s.157.1 to the proposed undertaking.

It is clear to the Review Board that it must first determine whether Part 5 of the *MVRMA* even applies. If it does, the Review Board has full discretion over scope of development and scope of assessment. If Part 5 does not apply to a certain undertaking, no environmental assessment should be conducted.

The order of questions used to determine the applicability of section 157.1 was set out in the “CZN” case and is supported by the applicants in this instance as the proper way to analyze these issues. In CZN, Justice Schuler approached the question of whether an undertaking was exempt from Part 5 of the *MVRMA* in the following manner:

1. First, ask what the current undertaking is and describe it.
2. Then, determine whether the historic undertaking was permitted or licensed prior to June 22, 1984 and consider its relation to the current undertaking.
3. If the historic undertaking was subject of a license prior to June 22, 1984, and it is sufficiently related to the current undertaking, determine whether any abandonment, decommissioning or other significant alteration is proposed which would except the current undertaking from the s.157.1 exemption.

³³ Part 5 of the *MVRMA* governs the environmental impact assessment process, which includes three potential stages – preliminary screening, environmental assessment and environmental impact review.

³⁴ Available at http://www.mveirb.nt.ca/upload/ref_library/1195078754_MVE%20EIA%20Guidelines.pdf, page 28.

³⁵ *North American Tungsten Corporation Ltd. v. Mackenzie Valley Land and Water Board*, 2003 NWTCA 5 (“NATL” below); and *Can. Zinc Corp. v. Mackenzie Valley Land & Water Board*, 2005 NWTSC 48 (“CZN” below).

In order to determine the applicability of Part 5 of the *MVRMA* in this case, the Review Board has analyzed the facts, arguments of the parties, the wording of the Act, and relevant legal precedents using these questions and in the order set out by the NWT Supreme Court. The Review Board will address each of these questions in turn in the following analysis. Once these three questions are answered and the applicability of Part 5 of the *MVRMA* is determined, the Review Board will address the two scope of development questions posed in the Request.

THE THREE S.157.1 QUESTIONS:

1. WHAT IS THE CURRENTLY PROPOSED UNDERTAKING?

A determination of what constitutes the proposed undertaking is essential because section 157.1 ‘grandfathering’ has been determined by the Courts to be fundamentally related to the undertaking in question rather than to an individual permit or license³⁶. In the *CZN* case, the order was clear – the Court first determined what the currently proposed undertaking was, and then compared that to the historic undertaking in Question #2. In order to determine whether the proposed undertaking is grandfathered, it is essential to first understand what is currently proposed in order that the two undertakings separated in time can be compared to see if they are sufficiently related in nature, function, scope and scale.

The Review Board notes that no interested parties have suggested that the physical works and activities at the mine site and proposed transfer facilities are separate undertakings, or that they are exempt from Part 5 of the *MVRMA*. The question of “what is the undertaking” has hinged entirely on whether the winter access road is part of the same comprehensive undertaking as these other components, or is separate.

In its submissions for this Ruling, Canadian Zinc argued that the winter road as an “undertaking in conjunction with the Prairie Creek Mine” is exempt from Part 5 of the *MVRMA*, and therefore not within the jurisdiction of the Review Board to scope in to EA0809-002³⁷. It appears to the Review Board from careful consideration of the developer’s arguments that Canadian Zinc is of the opinion that the winter road is absolutely exempt from environmental assessment while the mine itself and the accessory works and activities associated with it are “arguably”³⁸ subject to environmental assessment. This implies that the mine and transfer facilities must be treated as separate undertakings.

³⁶ *North American Tungsten Corporation Ltd. v. Mackenzie Valley Land and Water Board*, 2003 NWTCA 5.

³⁷ [Canadian Zinc Corp Initial Response to Request for Ruling](#), January 14, 2009, page 1.

³⁸ See [Correspondence Between CZN and MVLWB](#), filed on the Review Board public registry August 25, 2008, page 1.

Canadian Zinc thus argues that the winter road is a separate undertaking exempt from Part 5 of the *MVRMA*. It asserts that this argument is supported by the ruling in CZN: that the undertaking as described in the application for MV2003F0028, for the use of the winter access road, was exempt from Part 5 of the *MVRMA* because it was related to an undertaking that was permitted prior to June 22, 1984. The Court in the CZN case found that “the [Land and Water] Board erred in considering the undertaking to be [Canadian Zinc’s] whole enterprise, its mining operation” (para 58). The NWT Supreme Court held that

“The wording used by the Court of Appeal [in the Tungsten case] in dealing with what was meant to be grandfathered under the *MVRMA*, although suggestive of the wider enterprise, the mine in that case, does not rule out an interpretation of “undertaking” as a more restricted activity for which a permit is sought, such as the operation of the winter access road *in this case*” (para 55, emphasis added).

Canadian Zinc has used this wording as support in arguing that the winter road “undertaking” is separate from the larger undertaking of the mine, and that therefore the exemption provided for its existing MV2003F0028 permit would be extended to any application for use of the winter road, including for full-scale mining operations. It therefore appears to the Review Board that Canadian Zinc considers the current undertaking to be only the Prairie Creek Mine and the transfer facilities along the winter access road, but not the winter access road itself.

Justice Canada³⁹, on behalf of the federal government departments, and the applicants disagreed with Canadian Zinc.

Justice Canada was the only interested party that offered two options for what the current “undertaking” might include. In its first option, the mine site and transfer facilities would be part of the same integrated undertaking. The winter access road as currently permitted for the purpose of rehabilitation, site clean-up and supply for advanced exploration would be a separate undertaking exempt from direct environmental impact assessment on the basis of the CZN decision, but included in the current environmental assessment for cumulative effects assessment, along with other existing or reasonably foreseeable future developments. Justice Canada then advises that such an approach would likely constitute an improper way to conduct this environmental assessment. The Justice Canada argument also notes the current permit MV2003F0028 does not allow the use of the winter road in connection with the proposed mining operations:

“Therefore, if CZC [Canadian Zinc] intends to operate and use the winter road in connection with the proposed mining operations then a new permit application will be required...the future application for a permit for operation and use of the winter road in connection with mining operations may be subject to Part 5 of the *MVRMA*, including another environmental assessment”.⁴⁰

³⁹ All arguments by Justice Canada were provided in [Initial Federal Government Response to Request for Ruling](#), January 14, 2009.

⁴⁰ [Initial Federal Government Response to Request for Ruling](#), January 14, 2009. page 3.

The federal government thus suggests that this separation of the winter access road undertaking from the mine site and the transfer facilities could eventually lead to two environmental assessments rather than one⁴¹.

In Justice Canada's opinion as set out in its second option, the proper way to define the undertaking is to consider what is required for Canadian Zinc's entire desired outcome to be met: "It is our view that, like the water license in the Tungsten decision, the winter road would be required for use and operation of the proposed mining operation".⁴² Justice Canada concludes that "future use and operation of the winter road is an integral and necessary component of the proposed mining operation (which is the "undertaking" that is now the subject of the EA [environmental assessment])"⁴³, and that this future use is not currently permitted under MV2003F0028.

The Dehcho First Nations and the Canadian Parks and Wilderness Society agree with the federal government, stating that the undertaking currently in front of the Review Board is "full-scale mine operations and delivery of product"⁴⁴. As a result, the mine and transfer facilities and the required accessory component in the form of the winter road and its use are all necessarily part of the same undertaking. The applicants argued that Canadian Zinc's analysis (which they described as splitting the undertaking apart first, and then determining grandfathered status for each element separately) would render the exception clause in s.157.1 meaningless and go against the intent of the Act and contrary to the focus given by the Court of Appeal in the Tungsten case to determining the overall exemption status of the larger "undertaking" rather than to smaller "bits and pieces"⁴⁵.

The NWT Supreme Court held that the word "undertaking" in s.157.1 was synonymous with the term "project" and that this interpretation is also consistent with the French version of s.157.1⁴⁶. The Review Board notes as well that the terms "undertaking" and "project" as well as the French terms "ouvrage" and "activite" are all used in the singular in s.157.1. That may provide some guidance in that the section does not appear to contemplate exemption of multiple undertakings in relation to the same project. In any event, it would seem that in this instance the Review Board must determine the scope of the undertaking which is described by the developer and relate that to the historical undertaking which was the subject of a license or permit before 1984.

⁴¹ [Initial Federal Government Response to Request for Ruling](#), January 14, 2009. page 3.

⁴² [Initial Federal Government Response to Request for Ruling](#), January 14, 2009. page 4.

⁴³ [Initial Federal Government Response to Request for Ruling](#), January 14, 2009. January 14, 2009, page 5.

⁴⁴ [Ecojustice Reply on Questions 1 and 2 for Request for Ruling](#), January 19, 2009, page 2.

⁴⁵ [Ecojustice Initial Response to Request for Ruling Question #2](#), January 14, 2009, page 4.

⁴⁶ See CZN para 43. In fact the French version of s.157.1 uses the same words "ouvrage" and "activite" both in the main part of the section and in the exception whereas the English version uses "undertaking" and then "project".

The developer makes it clear in its *Project Description Reports* in support of its 2008 license and permit applications that the mine can only serve its function with the winter road in use. The transfer facilities will be constructed alongside the winter road and are a means to expedite mining project operations. The mine has no other way of getting its product to market and therefore, there is no project without the winter road. The Review Board agrees with the federal government and the applicants for the ruling that the suite of applications filed with the Mackenzie Valley Land and Water Board are intended for comprehensive mining project operations. This undertaking comes complete with a requirement for the use of the winter road and the construction and use of the transfer facilities.

There remains the question of the findings in the CZN case. The NWT Supreme Court has ruled that the currently permitted use of the winter road is exempt from Part 5 of the *MVRMA*. However, the context for that exemption clearly and markedly differs from that currently before the Review Board. It appears to the Review Board that Justice Schuler made her decision on the basis of consideration of a single application for limited use of the winter road only and determined accordingly that the undertaking related to the permit application she was considering was only the road. To scope the undertaking up to the entire mine would have been unfair to the developer, who at the time sought only a single permit to rehabilitate and use the road to support exploration and clean-up activities. Canadian Zinc made it clear at that time that the permit was not to support full-scale mining operations⁴⁷.

On the other hand, the Review Board is now faced with a suite of applications which envision permitting and licensing full-scale mine development (thus the permit and license applications for the mine site) and delivery of product (thus the permit applications for the transfer facilities). Canadian Zinc would have the Review Board rule that the winter road is a separate existing and exempt undertaking linking these key components of the separate mining undertaking. Canadian Zinc appears to suggest that the winter road is exempt from environmental assessment in any and all cases.

While Justice Schuler noted that the Court of Appeal's language in NATL could be interpreted to suggest that the term undertaking included the whole enterprise comprising the mine, she held in CZN that a more restrictive view of the term undertaking was also possible and confined her findings to a determination that in the case before her the undertaking was the winter road. Thus it appears that Justice Schuler made her decision on the basis of consideration of the winter road only and that the undertaking she was considering was only the road.

⁴⁷ Under "summary of operation" in the application for MV2003F0028, Canadian Zinc wrote "Rehabilitation, maintenance and use of an existing approximate 165 km long by 5 m[etre] wide winter road connecting the Prairie Creek Mine to the Liard Highway near Lindberg Landing to support site clean-up through removal of surplus reagents, equipment and supplies; and supply of planned advanced exploration activity". [CZN 2003 Application for Winter Access Road Development](#), November 6, 2008.

The Review Board recognizes the importance of the CZN ruling. The facts in front of the Review Board are, however, quite different from those which confronted Justice Schuler. Note that Justice Schuler, due to the single application in front of the Court, did not need to address the question of whether “undertaking” could also be narrowly defined when a suite of several applications were made at the same time, as is the case with the 2008 applications for the Prairie Creek Mine. Canadian Zinc has now applied for three permits and one license which collectively will be sufficient to authorize full-scale mining activity over a period of many years. The company’s 2008 *Project Description Reports* confirm these facts.

The project described includes the use of the winter road to facilitate additional construction, operation, and ongoing resupply of the mine and for the transportation of product out to the railhead. The winter road will not operate in isolation of the other components of the project. It is, as has been argued by Justice Canada, “an integral and necessary part of the proposed mining operations [sic] development which is the subject of the current EA”⁴⁸.

The Review Board, in this case, finds the arguments of the federal departments and the applicants more compelling than those of Canadian Zinc in the context of what is proposed – namely, a singular undertaking which entails full-scale mining and the delivery of product. The ruling in the CZN decision was for a fundamentally different undertaking: one smaller than, and not including all the component parts and proposed activities of, the currently proposed undertaking. The Review Board notes that the ruling in CZN was based on the facts before the Court at that time. It is the Review Board’s opinion that the facts in this case compel a different outcome. This approach is consistent with the Courts’ focus on the undertaking and in this case, it appears to the Board that the only conclusion consistent with the facts, the case law and the Act is that the undertaking has to be the whole project.

The evidence available to the Review Board leads inevitably to the conclusion that the undertaking proposed by Canadian Zinc must be described in a way that includes the winter road. The Review Board finds that the currently proposed undertaking is the entire Prairie Creek Mine industrial complex, including mining, milling, transportation of product to market and storage en route, and all ancillary developments (including both physical works and activities) required to facilitate this main activity. This includes the winter road.

2. WAS THE UNDERTAKING PERMITTED PRIOR TO JUNE 22, 1984?

Having established that the proposed undertaking is the whole project including the mine, the winter road and all ancillary developments (including all physical works and activities) required to extract ore, mill and transport lead and zinc concentrates, the Review Board considered the necessary second question of whether the

⁴⁸ [Initial Federal Government Response to Request for Ruling](#), January 14, 2009, page 2.

undertaking was the subject of a license or permit issued prior to June 22, 1984. The Review Board addressed this issue by re-posing it as two questions:

1. Was the Prairie Creek Mine undertaking the subject of licenses or permits prior to June 22, 1984?
2. Is the currently proposed development sufficiently related to the Prairie Creek Mine undertaking permitted prior to June 22, 1984?

These are important questions because in order to be exempt from environmental assessment under the *MVRMA*, the currently proposed undertaking must be sufficiently related to an undertaking which was the subject of a permit issued prior to June 22, 1984.

In order to make its determination, the Review Board compared the available facts about the current and the historic undertakings. The Review Board has identified some of the key components of the historic Prairie Creek Mine undertaking on pages 6-7 of this Ruling. These physical works and the activities associated with their use will be referred to as the “Cadillac Prairie Creek Mine” or the “1980-2 undertaking” below. Select key components of the currently proposed undertaking are identified on pages 9-10 of this Ruling and are used below to compare the currently proposed development to that which was permitted in the 1980s.

The Cadillac Prairie Creek Mine development was the subject of at least two land use permits and a water license issued before 1984. All of these authorizations were necessary for that development to proceed. Given the instructions of the Courts to focus on the undertaking and the obvious fact that many developments require a variety of regulatory approvals, it is the Review Board’s view that the undertaking which was the subject of the license and permits before 1984 was the whole Prairie Creek Mine and all of its component parts, which included a winter access road. The answer to the first question above is yes.

The next step was to determine whether the currently proposed undertaking is sufficiently related to the original undertaking to potentially qualify for exemption. The evidence indicates that the 1980-2 undertaking permits and license authorized mining of ore, milling of concentrate, treatment of water and discharge of waste associated with mining and milling and transport to market of concentrate from the Prairie Creek Mine. The 2008 applications address the same general activities and can therefore be said to be for the same general purpose.

The Review Board also looked closely at the particulars being applied for now and found similarities with the historic undertaking. The same underground mine and

initial ore deposit will be utilized, the location of the mill and much other onsite infrastructure is still the same and some of the same equipment will be used, much of the on-site infrastructure is already built and will be re-utilized in some fashion, and the same general winter road route, type of construction, heavy trucks, etc. will be used. The two undertakings are not exactly the same (an issue addressed further in question #3 below), but they are in the Review Board's opinion, sufficiently related in location, nature, and purpose to answer this question in the affirmative. The company now wants to do everything which Cadillac was authorized to do before 1984, plus some additional activities. The Review Board has therefore determined that a sufficiently related undertaking was the subject of permits and a license issued before 1984. No party to this proceeding has suggested otherwise. The answer to the second question above is therefore yes.

The Review Board finds that the two undertakings are similar enough for the currently proposed undertaking to qualify for exemption under s.157.1 on the basis of having been the subject of permits and a license issued prior to June 22, 1984, unless the exception to that section is applicable.

3. IS THERE A SIGNIFICANT ALTERATION PROPOSED?

The Review Board, has decided that (1) the current undertaking in the 2008 proposal includes the entire mine site and the winter access road and all physical works and activities required to mine, mill and transport lead and zinc concentrate to market, and (2) the undertaking is sufficiently similar to the 1980-2 Prairie Creek Mine undertaking which was the subject of a license and permits issued prior to June 22, 1984. Thus section 157.1 of the *MVRMA* requires that the entire undertaking be exempt from Part 5 environmental impact assessment **unless** abandonment, decommissioning or a significant alteration of the undertaking is proposed. It is to this last question the Review Board now turns.

Based on the 2008 *Project Description Reports* for the four applications referred to environmental assessment, the Review Board has determined that the currently proposed project is not for (1) abandonment or (2) decommissioning. Therefore, the only possible exception to the application of s.157.1 would be due to "significant alteration".

Unfortunately, there is no case law on s.157.1 directly applicable to the question of what constitutes a significant alteration to an undertaking. Efforts to find cases from other jurisdictions also yielded little assistance for the Review Board on what constitutes a "significant alteration" to an undertaking. A reading of existing case law and legal dictionaries did bring the following principles to light:

1. An "alteration" to the project first has to be shown. To be an "alteration" there must be a substantial change to the project or a replacement, removal, addition or variation to the project. If the project is "altered" there is a "change or variation

[in it] a modification, a change in some elements or ingredients of the thing, but not a change in the whole, a total replacement”⁴⁹. On the other hand, an “alteration” is not merely a “trifling modification”⁵⁰.

2. If an “alteration” of the project has been found, to be “significant”, the alteration must be a noticeable or measurably large change to the project and must be: consequential, notable, considerable, eventful, important, material, meaningful, profound or substantial.

The Court of Appeal in the NATL case provided some additional insight into what might constitute a “significant alteration” in stating that Parliament’s intent in having an “exemption clause” in the Act was that projects which were permitted prior to June 22, 1984 “are to be subjected to full scale environmental assessment... only if they **depart significantly from their approved mode of operation...**” (para 29, emphasis added).

Two of the three parties that made legal submissions in this proceeding included opinions on whether they felt a significant alteration to the Prairie Creek Mine was proposed. On the other hand, Justice Canada felt that the question of whether there was a significant alteration to the mining operation was actually “irrelevant in the specific circumstances. We hold this view because CZC [Canadian Zinc] has not asserted that s.157.1 applies to the proposed mining operation”.⁵¹ Justice Canada based this assertion on Canadian Zinc’s letter of July 18, 2008 to the Mackenzie Valley Land and Water Board, wherein it did not oppose the mining operation being referred to environmental assessment⁵². This letter is central to Justice Canada’s overall argument – “this is a clear statement by CZC [Canadian Zinc] that it does not assert that the proposed mining operations [sic] is exempt from Part 5 of the MVRMA pursuant to s. 157.1”.⁵³

The Review Board notes that the Act does not require a developer to apply for exemption of a proposed development under s.157.1. The exemption in that section applies by force of law, automatically, when the circumstances set out in s.157.1 exist. In addition, it seems clear to the Review Board that Canadian Zinc did not agree that the proposed mining development was a single combined undertaking when it wrote its July 18, 2008 letter to the Mackenzie Valley Land and Water Board. Indeed, the developer’s arguments have always hinged on its view that the

⁴⁹ From the definition of “alter” in Dukelow, Daphne A., editor, *Dictionary of Canadian Law*, 3rd Ed., Scarborough, Ont. : Carswell, c2004.

⁵⁰ From the definition of “alteration” in Garner, Bryan A., editor in chief, *Black’s Law Dictionary*, 8th ed. St. Paul, MN : Thomson/West, c2004.

⁵¹ [Initial Federal Government Response to Request for Ruling](#), January 14, 2009, page 4, underlining in original.

⁵² [Correspondence Between CZN and MVLWB](#), originally of July 18, 2008, placed on the Review Board public registry on August 25, 2008, at page 1 states “Canadian Zinc Corporation did **NOT** indicate the view that the Water License and Land Use Permit Applications should be exempt from the Application of Part 5 of the MVRMA” [original emphasis].

⁵³ [Initial Federal Government Response to Request for Ruling](#), January 14, 2009, page 5.

winter road should be treated as a separate undertaking, an argument the Review Board has now rejected in the current context. The Review Board is therefore not convinced that consideration of whether there is a significant alteration of the mine site is irrelevant.

The Review Board notes that the federal government identified a series of alterations to the original undertaking it felt merited consideration during this environmental assessment. In its referral letter dated August 8, 2008, Indian and Northern Affairs Canada (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 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”.⁵⁴

The Review Board notes that INAC did not provide any opinion on whether these changes add up to an overall “significant alteration”.

In contrast, the applicants for the Ruling provided a long list of alterations from the 1980-2 Prairie Creek Mine in their submissions that they felt constituted a combined significant alteration to the whole undertaking⁵⁵. They argued the overall undertaking, namely the mining and milling operation and transport of product to market, will be “significantly altered” and therefore, that the s.157.1 exemption does not apply to any aspect of the proposed undertaking.

The applicants also submitted that even though there are a variety of changes at the mine site that need to be considered, enough change is proposed to the winter road to by itself represent a significant alteration to the undertaking. The applicants argued that the two transfer facilities along the road would not only physically alter the road but also alter the volume, type, timing and duration of traffic on the road and thus likely also the need for maintenance and rehabilitation⁵⁶.

The applicants also point to the significantly increased size of ore reserves increasing the amount of traffic on the road, and the longer life of the mine increasing duration

⁵⁴ [Letter from Indian and Northern Affairs Canada to MVEIRB re: Referral to environmental assessment](#), August 8, 2008.

⁵⁵ See for example, pages 5-8, [Ecojustice Initial Response to Request for Ruling Question #2](#), January 14, 2009; [Request for Ruling from Dehcho First Nations and CPAWS](#), Nov. 6, 2008, page 7; [Scoping Submission from CPAWS](#), October 20, 2008, pages 11-12.

⁵⁶ At page 8 of [Request for Ruling from Dehcho First Nations and CPAWS](#), Nov. 6, 2008, it is argued that “... looking just at the road, the current applications envision physical alterations to the road and alterations to the use of the road, and we submit the Review Board can conclude those alterations are significant despite not having all the details on road alterations”.

of traffic. They feel the combination of such alterations might increase impacts on wildlife, contamination of water and land, and fragile karstlands (which a portion of the winter road crosses), among other valued components of the environment. The applicants noted that the public during scoping sessions perceived resumed and increased intensity of use of the winter road as a major issue giving rise to potential impacts and public concern (Wrigley, Nahanni Butte, Lindberg Landing, some residents of Fort Simpson), and noted that Parks Canada and Environment Canada also share concerns about increased use of the winter road⁵⁷. In summary, the applicants felt that the applications in front of the Review Board which triggered this environmental assessment entail a significant alteration to the whole project. Thus, they argue the road, being part of that larger project, is not grandfathered, nor is any other portion of the project immune to direct environmental assessment under Part 5 of the *MVRMA*.

In contrast, according to Canadian Zinc, there is no significant alteration proposed to the 1980-2 Prairie Creek Mine in the 2008 applications. Such alterations as are proposed, it argues, are overwhelmingly to improve environmental performance. Canadian Zinc argues that the transfer facilities do not represent significant alterations to the winter road, nor are the increases in winter road use enough to constitute significant alterations. Indeed the developer states that “the size of the ore reserve has no bearing on truck traffic. The mill is not being expanded. It will process minerals at the same rate. The same quantities of minerals will require annual transport”.⁵⁸

To support its arguments, Canadian Zinc noted that the CZN decision indicates that some changes are acceptable and don’t constitute a significant alteration –

“There is evidence that there are some differences between the type of materials and equipment Cadillac hauled on the road and what CZC [Canadian Zinc] intends to haul on the road... Basically, however, the activity on the road, both under Cadillac’s permit and CZC’s [Canadian Zinc’s] proposed permit, involves hauling materials and equipment from the mine to the highway and vice versa” (at para 62).

In Canadian Zinc’s opinion, this remains the case and the relevant facts are the same as those considered by the Supreme Court. Thus, Canadian Zinc focuses on a definition of “significant alteration” as a change in the “nature” or the undertaking – “The use of transfer stations – [which] may or may not change the “volume, type, timing and duration of traffic” on the Winter Road – does not change the nature of the Winter Road undertaking”.⁵⁹

⁵⁷ For example, the [Scoping Submission from Environment Canada](#), October 20, 2008, at page 2 noted that “Consideration should also be given as to whether there is an increase or change in usage of an existing component”. Pages 10-12 of the [Scoping Submission from Parks Canada](#), October 20, 2008, identified karstlands (km 43-83 of the winter road) and wildlife impacts associated with the use of the winter road as meriting special attention if the Review Board determined the winter road to be within the scope of development for this environmental assessment.

⁵⁸ [Canadian Zinc Corp Initial Response to Request for Ruling](#), January 14, 2009, page 2.

⁵⁹ [Canadian Zinc Corp Initial Response to Request for Ruling](#), January 14, 2009, page 2.

Having considered these arguments, the Review Board compared the physical works and activities associated with the 2008 Prairie Creek Mine undertaking (defined by the answer to question #1) with the physical works and activities described in the evidence about the 1980-2 Prairie Creek Mine. Some key facts emerging from this comparison are summarized in Table 1 below.

TABLE 1: Comparison of Various Elements of the Historic and Currently Proposed Prairie Creek Mine Undertakings⁶⁰

ASPECT	1980-82 (HISTORIC)	2008 (PROPOSED)
Winter road		
Storage/transfer facilities	A marshalling and transfer yard near the Liard River ice bridge	Two transfer facilities, each with storage capacities of 50,000 tonnes lead and zinc concentrate, near the Liard and Tetcela Rivers
Annual timing	3 months, 100 days a year; Dec.20-31 through to approximately March 31	Starting the western portion as early as November 15 annually, through to approximately March 31
Estimated annual truck traffic ⁶¹	4000 loads, 80 trips per day for 100 days = approximately 8000 transits including material and fuel backhaul loads	4800 round trips of concentrate, approximately 9600 transits including material and fuel backhaul loads
Mine Site		
Mine life	6 years	Minimum 14, likely to extend to 20, years
Mine reserves & resources ⁶²	2.0 million tons ore reserves proven, probable & possible	5.8 million tonnes measured and indicated resource, 5.4 million tonne inferred resource

⁶⁰ Note: This is not an exhaustive list of development components for either undertaking. Also, see pages 6-10 of this Ruling for more details and source material citations.

⁶¹ The Review Board notes that the different terminology about truck loads made it uncertain at times whether transits (single trips along the length of the winter road) or round trips were being discussed. There was also little clarification about the role of backhauling materials and fuel into the mine via haul trucks. The Review Board has seen no explanation for the 20% discrepancy between estimated truck traffic between 1980-2 and 2008 estimates. The Review Board has determined from the evidence available that, given the similar amount of ore being transported out per winter road season, and the similar nature of the Prairie Creek Mine to that which was originally envisioned, that the annual truck traffic will likely be similar in number of transits and weight carried along the winter road, with a similar number of trips and the potential for slightly increased weight (due to slight increases in estimated mining and milling throughput capacity) on an annual basis.

⁶² The Review Board notes that resource and reserve estimation methods have changed significantly over the time period between 1980 and 2008, with the rise of National Instrument 43-101 compliance requirements. That makes it difficult to directly compare historic and current resource/reserve estimates.

ASPECT	1980-82 (HISTORIC)	2008 (PROPOSED)
Ore mining capacity	1000 tons per day	Maximum 1200 tonnes per day
Milling capacity	1000 tons per day	Maximum 1200 tonnes per day
Milling process	Conventional crushing and flotation employing sodium cyanide and other reagents to separate lead and zinc concentrates	Conventional crushing, dense media separation (DMS), and non-cyanide flotation to separate lead and zinc concentrates
Process water usage	1150 cubic metres per day	1770-2055 cubic metres per day
Minewater outflows	302,000 Imperial gallons per day (1.37 million litres per day)	2.85 million litres per day ⁶³
Water management	Water from mine sump sent to water treatment plant and then to Prairie Creek. Process water and other required water comes from either groundwater wells or Prairie Creek.	Water from mine will be pumped to a two-cell water storage pond. Process water circulates from the water storage pond to the mill and back again. Potable water is obtained from groundwater wells. From the water storage pond, water flows to a new water treatment plant, then to the Polishing Pond, Catchment Pond, Harrison Creek and finally to Prairie Creek.
Waste rock management	No waste rock pile required – 18,000 tons per annum would be spread on roads and used in berms	Valley fill engineered waste rock pile above Harrison Creek; approximately 440,000 cubic metres of waste rock, approximately 800,000 tonnes ⁶⁴ , 55-60,000 tonnes per year mixed waste and DMS rock; solid waste landfill inside the waste rock pile
Ore & other materials stockpiling	No known plan for surface stockpiles (although there is evidence on site of start-up pile near mill)	New surface stockpiles for DMS rock, tailings (two locations) and ore

However, the Review Board finds that the evidence clearly indicates that continued exploration at the Prairie Creek Mine site has significantly expanded the mineable resource between 1980 and 2008.

⁶³ Figure 4-8 at page 87 in the 2008 Prairie Creek Mine *Project Description Report* identifies a “maximum average yearly mine drainage” of 33 litres per second.

⁶⁴ There was no information on the public registry available on the likely mass of the 440,000 cubic metre in volume waste rock pile estimated by the developer. The Review Board used a median estimate of 1.75 tonnes per cubic metre, having received estimates that the unit weight of waste rock ranges from 1.6 to 1.92 tonnes per cubic metre via personal communication with Dr. Dirk van Zyl, Norman B. Keevil School of Mining Engineering, University of British Columbia, and information provided by Dr. Ginger McLemore at New Mexico Technical University.

ASPECT	1980-82 (HISTORIC)	2008 (PROPOSED)
Buildings on site	90-95% of physical infrastructure in place by 1982, including mill, accommodation, service building, sewage treatment plant, etc.	New buildings include a large concentrate storage building, new accommodation block, DMS plant, backfill plant
Power system	3450 MW power requirement, from three diesel generators (four installed with 4.6 MW capacity)	New smaller, higher efficiency, lower emission generators with similar power capacity
Tailings management system	Tailings pond for long term subaqueous disposal, some backfill in mined out stopes planned	Cemented paste backfill into mined out stopes with two surface tailings storage facilities of a combined capacity of 50,000 tonnes
Explosives used	Ammonium Nitrate Fuel Oil (ANFO)	Consideration of alternative explosives if ammonium in minewater is too high
Underground works	Approximately 3km of underground works (to be expanded)	New decline and portal, expanded underground works
Workforce required	Workforce of 221, with 159 on site at any one time	Workforce of 220, with approximately 110 on site at any one time

The Review Board has already determined that in this case there is only one undertaking. Thus a change to one portion (e.g., to the mine site) can count in deciding whether there is an alteration to the whole. Because the undertaking is a combination of physical objects and activities that include both the mine site and the transportation corridor, both changes to the mine site and along the winter road must be considered when determining whether the overall alteration is significant. Thus, the test must be whether all of the proposed changes add up to an overall significant alteration of the proposed undertaking, rather than whether any of the changes by themselves are considered significant.

Chief among the differences between the historic and currently proposed undertakings are the following changes:

1. The need for an engineered waste rock facility where none was previously envisioned.
2. Two new concentrate and material storage transfer facilities along the winter road.
3. Changes to the water management system, including facilities changes alongside increased usage of water and increased outflows from the mine.
4. Changes to the tailings management system, including the use of a paste cemented backfill and surface storage of tailings (potentially for the operating life of the mine).

5. Longitudinal increases associated with a longer mine life, including increased cumulative amounts of ore removed and concentrate milled over time, increased surface materials storage timelines, and a longer period of operation of the winter road and associated cumulative increases in traffic and haul weights.

There are a number of other proposed changes to the undertaking from that previously permitted, but those listed above are the ones which in the Review Board's opinion contribute most heavily to its consideration of whether the undertaking is to be significantly altered.

The Review Board in particular notes that the 1980-2 mine foresaw no waste rock pile whatsoever and only 18,000 tons of waste rock generated per year. This amount was deemed insignificant enough that the proposal was to distribute the waste rock for use as road and other fill material. In contrast, the 2008 Prairie Creek Mine *Project Description Report* estimates that an engineered surface waste rock pile will be required, and that approximately 440,000 cubic metres of waste rock and Dense Media Separation reject rock will be placed in it during the minimum 14 year mine life. Using an estimate of 1.75 tonnes weight per cubic metre of waste rock, there will be approximately 800,000 tonnes of waste rock placed in this facility. This equates to somewhere around 55-60,000 tonnes per year, a threefold annual increase in waste rock production estimates. Given that the 1980-2 estimate was for a six-year mine life (18,000 times six years = 108,000 tons), the developer's new estimates indicate a seven- to ten-fold increase in waste rock over the life of the mine from that previously considered. The Review Board also notes a variety of questions have been identified during scoping about the waste rock pile - its location above Harrison Creek, size, geotechnical stability, geochemistry and potential for both acid rock drainage and metals leaching, changes to water quality and water management systems, among others. The inclusion of an engineered waste rock facility is a potentially significant alteration in part because it represents a large new physical location which expands the footprint of the mine and requires alterations to the water and materials management systems.

There is a proposal for transfer facilities in two new locations that have never before been envisioned or assessed. These facilities, particularly the never previously envisioned mid-span Tetcela Transfer Facility, represent a notable and material change to the undertaking because these both alter the way in which the winter road is used and alter the physical footprint of the overall undertaking. First, they fundamentally change the organization of the production system from one that envisions long-haul transportation of concentrate out and materials and hydrocarbons in along the winter road (with potentially one stop near the Liard Highway), to one where there may be storage of concentrate and other materials in three different locations – the mine, the Tetcela Transfer Facility, and the Liard Transfer Facility. This revised transportation system will be the subject of increased activity involving the unloading of trucks, storage on the ground, and reloading of materials on trucks. In the Review Board's opinion, the potential for spills, accidents and other malfunctions can be realistically said to increase when a development

increases the number of interim storage facilities and activities required to move product to market.

Second, the transfer facilities are each between 1.4 and 2.16 hectares in size, and thus represent increased physical footprints along the winter access road, both near key water bodies, one in close proximity to the Liard Highway. The inclusion of two transfer facilities along the winter access road is a potentially significant alteration in that it creates two new locations of major infrastructure and activity in areas where those activities have not been previously proposed, assessed or permitted.

The Review Board notes a variety of changes in the way water is proposed to be managed, used and treated at the site from that which was permitted prior to June 22, 1984. Mine drainage, treated sewage water, and waste rock pile and other runoff sources will now report to the newly reconfigured two-cell Water Storage Pond, mill process water will now report from the first cell of this Water Storage Pond (previously the Tailings Pond), and used process water will report back to the second cell of the Water Storage Pond. There will also be a new water treatment plant. These are all changes from the 1980-2 water management plan. The way in which waters are treated and fines are settled out (in a Polishing Pond and Catchment Pond, for example) prior to being released into Harrison Creek have also been altered over time. Alongside these structural changes is an approximate daily doubling both in the amount of water expected to come out of the mine and that needed for on-site use. The developer has argued that many of the components of the water management system have already been put in place and tested as a result of previous environmental assessments. Nonetheless, the Review Board notes that none of these revised systems have been put in place or assessed during environmental assessments for anything resembling full-scale mine production conditions. The proper comparison to assess the degree of change is to the last time the full-scale mine was assessed in any fashion, which was during the 1980-2 period. When compared in this light, the Review Board finds there are numerous alterations to the water management system that could arguably contribute to a significant alteration of the undertaking.

The Review Board notes that the paste tailings backfill technology to replace the tailings pond may entail long-term environmental benefits and minimize long-term management needs. Or it may not. Paste tailings backfill technology is a relatively new technique, the success of which depends of a variety of factors that have yet to be fully assessed in this instance (e.g., climate, water amounts and movement, solubility of the product)⁶⁵. In addition, the developer noted during scoping that the two surface tailings storage facilities, while meant to be temporary, may be in use continuously over the operating period of the mine and only decommissioned at closure⁶⁶. Given the increased length of mine life, this long-term surface storage of tailings represents another potentially substantial change.

⁶⁵ As discussed at page 11 of [Scoping Submission from CPAWS](#), October 20, 2008.

⁶⁶ As noted by the developer at page 10 of [Final Meeting Minutes for Nahanni Butte Scoping Session](#), October 9, 2008.

There will also be an increased number of years to the proposed development, necessarily increasing the cumulative amount of materials transported in and out of the mine and trips by vehicles of all types. The Review Board appreciates the point made by the developer that increased ore reserves would have been a natural outcome of the mining process anyway⁶⁷. It is typical of most mining developments to add ore reserves and increase mine life during production. The Review Board has not placed as much weight on the increase in longitudinal scale of the development as on the other four factors listed above. Nonetheless, the Review Board finds that a minimum of more than double the expected mine life and triple the ore resource does contribute to its overall finding of a significant alteration because it necessarily represents a change from the original mine plan.

The Review Board also notes that changes to water management systems, waste rock management, and tailings management were prioritized by all interested parties, including the developer, during scoping for this environmental assessment. The developer itself noted “the enhancements and improvements could be argued to be “significant alterations” to the previously permitted undertaking, and as such could take the application outside of the exemption [provided by s.157.1]”, and in the same letter noted that

“Our letter of May 28, 2008 did indicate, for the record, CZN’s view that an application for permits for the same undertaking as previously permitted, without significant alteration, would be exempt from the application of Part 5”.⁶⁸

These statements, taken together, seem to indicate the developer accepted that the new proposal could constitute a significant alteration from the historic undertaking.

It is the Review Board’s opinion that, taken all together, the changes proposed represent a significant alteration to the Prairie Creek Mine undertaking from what was permitted prior to June 22, 1984. The changes represent a significant departure from the previously approved mode of operation, and thus the facts in the Board’s opinion meet the test set out by the Court of Appeal in NATL.

Based on the evidence before it, the Review Board’s opinion is that a significant alteration to the overall undertaking is proposed, which means section 157.1’s exception clause of “significant alteration” is met, and Part 5 of the *MVRMA* applies to the whole undertaking.

⁶⁷ [Canadian Zinc Corp Initial Response to Request for Ruling](#), January 14, 2009, page 2.

⁶⁸ Both citations are taken from [Correspondence Between CZN and MVLWB](#), August 25, 2008.

REVIEW BOARD RULING:

The Review Board has determined that the entire Prairie Creek Mine undertaking, including mine, winter road and transfer facilities and their uses, is subject to Part 5 of the *MVRMA*. As such, consideration of scope of development and scope of assessment issues are within the Review Board's discretion under s.117 of the *MVRMA*.

Traditionally, the Review Board has included all physical works and activities required for the undertaking to occur in the scope of development for an environmental assessment. This can include works and activities that are already in place and permitted whether owned and operated by the developer or not⁶⁹ in addition to development components and activities proposed by the developer. The Review Board has frequently included all the works and activities associated with a development regardless of ownership, individual application status or other details. The Review Board sees no reason to vary its practice in this case.

Therefore, the Review Board finds that all physical works and activities associated with the winter access road (in answer to Ruling Question #1) and all physical works and activities associated with the mine site (in answer to Ruling Question #2) are part of the scope of development for the Prairie Creek Mine environmental assessment. The Review Board will issue *Draft Terms of Reference* in the coming weeks that identify the scope of development in more detail, and allow public comment before finalizing the scope of development.

SCOPE OF ASSESSMENT MATTERS

Although the requests for ruling in this matter did not address the scope of assessment, Canadian Zinc's arguments with particular respect to the mine site did. The Review Board has decided that some comment on these matters is warranted in this ruling as well.

In its forthcoming *Draft Terms of Reference*, the Review Board will provide its preliminary determination of the scope of assessment – what issues need to be examined in what level of detail during the environmental assessment – for review and comment. The Review Board reminds all interested parties that while the scope of development defines all the physical works and activities required to undertake the development, that does not mean that all physical works and activities are subject to the same level of assessment. Depending on their potential for impacts and subject to Review Board discretion, parts of the scope of development may be considered very closely, others very little or not at all.

⁶⁹ For example, the Tibbitt-Contwoyto winter road in the De Beers Gahcho Kue Diamond Mine environmental impact review (EIR0607-001) is an existing structure not owned/operated by the developer that is nonetheless in the scope of development.

The Review Board is sensitive to the desire by many parties to take into consideration the many existing studies, plans, environmental assessments, and existing mitigation systems, associated with this nearly 30-year old site. Indian and Northern Affairs Canada suggested as much in its referral letter in August, 2008; Canadian Zinc has been consistent in suggesting that the environmental assessment should not “reinvent the wheel” since the preliminary screening phase.

The Review Board will give full consideration to historic studies, impact assessment and operational information about all aspects of the Prairie Creek Mine before determining whether additional studies are required. Existing descriptions of, and environmental studies around, all currently existing project components will be used to focus the assessment as appropriate. The Review Board assures all interested parties it has no intention of ignoring the wealth of relevant existing evidence collected on how the existing infrastructure will likely interact with the environment.

The Review Board also notes that the Prairie Creek Mine includes a variety of existing structures, including the winter access road and much of the mine site infrastructure. The Review Board accepts the argument made by Canadian Zinc and others that conducting an impact assessment of the construction of facilities, including the road, which have been present on the land for over 25 years is not likely to generate any useful information even if it is possible. The Review Board will not be assessing construction impacts of already built structures. The Board has decided that the assessment of these facilities will be restricted to the effects of their ongoing operation in combination with the effects of other construction and operations necessary for the operation of the mine.

The Review Board will determine to what degree certain aspects of the development (e.g., existing structures that are not proposed to be changed) will be considered in the scope of assessment while developing its *Draft Terms of Reference* for the *Developer's Assessment Report*, and will consider all comments on this draft before finalizing the *Terms of Reference*.

DATED: March 5, 2009

For the Mackenzie Valley Environmental Impact Review Board:



Richard Edjericon, Chairperson