

Howse Property Project
Environmental Impact Statement Information Requests
Project Alternatives
Round 2 (Part 2): CEAA 27, 30, 31, 32, 33, and 38
February 2017

<p>CEAA 27, Round 1, Part 2</p>	<p>HC-IR-23 IN-IR-4d</p>	<p>5(1)(b) Transboundary 5(1)(c)(i) Aboriginal Peoples' Health/socio-economic conditions</p>	<p>6.2.1 6.3.5 6.3.4</p>	<p>Based on information provided by the proponent, it is not clear that all alternatives being considered for power supply over the life of the Project were assessed in response to CEAA 27 (Round 1 – Part 2). The proponent indicated that it “may eventually look into connecting the Howse plant to the DSO power system to reduce the number of generators.”</p> <p>If a connection between the Howse Project and DSO Power system is under consideration, then this alternative should be fully described and its potential effects assessed as per the Agency’s Operational Policy Statement: <i>Addressing “Purpose of” and “Alternative Means” under CEAA 2012.</i></p>	<p>Provide an alternatives assessment that includes all means of providing power to the Howse Project that are under consideration (e.g. connection to the local power grid or to DSO power system, if applicable). The analysis should be conducted in accordance with the Agency’s Operational Policy Statement: <i>Addressing “Purpose of” and “Alternative Means” under CEAA 2012.</i></p>
<p>HML Answer</p> <p>In the last iteration of CEAA 27, the Proponent indeed indicated that it may, in the future, consider the Alternative to Connect the Howse Plant to the DSO Power System. However, since that time, the Proponent has decided that it cannot consider this Alternative, as the Dome genset has a capacity of 2.8 X 5 @ 80% = 11 MW, and all of it is required for the Wet Plant Operation. As such, the spare capacity for the Howse Project is not available.</p>					
<p>CEAA 30, Round 1, Part 2</p>	<p>IN-IR-7</p>	<p>5(1)(c)(iii) Current Use of Lands and Resources for traditional purposes 5(1)(c)(i) Aboriginal Peoples Health/ Alternative means</p>	<p>2.2</p>	<p>Proponent did not provide information requested in CEAA 30 (Round 1 - Part 2) on whether there are additional effects, including but not limited to, the health of Indigenous peoples, or their uses of the land for traditional purposes during winter operations arising from changing project activities, including, but not limited to, those associated with the use of the dryer.</p>	<p>Provide information on whether there are additional environmental effects on valued components associated with winter operation activities, including those, but not limited to, use of the dryer. Describe mitigation measures for addressing any additional environmental effects.</p>
<p>HML Answer</p>					

Please see response to CEAA 7 above. The Howse Air modelling study incorporated two dryers each of them designed for an iron ore input of 320 tonnes per hour (operating 7 months/year). These conditions were considered in the Howse EIS effects assessment for the Air Quality VC (Section 7.3.2) as well as the Human Health Section (7.5.2).

The Proponent is committed to using dust extractors with filter bags will be used to control dust emissions at the Howse Mini-Plant dryers. These well maintained fabric filter dust emission control reduces dust emissions by >95%. The conclusion presented in the human health residual effects assessment of the effects of the project on human health (including the effects of the dryer, as modelled in the air quality study) state:

The overall effect of the Howse Project on human health is non-significant. This conclusion is based on conservative exposure assumptions that err on the side of over – rather than under-estimating human exposure scenarios. The likelihood of the Howse project having an effect on human health is considered very low, because the multimedia exposure assessment has employed numerous conservative assumptions, with consideration to traditional foods, Aboriginal traditional activities, and a comprehensive evaluation of the interaction of mine activities, air emissions and meteorological conditions that will influence air quality. Notwithstanding the conservative assumptions, the magnitude of health risk was found to be negligible for all exposure pathways, both individually and additively.

CEAA 31, Round 1, Part 2	CEAA	5(1)(a)(i) Fish and Fish Habitat 5(1)(c)(iii) Current Use of Lands and Resources for traditional purposes 5(1)(a)(iii) Migratory Birds	2.2	In the response to CEAA 31 (Round 1 - Part 2), the proponent indicated it is no longer considering proceeding with a second alternative route for local communities. According to the EIS, page 2-14, Alternative 1 would result in longer driving distances for Indigenous groups to access lands. It is not clear how the proponent determined that Alternative 2 is no longer a viable option and if that decision was made in consultation with Indigenous groups.	Provide a revised transportation route alternatives analysis which, at a minimum, includes: <ul style="list-style-type: none"> • The rationale for selecting Alternative 1 • The reasoning why the second alternative route (Alternative 2) is not a viable alternative. Provide information as described in the Agency’s Operational Policy Statement “Addressing ‘Purpose of’ and ‘Alternative Means’ under CEAA 2012.”
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HML Answer

Following a review of both Alternatives, HML has decided internally on Alternative 1. Although both bypass Alternatives had previously been discussed with Indigenous Groups, the final decision was made internally. HML recognizes that Alternative 2 poses an increased travel time (reduced access to land for traditional purposes) and is prepared to offer financial compensation for this Alternative, via a traditional fund/compensation fund.

	Alternative 1 Greenbush: 16 km of road upgrade	Alternative 2 Triangle: 1.3 km of new road
Economic	Bi-annual road upgrade \$5,515/km (total 16 km for Alt 1 for 15 years) \$2,647,200	Road construction is estimated at \$370,895* + Construction of 2 stream crossings: \$1,200,000** + Bi-annual road upgrade \$5,515/km (total 1.3 km for Alt 2 for 15 years) \$215,084

				TOTAL: \$2,647,200		TOTAL: \$1,785,979	
Technical	The logistics of either bypass route involve the bi-annual maintenance to which the Proponent is committed. For this, the logistics of Alternative 2 (1.3 km) is smaller than Alternative 1 (16 km).			Road maintenance is shorter (1.3 km) but more complicate (slope). However, the new road construction required under Alternative 2 poses large logistical constraints. Further, Alternative 2 requires that the Proponent arrange for the safe crossing of the DSO haul road by land users.			
Environmental	Alternative 1 has no effect on habitat loss/alteration or destruction. This road is currently being used and so there are no adverse environmental effects expected to biophysical VCs as a result of the implementation of Alternative 1. The Greenbush Alternative is approximately 15 km longer than Alternative 2. As a consequence of this longer route, it can be expected that there will be a slight depletion in air quality.			Alternative 2 requires that 1.3 km of new route be constructed. This Alternative will cross wetlands and two streams. Wetlands are the ecosystems that have the highest ecological value, since the majority of wildlife habitats in the LSA are associated with them. Furthermore, wetlands have a diversified flora, and species that occur in them usually cannot colonize other types of ecosystems. Wetlands and riparian environments occupy a small part of the LSA, but they support a high percentage of wildlife and floristic species there. Further to wetland destruction, Alternative 2 will cross two streams.			
Indigenous	Gate-restrictions to the road and limited access during blasts.			Gate-restrictions to the road and limited access during blasts. wetlands are recognized by the scientific community and First Nations as habitats to be protected and conserved. They are extensively used by the members of First Nations for berry picking, hunting and trapping.			
*Includes D8 Dozer, PC450 Excavator, HM 400 Trucks, 16M Grader, Compactor/Roller, supervisor							
**Lump-sum estimate based on Joan Stream							
CEAA 32, Round 1, Part 2	CEAA	5(1)(a)(i) Fish and Fish Habitat	2.2	In response to CEAA 32 (Round 1 – Part 2), the proponent stated that if it “chooses to use coagulant, the type of coagulant will need to be decided and then an effects analysis could be conducted.”	Per the Agency’s Operational Policy Statement “Addressing ‘Purpose of’ and ‘Alternative Means’ under CEAA 2012.”, provide an alternatives analysis for the use of coagulants that includes the types of coagulants that may be selected. If the effects of each type of coagulant are anticipated to vary, provide an analysis on each type. If		

			<p>If the use of coagulant is one of the alternatives being considered, then this alternative must be considered as per the Agency's Operational Policy Statement: <i>Addressing "Purpose of" and "Alternative Means" under CEEA 2012</i>.</p> <p>If the use of coagulants is selected as one of the preferred alternatives for the project, and the proponent is seeking to proceed with a project that would include the possibility of using coagulants, then this preferred alternative must be fully described and its potential effects must be assessed.</p>	<p>the use of a certain type of coagulant is a preferred alternative, update the assessment to include potential effects to VCs.</p>
<p>HML Answer</p> <p>If any runoff water from the site exhibits water quality issues (other than suspended solids), an inorganic coagulant could be added to help destabilize the fine particles and help them co-precipitate out with the floc formed by the addition of a coagulant. Currently, since Howse operations are not ongoing on an annual basis, and the use of coagulant is not required under the GNL guidelines, and local information on water quality at adjacent project sites indicates that it is not inferior when it is untreated (i.e. no coagulant is applied), the use of coagulant is not expected for the Howse Project.</p> <p>The Proponent chooses Alternative 1 (no water treatment) for the time being, but is committed to conduct ongoing water monitoring and implementing a coagulant if needed.</p> <p>Alternatives Considered</p> <p><u>Alternative 1:</u> No water treatment: Use of sedimentation ponds alone to allow sediment to settle for a known period of time prior to discharge.</p> <p><u>Alternative 2:</u> Addition of an inorganic coagulant: Coagulant as water treatment could be added as a contingency measure at the entrance of sedimentation ponds with manual dosing pumps, and mixed naturally by the turbulence action of the incoming flow. The inorganic coagulant could be aluminum sulfate, iron salts or lime. The treatment chemicals will help destabilize the fine particles and help them co-precipitate out with the floc formed by the addition of a coagulant.</p> <p><u>Alternative 3:</u> Addition of coagulant aid: An anionic flocculent could be added to enhance the settling rate of the coagulated particles.</p> <p>Effects on VCs</p> <p><u>Alternative 1:</u> This Alternative requires larger sedimentation ponds, and so increases the Howse footprint, thus potentially destroying sensitive habitat. However, the Howse Project will only build two new sedimentation ponds (HOWSEA, 1.9 ha and HOWSEB, 4.4 ha) and the third sedimentation pond is existing (Timmins 4 sedimentation pond 3, 3.4 ha). As such, Alternative 1 uses 3.1 ha of new footprint only, due to the larger sedimentation ponds. These values are based on the new sedimentation ponds being twice as large as those proposed under the present WMP (Volume 1 Appendix IV), as suggested in Section Erreur ! Source du renvoi introuvable.</p> <p>The new footprint could imprint on sensitive environmental areas. However, the current WMP plan, which includes two new sedimentation ponds that are planned without the use of coagulant, have been designed so that their imprint on wetlands is limited/minimized.</p> <p><u>Alternative 2:</u> The Howse WMP estimates that ponds will be half the size presented under the current WMP. As such, under Alternative 2, the Howse footprint is smaller. However, depending on the Proponent's choice of coagulant, this treatment may need further management by the Proponent. Inorganic coagulants are particularly effective on raw water with low turbidity (TSS concentration).</p> <p><u>Alternative 3:</u> A coagulant aid may be added to improve or accelerate the process of coagulation and flocculation by producing quick forming, dense and rapid-settling flocs. Primary coagulants are always used in the coagulation/ flocculation process. In many cases, coagulant aids are not required during the normal operation of the water treatment plant, but are used during emergency water treatment of water which has not been adequately treated in the flocculation and sedimentation basin. C</p>				

	No coagulant	Inorganic coagulant	Coagulant Aid		
Economic	The Proponent has not made an economic assessment of these options. However, it is expected that the addition of a coagulant is a costlier option than not adding coagulant. Notably, nearly all coagulant aids are very expensive.				
Logistics	This option would require no additional action from the Proponent.	<ul style="list-style-type: none"> Logistically, the use of coagulant is more complex (coagulant would be added at the entrance of sedimentation ponds with manual dosing pumps, and mixed naturally by the turbulence action of the incoming flow.) The additional of coagulant may create precipitates, which add to the overall sludge volume that must be treated and removed. This Alternative requires the addition of small infrastructure on site, including a pumping mechanism and a small water treatment that will need to be heated and connected to power. At the Howse project site, storage of chemical and such logistics is always difficult, as well as access to the sedimentation ponds; if coagulant is used in winter condition, extra manpower will be required to maintain the access to this area. 	<ul style="list-style-type: none"> Monitoring of effectiveness of coagulant (Mixing conditions, pH, Alkalinity, Water temperature, Turbidity) must be done to determine if a coagulant aid is needed. This Alternative requires the addition of small infrastructure on site, including a pumping mechanism and a small water treatment that will need to be heated and connected to power. At the Howse project site, storage of chemical and such logistics is always difficult, as well as access to the sedimentation ponds; if coagulant aid is used in winter condition, extra manpower will be required to maintain the access to this area. 		
Environmental	This Alternative requires larger sedimentation ponds, and so increases the Howse footprint. However, the current WMP plan, which includes two new sedimentation ponds that are planned without the use of coagulant, have been designed so that their imprint on wetlands is limited/minimized.	<ul style="list-style-type: none"> The Howse WMP estimates that ponds will be half the size presented under the current WMP; Inorganic coagulant contains aluminum and Iron; these metals, especially iron, are present in high concentration in the water. Aluminum and Iron in certain condition could be toxic for aquatic life. 	If neither natural TSS settling nor settling with the use of coagulant are effective (to be determined by the Proponent via monitoring), a coagulant aid would improve the coagulation process, thereby ensuring good water quality (TSS settling) in the sedimentation pond		
Indigenous	The effects of these Alternatives on Indigenous groups are directly relatable to the environmental effects (insofar as maintaining the integrity of the environment).				
CEAA 33, Round 1, Part 2	CEAA	5(1)(b) Federal Lands /Transboundary (GHGs) 5(1)(c)(i) Aboriginal Peoples Health/ Alternative means	2.2	<p>In response to CEAA 33 (Round 1 - Part 2), the proponent states that “neither Alternative will affect the biophysical or socioeconomic VCs” with respect to options for managing waste wood cleared from lands, but did not sufficiently substantiate these conclusions presented in the analysis of “environmental” and “aboriginal” considerations. Furthermore, under “aboriginal” considerations, only Alternative 1 is described.</p> <p>The Agency’s Operational Policy Statement: <i>Addressing “Purpose of” and “Alternative Means” under CEAA 2012</i> indicates proponents should indicate which alternative is preferred and considered in the effects assessment of the Project, or requires the proponent to fully assess the effects of all alternatives.</p>	<p>Provide information to substantiate conclusions in the alternatives assessment for waste wood; in particular, for concluding that neither alternative will affect biophysical or socioeconomic VCs, as well as statements under the environmental and aboriginal analysis sections. The proponent must include:</p> <ul style="list-style-type: none"> An explanation for how the alternatives for waste wood would not affect a biophysical or socio-economic VC. For example, burning wood for the purposes of fire drills could release air emissions and could affect the health of Indigenous peoples or the current uses of lands and resources. Provide an explanation for how the use of waste wood in landfills is a better alternative to cutting the wood for use by Indigenous peoples from an environmental perspective. Provide an explanation for how it was determined that Alternative 1 is preferred by communities.

					Indicate of the alternatives assessed, which approach is preferred, as outlined in the Agency's Operational Policy Statement: <i>Addressing "Purpose of" and "Alternative Means" under CEAA 2012.</i>
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HML Answer

Alternatives considered

Of the alternatives proposed under TM16, the Proponent is presently in the preliminary stages of considering three activities:

Alternative 1: Donating boards to the local Aboriginal communities: Under this Alternative, the Proponent will donate any wood boards that are available to local communities. The Proponent will cut the wood in pieces to facilitate transportation by local peoples, and placed at the gate. Locals will be able to collect the wood as-is, on a first-come first-serve basis

Alternative 2: Using material for fire drills: Under this Alternative the proponent will use the wood from logging and commercial wood for its fire drills.

Alternative 3: Used to manage landfills. When an active landfill cell needs to be closed, the Proponent will use the wood by placing it on top of the land fill and compact it as a closing/restoration method.

Effects on VCs

The use of local fire wood would not deplete air quality per se, since the Proponent will execute regular fire drills for the safety of its employees on a regular basis regardless of the source of fuel. These drills – regardless of whether they use the wood in question or any other material, will occur throughout the Project. By comparison, the benefit to Indigenous groups of having access to free wood is a real benefit of this alternative (logistically and economically, for Indigenous groups).

	Donating boards to the local Aboriginal communities	Using material for fire drills	Used to manage landfills
Economic	<ul style="list-style-type: none"> This alternative would require that the Proponent cut the wood and transport it to the gate, where it will be available for locals. Although the Proponent has not conducted a financial analysis of this option, it is assumed that this option is the costliest of the three. 	The least expensive option would be to use the wood for fire drills and/or landfills.	The least expensive option would be to use the wood for fire drills and/or landfills.
Logistics	This alternative would require that the Proponent cut the wood and transport it to the gate, where it will be available for locals.	The is the easiest Alternative for the Proponent: The wood would simply be burnt on-site (where logistically-reasonable).	This alternative would require minimal manipulation (e.g. cutting) from the Proponent, and would benefit is providing material for the mine restoration process.
Environmental	No foreseeable environmental effects, with the exception that the wood would have to be transported by truck to the gate (slight effect on air quality)	No foreseeable environmental effects: The Proponent is committed to conducting fire drills – whether it be with the wood in question or from another source.	Use of local material to fill the land fills is beneficial insofar as it completely eliminates the possibility of introducing any number of foreign materials to the environment, such as could be the case with foreign wood.
Indigenous	<ul style="list-style-type: none"> It seems reasonable to assume that free wood made available to indigenous communities would be the preferred option by Indigenous groups, over Alternatives 2 and 3. Indigenous groups would benefit logistically and financially from having free wood available. 	The effects of these Alternatives on Indigenous groups are directly relatable to the environmental effects (insofar as maintaining the integrity of the environment).	The effects of these Alternatives on Indigenous groups are directly relatable to the environmental effects (insofar as maintaining the integrity of the environment).

CEAA 38, Round 1, Part 2	HC-IR-32	5(1)(b) Transboundary 5(1)(c)(i) Aboriginal Peoples' Health/socio-economic conditions	6.3.4	The information provided in addressing CEAA 38 (Round 1 – part 2) is not adequate to understand the potential environmental and health effects of the potential chemicals to be used for dust suppression. Regarding dust suppression techniques, the proponent stated that it is “preparing a full report of these alternatives, and this will be provided to CEAA before the end of the year.”	Provide an assessment of the potential human and environmental effects related to the use of the chemicals for dust suppression (e.g. effects of chemical dust suppressants as a result of releases to air, deposition on soil and country foods, and runoff), including any additional mitigation measures that will be implemented. Revise effects assessment for VCs, if appropriate. Provide the report on dust suppression techniques that includes the mitigation measures that will be implemented.
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HML Answer

Biotechnology: The Proponent has been testing the feasibility of applying market-approved microbial technology dust control for the last two years:

<http://cdn.abrizo.com/clients/7249/public/9c64710b-7012-4dd7-dd0e-8b2ae8211f7e/image/CF-earthalive-600x176p.jpg?1439492632380><https://app.abrizo.com/click-tracking?ct=ygjlkr_gYWQFPspkK5XoB3kJUGYdipTjFIXPGjkSqQOgzRFB4TfM-LV9Wwu8WEU_sGxeos20NZQ7akWjDQ2dA~>

	Water	Calcium	Biotechnology	Pulp and paper residue
Economic	<ul style="list-style-type: none"> Best, economically, for the Proponent. 	<ul style="list-style-type: none"> Currently, the cost of dust control for the period of 3-4 months is estimated at \$1 million annually 	<ul style="list-style-type: none"> The exact costs are currently unknown, but this Alternative will increase cost of road maintenance for the Proponent 	<ul style="list-style-type: none"> The exact costs are currently unknown, but this Alternative will increase cost of road maintenance for the Proponent (more than 3 million per year) Issue with formulate due to the road conditions on site
Logistics	<ul style="list-style-type: none"> Water is readily available to the Proponent on site, and the Proponent is also investigating using water from pit dewatering but this water will only be available once dewatering commences at the Howse site, and water availability from this activity will be very limited for a number of years Water may freeze, causing dangerous road conditions 	<ul style="list-style-type: none"> Transportation from Sept-Îles, on an already-loaded train (explosives, fuel etc.) which only travels to the site once per week, will be difficult On-site storage is limited Calcium needs to be applied with water during dry periods 	<ul style="list-style-type: none"> Transportation from Sept-Îles, on an already-loaded train (explosives, fuel etc.) which only travels to the site once per week, will be difficult On-site storage is limited Needs to be applied with water during dry periods This microbial technology product requires the application of less volume of product than calcium (exact volume to be determined) This microbial technology product can be applied during the freezing period 	<ul style="list-style-type: none"> Transportation from Sept-Îles, on an already-loaded train (explosives, fuel etc.) which only travels to the site once per week, will be difficult This product is not efficient in all site due to different road composition throughout the site
Environmental	<ul style="list-style-type: none"> There are no known environmental effects to applying water as a dust suppressant at the Howse property. 	<ul style="list-style-type: none"> Calcium is a pollutant in itself: corrosive to vehicles and equipment, easily leaches into the environment, if present in high enough concentrations it can kill plants. During dry periods this method is not effective alone and thus water needs to be periodically applied to enable its working. 	<ul style="list-style-type: none"> there is no adverse environmental associated with the application of this product Resistant to time 	<ul style="list-style-type: none"> According to the supplier, there is no adverse environmental associated with the application of this product

Indigenous	The effects of these Alternatives on Indigenous groups are directly relatable to the environmental effects (insofar as maintaining the integrity of the environment).		
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