

Howse Property Project Environmental Impact Statement (EIS)

Proponent responses to CEAA IRs: 40, 41, 44-47 and 51.

Human Health

CEAA 40, Round 1, Part 2	HC-IR-3	5(1)(c)(i) Aboriginal Peoples Health/ socio-economic conditions 5(1)(c)(iii) Current Use of Lands and Resources for traditional purposes	6.3.4	Following its review of the proponent's response to CEAA 40 (Round 1 – Part 2), Health Canada advised that arsenic is a carcinogen via ingestion exposure (Health Canada's oral slope factor is 1.8 mg/kg bw-day) ¹ (Health Canada, 2010) ¹ and must be evaluated as a carcinogen with respect to berry ingestion in order to understand effects to the health of Indigenous peoples. Furthermore, any incremental increase in lifetime cancer risk associated with berry consumption must be calculated and compared to Health Canada's acceptable incremental increase in lifetime cancer risk (due to project activities) of 1x10 ⁻⁵ .	Provide an effects assessment of arsenic as a carcinogen via ingestion, compare any incremental increase in lifetime cancer risk (due to project activities) associated with berry consumption to Health Canada's acceptable incremental increase in lifetime cancer risk of 1x10 ⁻⁵ .
<p>HML Answer</p> <p>Response from health Canada, received by the Proponent via email on December 28 2016:</p> <p><i>For CEAA 40 - it appears that the proponent responded to CEAA 40 as part of their response to CEAA 43 in their technical memo entitled "Overview of Revised Quantitative Risk Estimates in Response to CEAA (September 2016)" and as such, the response provided is sufficient (no additional IR from HC now).</i></p> <p>No further response from the Proponent.</p>					
CEAA 41, Round 1, Part 2	HC-IR-5	5(1)(c)(i) Aboriginal Peoples Health/ socio-economic conditions 5(1)(c)(iii) Current Use of Lands and Resources for traditional purposes	6.3.4	<p>In reviewing the response to CEAA 41 (Round 1 – Part 2), it is not clear that the full range of potential human health risks posed by chromium arising from the Project have been adequately assessed. This information is needed to assess the effects to the health of Indigenous peoples.</p> <p>Health Canada has advised the Agency that with respect to chromium (Cr), the proponent's statement that the toxicity reference value (TRV) for total Cr that it is based on 1/7th of total Cr being Cr VI is correct. The ratio used in deriving the guideline value was based on a specific industrial source where chromium was analysed and speciated and 1/7 of that chromium was Cr VI, thus for that particular industrial release, 1/7 was the ratio. This is not necessarily the case for other sources/releases</p>	Provide a revised human health risk analysis for chromium where Cr is assumed to be 100% Cr VI in the assessment, or provide a rationale that the form of Cr expected to be present is one or more less toxic forms of Cr (e.g. Cr III).

¹ Health Canada. 2010. Part II: Health Canada Toxicological Reference Values (TRVs) and Chemical-Specific Factors, Version 2.0. Federal Contaminated Site Risk Assessment in Canada. Prepared by the Contaminated Sites Division, Safe Environments Directorate. September.

				<p>of chromium given the different ways chromium is released and transformed in different environments. Health Canada is currently in the process of updating the guidance document which will provide a summary of recommended TRVs to be used for federal contaminated sites in the near future.</p> <p>In order to be conservative in the evaluation of chromium with respect to human health, Cr should be assumed to be 100% Cr VI in the HHRA (unless it can be justified otherwise, such as by speciating Cr or providing literature references to indicate the likelihood of the Cr present to be Cr VI).</p>	
<p>HML Answer</p> <p>Errata to Chromium Concentration Under Baseline Scenario</p> <p>While addressing the follow-up request for CEAA 41 (re hexavalent chromium), AECOM risk assessment staff noted an error in the Baseline total chromium concentration in soil (incorrect entry of empirically derived concentration from Baseline field samples). This error resulted in an underestimated Baseline Cr soil exposure, as well as impacting the incremental soil concentrations modelled under the project and cumulative scenarios. The input to the numerical model has been corrected and confirmed for all associated exposure pathways involving soil. Hazard quotients and incremental lifetime cancer risks associated with exposure to chromium have been recalculated and are presented in Tables 1 and 2 (in attached document Howse Property Proponent Response CEAA 41.pdf). All predicted risk estimates remain well below the threshold levels of HQ<1 and ILCR< 1E-5. The interpretation of risk estimates as presented in the original HHHRA risk assessment report remain unchanged.</p> <p>Please see attached document Howse Property Proponent Response CEAA 41.pdf.</p>					
<p>CEAA 44, Round 1, Part 2</p>	<p>HC-IR-8</p>	<p>5(1)(c)(i) Aboriginal Peoples Health/ socio-economic conditions</p> <p>5(1)(c)(iii) Current Use of Lands and Resources for traditional purposes</p>	<p>6.3.4</p>	<p>Following the review of CEAA 44 (Round 1 – Part 2), in order to understand the effects to the health of Indigenous groups, Health Canada recommends the following as acceptable standards to use in the determination of significance of an effect on human health: <1.0 for a HQ for non-carcinogens; <1.0E-5 (<1 x 10⁻⁵) for incremental increases in lifetime cancer risk (ILCR) associated with project-related activities. For non-cancer risks, where HQs >1.0 currently exist in the baseline scenario, the predicted change as a result of the project should be discussed with a narrative and compared to baseline conditions to determine significance (e.g. baseline HQ is 1.4 and future HQ is predicted to be 1.6). For carcinogens, the incremental increase in lifetime cancer risk associated with project activities should be evaluated; if that incremental increase exceeds 1 x 10⁻⁵, additional mitigation should be presented, as appropriate.</p>	<p>Provide a discussion for the predicted potential effects to human health as a result of the Project for non-cancer risks where HQs >1.0 currently exist in the baseline scenario and are predicted to increase as a result of project activities. Compare prediction to baseline conditions when determining significance (e.g. where baseline HQ is 1.4 and future HQ is predicted to be 1.6). Update effects assessment conclusions and the recommended mitigation measures where elevated non-carcinogenic risks are predicted as a result of project activities, where applicable.</p> <p>Evaluate the incremental increase in lifetime cancer risk associated with Project activities. If that incremental increase exceeds 1.0E-5, indicate whether additional mitigation measures that will be implemented, as well as present a revised environmental effects analysis.</p>
<p>HML Answer</p> <p>Please see attached document Howse Property Proponent Response CEAA 44.pdf.</p>					

<p>CEAA 45 and 46, Round 1, Part 2</p>	<p>HC-IR-10</p>	<p>5(1)(c)(i) Aboriginal Peoples Health/ socio-economic conditions 5(1)(c)(iii) Current Use of Lands and Resources for traditional purposes</p>	<p>6.3.4</p>	<p>In order to verify the accuracy of the assessment of effects to the health of Indigenous people, Health Canada recommends a follow up program that consists of monitoring environmental media (e.g. air, water, soil, food) for changes, given that monitoring specific environmental media can provide a reasonable understanding of any changes that may be due to project-related activities. Provided adequate baseline sampling is conducted, people would not need to be subjected to specific health studies.</p> <p>The proponent referred to an Appendix in the response to CEAA 45 and 46 (Round 1 – Part 2), however the description of the appendix was not adequate to find the noted Table.</p>	<p>Following section 8 of the EIS Guidelines, and based on Health Canada’s recommendation, describe any follow-up program the Proponent would implement to verify the accuracy of the effects predictions and the Human Health Risk Assessment regarding the health of Indigenous people. For example, regarding country foods, describe specific foods to be analyzed, frequency of analysis, interpretation and reporting of results, and potential mitigation to be implemented in the event of increases of contaminants in these foods.</p> <p>Include how monitoring would inform whether additional health studies and/or mitigation measures may be needed in the future, as part of an adaptive management program.</p> <p>Clarify which appendix is being referred to in the response to CEAA 45 and 46 (Round 1 – Part 2).</p>
<p>HML Answer</p> <p>Response from health Canada, received by the Proponent via email on December 28 2016:</p> <p><i>For CEAA 45 and 46, it does not appear that in any IR responses there is a description of the proposed follow-up program that would be implemented to verify the accuracy of the effects predictions in the HHRA regarding the health of indigenous people. The proponent has now clarified what tables were referenced so this can be deleted from the request.</i></p> <p>Monitoring:</p> <p>The Proponent is committed to duplicating the country food sampling program, conducted in summer/fall 2015 for the Howse Property EIS, 2 years after the commencement of the Howse Operations phase and, subsequently, every 5 years for the duration of the operations phase. Please refer to Supporting Study D of the Howse Property EIS for a full description of the sampling methods. Results would be reported during Health and Safety Committee meetings (held 3-4 per year) and a copy of these reports will be submitted to Health Canada. In the event of increases of contaminants in any of these foods, the proponent will conduct a new Human Health Risk Assessment. Subsequently, a targeted action plan (results-dependent) will be implemented.</p>					
<p>CEAA 47, Round 1, Part 2</p>	<p>HC-IR-12</p>	<p>5(1)(c)(i) Aboriginal Peoples Health/ socio-economic conditions 5(1)(c)(iii) Current Use of Lands and Resources for traditional purposes</p>	<p>6.3.4</p>	<p>Health Canada has advised the Agency that it would like to obtain a copy of any public comment/complaint received by the proponent related to changes in country foods. In order to mitigate potential effects to the health of Indigenous people, Health Canada also recommends that the proponent make the analytical results of any country foods monitoring program (e.g. analytical results of any country foods analysed in comparison to baseline analytical results for these foods) publicly available so that all interested parties can access the results, with any changes in contaminant concentrations clearly identified.</p>	<p>Comment on whether the Proponent will make all analytical results from the country food monitoring programs publicly available (along with an interpretation of the results) to inform consumers of any potential elevated risks associated with consumption of local country foods. In addition, if public complaints are registered regarding changes in taste/quality/availability of country foods, comment on whether and how the proponent will share the information with regulators and undertake additional monitoring to determine if changes have occurred as a result of project activities. If changes are identified, describe how adaptive management would be used to revise mitigation measures at that time.</p>
<p>HML Answer</p> <p>Please see answer to CEAA 45 and 46 above. Reports will be submitted to CEAA via email and communicated to the public via HS meetings. The proceedings from HSE meetings are communicated to stakeholders on a shared drive and they may release this information at any time for their own purposes.</p>					
<p>CEAA 51,</p>	<p>HC-IR-16</p>	<p>5(1)(c)(i) Aboriginal Peoples Health/ socio-economic conditions</p>	<p>6.3.4</p>	<p>Health Canada has advised the Agency that without small mammal and bird baseline data it may be difficult in the future to evaluate whether changes in contaminant levels in various media were a result of project-</p>	<p>Describe any commitments to collect small mammal and bird baseline data to inform any follow-up monitoring programs for effects to country foods and to carry out a revised human health risk assessment that would identify risks and inform whether</p>

<p>Round 1, Part 2</p>		<p>5(1)(c)(iii) Current Use of Lands and Resources for traditional purposes</p>		<p>related activities or whether these species previously contain elevated levels of contaminants. Monitoring other environmental media (e.g. air, surface water, soil, vegetation), may be adequate to characterize any changes in contaminant levels due to project activities, depending on the level of increase in contaminant concentrations and the toxicity of those contaminants.</p> <p>With respect to health effects of Indigenous peoples, in order to evaluate the accuracy of the assessment and effectiveness of mitigation measures, Health Canada advises that it may be prudent in the future, should monitoring show increases in contaminant levels in other media, to collect small mammal and bird samples and evaluate tissues for those contaminants that increased in the other media.</p>	<p>additional mitigation measures are required as part of an adaptive management program. If no commitments can be described, provide a rationale as to why not.</p>
<p>HML Answer Please see answers to 45, 46 and 47.</p>					