

March 24<sup>th</sup>, 2016

Mr. David Harpley  
VP, Environment and Permitting Affairs  
Canadian Zinc Corporation  
Suite 1710 – 650 West Georgia St  
Vancouver, BC V6B 4N9

Dear Mr. Harpley,

**RE: March 3<sup>rd</sup>, 2016 letter regarding Round 1 Information Requests from the Review Board**

The Mackenzie Valley Environmental Impact Review Board (the Review Board) recently met to discuss Canadian Zinc Corporation's (CanZinc) March 3<sup>rd</sup> letter<sup>1</sup> regarding several of the Review Board's information requests (IRs). The letter outlined CanZinc's concerns regarding the level of detail requested, the appropriateness of some requests and the requirement for further assessment. The following addresses CanZinc's concerns related to specific IRs.

**Review Board response to concerns over individual information Requests**

CanZinc summarized their concerns with individual IRs in a table. The Review Board reviewed all of these concerns and has categorized its responses into three categories as follows:

1. **IR responses provided.** The Review Board believes the information provided by CanZinc in its letter is an IR response. The quality and content of the IR response may be examined by EA participants in the stages that follow. CanZinc should include this information as its response to the IR in the Online Review System (ORS).
2. **No action.** No action is required on the part of the Review Board as CanZinc expressed an intention to answer the IR as requested and CanZinc understands what is being requested. CanZinc should respond to the IR in the ORS.
3. **Further clarification provided.** The Review Board issued IRs to inform its decision. In response to some IRs, CanZinc contested the IR and did not provide additional information. Further clarification for these IRs is provided below and CanZinc must respond using the ORS. The IRs in this category include 4, 7, 32, 33 and 41.

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<sup>1</sup> [http://www.reviewboard.ca/upload/project\\_document/EA1415-01\\_CanZinc\\_letter\\_to\\_MVEIRB\\_re\\_Board\\_IR\\_s\\_3Mar2016.PDF](http://www.reviewboard.ca/upload/project_document/EA1415-01_CanZinc_letter_to_MVEIRB_re_Board_IR_s_3Mar2016.PDF)



All of the Review Board's positions are summarized in the table appended to this letter.

#### **IR 4 Water - channel crossings**

The Review Board requires CanZinc to respond to IR4 as written. The purpose of IR4 is to improve the Review Board's understanding of the potential risks associated with channel crossings and channel behaviour near the road. The broad intent of the IR is to understand:

- a) the environmental setting near the crossings and where the road will be adjacent to watercourses (e.g. are channels naturally unstable, how much bedload movement is there, what are historic patterns for avulsions and floods);
- b) the effects of the proposed project to the environment or the possible effects of the environment to the project (e.g. will channels be constricted and what are the effects of constriction given the environmental setting);
- c) if the proposed project design and existing environment may affect the risk assessment for the proposed all season road and, as a result, the effects of potential for accidents and malfunctions (e.g. are the effects potentially significant).

Following the review of the DAR and DAR Addendum materials provided by CanZinc, the Review Board determined additional information was needed to address the above three items. Additional information on the existing environment is a necessary starting point to understand if:

- the proposed project will be affected by the nearby watercourses,
- the proposed structures and design are suitable given the existing environment,
- the proposed project will adversely affect the environment, or
- a structure could result in secondary adverse impacts to the road stability (e.g. if a proposed structure constricted a channel, it may cause erosion upstream that may then affect the road).

This is necessary for the Review Board to understand the likelihood of significant impacts as a result of the project. Specifically, it would assist the Review Board in understanding:

- how much flexibility there is with respect to the crossing locations and crossing design,
- what the effect of the crossing could be on the environment and if those effects could be potentially significant, and
- what the effect of the proposed design could be to the road stability.

#### **IR 7 Water- erosion risks**

The Review Board requires CanZinc to respond to IR7 as written. The intention of IR7 is to examine the potential risks to the entire road from erosion at meander bends. The intent and purpose is similar to what is described above for IR4. The IR cited examples at km 3.6 and the Liard River crossing.

In its letter, CanZinc's stated that it has assumed that the crossing at km 3.6 is not part of this EA because it is already permitted for all season use. It also commented on the work done in response to the 2006/07



flood events. Regarding the crossing at km3.6 and the first 37.4 km, while it is permitted for all season use, as stated in the *Reasons for Decision on the Scope of the Environmental Assessment*<sup>2</sup>, “any upgrades over and above what was previously constructed under N80F249” will be considered in this EA. If CanZinc intends on upgrading the crossing and road bed beyond what was required in 1980, the upgrades are within the scope of the EA and will be assessed.

Regarding the remainder of the road, as described in the Review Board's response to IR4, information related to the erosion risks from channels near the proposed road are pertinent. This is necessary to better understand the risks associated with potential accidents and malfunctions and the effects of the environment on the project.

### ***IRs 32 and 33 – Noise***

The Review Board requires CanZinc to respond the IR as written. The IR was posed by the Review Board to understand the effects of noise. While it is true that noise is a subject of note in the Terms of Reference, it has the potential to affect the key lines of inquiry of effects to traditionally harvested species and traditional harvesting, effects to the Nahanni National Park Reserve, and valued components. Therefore, an effects assessment for the potential impacts from noise is necessary. The items requested are basic and essential components to understand the effects of noise to valued components. Information requests 32 and 33 will provide information that parties and the Review Board can use assess the conclusions reached by CanZinc with respect to the potential effects from noise.

### ***IR 41 - Cultural and spiritual sites and activities***

The intent of this IR was to distinguish between what engagement was conducted for the winter road vs the all-season road, what engagement was specific for the all-season road, and what the outcomes of that engagement were. The distinction between the winter road and all-season road is important. This is a new project and a new EA, and while information from previous EAs will be considered, the Review Board still needs information specific to this project. The Review Board must understand what concerns were raised through engagement for the all season road and how these concerns have been addressed to date.

To answer this IR, if the concerns related to culture and harvesting in the DAR were all derived from previous engagement and research from EA0809-002, CanZinc should state that. If additional engagement for the all-season road also informs CanZinc's position, that should be distinguished and described.

Regarding the Traditional Knowledge report, the Review Board recognizes that Nahæâ Dehé Dene Band submitted a Traditional Knowledge report for this EA. The report was conducted during the last CanZinc EA (EA0809-002) for the Prairie Creek mine and winter road. The Review Board has and will consider this information.

In general, as described in section 2.3 of the Terms of Reference, the Review Board recommends that the developer provide engagement records specific to the all season road and that the developer follow the Review Board's *Guidelines for Incorporating Traditional Knowledge in Environmental Impact Assessment* and

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<sup>2</sup> [http://reviewboard.ca/upload/project\\_document/EA1415-01\\_Reasons\\_for\\_Decision\\_for\\_Scope\\_of\\_EA.PDF](http://reviewboard.ca/upload/project_document/EA1415-01_Reasons_for_Decision_for_Scope_of_EA.PDF)



the Mackenzie Valley Land and Water Board's *Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits*.

### **Next Steps and Procedural Clarification**

The Review Board requests and requires CanZinc to respond to the outstanding IRs on the ORS based on the clarifications provided in this letter.

The Review Board reminds CanZinc that when responding to IRs:

- the onus is on the developer to support each of its conclusions with rationale and evidence (see item 17 from the *Rules of Procedure*);
- should the Review Board determine that it does not have sufficient supporting evidence to adequately consider the developer's position, it may request additional information at any time during the EA process (see items 15 and 37 from the *Rules of Procedure*).

If CanZinc has any further concerns regarding the IRs in question or future IRs, please refer to the process outlined in the Review Board's *Direction on Procedure* of March 16, 2016.

To assist the Review Board with planning, please indicate when CanZinc will likely be able to submit responses to IRs. Please feel free to contact Environmental Assessment Officer Sachi De Souza [(867) 766-7054; [sdesouza@reviewboard.ca](mailto:sdesouza@reviewboard.ca)] to further clarify any questions or concerns you may have.

Sincerely,

Mark Cliffe-Phillips  
Executive Director

### **Attachment:**

*Summary table of CanZinc's concerns and the Review Board's responses*

Summary table of CanZinc’s concerns and the Review Board’s responses

IR	Recommendation	CanZinc Comment	Review Board's response
2	1. Please update the terrain stability mapping to accurately reflect all of the observations made along the alignment related to permafrost and permafrost features. The terrain stability mapping should clearly depict the permafrost distribution along the alignment.	We have no problem with 1. Re 2, we realize this has since been retracted. However, that it was included initially is concerning. Hand-excavated test pits were conducted as part of fieldwork undertaken. Re the geophysics, in our previous geophysics rebuttal (Jan 29) we noted that geophysics can be useful where massive ice can occur. However, in that case (Mary River), we also noted that the method was useful in continuous permafrost terrain in coarse material, neither of which occur in the KP91-94 area. Further, massive ice was investigated at Mary River due to planned 15 m fills for a railway, a very different situation. As such, the original request suggests a lack of understanding.	The issues to which the developer is referring have already been addressed through the Review Board's amendment of this IR. We look forward to CanZinc's response to the remaining questions.
	2. Please support the description by providing additional information from site surveys. The Board expects CanZinc to conduct hand-excavated test pits and geophysics surveys (e.g. ground penetrating radar and/or resistivity surveys), to investigate for the presence and extent of massive ground ice in known areas of fine soils e.g. the organic swamp areas adjacent to watercourses and the lacustrine deposits (KP91 Km to KP94 Km). While test pits may not be possible in the winter, the Board considers geophysics surveys possible and necessary at this time		
3	Please provide detailed descriptions of the slope aspect and angle and describe what the effects to permafrost along the alignment are predicted to be.	Consideration of slope angle and slope aspect was included in the baseline road section descriptions in Section 5 of the geotechnical report, Appendix 2 of the DAR. TSM and slope angle/aspect mapping did not alter our interpretation of effects on permafrost, and the consequent recommendations regarding road alignment and construction approach. Therefore, the requested work has been completed, to the extent necessary for this stage of the project, given that more site-specific review will occur during the detailed investigation and design phase.	The Review Board considers the information from CanZinc to be an IR response. The quality and content of this response may be examined by EA participants in the EA stages that follow. CanZinc should include this information as its response in the online review system.

Summary table of CanZinc’s concerns and the Review Board’s responses

IR	Recommendation	CanZinc Comment	Review Board's response
4	1. An updated list of the major crossings including the alternative alignment between KP103 Km and KP124 Km. The list should also include all the alluvial fan crossings.	The comment to this recommendation refers to information to confirm that crossing locations have been 'nailed down'. Crossing locations were selected by qualified engineers experienced in road design, and taking account of a variety of factors (e.g. approaches, bank to bank width), including channel stability. In all cases, the crossing locations can be considered 'nailed down' as they are the best locations, notwithstanding possible minor adjustments during detailed design which will not alter assessed effects in any significant way. All crossing locations are inherently stable based on field evidence of the age of landforms and vegetation present, apart from 3 floodplains that are crossed. These regularly carry water and have potential for channel movement, Casket Creek, a Grainger tributary and Grainger River. In each case, engineering works are proposed to train flows under or into the crossing structure to avoid channel movement. This will be better explained in the Technical Session. The alluvial fan crossings on the Alternate Alignment are on the very edge of the fans, taking advantage of firm ground as opposed to adjacent muskeg. These fans do not usually carry water, but there is a risk of water and debris during high runoff events. Therefore, culverts and armour will be required. However, there is low risk of impacts from erosion and sediment production given the natural vegetation filter before downslope wetlands, which are not fish-bearing. 1. No problem with this.	No comment. The Review Board looks forward to the updated and complete list of the crossing locations.
	2. For each crossing, the following should be provided:		
	2.1. Descriptions of the physical environmental setting, including channel and floodplain dimensions, bedload transport activity, channel stability, overbank flooding, and avulsion history.	2.1 Relevant information was provided in the DAR Addendum, Appendix A (Table 2 and Appendix B), including channel and floodplain dimensions, and flood level. Bedload and flood level will be reviewed in detailed design.	Appendix A of the DAR addendum does describe some of the environmental conditions around the major stream crossings. However, as stated by CanZinc, these do not provide information about the potential bedload movement or flood level.  As stated in the Review Board's Adequacy Review (section 7.6) from May 22, 2015 and the June 24th, 2015 letter, the Review Board needs a clear understanding of the risks associated with channel crossings and channel morphology. The information needed includes a description and history of the items listed in the IR. These are necessary to understand the risk to the road from the environment and the risks of the environment to the road. This will inform the Review Board's understanding of significance associated with the proposed project and will assist the risk assessment required as part of the key line of inquiry for "effects of potential accidents and malfunctions". This is particularly important for unconfined channels.

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	2.2. Support for the above from site photographs and historical air photo interpretation and mapping.	2.2 Photographs were provided in DAR Addendum, Appendix A (Table 2). Historical air photo review is not considered necessary for the reasons noted above (channels are stable or will be trained).	As stated above, the Review Board needs to understand the risks to the road and the risks to the environment from the road. To support this, the Review Board needs to grasp the likelihood and confidence around CanZinc's predicted impacts. Air photo interpretation is one option which was recommended in the adequacy review and not utilized by CanZinc in the DAR Addendum. Upon review of the DAR Addendum materials, more information is still needed to understand the likelihood of the channels being unstable, channel avulsion, and overbank flooding and how these events may affect the stability of the proposed road and the surrounding environment. The Review Board requests that CanZinc use historic air photos and site photos to support its descriptions.
	2.3. Descriptions of the crossing structure and the approach segments of the road with respect to channel and floodplain constriction.	2.3 Relevant information was provided in the DAR Addendum, Appendix A (Table 2).	The DAR Addendum, Appendix A describes the major channel crossings. Crossings may constrict the flow through the channels. In addition, some crossings will likely be armoured which may further constrict flow. The environment around areas that may be potentially affected by constricting channels either through the structure itself or armouring needs to be described in more detail. For example, armouring portions of the channel to protect the structures may result in backwater erosion upstream of crossings. These need to be understood. An understanding of the locations that may be affected by channel constrictions and floodplain constrictions will help with determining how much flexibility there is with respect to the crossing locations, crossing design, what the effect of the crossing is on the environment and if those effects could be potentially significant, and what the effect of the constriction could be to the road. This is necessary to inform the Review Board's understanding of significance associated with the proposed project and will assist the risk assessment required as part of the key line of inquiry for "effects of potential accidents and malfunctions".
	2.4. Descriptions of the alternative crossing locations that were considered, and how this particular site was selected.	2.4 Also provided in DAR Addendum, Appendix A (Table 2) and better explained in the Technical Session..	The Review Board considers the information from CanZinc to be an IR response and look forward to discussing this at the technical session.

Summary table of CanZinc’s concerns and the Review Board’s responses

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	2.5. Descriptions of the potential effects of the environment on the crossing, with respect to channel avulsion, bed material aggradation, or excessive bedload transport through the crossing.	2.5 Relevant information was provided in the DAR Addendum, Appendix A (Table 2). Bed load issues are appropriate for the detailed design phase.	DAR Addendum Appendix A provides a description of the crossing locations but does not provide sufficient information on channel avulsion, bed material aggradation, or bedload transport. Bedload transport and channel avulsion risks are pertinent to understanding the likelihood of significant adverse effects. Similar to the response to 2.1, these are necessary to understand the risks to the road from the environment and the risks of the environment to the road. This will inform the Review Board's understanding of significance associated with the proposed project and will assist the risk assessment as required as part of the key line of inquiry for "effects of potential accidents and malfunctions". The Review Board needs the information requested in the original IR.
	2.6. Descriptions of the potential effects of the crossing on the environment, with respect to constriction of channel/floodplain width, the alteration of bedload/debris transport and bed material accumulation, and the direction of channel avulsions down the road alignment.	2.6 This is the same as 2.3 Information has either been provided or further consideration can be deferred to detailed design.	<p>The DAR Addendum, Appendix A describes the major channel crossings. Crossings may constrict the flow through the channels. In addition, some crossing will likely be armoured which may further constrict flow. The effect of potentially constricting channels either through the structure itself or armouring needs to be described in more detail. For example, armouring portions of the channel to protect the structures may result in backwater erosion upstream of crossings. These potential effects need to be understood. An understanding of the locations that may be affected by channel constrictions and floodplain constrictions will help with determining how much flexibility there is with respect to the crossing locations, crossing design, what the effect of the crossing is on the environment and if those effects could be potentially significant, and what the effect of the constriction could be to the road. This is necessary to inform the Review Board's understanding of significance associated with the proposed project and will assist the risk assessment required as part of the key line of inquiry for "effects of potential accidents and malfunctions".</p> <p>To distinguish between item 2.3 and 2.6, item 2.3 is specifically asking about the conditions around the structures that may constrict flow, item 2.6 is asking about the effects of the constriction. In addition, as described above, bedload transport and channel avulsions will be discussed during the EA.</p>



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	3. A description of any channel avulsion hazards that may affect the road that are not directly associated to channel crossing structures (e.g. km 30.6)	3. this item refers to the lower Sundog section where the road parallels the creek. This is a flood level-road bed elevation issue and would be addressed during detailed design. The road bed would be elevated sufficiently above a specified flood level. Channels can naturally avulse away from or up to the road.	The point that the road-bed elevation can be addressed in detailed design neglects consideration for how the road may effect the environment and how the environment may affect the road. For the entire road, including the Sundog creek realignment, the Review Board needs to understand if there is a risk of channel avulsions affecting the road, where those risks are located along the road, and what the associated risks may be. It is only with this information can the Review Board determine if the risks could result in a significant adverse impact. This is needed during the EA in order to better understand the significance associated with the proposed project and will assist the risk assessment required as part of the key line of inquiry for "effects of potential accidents and malfunctions".
6	Please describe what mitigations would likely be implemented to address risks from geohazards in the high risk and moderate risk areas defined in the Terrain Mapping Report. The descriptions should include a list of the possible mitigations, why each mitigation would be appropriate and under what conditions each would be implemented.	This information was also already provided in the DAR, Appendix 2, Section 8.1.3, and to a lesser extent in the DAR Addendum and TSM report. The first approach is to avoid potentially problematic areas, and that is what the proposed road alignment adjustments seek to do. Again, a more site-specific review will occur during the detailed investigation and design phase, when site-specific mitigations, such as wider or thicker fill, will be considered further, if necessary..	The Review Board considers the information from CanZinc to be an IR response. The quality and content of this response may be examined by EA participants in the EA stages that follow. CanZinc should include this information as its response in the online review system.
7	Please describe the erosion risks at meander bends that may affect the road	Km 3.6 is referenced. This is a winter road section already built to all season standards and armoured, and we assume scoped out of further assessment. In any event, the risks are low since armour was placed on this and other sections specifically to address the damage from the 2006 and 2007 flood events (Cadillac had not armoured the road).	<p>CanZinc's response was limited to km 3.6 and the 2006/07 flood events. Regarding the crossing at km3.6 and the first 37.4 km, while it is permitted for all-season use, as stated in the Reasons for Decision on the scope of EA, any upgrades over and above what was previously constructed under N80F249 will be considered in this EA. If CanZinc intends on upgrading the crossing and the adjacent road bed beyond what was required in 1980, the upgrades are scoped in and will be assessed.</p> <p>Regarding the remainder of the road, as described in the Review Board's response to IR4, information related to the erosion risks from channels near the proposed road are needed. This is necessary to better understand the risks associated with potential accidents and malfunctions and the effects of the environment on the project.</p> <p>CanZinc must respond to the IR as written.</p>

Summary table of CanZinc’s concerns and the Review Board’s responses

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10	Please provide detailed evidence to clarify subjective statements used in the alternatives assessment	The full context leading to this request is "Some local aboriginals perceive that an all season road, including some limited blasting for bridge abutments and approaches, will mean a greater impact on the land compared to a winter road. However, others likely agree with CZN’s belief that use of an all season road through the mountains will be inherently safer than only winter use, and that as a result, the risk of accidents and spills will be less." This discussion is provided to justify a component score. The multiple accounts analysis is somewhat subjective by definition, and based on an opinion. We think some latitude is reasonable.	The Review Board considers the information from CanZinc to be an IR response. The quality and content of this response may be examined by EA participants in the EA stages that follow. CanZinc should include this information as its response in the online review system.
17	1. Please provide a timeframe prior to road construction when a baseline vegetation survey for potential contaminants of concern will occur.	1. The requirement for vegetation monitoring is linked to concentrate transport on the all season road. Therefore, a baseline survey need only be completed prior to this, not prior to road construction.	The Review Board considers the information from CanZinc to be an IR response. The quality and content of this response may be examined by EA participants in the EA stages that follow. CanZinc should include this information as its response in the online review system.
	2. Please describe the survey methodology for this baseline vegetation study.	2. and 3. We believe it would be appropriate to request this information as a condition of land use permits, which would also require it to be approved before concentrate haulage. The information is not considered to have any material influence on the assessment of effects during this EA.	The Review Board considers the information from CanZinc to be an IR response. The quality and content of this response may be examined by EA participants in the EA stages that follow. CanZinc should include this information as its response in the online review system.
	3. Please describe a monitoring plan for loading of potential contaminants of concern in vegetation along the proposed road route		
18	1. Please submit a conceptual framework for an invasive species management plan for discussion during the technical sessions. Describe adaptive management options to prevent the spread of invasive species in the conceptual framework.	1. During the Adequacy Review, it was agreed that, for management plans, CZN would provide either a draft plan or the key mitigation/monitoring steps to be included in a future plan. We agree to do this for an Invasive Species Management Plan if this is what is intended.	CanZinc's statement is correct, this is the intent. CanZinc should include their response in the online review system
	2. A Contaminant Loading Management Plan was developed for the winter road. Describe what mitigations from that plan are relevant, which mitigations need to be updated given the proposed change to an all season road, and what new mitigations would be needed for proposed project.	2. This was provided in the DAR Addendum, Appendix D, section 4.2.	The Review Board is familiar with the referenced section and notes that the only changes CanZinc made to the contaminant loading plan was to change the words "winter road" to "all season road". No commentary was provided on what mitigations from that plan are relevant for an all season road as opposed to a winter road, which mitigations need to be updated given the proposed change to an all season road, and what new mitigations would be needed for proposed project. If there are no changes to the existing plan, CanZinc can state this and include this in their ORS response.

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IR	Recommendation	CanZinc Comment	Review Board's response
19	Please either describe in detail how these measureable parameters would effectively capture potential effects to harvested species due to avoidance or altered movement, or provide alternate parameters that CanZinc will measure to adequately quantify these responses.	Firstly, the DAR is referenced whereas the Vegetation and Wildlife & Wildlife Habitat assessment report was updated in the DAR Addendum, and further describes how measurable parameters are used to monitor effects. Secondly, the author seems to ignore the evidence that wildlife use of the road corridor is sparse, except for moose, the only harvested species currently of significance with respect to the road locally, and which is not prone to significant effects from altered movement.	The Review Board recognizes that information may be provided in multiple documents submitted by CanZinc. To avoid further confusion, CanZinc will please state, or restate, the information that pertains to the IR and indicate specifically where in the DAR and DAR addendum materials (public registry number, section, and page number) the response is from. This response should be submitted using the online review system.
20	Please describe the anticipated impacts on all harvested species from disturbance and displacement caused by the project. This description will include but is not limited to a discussion on impacts to migratory species or those whose habitat range is only partially (either temporally or geographically) within the vicinity of the all season access road.	Again, the DAR is referenced whereas the Vegetation and Wildlife & Wildlife Habitat assessment report was updated in the DAR Addendum, and provides further consideration for migratory species and those whose habitat range is only partially within the vicinity of the all-season road. Also, recent TK and information from hunters indicates that only moose, and occasionally buffalo, are harvested locally.	The Review Board recognizes that information may be provided in multiple documents submitted by CanZinc. To avoid further confusion, CanZinc will please state, or restate, the information that pertains to the IR and indicate specifically where in the DAR and DAR addendum materials (public registry number, section, and page number) the response is from. The species of interest are boreal caribou, woodland caribou, and moose. This response should be submitted using the online review system.
26	Please provide summaries of the data provided in DAR Addendum Appendix C Attachment C. Include a description of statistically appropriate central tendency, trends, and range of concentrations by species and location. This information is conducive to presentation in graphical format.	In the opinion of our fisheries biologist, the utility of fish tissue information is low for the road. The road is not a single continuous discharge point (i.e. effluent), and therefore it shouldn’t be treated as one. Gathering a large amount of baseline tissue concentration data will be very expensive and provide little benefit. The probability of a significant impact as a result of a spill or natural erosion is very small. Concentrate is in a form that is not readily bioavailable, and any spill would be cleaned up. Metals would not be expected to build-up in the tissues of fish. A spill of diesel would also not lead to build up in tissues. Therefore, we see no point in providing the requested information. Further, other than for Prairie Creek, the data (for Tetcela River) is insufficient to calculate summary statistics.	If CanZinc has insufficient data to complete summary statistics, then the Review Board considers the information from CanZinc to be an IR response. The quality and content of this response may be examined by EA participants in the EA stages that follow. CanZinc should include this information as its response in the online review system.
27	Please provide summaries of the data provided in DAR Addendum Appendix C Attachment D. Include a description of statistically appropriate central tendency, trends, and range of health factor by species and location. This information is conducive to presentation in graphical format. Please also include a discussion of existing levels of parasites, disease and condition. If this data are not available, please describe how and when it will be collected	Similar to tissue data, our fisheries biologist believes there is little utility in fish health data. The EA requirements for an all-season road should not have to meet the requirements of a continuous discharge. Being able to use the baseline data in a meaningful way to assess potential effects is also unlikely. Since the metals in concentrate are not readily bioavailable, measurable effects on fish health are unlikely. In short, fish health indices have very little utility in the assessment of potential effects, and therefore there is no point in providing the requested information. Also, the available fish health data is limited.	If CanZinc has insufficient data to complete summary statistics, then the Review Board considers the information from CanZinc to be an IR response. The quality and content of this response may be examined by EA participants in the EA stages that follow. CanZinc should include this information as its response in the online review system.

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29	Will CanZinc commit to collecting baseline on fish tissue chemistry and fish health data at key locations along the length of the proposed road alignment prior to construction, in order to facilitate the updating of its Aquatic Effects Monitoring Program?	Firstly, we feel it is inappropriate to pose a pointed question such as this. Secondly, comments on IR's 26 and 27 above indicate that the data from the suggest work would have little utility. Thirdly, fish tissue and fish health study will likely pose a greater risk to fish populations than a spill. Fish in creeks along the road are generally too small for tissue plug sampling, meaning that most sampling will have to be lethal. Similarly, most health indices also require a lethal sampling program. Fourth, the comment to this recommendation refers to separating the effects of the road from effects of the mine discharge. What we would consider amenable is documenting the tissue metals content and health of sculpins in Funeral Creek and Prairie Creek. The existing AEMP for the Mine includes an effects monitoring and bull trout occupancy survey, and adding tissue metals to a common species is little additional effort without significant adverse impact.	The Review Board considers the information from CanZinc to be an IR response. The quality and content of this response may be examined by EA participants in the EA stages that follow. CanZinc should include this information as its response in the online review system.
31	Please complete an assessment of effects on the three Myotis species potentially affected by the Project, as required in the Species at Risk Act.	COSEWIC (2013) indicates that bats are most sensitive to effects during the winter. They also indicate that bats are not particularly sensitive to disturbances while overwintering, except if the activity is occurring directly at or within the hibernacula. Environment Canada agree with this. No adverse Project-bat interactions are expected since suitable hibernacula sites (caves in karst formations) are not present near the proposed route. The feature at Km 56 is a shallow pond, which may in fact not be a karst feature. Therefore, an assessment has already been completed, to the extent necessary. It is also worth noting that all season road operations will represent much less activity in winter than a winter road, and therefore the risk to bats is incrementally less.	The Review Board considers the information from CanZinc to be an IR response. The quality and content of this response may be examined by EA participants in the EA stages that follow. CanZinc should include this information as its response in the online review system.

Summary table of CanZinc’s concerns and the Review Board’s responses

IR	Recommendation	CanZinc Comment	Review Board's response
32	<p>1. Please provide detailed information about sources of noise from the project including, but not limited to:</p> <p>1.1. their locations, timing (including, but not limited to, the start and end dates, time of day, seasonality etc.),</p> <p>1.2. duration (how long the sound is emitted), frequency and magnitude (including, but not limited to, normal, peak, and cumulative decibel levels).</p> <p>2. Provide an assessment of how far this noise can travel until it reaches background for individual sources and for any combination of noise sources, such as multiple noise sources from a borrow source.</p> <p>3. Provide a consideration of how terrain, temperature, and weather may affect noise.</p>	<p>Although the language is incorrect, this request is actually asking for a comprehensive noise assessment. This is inappropriate given the stage of the EA and the fact that noise is a subject of note. Further, and more importantly, there is no purpose to this assessment because there is no data to gauge impacts on wildlife, and as already stated, the Nahanni Butte community is 7 km from the nearest point of the road, and is separated from it by a height of land to the west and large islands between braided channels to the east, eliminating any possibility of noise transmission to the community. Also, ambient noise regulations don’t exist in the NWT. Golder and Tetrattech were consulted on this item. Both say that the output of a noise model will not help an assessment of how moose, caribou, sheep etc., will respond. There is no published work on wildlife response to noise. Effects have been adequately assessed in the Tetrattech wildlife report. Regarding Nahanni Butte, as noted, local traffic is common in the community, and therefore, even if truck noise from the access road could be discernable, it is highly unlikely to be an irritant. Note that access road traffic will be the same as for the already permitted winter road, except it will be spread over the year. Also note that it was the NDDB's decision in the last EA to route the road in its present alignment to intersect the Liard Highway as opposed to routing it to Lindberg Landing further north. The requested assessment is not necessary for impact assessment and an unnecessary expense.</p>	<p>The IR was posed by the Review Board to understand the effects of noise. While it is true that noise is a subject of note in the Terms of Reference, it has the potential to affect the key lines of inquiry of traditionally harvested species, effects to the Nahanni National Park Reserve and valued components; therefore, an effects assessment for this potential impact is essential to the EA. The items requested are basic and essential components of an effects assessment related to noise and the subsequent possible effects to valued components and therefore are required.</p>
33	<p>Provide a time series analysis of noise from the project. In other words, estimate how long a valued component can hear noise associated with the project. For instance, how long would a person be able to hear a haul truck and what is the interval between being able to hear the noise from one haul truck until the noise from another haul truck is audible? This must include considerations of terrain, weather, peak sound emissions (use of engine breaks for instance), and time of year.</p>		
34	<p>Please provide an assessment of predicted dust emissions from stationary sources, such as borrow sites, to: vegetation, water quality, and fish and fish habitat. This will include a consideration of sensitive time periods, such as spawning times, egg and juvenile stages for fish; periods of low or no flow, and any other periods for increased vulnerability</p>	<p>In Golder's air quality assessment (Appendix D of the DAR Addendum), fugitive dust generated from overburden removal, material handling, rock crushing and screening, compacting, grading, vehicular traffic (road dust) and air transport were estimated. By road phase, estimated dust emissions from operations were far greater than construction (2,609 tonnes/year verses 58.3 tonnes/year). The mitigation proposed for operations dust is to follow GNWT dust suppression guidelines, and by doing so, potential effects are "expected to be low" (p. 21). Golder say that the reason they excluded borrows from modelling in the work was that the construction phase was estimated to emit much less for a shorter period, and therefore the assessment of operational traffic on the road is a conservative analog for the construction phase of the project. Hence, there is no need or logic for assessing dust from borrows. In any event, the outcome would be the same, to follow GNWT suppression guidelines.</p>	<p>The Review Board considers the information from CanZinc to be an IR response. The quality and content of this response may be examined by EA participants in the EA stages that follow. CanZinc should include this information as its response in the online review system.</p>

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37	Provide a list of the different tourism industries in the region, the number of people employed in tourism and tourism-dependent jobs (according to gender, community and region), the revenue generated by each tourism industry and its overall value to the local and regional economies.	We don't see the point of this. The Project will have minimal impact on the existing tourism, but has the potential to stimulate additional tourism because of the improved access. We know of one year when a few tourists visited the Ram Plateau area, which we noted. We also said that charters from Fort Simpson going to the central NNPR may overfly the western end of the road which already exists to all season standards. We discussed the Liard River crossing and explained that barge crossings are relatively rapid and would not hinder canoe/raft trips ending at Lindberg Landing. Other than that, the all season road will have no effect on tourism. Therefore, further research into tourism isn't going to identify any additional effect, and so isn't necessary.	The Review Board has posed IRs to assist with making its determination. The Review Board considers the information from CanZinc to be an IR response. The quality and content of this response may be examined by EA participants in the EA stages that follow. CanZinc should include this information as its response in the online review system.
38	Describe the direct and indirect economic value of Nahanni National Park Reserve visitors to the Nahanni National Park Reserve and to the local and regional economies.	Again, we don't see the point of this. NNPR activities clearly affect Fort Simpson in terms of charter and schedule flights and hotels, but the all season road wouldn't alter that. NNPR activities have relatively little affect on Nahanni Butte, other than a few seasonal jobs and river trips occasionally stopping for food or lodging in summer, and again the all season road wouldn't alter that, but could stimulate much greater tourism if the Band desired (controlled access).	The Review Board has posed IRs to assist with making its determination. The Review Board considers the information from CanZinc to be an IR response. The quality and content of this response may be examined by EA participants in the EA stages that follow. CanZinc should include this information as its response in the online review system.
41	Distinguish between past baseline information and community engagement about the Project region and winter road route (EA0809-002) Describe engagement activities specific to cultural or harvesting concerns of an all season road (EA1415-01).	The comment to this recommendation states "The ToR sought relevant research pertaining to cultural and spiritual sites and activities, including that conducted by CanZinc and its consultants, the Nahanni Butte Dene Band Traditional Knowledge study, and any other relevant materials. This information was not provided in the DAR." This is not correct. This information was provided or referred to in Sections 5.2, 5.3 and 11.9.3. Section 5.2 provides a summary of traditional harvesting activity. We draw your attention to the last paragraph on p. 123 which states "Camp sites were likely established and utilized all along the travelled routes (Band members indicated that such camps were only temporary and were used perhaps only for 1 night while on a harvesting expedition, and that the locations were more or less at random and not in common, frequently used locations (January 20, 2015))". This is important because potential heritage resource locations is related to the locations of traditional activity, and given that camp locations were 'at random, such resources could be anywhere in the area. However, in Section 5.3, third paragraph on P. 127, we noted that "CZN held meetings with the NDDB in July and August 2009 as part of a TK addendum. <b>[this response has been truncated to fit within the table]</b>	<p>The Review Board recognizes that NDDB has submitted a Traditional Knowledge report for this EA. The report was conducted during the last CanZinc EA (EA0809-002) for the Prairie Creek mine and winter road. The Review Board has and will consider this information.</p> <p>The specific request was that CanZinc distinguish between what was conducted for the winter road vs the all-season road, what engagement was specific for the all-season road, and what the outcomes of that engagement were. The distinction between the winter road and all-season road is important. This is a new project and a new EA, and while information from previous EAs will be considered, the Review Board still needs information specific to this project. The Review Board must understand what concerns were raised through engagement for the all season road. To answer this IR, if the concerns related to culture and harvesting in the DAR were all derived from previous engagement and research from EA0809-002, CanZinc can state that. If additional engagement for the all-season road also informed CanZinc's position, that should be distinguished and described.</p> <p>As described in section 2.3 of the Terms of Reference, the Review Board recommended that the developer provide engagement records specific to the all season road and that the developer follow the Review Board's <i>Guidelines for Incorporating Traditional Knowledge in Environmental Impact Assessment</i> and the <i>Mackenzie Valley Land and Water Board's</i> Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits.</p>