

Addendum

This table summarizes comments made during public consultations on the draft impact study that was completed on November 21, 2005. The table also sets out other considerations in response to the comments.

#	Source	Comments	Other Considerations
1	Public	<p>“...no priority is given to stored potlining.”</p> <p>“Ensure that the plant's priorities for potlining treatment are:</p> <ul style="list-style-type: none"> • 1st, the potlining newly produced every year in Quebec by Alcan. • 2nd, the potlining already stored at Arvida.” 	<p>As indicated in the Environmental Assessment Track Report, under its environmental assessment mandate the responsible authority cannot change the operational methods used by the promoter.</p> <p>It is the promoter’s responsibility to set the objectives of its project. The project submitted seeks not only to resolve the problem of storage of spent potlining at Jonquière but also to find a management solution for the spent potlining generated at its other facilities and by other Quebec companies.</p>

#	Source	Comments	Other Considerations
	(cont.)	<p>“To limit the accumulation or landfilling of additional quantities of industrial wastes, processing must be limited to potlining produced by Alcan in Quebec and that already stored at Arvida, for so long as the promoter has not found a market for the inert residues produced in the process.”</p> <p>“Will the promoter be importing still more potlining from outside the region and even from the United States?”</p> <p>“...that the company (Alcan) undertake not to import its hazardous materials into our region...”</p>	

#	Source	Comments	Other Considerations
2	Public	<p>“...why such emphasis on this production capacity of 80,000 t a year?”</p> <p>“In any case there are no figures to confirm that a plant of less capacity would not be ‘profitable’.”</p> <p>“A prudent and responsible approach would be to build a plant of more modest production capacity in the region.”</p> <p>“Limit the plant’s maximum capacity to 60,000 t/year.”</p> <p>“...limit LCLL capacity to 60,000 tonnes a year...”</p>	<p>The promoter provided additional information:</p> <p>“A plant with the capacity to process 80,000 t of spent potlining a year meets our commitments while fitting into a sustainable development context that takes into account the economic, environmental and social aspects.</p> <p>Economy</p> <p>The plant must be able to process stored potlining within a reasonable time as well as what is generated by our facilities. To improve its financial performance, we shall be offering part of the plant’s capacity to other aluminum producers, which also have to process their spent potlining. It should be noted that economies of scale are possible in sizing a hydrometallurgical plant. Alcan will nevertheless have to invest CA\$230 million.</p> <p>The workers that operate this plant will be in a plant that can operate for a number of years and which ought to be profitable to some extent.</p> <p>Environment</p> <p>As is shown by the impact study, we have done everything we could to reduce the environmental impact of the spent potlining processing project. The capacity of such a plant has very little impact on the environment. A plant processing 80,000 t/yr would have an environmental impact very comparable to that of a 60,000 t/yr plant.</p>

#	Source	Comments	Other Considerations
	(cont.)		<p>Social aspect</p> <p>The spent potlining treatment plant is an extension of the aluminum production process. As such, it cannot be compared to a plant whose only purpose would be to deal with hazardous waste.</p> <p>Quebec is one of the largest producers of elemental aluminum. It is logical, therefore, that the potlining generated in its facilities be processed on the spot. It would be unrealistic to divide Quebec into various aluminum producing regions and ask each of them to put forward a potlining treatment project. At the moment, management of spent potlining requires interregional movements. The location of our site, at the centre of gravity of aluminum production in Quebec, would cut down on such movements.</p> <p>The project as proposed, with a processing capacity of 80,000 t/yr, is the one best suited to a sustainable development approach.”</p>
3	Public	<p>“...the people’s historical economic dependence on the multinational Alcan, particularly in the context of recent job cuts, creates a particular situation that opens the door to projects that are not desirable in terms of the region’s long-term development.”</p> <p>“...the region is subject to the lion’s share of the environmental impacts and risks associated with this activity.”</p>	<p>Environment Canada believes that the project will not involve significant environmental impacts. It will have positive impacts on employment in the region.</p> <p>The project does not introduce a new industry to the region, as the spent potlining treatment plant is an extension of the aluminum production process and it simply closes the loop on an existing industry.</p>

#	Source	Comments	Other Considerations
4	Public	<p>“...health data show very unfavourable statistics for the most exposed populations.”</p>	<p>Under the provincial process (BAPE), Dr. Larouche demonstrated that: “only air-suspended particles are of particular concern in the protection of public health.” In addition, section 8.3.2 indicates that: “... since the 1980s, air quality in terms of total suspended particles and PM 2.5 has improved greatly and there is reason to believe that this improvement will continue with the closure of the Söderberg potrooms.”</p>
5	Public	<p>“Road transport also affects greenhouse gas emissions.”</p>	<p>The promoter provided additional information:</p> <p>“The effect of road transport on greenhouse gas emissions has been evaluated only for the additional transportation over and above the current situation. The road transport associated with potlining treatment plant has two components: transport of the spent potlining to the treatment plant and transport of the potlining treatment plant’s by-products and residues to a storage or landfill site.</p> <p>With regards to the transport of the spent potlining, the additional road transport is from the Arvida storage site and from the other aluminum smelters (Sept-Îles and Baie-Comeau) for their potlining. The rest of the road transport identified in Figure 3.3.2 is part of current activities. As regards by-products (carbon and inert substances), these will be taken to building 308 continuously and more intensively transported (two or three times a year) between building 308 and the storage site. With regards to the residues, aluminum and iron will be sent to recycling (inside the Jonquière complex) and the descaling residues and iron oxide will be taken to the red mud disposal site.</p>

#	Source	Comments	Other Considerations
	(cont.)		<p>Table 1 summarizes the data on the additional road transport associated with the potlining treatment plant. It gives an estimate of the greenhouse gas emissions generated by road transport. This estimate was made using emission factors for carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) for heavy vehicles with diesel engines (Environment Canada, April 2005)¹ and an average consumption for heavy vehicles (Natural Resources Canada, March 2000).²</p> <p>This evaluation shows that about 843 t (equivalent CO₂) a year of greenhouse gases are likely produced by road transport. However, if we take into account the transport avoided or eliminated following implementation of the potlining treatment plant in Saguenay, namely the transport of the potlining between the Arvida removal centre and the storage site at the same location, then its transport from the North Shore aluminum smelters to the Montreal area (see table 2), the net effect of the planned potlining treatment plant will be to decrease greenhouse gas emissions by some 540 t a year (in equivalent CO₂).”</p>

¹ Environment Canada, Canada's Greenhouse Gas Inventory 1990-2003, Appendix 13: Emission Factors, April 2005

² Natural Resources Canada, Office of Energy Efficiency, Fuel Efficiency Benchmarking in Canada's Trucking Industry, Results of an Industry Survey, March 2000

#	Source	Comments	Other Considerations
6	Public	<p>“...data from the air quality sampling station operated by the department of the Environment already show significant excess amounts of fine particulates...”</p>	<p>The modelling results provided by the promoter show that the maximum potential contribution to PM 2.5 would be on the order of 0.7 to 0.9%. Even though the effects are minor, Industry Canada will require a tracking program.</p> <p>Under the provincial process (BAPE), Dr. Larouche demonstrated that: “only air-suspended particles are of particular concern in the protection of public health”. Section 8.3.2 indicates that: “... since the 1980s, air quality in terms of total suspended particles and PM 2.5 has improved greatly and there is reason to believe that this improvement will continue with the closure of the Söderberg potrooms.”</p> <p>BAPE also made a statement on this subject: “The Commission considers that the improvement of ambient air quality observed in Parc Berthier since the early 1980s should continue with the dismantling of the remaining Söderberg potlines at the Arvida plant. Accordingly, it deems that the very low dust contribution of a potential spent potlining treatment plant should not compromise the improvement in ambient air quality that began some several years ago in Jonquière.”</p>
7	Public	<p>Ensure that “follow-up includes the startup period...”</p>	<p>The promoter provided additional information: The atmospheric environment quality observation program is already in place around the Jonquière facilities; the follow-up will therefore include the startup period.</p>

#	Source	Comments	Other Considerations
8	Public	<p>Ensure that “The program includes air quality follow-up, particularly of fine particulates...”</p> <p>“The modelling done for Tecsalt Inc.’s impact study is essentially based on data from a single measurement station, in the immediate vicinity of the site (Parc Berthier).”</p>	<p>Section 10.3.2 indicates that: "...Alcan and the MDDEP have implemented an air quality follow-up program. This follow-up program is suited to the assessment of the potential effects of the proposed potlining treatment plant."</p> <p>The promoter says the program includes not just the Parc Berthier station but also three other stations near the site.</p>
9	Public	<p>Ensure that “The program also relies on a complete environmental characterization of the receiving environment.”</p>	<p>Environment Canada believes that this project will not have significant environmental effects. Industry Canada enforces control of atmospheric emissions through rigorous follow-up. Control of atmospheric emissions is the best guarantee that indirect effects on human health will also be controlled.</p>
10	Public	<p>Ensure that the follow-up program includes “the involvement of independent experts”.</p>	<p>Industry Canada and the other federal authorities (Health Canada, Environment Canada and Natural Resources Canada) are responsible for establishment of the follow-up protocol and for the assessment of follow-up reports.</p>
11	Public	<p>Ensure that the follow-up program includes “...data archiving for 50 years...”</p> <p>Ensure that the follow-up program includes “...the public release of detailed follow-up data, including environmental incidents, and “raw” data (peaks, overruns, and not just averages)...”</p>	<p>Industry Canada is required to release follow-up reports to the public through the Canadian Environmental Assessment Registry throughout its involvement with the project, that is, for about six years. After the mandatory environmental registry period, the reports will be available for the foreseeable future.</p> <p>A record of the results will be kept by the promoter for at least five years (and not two years, as indicated in section 10.3.4).</p>

#	Source	Comments	Other Considerations
12	Public	Ensure that the follow-up program includes "...a complete, public assessment by an independent commission..."	<p>Industry Canada and the other federal authorities (Health Canada, Environment Canada and Natural Resources Canada) are responsible for establishment of the follow-up protocol and for the assessment of follow-up reports.</p> <p>If an independent commission is created, the promoter has said it will take part.</p>
13	Public	Ensure that "The follow-up committee has the ability (in terms of finances, expertise, etc.) to conduct a real follow-up exercise."	<p>Industry Canada and the other federal authorities (Health Canada, Environment Canada and Natural Resources Canada) are responsible for establishment of the follow-up protocol and for the assessment of follow-up reports.</p>
14	Public	"...the Alcan process has not been certified reliable by anyone..."	<p>"Following conclusive laboratory tests at the Arvida Research and Development Centre, the LCLL process...was then the focus of two series of pilot tests conducted at COREM..." (section 4.5.1.1)</p> <p>In addition, in August 2000 Alcan decided to have an independent audit of its research and development work to confirm the adequacy of the process for commercialization. This Process Audit was completed by Dynatec Corporation in Alberta, Canada. Dynatec did not find major flaws in the process: "The project basis is fundamentally sound, and there are no laws of chemistry or physics violated." It made several recommendations that Alcan has since reviewed and applied during detailed engineering.</p> <p>It must also be noted that the follow-up program will help confirm that the LCLL process has no significant environmental impact.</p>

#	Source	Comments	Other Considerations
15	Public	<p>“It would be really indecent for the federal government to subsidize this type of company given its current situation and its behaviour towards our region.”</p> <p>“Alcan should fund the plant.”</p>	<p>Under the mandate of an environmental assessment, it was not possible to include an analysis of the promoter’s financial need, or past behaviour, with regards to this project.</p>
16	Public	<p>“...that the end product wastes be tested and retested to demonstrate clearly that they no longer contain any hazardous substance...”</p>	<p>Section 3.1.2.4 indicates that a check will be made to ensure that the inert substances meet the standards and do not constitute hazardous materials as defined in the Regulation respecting Hazardous Materials. If they do, they will be fed back into the leaching circuit.</p> <p>Section 3.2.4.3 indicates that all solid wastes will be analysed to verify their quality before being landfilled, in the case of the iron oxide and scaling residue, or stored, in the case of the carbon and inert substances.</p> <p>Industry Canada will ensure that this suggestion is included in the follow-up program.</p>
17	Public	<p>With respect to Table 4.4.1: “...Alcan’s many scientists have tried to cloud the issue by lumping the CALSIFRIT process in with other pyrometallurgical processes.”</p>	<p>Under the operational policy of the Canadian Environmental Assessment Agency, analysis of implementation procedures must be based on the promoter’s perspective (environmental, technological, economic, etc).</p>

#	Source	Comments	Other Considerations
18	Public	“We also demand jobs in processing and when employment is consolidated following the replacement of the Söderberg potrooms by a new aluminum smelter in Jonquière.”	The responsible authority was unable, under its environmental assessment mandate, to address this subject.
19	Public	“The LCLL technology developed at the Arvida Research & Development Centre (CRDA) still seems to us the most appropriate one for processing spent potlining.”	Comment noted.
20	Public	“It is very important to the economy of the Saguenay-Lac-St.-Jean region for Alcan’s proposed LCLL-process spent potlining treatment plant to become a reality—an importance that extends well beyond the 40 direct jobs created by the new facility, as it will preserve in excess of 1,000 direct jobs in the region.”	Comment noted.
21	Public	“Alcan should undertake that a minimum of 68% of the economic spin-offs from the construction of the spent potlining treatment plant will accrue to the Saguenay–Lac-St.-Jean region.”	The responsible authority was unable, under its environmental assessment mandate, to address this subject.

#	Source	Comments	Other Considerations
22	Public	“That a committee be set up to maximize the economic spin-offs for the region of the proposed spent potlining treatment plant.”	The responsible authority was unable, under its environmental assessment mandate, to address this subject.
23	Public	“That Alcan undertake to divide the lots for the construction of the spent potlining treatment plant.”	The responsible authority was unable, under its environmental assessment mandate, to address this subject.
24	Public	“In order to ensure the safety of workers and their workplaces, a prevention representative must be included in the plant’s initial staff in keeping with Act S.2.1.”	The promoter must comply with provincial Acts and regulations in this area.

#	Source	Comments	Other Considerations
25	Public	<p>“That transport of the potlining to the future Jonquière treatment plant be subject to the following prescriptions:</p> <ul style="list-style-type: none"> • In secure rail or road containers for potlining from Alcan’s pot shell dismantling centres in Grande-Baie and Alma. • In trucks, by whole potlines, for Alcan aluminum smelters without pot shell dismantling facilities (applying all possible safety measures to ensure the complete safety of other highway users). • In secure rail containers for potlining from all other Quebec aluminum smelters. • In dump trucks, with rigorous measures to protect people and the environment, to take potlining already stored at Arvida to the treatment plant.” 	<p>Section 3.3 analyses the potlining transport; nothing therein appears to gainsay these suggestions.</p>

#	Source	Comments	Other Considerations
26	Public	<p>“That a multipartite follow-up committee be formed during the startup of the spent potlining treatment plant to ensure the safety of the community and the workers as well as compliance by the promoter with its commitments.”</p>	<p>Industry Canada and the other federal authorities (Health Canada, Environment Canada and Natural Resources Canada) are responsible for establishment of the follow-up protocol and for the assessment of follow-up reports.</p> <p>The promoter must comply with provincial Acts and regulations in this area.</p> <p>If a committee is created, the promoter has said it will take part.</p>
27	Public	<p>“Prevent the release of toxic gases into the atmosphere, especially during crushing and leaching (cyanide and ammonia).”</p>	<p>The promoter provided additional information:</p> <p>“No cyanide gas is emitted during the crushing and leaching stages. The cyanide remains solubilized in the liquid until it reaches the crushing building, where it is destroyed. Dust extractors prevent the emission of dust that is potentially contaminated by cyanide.</p> <p>The main source of ammonia is the destruction of cyanide. Ammonia is produced when cyanide molecules are split in two during their reaction with water, caustics and heat. Although there are no standards for ambient air ammonia levels, a “thermal oxidizer,” which destroys 95% of ammonia released during cyanide destruction, has been installed. (See section 3.2.2.1 of the impact study for more information).”</p> <p>It should also be noted that the follow-up program will help confirm the effectiveness of the reduction systems.</p>

#	Source	Comments	Other Considerations
28	Public	“Have the plant’s wastewater treated.”	The LCLL process itself does not produce any liquid waste. The plant’s only liquid waste is generated by auxiliary units (ie, the blowoff of vapour production boiler water and cooling water system bleeding) and will be sent to the water treatment system at the Jonquière facilities.
29	Public	“Do not send residue to the red mud site.”	<p>The authority responsible is satisfied with the explanations provided in section 1.8.5:</p> <ul style="list-style-type: none"> • “The additional quantity of waste from the potlining processing plant is very low (0.03%) compared to the amount of waste sent to this site annually;”
30	Enviro. Canada and Public	<p>“We believe that the CALSIFRIT technology is better because it has fewer environmental impacts...”</p> <p>“A serious comparative analysis should be conducted with regard to the CalsiFrit process before a technology is selected.”</p>	<p>Under the operational policy of the Canadian Environmental Assessment Agency, analysis of implementation procedures must be based on the promoter’s perspective (environmental, technological, economic, etc).</p> <p>The follow-up program will help ensure that the LCLL process is commercially reliable.</p>
31	Enviro. Canada	“...the reference to CCME criteria, namely PM 10 or PM 2.5, has not been taken into account with respect to atmospheric emissions;”	The promoter said that the criteria were taken into account in many parts of the study.

#	Source	Comments	Other Considerations
32	Enviro. Canada and Public	<p>“Solid waste identified in the report as inert and carbonaceous matter will be temporarily disposed of at landfills until a cost-effective solution is established with cement factories or other partner companies;”</p> <p>“The solid waste generated is equivalent to 70% of the amount of potlining and will be disposed of in landfills again until another environmentally acceptable solution is found;”</p> <p>“Seriously check the market for carbonaceous and inert matter.”</p>	<p>Alcan expects to obtain valuable by-products, not waste. Alcan also plans to temporarily store those by-products, not send them to landfills.</p> <p>The promoter provided additional information:</p> <p>“Carbonaceous and inert matter is the main by-product of spent potlining treatment. Alcan intends to divert the by-product through its plan to develop a limited capacity storage site for them.</p> <p>Alcan has indicated that possible avenues for diversion include cement factories or using the by-products as fuel or decomposers.</p> <p>Industrial-scale diversion trials for carbonaceous and inert matter can only be conducted once a certain amount of matter is available. This justifies the development of the storage site, which will be able to accommodate five years’ worth of carbonaceous and inert matter. In the event the storage site is at full capacity, the by-products could be disposed of at an authorized landfill site.</p> <p>Alcan has already entered into negotiations with potential clients interested in the by-products.”</p>

#	Source	Comments	Other Considerations
33	Enviro. Canada	<p>“The capacity of LCLL technology has not been proven at a real scale of 80,000 tonnes/year; a pilot plant at a scale of 1/25, for instance, evaluated at a cost of \$24 million, could be developed beforehand in order to define the design parameters and mitigate the technological risk;”</p>	<p>Technological risks will be assessed by Technology Partnerships Canada as part of its due diligence process.</p> <p>“Following conclusive laboratory tests at the Arvida Research and Development Centre, the LCLL process...was then the focus of two series of pilot tests conducted at COREM...” (section 4.5.1.1)</p> <p>The promoter provided additional information: “Alcan has the relevant expertise in each of the different operations that make up the LCLL process. Alcan has been operating the largest inorganic chemistry complex in Canada for more than 50 years. Its expertise in the crushing, causticizing and cyanide destruction stages and hydro-metallurgical processes is recognized worldwide at both the operational and research and development levels.”</p>
34	Enviro. Canada	<p>“Reuse of the ‘Bayer’ liquor produced using the LCLL process depends on the ongoing and future operation of the Vaudreuil plant.”</p>	<p>The promoter provided additional information: “In the event of the closure of the Vaudreuil plant, the filtrate produced during the evaporation stage of the potlining treatment process (the solution’s composition is similar to that of the Bayer liquor) would be reused as a sodium hydroxide solution at the leaching stage. However, the LCLL process generates a surplus of sodium hydroxide solution. A market study was conducted to identify potential users for the solution, which include paper manufacturers. The solution could also be reused at another Alcan aluminum smelter.”</p>

#	Source	Comments	Other Considerations
35	Health Canada	<p>“Considering that the construction work will be carried out over a 20-month period (main report, section 3.1.1.7), it would be appropriate to obtain additional information on some of the more critical aspects of the project (eg, daily volume of truck traffic) so as to better understand the anticipated impact during the construction period. Furthermore, the report mentions (p. 1–18) the spreading of dust depressants “when required.” What will the promoter base itself on to implement this mitigation measure? Will air quality at the work site be assessed during the construction period?”</p>	<p>The promoter provided additional information:</p> <p>“1- Trucking during the construction period – Daily volume of traffic</p> <p>During the construction period, trucks will transport construction materials and equipment to the potlining treatment plant site, which is located within the Jonquière facilities. The estimated average number of trucks per day at various construction stages is shown in Table 3.</p> <p>As set out in section 7.4.4.2 of the study, the following urban boulevards provide access to the site: Mellon Boulevard, Saguenay Boulevard and Royaume Boulevard. According to traffic data, the amount of traffic on those boulevards is as follows:</p> <ul style="list-style-type: none"> • Mellon Boulevard: approximately 4,400 vehicles per day • Saguenay Boulevard: approximately 4,000 to 5,000 vehicles per day • Royaume Boulevard: approximately 12,000 to 13,000 vehicles per day <p>The number of additional vehicles related to the construction of the potlining treatment plant is low compared with current traffic around the construction site. Therefore, no major impact on local traffic is expected.</p> <p>All access lanes and roads at the Jonquière facilities are paved, which should minimize the amount of dust in the air caused by truck traffic</p>

#	Source	Comments	Other Considerations
	(cont.)		<p>and facilitate application of mitigation measures (eg, the cleaning of roads near the construction site).</p> <p>2- Criterion for applying mitigation measures to reduce dust emissions</p> <p>The specifications for the potlining treatment plant will clearly indicate that mitigation measures have to be applied to reduce the amount of dust in the air if the dust is visible at more than five metres from the emission point. Alcan will be supervising the construction work. The site foreman will be responsible for evaluating the situation and requesting the application of mitigation measures.”</p>
36	Health Canada	<p>“Considering that it has already been anticipated that the 98th percentile averaged annual value will exceed the criterion for fine particles, it would be worthwhile for ALCAN to make every effort to reduce particle emissions as much as possible, including provisions specific to transportation.”</p>	<p>The promoter currently has no other initiatives planned to help reduce fine particle levels. The promoter has updated Table 1.6.1 (see “Table 4” at the end of this document).</p> <p>However, BAPE did make a statement on the subject: “The Commission considers that the improvement of ambient air quality observed in Parc Berthier since the early 1980s should continue with the dismantling of the remaining Söderberg potlines at the Arvida plant. Accordingly, it deems that the very low dust contribution of a potential spent potlining treatment plant should not compromise the improvement in ambient air quality that began several years ago in Jonquière.”</p>

#	Source	Comments	Other Considerations
37	Health Canada	<p>“The promoter feels that the consultation and information initiatives will be enough to reassure local residents, particularly those living near the plant (Table 9.2.1 – Impacts and Mitigation Measures Summary/Local population and neighbourhood). The information activities, about which the promoter has provided no details, should include information on the safety measures Alcan will take to prevent that type of accident and training given to plant employees, carriers, and generally anyone who will be handling waste, or who will have access to the storage site or the treatment plant. The way residents are reassured depends as much on public information as on maximizing the safety measures that the promoter takes to prevent accidents. The nearest residences are located one kilometre from the plant’s future site.”</p>	<p>The promoter will consider these recommendations when it prepares its annual environmental report (section 10.3.4).</p>

#	Source	Comments	Other Considerations
38	Health Canada	“Since there seems to be contradictory data with regard to the project’s impact on health and in order to address residents’ concerns, evidence confirming the position taken by the physician consulted could reassure the groups concerned about this aspect.”	The complete document submitted by Dr Léon Larouche is available on the BAPE’s Web site (in French only): http://www.bape.gouv.qc.ca/sections/mandats/alcan-brasque/documents/DB7-1.pdf
39	Health Canada	“We believe that the concerns raised by the groups in question regarding the tonnage of potlining treated on the site should be taken into account by the promoter when preparing information activities (ref. Table 9.2.1 – Impacts and Mitigation Measures Summary/Local population and neighbourhood).”	The promoter will take these recommendations into account when preparing its annual environmental report (section 10.3.4).

#	Source	Comments	Other Considerations
40	Health Canada	<p>“While this working group is, in our opinion, a positive initiative, we also believe the promoter should include other experts in the group. For instance, the working group could include a representative of the academic community, such as the Groupe de recherche et d’intervention régionales (GRIR) of the University of Quebec at Chicoutimi (UQAC). In addition, it is recommended that during public consultations on the project, university centres, groups and research institutes, independent researchers and other groups with environmental expertise be represented. These groups’ concerns often differ from those of economic and political stakeholders; a multidisciplinary working group could help reduce public apprehension.”</p>	<p>If an independent committee is created, the promoter has said it will take part. Furthermore, the participation of outside experts would be the committee’s prerogative.</p>

#	Source	Comments	Other Considerations
41	Natural Resources Canada	“Section 7.3.1.3. It would be appropriate for the designer to look up the provisions of the 2005 National Building Code of Canada, which was published in September 2005 but may not yet be officially in force in Quebec. (The National Building Code is a model code that must be officially adopted in order to become law in a given province.)”	From the Quebec government site: ³ “This edition (Quebec Construction Code -NBC) cannot be approved until fall 2006 at the earliest...” “Meanwhile, the amended 1995 editions of the NBC and of the NOC will continue to apply.” However, the Alcan engineering department takes note of the suggestion.
42	Natural Resources Canada	“Section 7.3.1.4. Clayey soils may considerably amplify seismic tremors. CNBC 2005 takes a different approach to the ‘foundation coefficient’ used in the 1995 code.”	From the Quebec government site: ⁴ “This edition (Quebec Construction Code -NBC) cannot be approved until fall 2006 at the earliest...” “Meanwhile, the amended 1995 editions of the NBC and of the NOC will continue to apply.” However, the Alcan engineering department takes note of the suggestion.

³ Source: <http://www.rbq.gouv.qc.ca/dirLoisReglementsCodes/dirCodeNationaux/index.asp>

⁴ Source: <http://www.rbq.gouv.qc.ca/dirLoisReglementsCodes/dirCodeNationaux/index.asp>

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43	Natural Resources Canada	“Section 8.4.4.1. To guard against accidents, in particular the consequences of a ventilation system defect, it may be wise to design for the impact of a strong seismic tremor which, even if it does not damage the structure, may cut main and auxiliary power to the ventilation system or knock a fan out of its casing.”	Section 8.4 in fact posits a ventilation system that has completely broken down.

Table 1 – Additional road transport

Material	Origin	Destination	Distance (km)	Trucks / yr	Total distance (km/yr)	GHG (t eq. CO₂/yr)
Spent potlining						
Potlining	Arvida storage	SPLTP	35	1,389	9,723	106
Potlining	Arvida removal	SPLTP	7	611	855	9
Potlining	Sept-Îles	SPLTP	565	417	471,210	5,133
Potlining	Baie-Comeau	SPLTP	340	417	283,560	3,089
Transport of by-products and residues						
Carbon and inert substances	SPLTP	Building 308	113	3,611	722	8
Carbon and inert substances	Building 308	Storage	1	3,250	6,500	71
Aluminum	SPLTP	Aluminum smelter	3	85	510	6
Iron	SPLTP	Recycling centre	3	85	510	6
Descaling residue	SPLTP	Red mud site	35	5	35	4I
Iron oxide	SPLTP	Red mud site	35	7	49	1
TOTAL						8,427

Table 2 – Road transport eliminated

Material	Origin	Destination	Distance (km)	Trucks / year	Total distance (km/year)	GHG (t eq. CO₂/year)
Spent potlining						
Potlining	Arvida removal	Arvida storage	3.5	611	4,277	47
Potlining	Sept-Îles	Montreal	880	417	733,920	7,994
Potlining	Baie-Comeau	Montreal	645	417	537,930	5,859
TOTAL						13,900

Table 3 - Truck transport volume for the construction phase

Period	Estimate of volume
August to November 2005	20 to 25 trucks a day
April to December 2006	20 to 25 trucks a day
January to December 2007	10 trucks a day

Table 4

Table 1.6.1 Concentrations of Ambient Air Pollutants Measured at the Parc Berthier Station (02016), 1996–2005

Pollutant		Standard	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Suspended Particles	Daily maximum ($\mu\text{g}/\text{m}^3$)	150	198	137	161	142	150	105	-	-	-	-
	Annual average ($\mu\text{g}/\text{m}^3$)	70	36.3	29.8	32.7	38.0	29.6	29.0	-	-	-	-
	Amount exceeding the 24-hour standard		1	0	1	0	0	0	-	-	-	-
Sulphur Dioxide	Hourly maximum (ppb*)	500	182	169	198	206	183	242	199	202	194	247
	Daily maximum (ppb*)	110	97	109	111	94	75	111	120	(2)	(2)	(2)
	Annual average (ppb*)	20	12.5	10.8	12.9	10.2	9.4	11.8	11.6	12.3	9.6	12.3
	Amount exceeding the 24-hour standard		0	0	2	0	0	2	7	(2)	(2)	(2)
Particles less than 10 μm (PM 10)	Annual average ($\mu\text{g}/\text{m}^3$)	-	25.5	18.6	20.4	24.4	15.7	15	15	18	22	25
	98th percentile ($\mu\text{g}/\text{m}^3$)	-	103	77	91	91	74	51	69	71	59	64
	Daily maximum ($\mu\text{g}/\text{m}^3$)	-	138	104	96	94	95	68	89	75	82	65

Pollutant		Standard	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Estimate ⁽³⁾ Particles less than 2.5 µm (PM 2.5)	Annual average (µg/m ³)	-	15.3	11.2	12.2	14.6	9.4	9	9	10.8	13.2	15.0
	98th percentile (µg/m ³)	30 ⁽⁴⁾	62	46	55	55	44	31	41	43	35	38
	Daily maximum (µg/m ³)	-	83	62	58	56	57	41	53	45	49	39

*ppb: part per billion

1. Results for 2005 for PM 10 are based on measurements from January to September 2005.
2. Average SO₂ values for a 24-hour period were not available from the MDDEP at the time this report was prepared.
3. PM 2.5 concentrations were estimated based on PM 10 measurements, considering that 60% of PM 10 are PM 2.5. Values for 2005 are based on results of PM 10 measurements from January to September 2005.
4. The value of 30 µg/m³ is not a standard stemming from the *Regulation Respecting the Quality of the Atmosphere*; it is a criterion developed by the Canadian Council of Ministers of the Environment (CCME) for PM 2.5. The criterion applies to the 98th percentile annual value averaged over three consecutive years for 24-hour concentrations.