ALDERON
IRON ORE CORP

KAMI IRON ORE PROJECT

Kami Iron Ore Project

Responses to Provincial, Aboriginal and Public Comments on the Amendment to the Environmental Impact Statement

June 2013

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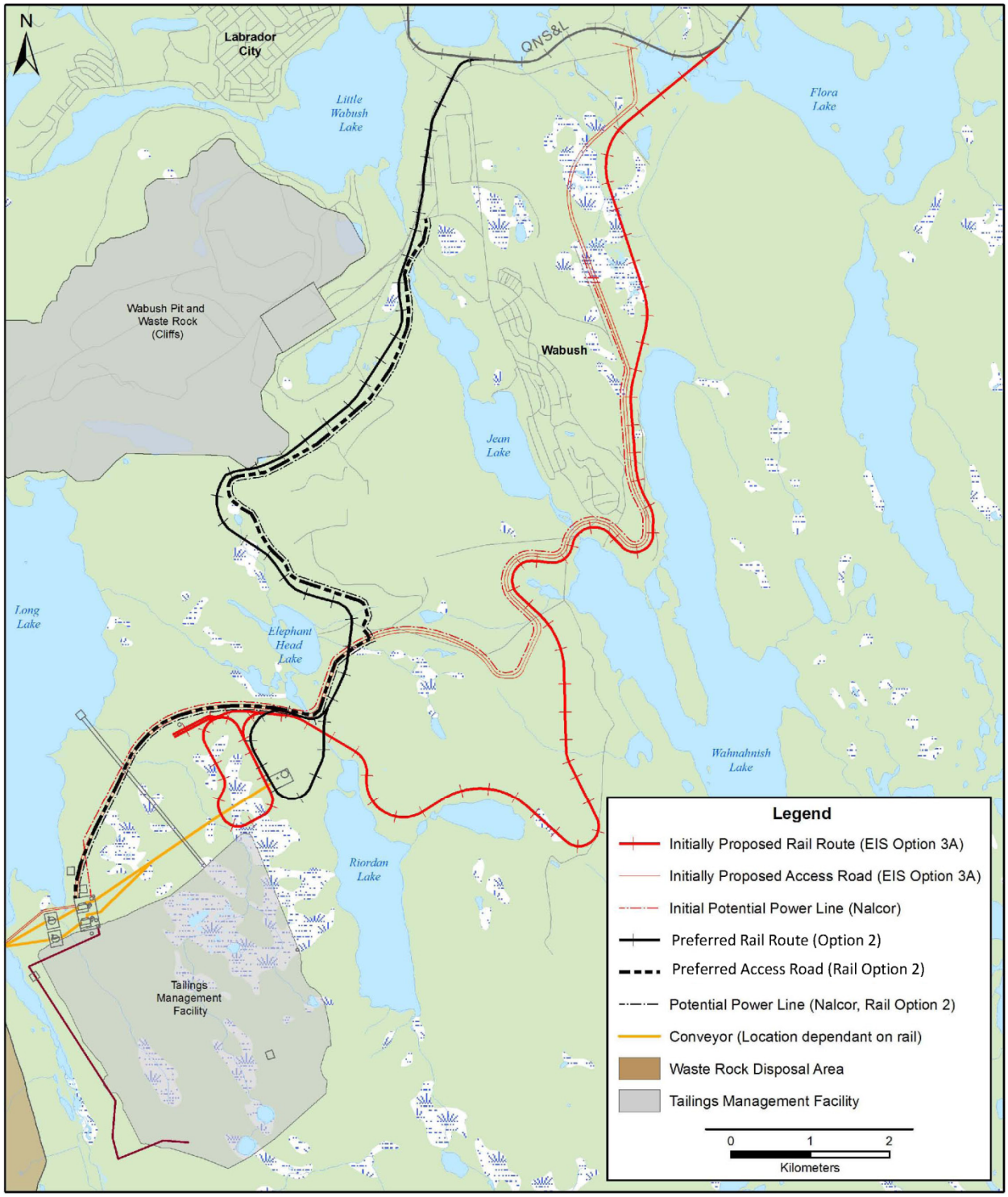
Alderon's General Comment:

1. INTRODUCTION

In response to comments received from the Government of Newfoundland and Labrador and stakeholder groups, Alderon has conducted a comprehensive analysis on the alternate routes that the railway could take to avoid the Wabush (Wahnahnish Lake) Protected Public Water Supply Area (PPWSA). The analysis shows that, based on changes and advances in the design of the Project, the previously evaluated Option 2 (Figure 1.1) which avoids the PPWSA and protected wetland habitat is now a viable alternative and has been selected as the preferred route for the Project. Alderon has now withdrawn the previous preferred alternative through the PPWSA (Option 3A) for consideration as part of this Environmental Assessment. A comparison of the predicted environmental effects of the preferred alternative (Option 2) to the previous preferred alternative (Option 3A) shows that there is no increase in potential adverse environmental effects, and in most cases there would be a net benefit resulting from the change in routing.

Figure 1.1 Preferred Rail Line Routing (Option 2)



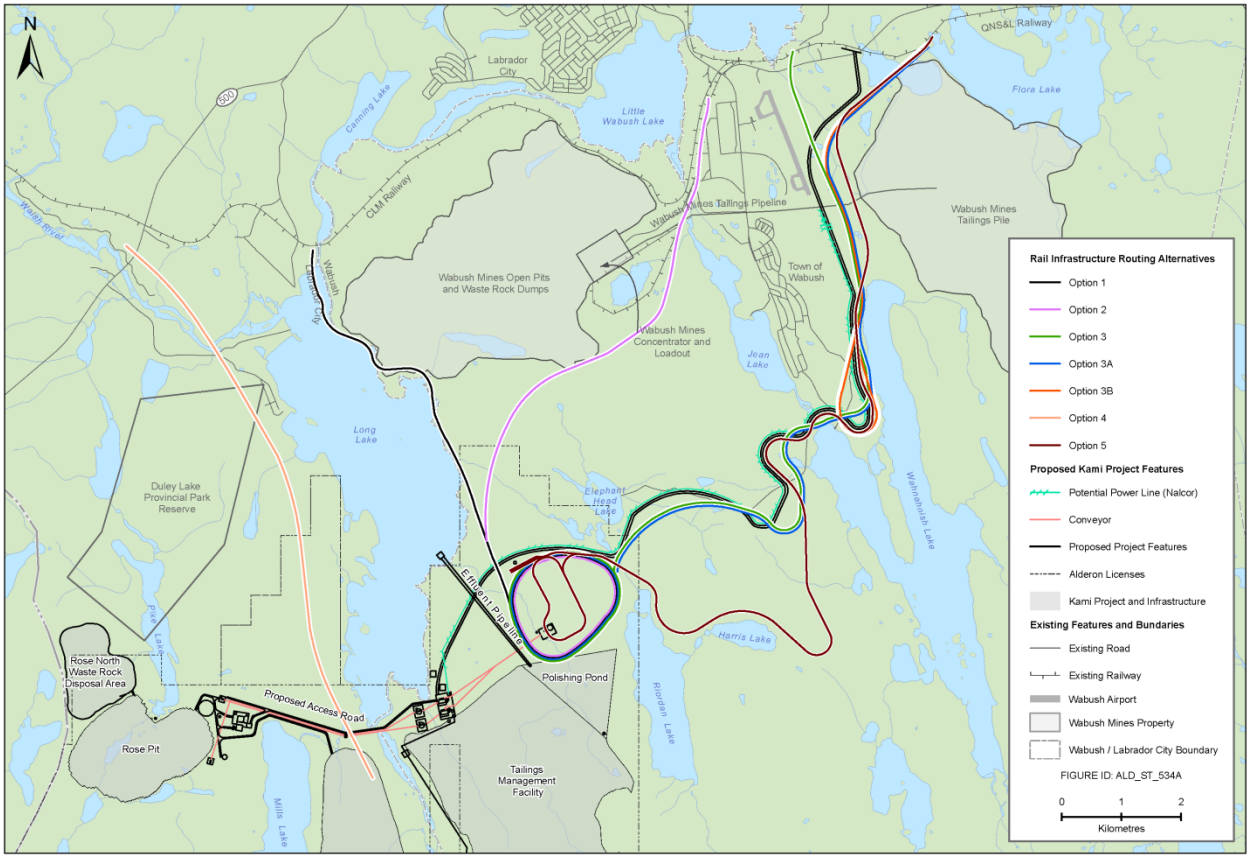
2. RAIL ROUTE OPTIONS ANALYSIS

Alderon has conducted a new rail route options analysis and has subsequently selected a modification of the previously evaluated Option 2 route as the new preferred route for the proposed Project. This section describes the analysis results and the technical information that supports Alderon's decision to abandon the previous preferred alternative (Option 3A) route and advance the Project design based on a modified Option 2 rail route.

As per comments made in previous Information Requests submitted to Alderon by the Town of Wabush and the NL Department of Water Resources, the Option 2 route has been identified as the preferred route to Option 3A by these stakeholders.

Four options were previously identified in the EIS. Figure 1.2 shows the rail route options previously assessed as presented in EIS Volume 1, Section 2.8.3, Figure 2.21 and in Appendix K of the Amendment to the EIS. A detailed discussion of the four options considered in this analysis is provided below.

Figure 1.2 Summary Evaluation of Rail Infrastructure Routing Alternatives



Option 1: Option 1 links the mine site loop to the BLR by following the east shore of Long Lake, as shown in Figure 1.2. It offers the shortest connection between the mine and an existing railway line and existing physical constraints make this option unviable.

Technical Considerations

The alignment presents technical challenges:

- The route passes between Long Lake and the southwest end of Wabush Mines' West Pit. The natural topography at the edge of the lake is relatively steep starting at the water's edge. A 500 m section of the route closest to the open pit is a steep waste rock embankment with 20 to 25 m lateral distance between the top of the embankment and the edge of Long Lake. Waste rock piles present between the mine and the lake and would need to be partially removed or stabilized in order to construct a railway. Cut operations necessary to create a shelf in the side slope above the lake may further harm the geotechnical stability of the land and affect the shoreline.
- The top of the waste rock embankment also forms the crest of the West Pit. Wabush Mines has installed numerous large diameter, deep water pumping wells used to dewater the West Pit. The discharge is piped down the waste rock slope and discharged directly to Long Lake and may impact the design and construction of the rail.
- Known hydrogeological connections between Long Lake and the Wabush Mines West Pit suggest that the ground conditions on which the railway would be built are less than ideal.
- Access for construction would be limited to an approach from the south as there is no road access to the location where the spur would meet the BLR.
- On the positive side, the alignment provides a very gentle downhill gradient for loaded trains.
- Cut and fill work would be limited to creating a sufficiently wide shelf in the existing shoreline slope to accommodate a single track.

Operational Considerations

This alignment ties into the Bloom Lake Rail (BLR), and operations on this line will require cooperative agreement and services with Cliffs operations for both the Wabush Mine (Scully Mine) and Bloom Lake Mine. While Bloom Lake has suspended its expansion plans, it is understood that this expansion is still planned and would impact the capacity of this line and Alderon's use of this connection to QNSL and on to the port once implemented.

The Wabush Mine operation will also have an impact on the ability to operate trains to the Kami Mine. There are already restrictions in effect on BLR traffic passing along the northern edge of Wabush Mines property when mine blasting operations are taking place. It is expected that similar restrictions will also be imposed against rail operations on the mine trackage passing along the western side of the Wabush (West) pit. The loss of operational flexibility can create a

situation where additional rail rolling stock will be necessary in order to protect against unpredictable main track shutdowns creating erratic train cycle times.

Environmental Considerations

Approximately 5 km of the eastern shoreline of Long Lake would be affected by the construction and operation of alignment Option 1. To maintain suitable gradient for rail traffic, the track would be located close to the water's edge. This will result in difficult construction conditions in order to avoid placement of fill material in the water and control of runoff and erosion. Once operations begin, if a derailment were to occur in this area, the likelihood of railway equipment breaching the water is very high. The uphill slope on the east side of the track would naturally force any derailed equipment to fall to rest on the lake side of the track. The aerial view in Figure 1.3 provides some idea of the limited space available to build and operate the railway adjacent to the lake.

Additionally, portions of the waste rock piles on Wabush Mine's property may need to be relocated. This creates a need to find another suitable location to deposit this material pending the necessary environmental reviews and protective action that will be required to execute this work.

Figure 1.3 Aerial View of Long Lake (Option 1 Environmental Aspect)

Option Assessment

In general, the construction of a rail route through this area, if possible, would be very difficult and would likely have a direct impact on Wabush Mines infrastructure related to the West Pit and potential effects on Long Lake. Further, there are known hydrogeological connections between Long Lake and the pit, potential pit slope instabilities, and unconsolidated waste rock

piles that pose significant risk and liability to the stability and safety associated with the construction and operation of rail line through this area.

The physical constraints and issues with stability and safety, further compounded by operational issues as described above, render this option unviable for the Project.

Option 2: Alderon engaged a new rail engineering consultant to complete this engineering analysis, which included review of historical information, the current Project and rail route designs, the most recent land ownership and topographical information available, and an investigation of the constraints associated with the industrial park and Wabush Mines areas.

The engineering team from WorleyParsons, Alderon's Engineering, Procurement, and Construction Management (EPCM) consultant, evaluated several routing alternatives within the Option 2 corridor and determined that the alignment shown in Figure 1.1 provided a viable route. The profile for this Option 2 alignment is generally flat from station 0+000, at the connection with QNSL, to 1+500, after which there is a 1% gradient between stations 1+500 through 8+000. From station 8+000 to the loop track the profile is relatively flat and only slightly above lake level at Riordan Lake. A vertical curve is needed to elevate the track above the lake level, which increases the fill quantity requirements but will also decrease the cut quantities around the loop track while maintaining sufficient level track in approach to the loop for loading purposes.

Technical Considerations

The newly proposed routing has some remaining technical challenges:

- The bridge crossing at Route 500 will require further investigation and design to address the potential earthworks requirements, crossing grade, and spatial constraints.
- Land ownership and several small access roads associated with the industrial park may require further investigation and negotiation.
- Substantial earthworks or a bridge crossing of the Jean River alongside the existing Wabush Lake Rail and Wabush Mines access road, or at an alternate location will be required.
- A grade crossing at the Wabush Mines access road, and subsequent crossing of the Wabush Mines tailings line will be required.
- Adjustment of alignment to avoid intersection with the Wabush Mines' waste rock pile.
- Re-alignment of the approach and departure from the loop track to optimize the water crossing requirements.

Operation Considerations

The operational considerations associated with the previous Option 2 route and connection to Wabush Lake rail have been reduced or eliminated by extending this route directly to QNSL. For the currently proposed Option 2, it is planned that QNSL will operate directly to Alderon's loop track. If for any reason, direct connection to QNSL isn't achievable, Alderon will work to

collaborate on a connection to Wabush Lake Rail and an operational scenario suitable for both parties. This would further reduce the footprint of Alderon's rail line.

Environmental Considerations

Option 2 does not interact with any major waterbodies. There are two main water crossings at the river connecting Jean Lake and Little Wabush Lake and at the river connection between Riordan Lake and Elephant Head Lake. There are several other small water crossings along this route. An environmental analysis of rail Option 2 has been conducted and the selection of Option 2 will not likely result in significant adverse environmental effects. In addition, the nature or number of likely Project interactions with certain environmental components is expected to be reduced in comparison to Option 3A. Additional information on environmental effects assessment for Option 2 is presented in Section 3.0 and Appendix B.

Option Assessment

The primary issues identified with respect to the construction and operation of the originally proposed Option 2 route have now been addressed based on the revised Option 2 route as follows:

- Excessive grades (greater than 1.5%) identified for the original Option 2 route have been reduced to an estimated maximum of 1% based on the revised loop location and the modified Option 2 route, assessed using more detailed topographical information than was previously available along the route.
- The rail line serving the industrial park has been removed and will not require adjustment to accommodate Alderon's new line.
- Operational issues related to interchange requirements and coordination with, or interference from, the Wabush Lake Rail operations, are reduced or avoided based on the availability of space to connect Alderon's rail line directly to the QNS&L rail line. The option to connect to Wabush Lake Rail will continue to be considered in an effort to further reduce the footprint of the Project.

Based on these considerations, the current Option 2 route design is considered viable.

Option 3A: The technical, operational, and environmental considerations with respect to the construction and operation of Option 3A are summarized below for comparison with Option 2 above.

Technical Considerations

The technical considerations associated with this route option are as follows:

- A large, clear span bridge or embankment and culvert crossing at the intersection of Loon Pond and Wabush Mines' fish habitat compensation area.
- Crossing at the intersection with Wabush Mines' tailings lines will require alteration of the tailings line and a grade crossing of the associated tailings access road.

- The route passes through the Town of Wabush PPWSA and requires spill mitigation and water control measures as well as the design and construction of an alternative water supply for the Town.
- A new bridge crossing at Jean Lake Rapids and alignment of the rail to eliminate or minimize infringement on the 150 m no-development buffer zone around Wahnahnish Lake.
- Crossing of several roads and trails that are used by the public to access cabins and recreational areas.

Operational Considerations

- The direct connection to QNSL allows QNSL to operate on the Alderon rail line with the same operating parameters as the currently proposed Option 2 route.
- As part of the mitigation measures proposed to reduce the risk of a derailment and spill of hydrocarbons within the PPWSA, reduced fuel train speeds and increased inspections increase the operational complexity for this route.

Environmental Considerations

- The crossing at Loon Pond and the Wabush Mines' fish habitat compensation area could impact the completed compensation area.
- Mitigation measures are required within the Town of Wabush PPWSA to address the potential for a fuel spill affecting the water supply. These measures include spill containment, drainage handling and treatment, and the provision of a suitable back-up water supply for the Town.
- Special construction methods and monitoring of equipment during operations will be required while working within the PPWSA.
- The route and crossing will pass through the Jean Lake Rapids Management area.

Other Considerations

- The proximity of the rail route to the Town of Wabush and the intersection and interference with several recreational roads and trails pose public health and safety risks.

Option Assessment

The environmental and related technical challenges are substantial for Option 3A. The mitigation requirements associated with the Loon Pond Crossing (Wabush Mines habitat compensation area) and the section of the route which traverses the PPWSA. Further, the risk to local stakeholders with respect to rail operations and potential effects, as well as a potential fuel spill, are considerable. The operational aspects of Option 3A are positive, given the direct connection to QNS&L and the technical considerations outside of the PPWSA area are reasonable.

Option 4: Option 4 extends between the Kami Mine site and a junction with the BLR west of the Tamarack golf course. Its route passes immediately west of Long Lake and adjacent to Duley Lake Provincial Park Reserve. The route is shown in Figure 1.2.

Technical Considerations

- The route requires a significant bridge structure to carry the railway over Walsh River.
- Two grade crossings would be required for the public roads that access both Duley Lake Provincial Park Reserve and the residences located along the west shoreline of Long Lake.
- The proposed rail route will intersect trails and other areas associated with the cabin development areas utilized for walking, ATVs, and snowmobiles.
- The construction and operation of the Option 4 route would be in close proximity to cabins and recreational areas along the west side of Long Lake, and would cross the Duley Lake Provincial Park Reserve.
- Due to the topography, adjacent large waterbodies and proposed waste rock piles, potential economic mineral zones to the north, and the general site layout requirements around the open pit, the options for a loop track for loading are very limited and would require substantial cut and fill earthworks to construct for Option 4.

Operational Considerations

Option 4 alignment ties into the Bloom Lake Rail (BLR), and operations on this line will require cooperative agreements and services with Cliffs operations for both the Wabush Mine (Scully Mine) and Bloom Lake Mine. The need to operate in conjunction with competing rail line operations may impact the efficiency of this rail option significantly. In addition, while Bloom Lake has suspended it's production expansion plans, it is understood that this expansion is still planned to move forward and would impact the capacity of this line and Alderon's use of this connection to QNSL and on to the port once implemented.

At the mine, a loading loop track is not practical given the terrain where Option 4 terminates. A stub-end yard would likely be required, meaning that every train will need to have the locomotives uncouple from one end and be relocated to the other end of the train upon each arrival at the mine. This can be problematic in the severe cold weather conditions experienced in this region. The air brake system preferably should remain charged by the locomotives at all times in order to avoid complications restoring adequate air pressure if the engines are removed for any significant length of time. The need to move the engines from one end of the train to the other adds unnecessary time and potential delays to the overall rail loading process cycle.

Environmental Considerations

Some environmental and social impact issues are associated with Option 4. The alignment must cross the Duley Lake Provincial Park Reserve lands and there is no option to route the trackage around the park based on the topography in the area.

The alignment will likely create noise and vibration concerns with the cabin residences that are located along the west shoreline of Long Lake immediately south of the provincial park. Option 4 is the only route studied that requires track to be constructed in close proximity to a large concentration of existing cabin residences.

Other Considerations

Option 4 is the only alignment that does not cross lands owned or controlled by Cliffs Resources. This may reduce the complications necessary to obtain the right-of-way for the railway. Nearly half of the alignment required is located on property designated for the Kami Mine operation. As a result, current and future access to the railway could be controlled.

Option 4 Assessment

Technical, operational, environmental, and effects on recreational users as described above make this Option 4 rail route unviable.

Option Analysis Summary

Alderon has re-assessed the rail route options and based on the technical, operational, and environmental considerations described above. Options 1 and 4 have been confirmed unviable for the Project. Based on the additional engineering work completed on Option 2 and the modified route presented, this option is considered viable. A direct comparison of Option 2 and Option 3A provides for the following conclusions:

- Option 2 has several technical challenges, however the technical challenges associated with the PPWSA and crossing at the Wabush Mines' habitat compensation area for Option 3A are generally more substantial and carry additional risk to stakeholders.
- The operational complexity for Options 2 and 3A is similar with the exception of fuel train operations requiring reduced speeds and increased inspections for Option 3A.
- The environmental considerations are far more substantial for the Option 3A route.
- In terms of construction, Option 2 requires substantially more cut and fill to address grade issues along the route based on the current alignment, however the overall track length is approximately 9 km shorter.

Overall, the assessment of these factors favours Option 2.

3. PREFERRED ALTERNATIVE RAIL ROUTE (OPTION 2)

Based on the results of the rail route options analysis, Option 2 route has been identified as the new preferred route for the proposed Project. Information on rail alignment and conceptual design of the selected rail route is summarized below and presented in detail in Appendix A.

Route Alignment

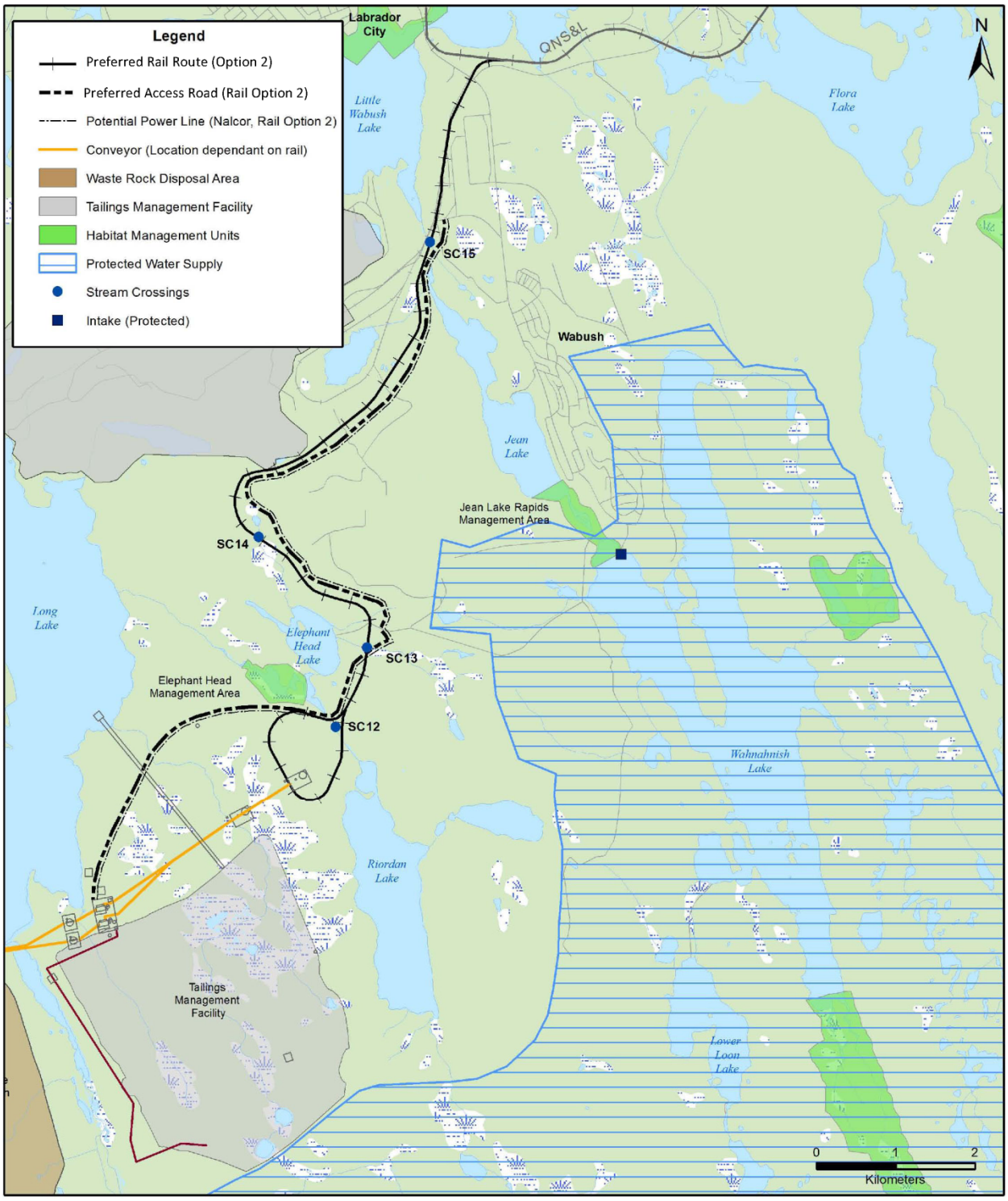
The Option 2 route comprises 3.9 km of loop track connecting to a 10.6 km line which travels generally northward along the east side of Elephant Head Lake and east of the Wabush Mines' Scully Mine waste rock piles and loop track as shown in Figure 1.1. The route continues north crossing Wabush Mines' tailings line, Jean River, the Wabush Mines' main access road, and then between the Cliffs (Wabush Mines') rail spur and the Wabush Industrial Park. Near the north end of the industrial park, the route continues to parallel Cliffs' rail spur to the east, across Route 500 where a new rail overpass will be constructed, and then connecting to the Northlands District of the QNS&L rail line.

Details on rail alignment, including the plans and cross-sections are shown in Appendix A. Note that some of the background imagery is dated and does not show the current ground conditions or features in some locations. For example, at the Route 500 crossing, the Cliffs' crossing in the imagery is the grade crossing that existed prior to the construction of the new underpass in 2011.

The rail infrastructure will consist of a newly constructed (single) track designed to match the existing design parameters of the QNS&L to provide technical and operational uniformity. The track will be constructed to main line, heavy haul standards in line with QNS&L and American Railway and Maintenance of Way Association (AREMA) design procedures. The track will be of standard gauge (1435 mm), and the rail will be standard cross section weighing approximately 136 pounds per yard. The rail will be secured to track ties and installed on crushed rock ballast. The railway right of way will be nominally 30 m wide, with boundaries 15 m to either side of the track centerline. A maximum grade of 1% was used in the layout and design of the rail route.

Stream crossings will be required at the inflow to Elephant Head Lake (from Riordan Lake), three small tributaries to Elephant Head Lake, and at Jean River as shown on Figure 1.4. The crossings at the inflow to Elephant Head Lake (from Riordan Lake) and at Jean River will be bridge crossings. The other, small water crossings will comprise small culverts.

Figure 1.4 Watercourse Crossings



4. ENVIRONMENTAL EFFECTS ANALYSIS

Alderon conducted an environmental effects analysis of the Option 2 routing and has compared it to the previous preferred alternative route Option 3A. Overall, the preferred Option 2 rail route will not likely result in significant adverse environmental effects, and is predicted to have a net reduction in overall environmental effects when compared to Option 3A.

The environmental analysis focuses on the Valued Environmental Components (VECs) which were assessed in the EIS:

- Atmospheric Environment;
- Landforms, Soils, Snow and Ice;
- Water Resources;
- Wetlands;
- Freshwater Fish, Fish Habitat and Fisheries;
- Birds, Other Wildlife and Their Habitats, and Protected Areas;
- Species at Risk and Species of Conservation Concern;
- Historic and Cultural Resources;
- Current Use of Lands and Resources for Traditional Purposes by Aboriginal Persons;
- Other Current Use of Lands and Resources;
- Community Services and Infrastructure;
- Health and Community Health; and
- Economy, Employment and Business.

For each VEC, the analysis begins with an overview summary of the key results of the initial (EIS) effects assessment for the originally proposed rail route Option 3A, followed by a discussion of whether and how the likely environmental effects and required mitigation associated with Option 2 would be the same as or different from those assessed and evaluated in the EIS. Table 1.1 below provides a summary of the key results of the comparative environmental analysis for the two rail routing options. The detailed analysis is provided in Appendix B.

Table 1.1 Rail Line Routing Options: Environmental Effects Analysis Summary

Valued Environmental Component	Environmental Assessment	Summary of Environmental Effects Analysis: Rail Line Routing Option 3A (EIS) and Option 2 (Alternative) *Key Findings*
Atmospheric Environment	*Existing Environment*	• No difference in environment between route 3A and route 2 • VEC focuses on air quality, greenhouse gases, noise, vibrations and lighting issues. • Existing environment is described using available monitoring datasets and other sources, with air quality and noise baseline study program by Alderon. • PDA with larger LSA that encompassed Project sites and adjacent communities and surrounding areas. RSA includes all of Western Labrador and parts of Eastern Québec, including other projects with emissions. • Existing environment description equally applicable to both Options.
	Effects Assessment and Mitigation	• EIS includes detailed modeling of particulate matter (dust and combustion gasses), noise and other Project-related emissions. • Rail line not a major point source contributor to Project emissions and associated effects on the atmospheric environment. • Rail Option 2 would increase distance from Wabush, with correspondingly lower concentrations of particular matter and noise levels. • Rail Option 2 results in rail car unloading loop being somewhat closer to cabins at north end of Riordan Lake. Would be addressed through Alderon's on-going consultation and mitigation program with local cabin owners, as required. • No additional air or noise emissions modeling or different mitigation measures required over those presented in the EIS. • Rail Option 2 is approximately 9 km shorter than Option 3A, which will result in less air emissions.
	Conclusion	• Although neither option is likely to result in significant adverse environmental effects, Option 2 has net environmental benefits over Option 3A due to the greater distance from local receptors and the smaller footprint of the rail infrastructure.
Landforms, Soils, Snow and Ice	*Existing Environment*	• VEC considers potential changes in landforms, terrain stability, soil quality and quantity, snow and ice, as well as acid rock drainage and metal leaching. • Description of existing environment covers and is equally applicable to both Options.
	Effects Assessment and Mitigation	• Rail component comprises a small portion of overall Project footprint, and will contribute minimally to total area of ground disturbance and any effects on VEC. • Option 2 rail line is shorter (less ground disturbance), but follows through similar geology and terrain. • No difference in likely effects or required mitigation between the two Options.
	Conclusion	• Neither option is likely to result in significant adverse environmental effects and there is no expected difference in likely effects of the two options on the Landforms, Soils, Snow and Ice VEC.

Valued Environmental Component	Environmental Assessment	Summary of Environmental Effects Analysis: Rail Line Routing Option 3A (EIS) and Option 2 (Alternative) *Key Findings*
Water Resources	*Existing Environment*	• VEC includes both surface water and groundwater, with existing environment described through available datasets and Alderon field studies. • PDA, LSA and RSA for the VEC encompassed Project physical footprint and the waterbodies, watercourses and watersheds with which it may interact. • Description of existing environment covers and is equally applicable to both Options.
	Effects Assessment and Mitigation	• Rail line must cross over or adjacent to a number of watercourses and waterbodies. • Potential effects through installation of culverts and bridges, potential accidental spills. • Option 2 would decrease number of required watercourse crossings, and much less of its (shorter) route would be located near waterbodies. • Option 2 would also not cross through the Town of Wabush's Protected Public Water Supply Area (PPWSA).
	Conclusion	• Although neither option is likely to result in significant adverse environmental effects, Option 2 has net environmental benefits over Option 3A due to the avoidance of the PPWSA and the reduced number of interactions with waterbodies.
Wetlands	*Existing Environment*	• Wetlands are located throughout the region, especially fens and marshes. • Key ecological components, with some local wetlands protected as Habitat Management Units. • EIS involved wetland inventories and other studies, including a regional ELC which fully encompassed both rail route options.
	Effects Assessment and Mitigation	• Project will interact with wetland areas particularly as a result of the ground disturbance during construction. • Mitigation identified and proposed in the EIS (avoidance where possible, hydrology and erosion control, etc) equally applicable to both Options. • Option 2 would have smaller overall footprint, and interact less with wetland areas. • Option 2 would also avoid direct interaction with Jean Lake Rapids Management Unit, and increase distance between rail line and Elephant Head Management Unit.
	Conclusion	• Although neither option is likely to result in significant adverse environmental effects, Option 2 has net environmental benefits over Option 3A due to the reduced interaction with wetlands and the avoidance of the Jean Lake Rapids and Elephant Head Management Units.
Freshwater Fish, Fish Habitat and Fisheries	*Existing Environment*	• VEC includes fish, their habitats and the use of these resources by people. • PDA, LSA and RSA encompass Project physical footprint and the waterbodies, watercourses and watersheds with which it may interact. • Description of existing environment based on existing datasets and extensive multi-year fish and fish habitat surveys by Alderon. Covers and is applicable to both Options.

Valued Environmental Component	Environmental Assessment	Summary of Environmental Effects Analysis: Rail Line Routing Option 3A (EIS) and Option 2 (Alternative) *Key Findings*
	Effects Assessment and Mitigation	• Rail line will inevitably cross over or adjacent to a number of watercourses and waterbodies. • Potential effects through installation of culverts and bridges, and potential accidental spills. • Option 2 would substantially decrease the number of required watercourse crossings, and much less of its (shorter) route would be located near waterbodies. • Option 2 also avoids interaction with Loon Lake fish habitat compensation area.
	Conclusion	• Although neither option is likely to result in significant adverse environmental effects, Option 2 has net environmental benefits over Option 3A due to the reduced number of watercourse crossings.
Birds, Other Wildlife and Their Habitats, and Protected Areas	*Existing Environment*	• Includes migratory and non-migratory birds, amphibians, small mammals, ungulates and furbearers, as well as existing or planned protected areas. • EA wildlife surveys and ELC completed by Alderon cover and fully encompass both rail route options.
	Effects Assessment and Mitigation	• Potential effects include changes in the presence, distribution and abundance, habitats and health of wildlife, as well as interactions with existing or planned protected areas. • Both rail options cross through similar vegetation types, and neither crosses through particularly important or unique habitats. • Neither option interacts with the current ranges of the George River or Lac Joseph caribou herds. • EIS mitigation measures equally applicable to both rail routing options. • No material difference in likely effects on wildlife between the options. • Option 2 would avoid direct interaction with Jean Lake Rapids Management Unit, and increase distance between rail line and Elephant Head Management Unit.
	Conclusion	• Although neither option is likely to result in significant adverse environmental effects, Option 2 has net environmental benefits over Option 3A due to the smaller footprint and the avoidance of the Jean Lake Rapids and Elephant Head Management Units.
Species at Risk and Species of Conservation Concern	*Existing Environment*	• Includes plant or animal species and/or their critical habitats that are of provincial, national or international importance, especially those protected under provincial and/or federal legislation. • EA vegetation and wildlife surveys and ELC study completed by Alderon cover and fully encompass both rail route options.
	Effects Assessment and Mitigation	• Both rail options cross through similar vegetation types, and neither crosses through particularly important or unique habitats. • Neither option interacts with the current ranges of the George River or Lac Joseph caribou herds. • EIS mitigation measures equally applicable to both rail routing options. • No material difference in effects on these species between the options. • Alderon will complete a field survey for listed or rare plants along Option 2 rail route in 2013.

Valued Environmental Component	Environmental Assessment	Summary of Environmental Effects Analysis: Rail Line Routing Option 3A (EIS) and Option 2 (Alternative) *Key Findings*
	Conclusion	• Although neither option is likely to result in significant adverse environmental effects, Option 2 has net environmental benefits over Option 3A due to the smaller footprint of the rail infrastructure.
Historic and Cultural Resources	*Existing Environment*	• VEC includes sites, materials and landscapes or places of historic and archaeological, cultural, spiritual, paleontological and/or architectural importance. • Historic Resources Overview Assessment (HROA) completed for the Project, which involved background research, field surveys, archaeological potential mapping and informant interviews.
	Effects Assessment and Mitigation	• EIS rail route (Option 3A) does not interact with known historic resources and passes through an area of identified low potential. • Alternative rail route (Option 2) will be shorter in length and thus result in less overall ground disturbance. • Option 2 would also extend through an area of low archaeological potential, and does not pass in close proximity to waterbodies. • EIS mitigation measures equally applicable to both rail routing options. • No likely difference in effects between the two rail options.
	Conclusion	• Neither option is likely to result in significant adverse environmental effects and there is no expected difference in likely effects of the two options on the Historic Resources VEC.
Current Use of Lands and Resources for Traditional Purposes By Aboriginal Persons	*Existing Environment*	• No Aboriginal communities are located in proximity to the Project site. • Five Aboriginal communities and organizations claim Aboriginal rights/title to lands in Western Labrador, including the Project area. • Alderon offered Aboriginal engagement agreements to all relevant groups to gather information on current land and resource use activities and other issues. • Information used in the assessment included information provided by Aboriginal groups, existing and publicly available data and independent research committed by Alderon. . • LSA and RSA for this VEC fully encompass both rail route options.
	Effects Assessment and Mitigation	• Available information does not indicate that any of the five Aboriginal groups, other than some individual members of NCC residing in Lab West, currently undertake traditional land and resource use activities within the PDA or LSA. • The Project (including both rail routing options) is not likely to adversely affect the current use of land and resources for traditional purposes by Aboriginal persons.
	Conclusion	• Neither option is likely to result in significant adverse environmental effects and there is no expected difference in likely effects of the two options on the Current Use of Lands and Resources for Traditional Purposes By Aboriginal Persons VEC.
Other Current Use of Lands and Resources	*Existing Environment*	• VEC considers any current (1990-present) land and resource use activities by non-Aboriginal people in Western Labrador or Fermont, Québec, including municipal, commercial and recreational pursuits. • LSA and RSA fully encompass both rail route options and their surrounding environments.

Valued Environmental Component	Environmental Assessment	Summary of Environmental Effects Analysis: Rail Line Routing Option 3A (EIS) and Option 2 (Alternative) *Key Findings*
	Effects Assessment and Mitigation	• Potential project effects result from alterations of, or restricted access to, certain land areas, as well as other possible disturbances (noise, dust, visual intrusions). • Option 2 would interact with a lower number of local cabins and potentially have less of an effect on cabin access in the region. • Option 2 would require fewer crossings of existing snowmobile trails, and is farther removed from some identified hunting, trapping, fishing and other recreational areas. • Option 2 would see less interaction with the Town of Wabush and its land base, roads, water supply and potentially its residents. • EIS mitigation measures are equally applicable to both rail routing options.
	Conclusion	• Although neither option is likely to result in significant adverse environmental effects, Option 2 has net environmental benefits over Option 3A since it is located further from the Town of Wabush and from recreational areas.
Community Services and Infrastructure	*Existing Environment*	• Community services and infrastructure in the municipalities of Labrador City, Wabush and Fermont are described, including demographics, employment, health and social services, education and training, safety and security, municipal services and infrastructure, recreation and commercial and industrial facilities. • This description of the existing environment is regional in nature, and is therefore relevant (and equally applicable) to both rail routing options.
	Effects Assessment and Mitigation	• Railway activities are not expected to be a key contributor to any such Project-related demands for community services and infrastructure. • Option 2 would see less direct and indirect interaction with the Town of Wabush and its land base, roads, water supply and potentially its residents.
	Conclusion	• Although neither option is likely to result in significant adverse environmental effects, Option 2 has net environmental benefits over Option 3A since it is located further from the Town of Wabush and from its community services and infrastructure.
Health and Community Health	*Existing Environment*	• VEC includes consideration of 1) physical human health and well-being, and 2) community (social) health and quality of life. • The description of the existing environment for this VEC is regional in nature, and is therefore relevant (and equally applicable) to both rail routing options.
	Effects Assessment and Mitigation	• Railway activities are not expected to be a key contributor to any potential health issues or interactions. • Both alternatives will be essentially identical in terms of their associated components and their construction and operational activities. • Given its location further away from the Town of Wabush and its roadways and water supply, Option 2 may decrease the potential for health effects as a result of possible accidental events.
	Conclusion	• Although neither option is likely to result in significant adverse environmental effects, Option 2 has net benefits over Option 3A since it is located further from the Town of Wabush.

Valued Environmental Component	Environmental Assessment	Summary of Environmental Effects Analysis: Rail Line Routing Option 3A (EIS) and Option 2 (Alternative) *Key Findings*
Economy, Employment and Business	*Existing Environment*	• VEC includes the regional economy and associated employment and business characteristics and activities in Labrador West and Fermont, Québec and elsewhere as relevant. • The description of the existing environment for this VEC is regional in nature, and is therefore relevant (and equally applicable) to both rail routing options.
	Effects Assessment and Mitigation	• Both rail options will be very similar in nature, and will involve comparable types and levels of labour, materials and other features. • Both options would have similar if not identical effects / benefits with regard to this VEC, including their associated labour force, business opportunities, and other outcomes. • The effects management (benefits optimization) measures outlined in the EIS are equally applicable to both routing options.
	Conclusion	• Both rail options are likely to have comparable types and levels of benefits for the Economy, Employment and Business VEC.

The information and findings of the EIS for Route 3A are applicable to, and valid for, assessing the effects of Option 2 rail route. The description of the existing environment presented in the EIS has adequately covered and addressed both options. The local and regional study areas used for the various VECs assessed in the EIS encompassed both rail options, and therefore the environmental effects predictions, identified mitigation measures and other EA outcomes apply equally to both. Option 2 rail route will not likely result in significant adverse environmental effects, and is predicted to have a net reduction in environmental effects overall. No new or additional environmental baseline information, analysis or mitigation is required in order to advance this option through the EA process, or as part of on-going Project planning and design and future implementation.

For some environmental components, the adoption and implementation of Option 2 rail route are predicted to be neutral from an environmental perspective. Several instances were identified through the above analysis where this rail route would reduce the nature or number of likely Project interactions with certain environmental components. Alderon is aware of the various questions and concerns that have been raised with regard to the Option 3A rail route during the governmental, public and Aboriginal review of the EIS - particularly with regard to its location within the Town of Wabush PPWSA and the potential environmental issues and risks that may be associated with this.

As a result, and based on the results of the technical, operational and environmental analyses summarized above, Alderon is advancing Option 2 rail route as its proposed design concept for the rail component of the Kami Project in Labrador and is now seeking EA approval for this rail route.

5. CONCLUSIONS AND NEXT STEPS

At the request of the Government of Newfoundland and Labrador and in response to comments from stakeholder groups, Alderon has conducted a new rail route options analysis to provide

further information to support Alderon's selected rail route Option 3A. As a result of the technical, operational and environmental analyses conducted, Alderon has selected a modification of the previously evaluated Option 2 route as the new preferred route for the proposed Project.

Alderon has abandoned the Option 3A route and is advancing the project design based on the new Option 2 rail route. Additional engineering has been completed in support of this options analysis. As the design proceeds, Alderon commits to providing Department of Transportation and Works environmental assessment personnel with regularly updated design information as part of the permitting process submissions.

Alderon will continue to assess and advance the design of the infrastructure associated with the rail route, including the permanent access road to the site, and the power lines to the site. Permanent access road and the power line is planned to fall within the Option 2 rail route corridor. As contemplated in the EIS, temporary construction access will be required to the mine construction areas via existing roads and trails, with some upgrades as required to mobilize equipment, on the west side of the property along the existing exploration road to the proposed open pit area, as outlined in Volume 1, Section 2.6.1 of the EIS, and along the existing Elephant Head Lake Road on the east side of the site, which intersects the Option 2 rail and road routes. The power line will be constructed and operated by Nalcor. Alderon will consult with Nalcor on the change to the rail and road access route to the mine site.

Alderon will continue to engage with local stakeholders, in keeping with Alderon’s corporate principles and its Community Relations Policy, to inform them of this positive change in the Project design and the associated reduction in environmental effects.

1.1 Information Requests Received from Newfoundland and Labrador Water Resources Management Division (WRMD)

1.1.1 Information Request No. NLWR S-01

Appendix K details the selection of the proposed railway road. It is indicated that "the rail impact should be considered as no more of an impact than the road network that is already exists in this area". This is not an accurate assessment of the impact the rail system could have on the PPWSA. The area of the proposed railway route in the northeast section of Wahnahnish Lake is significantly closer to the lake than the secondary road indicated in Figure 3-1 of Appendix K.

Alderon Response to IR No. NLWR S-01

Alderon acknowledges that the above-noted statement does not reflect the potential environmental impact of the rail infrastructure on the PPWSA. The statement above was intended to note that the physical corridor of the road and rail would be comparable to the existing road in this area.

1.1.2 Information Request No. NLWR S-02

In Table 1 of Appendix K, the proponent should indicate the potential environmental issues which may result in the event of a spill for all options in which the railway crossed the PPWSA.

Alderon Response to IR No. NLWR S-02

As explained in detail in Alderon's General Comment presented in Section 1.0 above, Alderon has abandoned the rail route Option 3A that passed through the PPWSA in favour of Option 2 which has no impact on the PPWSA.

1.1.3 Information Request No. NLWR S-03

Response to NLWR 14 did not include the required buffer zones: "*9.1 The proponent shall provide the following buffer zones along and around water bodies from the high water mark in a designated area - intake pond or lake - a minimum of 150 metres*".

Alderon Response to IR No. NLWR S-03

Alderon acknowledges the omission.

1.1.4 Information Request No. NLWR S-04

Response to NLWR 06 indicates that transportation of hazardous materials is proposed via access road along the southwest side of Wahnahnish Lake. Transportation of all hazardous materials must be a minimum of 150 m from Wahnahnish Lake to comply with the 150 m no development buffer zone. Any transportation routes within the PPWSA that may transport hazardous goods must comply with the minimum mitigative measures proposed response to NLWR 13 and Appendix K.

Alderon Response to IR No. NLWR S-04

Alderon has abandoned the rail route Option 3A that passed through the PPWSA in favour of Option 2 which has no impact on the PPWSA. In addition, it is currently planned to locate the permanent mine site access road and transmission line within the Option 2 corridor. Based on project planning and design, temporary access during construction will be required from the east of the project site via existing roads, with some potentially minor modifications to address the 150 m buffer zone, which passes through the PPWSA. The water crossing at Jean Lake Rapids, which is within the 150 m buffer, is downstream of Wahnahnish Lake and therefore the risk associated with a potential spill in this area is greatly reduced. Alderon will review the use of these roads and any necessary modifications with NLWR during the permitting process to determine what specific requirements may be necessary to mobilize equipment and personnel via these existing roads.

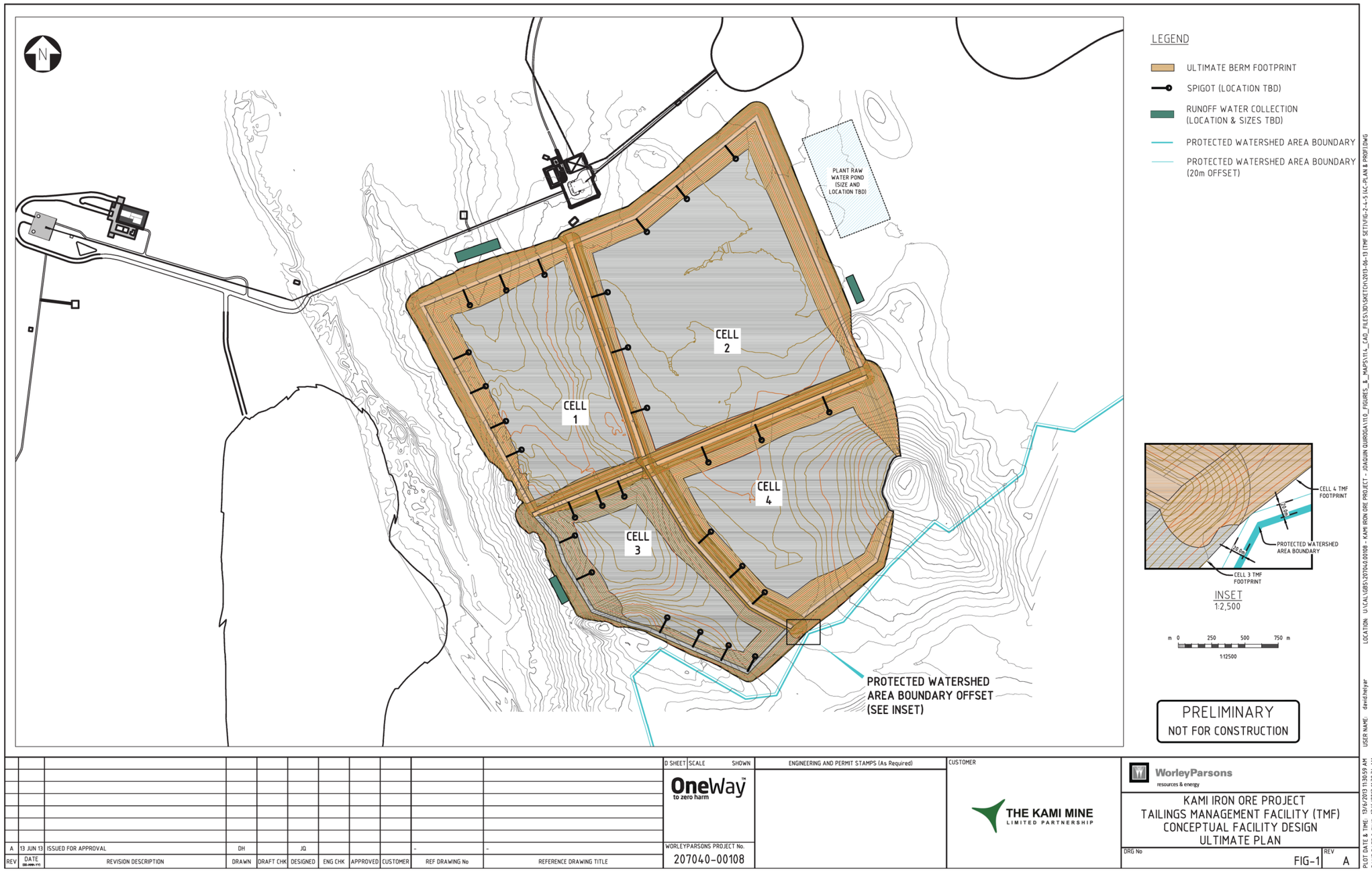
1.1.5 Information Request No. NLWR S-05

Response to NLWR 02 indicates that tailings water would not be discarded into the PPWSA. Figure 2.7.3 still shows the tailings management facility (TMF) with a small section that is inside the PPWSA. No area of the TMF will be permitted inside the PPWSA.

Alderon Response to IR No. NLWR S-05

Alderon will ensure the TMF will be designed and constructed outside the PPWSA. The attached updated draft plan (Figure 1.5) shows the PPWSA boundary and the TMF outside of this boundary.

Figure 1.5 Tailings Management Facility



1.1.6 Information Request No. NLWR S-06

Response to NLWR 22 was not sufficient as the data requested was not provided to assess the impact the project could have on groundwater quantity which influences the PPWSA. In Section 16.6.1.1, page 16-74 of the EIS, the proponent states that .... "Construction of the open pit mine is anticipated to result in the greatest degree of local groundwater disruption" ..... However, the proponent has not provided data to outline the expected degree of groundwater disruption, nor how wide-spread the disruption to groundwater flow and levels is anticipated to be. As per the original comment..."There was limited discussion on the potential for altering groundwater divides through pit construction, and the effect of a possible shift in groundwater flow that could adversely affect groundwater recharge to surface water sites beyond the Project area"...,data that address these concerns are referenced; however there is no in-depth discussion regarding these concerns.

Alderon Response to IR No. NLWR S-06

Alderon has completed a numerical model to predict, based on the information currently available, the hydrogeological impact of the open pit mine on the surrounding groundwater and surface waterbodies. The model report was provided to NLWR and NLDEC on May 17, 2013.

1.1.7 Information Request No. NLWR S-07

The proponent mentions that they received no data with regards to any private drinking water wells within the study area. As mentioned in discussions with the proponent, there are no wells identified in the current database. However, our data are incomplete, as prior to 2010 there were no licenced water-well drillers in Labrador West; therefore, any wells constructed were done so without provincial oversight, as there was no mechanism for the Department to be notified regarding them. This does not preclude the construction of wells in the Project area, and the proponent is responsible with confirming the presence of wells used for private supply.

Alderon Response to IR No. NLWR S-07

Alderon's consultation with cabin owners has included questions on water supply sources and, to date, no cabin owners interviewed have private water supply wells. Alderon will continue to review the potential effects of the project on the hydrogeology of the LSA as project planning and design advance and will consult with cabin owners who could be impacted regarding their private water supplies.

1.2 Information Requests Received from Newfoundland and Labrador Pollution Prevention Division (NLPP)

1.2.1 Information Request No. NLPP S-01

IR No. NLPP 06 and IR No. NLPP 07: The response does not adequately address the question. The response to NLPP 06 acknowledges that a % sulphur of 0.035% was used in the calculations. However, the response to NLPP 07 indicates that a value of 0.5% sulphur was used in the calculations. The new *Sulphur in Diesel Fuel Regulations* limits most emission sources to 0.0015% sulphur and stationary sources to 0.1% sulphur. While it is appreciated (as cited by the proponent) that the % sulphur values used are more conservative than what the Regulation allows, it draws into question the type of fuel that is to be combusted. If the fuel is only available to a maximum of 0.1% sulphur but it was assumed to be 0.5% sulphur, can we be certain of the type of fuel to be combusted?

Alderon Response to IR No. NLPP S-01

All diesel fuel to be consumed by the equipment proposed for this Project will be ultra-low sulphur diesel (ULSD) that will meet the sulphur in diesel specifications as per the federal *Sulphur in Diesel Fuel Regulations* at the time when the Project begins. Currently, ULSD is defined as diesel fuel with a sulphur content of 0.0015% (15 ppm) for market diesel.

The SO_2 emission inventories for the construction and operation phases of the Project have been updated to reflect the use of ULSD for all vehicles on site during both stages (Table 1.2 to Table 1.6). Note that only SO_2 has been changed; other contaminants are reproduced here for completeness.

Table 1.2 Estimated Emissions of CACs During Project Construction from Heavy Equipment

Equipment	CAC Contaminant (tonnes)				
	CO	NOx	SO_2	PM	THC
General					
Mobile cranes - 200 t	2.8	8.12	0.01	0.39	0.55
Boom truck	19.5	43.26	0.06	3.31	3.16
Earth moving equip.	38.0	73.89	0.10	5.79	4.84
Dump Truck	6.5	12.42	0.02	1.04	0.82
Diesel generator	67.5	159.44	0.15	8.59	8.65
Cement plant	0.6	1.32	0.00	0.10	0.10
Cement mixer	1.1	3.53	0.00	0.16	0.25
Rail					
Blasting drill rig	0.7	2.27	0.00	0.11	0.16
Dump truck	22.1	42.22	0.06	3.54	2.77
Bulldozer	3.8	8.33	0.01	0.68	0.61

Equipment	CAC Contaminant (tonnes)				
	CO	NOx	SO_2	PM	THC
Hydraulic excavator	11.3	22.08	0.03	1.73	1.45
Grader	1.3	2.75	0.00	0.22	0.20
Roller compactor	2.8	5.60	0.01	0.42	0.37
Front end wheeled loader	7.3	11.29	0.02	1.25	1.57
Diesel generator	27.0	63.78	0.06	3.43	3.46
Boom crane	0.9	3.03	0.00	0.15	0.22
Boom truck	2.0	4.33	0.01	0.33	0.32
Rail equipment (diesel engine)	8.3	12.85	0.41	1.40	1.79
Tractor backhoe/loader	2.3	3.06	0.00	0.51	0.43
TMF					
Hydraulic excavator	1.4	2.76	0.00	0.22	0.18
Earth moving equip.	2.2	4.22	0.01	0.33	0.28
Drill	1.0	2.87	0.00	0.13	0.17
Tractor backhoe/loader	0.5	0.61	0.00	0.10	0.09
Bulldozer	1.3	2.78	0.00	0.23	0.20
Vibratory roller	0.5	0.92	0.00	0.07	0.06
Sheepsfoot roller	0.9	1.84	0.00	0.14	0.12
Dump Truck	2.6	4.97	0.01	0.42	0.33
Total	**236**	**505**	**0.98**	**35**	**33**

Table 1.3 Estimated Emissions of CACs During Construction Phase from Transportation Equipment

Equipment	CAC Contaminant (tonnes)						
	SO_2	NOx	CO	PM	PM_{10}	$PM_{2.5}$	VOC
General							
Light duty truck	0.001	0.08	1.57	0.003	0.003	0.001	0.076
Tankers	0.001	0.36	0.07	0.009	0.009	0.007	0.016
Flat bed truck	0.003	0.91	0.18	0.022	0.022	0.017	0.040
Multi-axle trailers	0.003	0.91	0.18	0.022	0.022	0.017	0.040
Rail							
Light duty trucks	0.002	0.24	4.72	0.008	0.008	0.004	0.227
Personnel bus	0.005	1.28	0.29	0.044	0.044	0.039	0.042
Water truck	0.000	0.07	0.02	0.002	0.002	0.002	0.004
Fuel truck	0.000	0.07	0.02	0.002	0.002	0.002	0.004
Concrete truck	0.001	0.36	0.07	0.009	0.009	0.007	0.016
Rail welding supply truck	0.001	0.18	0.04	0.004	0.004	0.003	0.008
Rail boom truck	0.000	0.07	0.02	0.002	0.002	0.002	0.004

Equipment	CAC Contaminant (tonnes)						
	SO_2	NOx	CO	PM	PM_{10}	$PM_{2.5}$	VOC
TMF							
Haul truck	0.003	0.91	0.18	0.022	0.022	0.017	0.040
Total	**0.02**	**5.44**	**7.35**	**0.15**	**0.15**	**0.12**	**0.52**

Table 1.4 Estimated Emissions of CACs During Project Construction

Activity	Total CAC Emissions (tonnes)						
	CO	NOx	SO_2	TPM	PM_{10}	$PM_{2.5}$	THC
Transportation of equipment - general	2.00	2.26	0.008	0.055	0.055	0.042	0.17
Transportation of equipment - rail	5.17	2.27	0.010	0.071	0.071	0.058	0.31
Transportation of equipment - TMF	0.18	0.91	0.003	0.022	0.022	0.017	0.04
Equipment operation - general	74.2	296.6	0.3	9.1	--	--	18.4
Equipment operation - rail	33.1	173.2	0.6	4.5	--	--	13.3
Equipment operation - TMF	3.2	20.2	0.03	0.5	--	--	1.4
Unpaved roads	--	--	--	1076.7	179.1	2.1	--
Fugitive dust (ground clearing)	--	--	--	115.7	--	--	--
Cement plant operation	--	--	--	0.11	0.04	--	--
Total	**118**	**495**	**1.0**	**1399**	**276**	**41**	**34**

Table 1.5 CAC Emissions for Equipment During Project Operation

Equipment	Emissions of CACs (tonnes/yr)					
Primary Mining Equipment	CO	NOx	SO_2	TPM	PM_{10}	$PM_{2.5}$
Wheel Loader	1.89	2.74	0.04	1.45	1.39	1.30
Haul Truck	477.00	936.00	1.41	77.00	73.92	69.30
Secondary Mining Equipment						
Wheel Dozer (Caterpillar 844)	0.72	1.77	0.02	0.81	0.78	0.73
Track Dozer (Caterpillar CAT D9)	0.41	1.01	0.01	0.47	0.45	0.42
Track Dozer (Caterpillar CAT D10)	1.23	3.04	0.04	1.40	1.34	1.26
Motor Grader (Caterpillar 16M)	4.98	9.44	0.02	1.13	1.08	1.02
Water Truck 20,000 gal (Caterpillar CAT777F)	4.60	20.21	0.10	0.66	0.63	0.59
Auxiliary Equipment						
Air Track Drill	0.09	3.27	0.00	0.17	0.16	0.15
Wheel Loader	0.25	0.37	0.01	0.19	0.19	0.17
Service Truck	3.77	0.19	0.00	0.00	0.00	0.00
Forklifts 15 tones	0.34	1.01	0.03	0.05	0.05	0.04
Forklifts 2.5 tones	0.34	1.01	0.03	0.05	0.05	0.04

Equipment	Emissions of CACs (tonnes/yr)					
Primary Mining Equipment	**CO**	**NOx**	**SO_2**	**TPM**	**PM_{10}**	**$PM_{2.5}$**
Pickup 3/4 Ton Mine Ops.	2.05	0.11	0.00	0.00	0.00	0.00
Pickup 3/4 Ton Maint.	2.05	0.11	0.00	0.00	0.00	0.00
Pickup 3/4 Ton Eng.,Survey.,Geol.	2.05	0.11	0.00	0.00	0.00	0.00
Pickup 3/4 Ton Ore Cotrol, Samplers	2.05	0.11	0.00	0.00	0.00	0.00
Pickup 3/4 Ton Blasting	2.05	0.11	0.00	0.00	0.00	0.00
Pickup 1 Ton Flatbed	2.05	0.11	0.00	0.00	0.00	0.00
Pickup 1 Ton Service Body	2.05	0.11	0.00	0.00	0.00	0.00
Water truck fill station (diesel pump)	0.66	3.08	0.01	0.00	0.01	0.00
Light Plant (1000 w. diesel generator)	5.25	6.55	0.01	0.68	0.65	0.61
Mobile Pump (125 HP diesel)	1.33	6.16	0.02	0.01	0.01	0.01
Portable Generator 600kw	1.33	6.16	0.02	0.01	0.01	0.01
Aggregate Plant	1.43	2.84	0.01	0.21	0.20	0.19
Tailings Management Facility Equipment						
Pickup Truck	2.05	0.11	0.00	0.00	0.00	0.00
Excavator	1.04	1.97	0.00	0.24	0.23	0.22
Boom Truck	2.29	4.54	0.01	0.33	0.32	0.30
Water Truck	0.08	0.36	0.00	0.01	0.01	0.01
Dump Truck	0.15	3.18	0.00	0.16	0.16	0.15
Loader	0.34	0.49	0.01	0.26	0.25	0.23
Dozer	0.20	0.48	0.01	0.22	0.21	0.20
Vibratory Roller	0.77	1.47	0.00	0.17	0.16	0.15
Sheepsfoot Roller	0.77	1.47	0.00	0.17	0.16	0.15
Boiler House						
Boiler (up to 5)	12.00	48.00	0.51	4.73	2.37	0.57
Railway						
Locomotives	4.81	34.28	0.02	0.89	0.89	0.89
Railway Inspector Pick-up Truck	0.21	0.11	0.00	0.00	0.00	0.00
Rail Ballast Regulator	0.11	0.11	0.00	0.02	0.02	0.01
Rail Track Tamper	0.11	0.11	0.00	0.02	0.02	0.01
Boom Truck	2.29	4.54	0.01	0.33	0.32	0.30
Total	**547.20**	**1106.78**	**2.34**	**91.88**	**86.04**	**79.07**

Table 1.6 Summary of Project CAC Emissions During Operation

Activity	Emissions of Various CACs (tonnes/yr)					
	CO	SO_2	NO_X	TSP	PM_{10}	$PM_{2.5}$
Mining and other Project Equipment	547.2	2.34	1106.8	91.9	86	79.1
Fugitive Emissions	-	-	-	887.1	392.2	190.3
Total Project Emissions	547.2	2.34	1,107	979	478.2	269.4

1.2.2 Information Request No. NLPP S-02

IR No. NLPP 08: The proponent has provided a table which indicates the changes in emission rates between modelling for the EIS and modelling for the IRs. Table 2.6.12 however has a couple of questionable entries. For both "blasting" and "drilling" the uncontrolled emission rates are lower than the controlled emission rates. How is that possible? Also, how does an activity, such as "wind erosion" go from have no cited uncontrolled emission, to having a controlled emission? It is quite likely that the Table has erroneous labelling.

Alderon Response to IR No. NLPP S-02

NLPP is correct in that there were misplaced columns in Table 2.6.12 in the response to IR No. NLPP 08 pertaining to blasting and drilling emissions. The corrected values for the controlled emissions for blasting and drilling are those included in Table 1.6 below (revised Table 2.6.12) under the controlled emission rate column. The values provided for the uncontrolled emissions should be the same as those for the controlled emissions as no mitigation has been applied (Table 1.7). In terms of the “wind erosion” sources of emissions, the emission rates for uncontrolled emissions have now been included in Table 1.7.

Table 1.7 Project Activities, Planned Mitigation and Particulate Emission Rates (Revised Table 2.6.12 from EIS Volume 1)

Activity	Uncontrolled Emission Rate (g/s)			Planned Mitigation	Control Efficiency (%)	Controlled Emission Rate (g/s)		
	TPM	PM_{10}	$PM_{2.5}$			TSP	PM_{10}	$PM_{2.5}$
Blasting*(annual)	4.5	2.34	0.135	-	-	4.5	2.34	0.135
Drilling	0.662	0.662	0.662	-	-	0.662	0.662	0.662
Material Handling - Loading Mined Ore into Haul Trucks	1.09	0.516	0.078	-	-	1.09	0.516	0.078
Unpaved Road - Haul Truck Travel to Primary Crusher No.1	51.8	13.7	1.37	Dust Suppression/Vehicle Restrictions	98	1.036	0.274	0.0274
Unpaved Road - Haul Truck Travel to Primary Crusher No.2	68.6	17.5	1.75	Dust Suppression/Vehicle Restrictions	98	1.372	0.35	0.035
Material Handling - Unloading of Mined Ore to Gyratory Crusher	1.09	0.516	0.078	-	-	1.09	0.516	0.078
Material Handling - Loading of Overburden/Waste Rock	2.34	1.11	0.168	-	-	2.34	1.11	0.168
Unpaved Road - Haul Truck Travel to Rose North Disposal Area	125.4	33.4	3.34	Dust Suppression/Vehicle Restrictions	98	2.508	0.668	0.0668
Unpaved Road - Haul Truck Travel to Rose South Disposal Area	551	146.7	14.7	Dust Suppression/Vehicle Restrictions	98	11.02	2.934	0.294
Material Handling - Unloading of Overburden/Waste Rock	2.34	1.11	0.168	-	-	2.34	1.11	0.168
Wind Erosion - Rose North Waste Pile	0.133	0.066	0.027	Assumes that at any given time only approximately 6% of the pile is exposed to wind erosion or contains newly deposited material	94	0.009	0.004	0.002

Activity	Uncontrolled Emission Rate (g/s)			Planned Mitigation	Control Efficiency (%)	Controlled Emission Rate (g/s)		
	TPM	PM_{10}	$PM_{2.5}$			TSP	PM_{10}	$PM_{2.5}$
Wind Erosion - Rose East Waste Pile	3.81	1.91	0.763	Assumes that at any given time only approximately 6% of the pile is exposed to wind erosion or contains newly deposited material	94	0.254	0.127	0.051
Wind Erosion - ROM Stockpile Small	0.003	0.002	0.0007	Assumes that at any given time only approximately 6% of the pile is exposed to wind erosion or contains newly deposited material	94	0.0002	0.0001	4.37E-05
Wind Erosion - ROM Stockpile Large	0.035	0.018	0.007	Assumes that at any given time only approximately 6% of the pile is exposed to wind erosion or contains newly deposited material	94	0.002	0.001	0.0005
Crusher Buildings[1]	0.807	0.41157	0.12105	Baghouse	-	0.807	0.41157	0.12105
Material Handling - Loading to Crusher Conveyor	80.7	40	40	Enclosed building with bag house / collection at transfer points	99	0.807	0.4	0.4
Material Handling - Conveying to Crushed Ore Stockpile	80.7	40	40	Uncovered Conveyor/Undisturbed Material	99.9	0.0807	0.04	0.04
Material Handling - Stacking Conveyor	80.7	40	40	Minimize drop height/coarse material	95	4.035	2	2
Wind Erosion - Crushed Ore Stockpile 1	0.004	0.002	0.0009	Assumes that at any given time only approximately 6% of the pile is exposed to wind erosion or contains newly deposited material	94	0.0003	0.0001	5.77E-05
Wind Erosion - Crushed Ore Stockpile 2	0.004	0.002	0.0009	Assumes that at any given time only approximately 6% of the pile is exposed to wind erosion or contains newly deposited material	94	0.0003	0.0001	5.77E-05
Material Handling - Reclaim of Crushed Ore from Stockpile	80.7	40	40	Enclosed in reclaim tunnel - dust collection with bag house	99	0.807	0.4	0.4

[1] The emission rates provided for the crusher buildings already take into account the planned mitigation (Baghouse)

Activity	Uncontrolled Emission Rate (g/s)			Planned Mitigation	Control Efficiency (%)	Controlled Emission Rate (g/s)		
	TPM	PM_{10}	$PM_{2.5}$			TSP	PM_{10}	$PM_{2.5}$
Material Handling - Conveying of Reclaimed Crushed Ore to Process Plants	80.7	40	40	Uncovered Conveyor/Undisturbed Material	99.9	0.0807	0.04	0.04
Feeding to Process Plants	80.7	40	40	Enclosed in building with dust collection and wet process	99.9	0.0807	0.040	0.040
Process Plants - Grinding/Screening	Neg.	Neg.	Neg.	Wet process	-	Neg.	Neg.	Neg.
Material Handling - Final Concentrate Loading to Conveyor	30.4	15.2	15.2	3.5% to 6% moisture - no dust collection	99	0.304	0.152	0.152
Material Handling - Final Concentrate Conveying	30.4	15.2	15.2	Uncovered Conveyor/Undisturbed Moist Material	99.9	0.0304	0.0152	0.0152
Material Handling - Rail Car Loading	30.4	15.2	15.2	Bag house on hopper - no dust collection at discharge chute - moist material	99	0.304	0.152	0.152
Wind Erosion - Tailings Pond	92.2	46.1	18.4	Assumes that at any given time approximately 6% of the pile is exposed to wind erosion or contains newly deposited material.	94	6.14	3.07	1.23

1.2.3 Information Request No. NLPP S-03

IR No. NLPP 09: While generically the response is accurate, it is misleading when it comes to point sources, in particular the boiler house. Per the *Air Pollution Control Regulations*, all new emission sources must meet Good Engineering Stack Height if emissions of $S0_2$ or TSP exceed 20 tonnes annually. This is the case for the boiler house as 170 tonnes of $S0_2$ are projected to be emitted. Therefore the downwash impact cited in the response will be non-existent and emissions will carry farther afield. So while impacts in close proximity may be conservatively estimated by modelling this particular source as a volume source, it underestimates the impacts farther away. Given the relative closeness of such emission sources to the property boundary, there may be some impacts outside the property boundary that are unaccounted for. Therefore a sensitivity analysis should be conducted comparing the major point sources modelled as point sources vs. volume sources for all affected pollutants and discharges.

Alderon Response to IR No. NLPP S-03

For clarification, please note that the boiler exhaust stacks were modelled correctly as point sources, not as volume sources. The previous discussion was intended to discuss the general differences between point and volume sources. Alderon acknowledges the stipulation of the *Air Pollution Control Regulations* regarding good engineering practice (GEP), and it is assumed for modeling purposes that there will not be downwash because the GEP will be applied to the Project during detailed engineering. Therefore, if the boiler was represented correctly as an elevated point source, a sensitivity analysis would be appropriate, but upon clarification that GEP will be applied in stack design, it is expected that the review will conclude that a sensitivity analysis is not required.

1.2.4 Information Request No. NLPP S-04

IR No. NLPP 10: The proponent argues that modelling for construction activities were not required stating "EIS guidelines did not specifically state that construction emissions were to be modelled". However, Section 4.16.4 of the EIS Guidelines states that the adverse environmental effects of the Project on the atmospheric environment must be assessed for all phases of the Project. That section also states that modelling shall be conducted in accordance with the requirements of the *Air Pollution Control Regulations* of the *Newfoundland and Labrador Environmental Protection Act* (NLEPA) and the Newfoundland and Labrador Department of Environment and Conservation (DOEC) guidance documents: *Guidance for Plume Dispersion Modeling;* and *Determination of Compliance with the Ambient Air Quality Standards.* The request for modelling for the construction phase is reiterated.

Alderon Response to IR No. NLPP S-04

Air dispersion modelling, using CALPUFF, has been conducted for the construction of the Project to predict ground level concentrations of particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) and nitrogen oxide (NO_x) and is provided below. The construction scenario modelled represents a period in time during which the maximum amount of construction equipment and activity would be taking place simultaneously and includes emissions of $PM_{2.5}$ and NO_x from the operation of various pieces of combustion equipment and the fugitive releases

of $PM_{2.5}$ from various construction activities. The combustion sources and quantities used in the modelling are represented in Table 1.8. The emissions rates for each piece of combustion equipment are represented in Table 1.9. The sources of fugitive dust emissions, planned mitigation and resulting emission rates used in the construction model are represented in Table 1.10.

Table 1.8 Combustion Construction Equipment and Quantities

Combustion Equipment	Equipment Counts	Equipment Location (# of pieces per area)							
		Rose Pit	Rose North	Rose South	Polishing pond and tailings	Crushers, conveyors and Processing	Rail loop and loading area	Rail line through Wabush to Mainline	Site roads
Dozers	31	1	1	1	2	6	4	6	10
Excavators on site	20	3				7	3	4	3
Large trucks on site	15	12						3	
Cranes	16					10	2	3	1
Pickups	81	6	2	2	6	30	8	15	12
Buses	23								23
Water Trucks	2								2
Generators	15	2	1	1	1	4	2	4	

Table 1.9 Emission Rates for Combustion Construction Equipment

Combustion Equipment	Emission Rates (g/s) Per Piece	
	PM	NOx
Dozers on site	0.002	0.403
Excavators on site	0.002	0.403
Large trucks on site	0.002	0.403
Cranes on site	0.002	0.402
Pickups on site[1]	2.39E-05	1.71E-03
Buses[1]	1.88E-04	7.10E-03
Water Trucks[1]	4.51E-05	1.64E-03
Generators	0.1395	1.965
Dozers on site	0.002	0.403
Excavators on site	0.002	0.403
Large trucks on site	0.002	0.403

Notes:
[1]Assumes gas consumption for pick-ups and diesel for buses and watertrucks
Vehicles operating 16 hrs/day and generators 24 hrs/day
Assume all PM is PM2.5 for combustion sources

Table 1.10 Sources of Fugitive Dust Releases During Project Construction, Planned Mitigation and Emission Rates

Activity	Uncontrolled Emission Rate (g/s)	Planned Mitigation	Control Efficiency (%)	Controlled Emission Rate (g/s)
	$PM_{2.5}$			$PM_{2.5}$
Site Clearing[1]	0.173	-	-	0.173
Rock Crushers[2]	-	Wet Suppression	-	0.017
Material Handling - Loading Overburden into Large Trucks[3]	0.003	-	-	0.003
Material Handling - Unloading of Overburden[4]	0.003	-	-	0.003
Unpaved Road - Worker Bus[5]	0.871	Dust Suppression/Vehicle Restrictions	98	0.017
Unpaved Road - Pick-up Trucks[6]	4.12	Dust Suppression/Vehicle Restrictions	98	0.082
Unpaved Road Travel - Large Trucks[7]	129	Dust Suppression/Vehicle Restrictions	98	2.59

Notes:
[1] Emissions per dozer
[2] Emission factor includes wet suppression control; emissions per crusher
[3] Emissions per large truck
[4] Emissions per large truck
[5] Emissions are based on total km's travelled by each bus
[6] Emissions are based on total km's travelled by each pick-up truck
[7] Emissions are based on total km's travelled by each large truck

Emission factors were acquired from the US EPA AP-42 Compilation of Air Pollutant Emission Factors, the US EPA NONROAD Program, and Transport Canada's Urban Transportation Emission Calculator, and the emission rates (as presented above) were determined using the same methodologies as for the operation model.

The results of the model are presented in Table 1.11 and Figures 1.5, 1.6 and 1.7.

Table 1.11 Maximum Predicted Ground Level Concentrations during Project Construction

Receptor #	UTM E (m)	UTM N (m)	$PM_{2.5}$ (µg/m^3)			NO_x (µg/m^3)		
			1 Hour	24 Hour	Annual	1 Hour	24 Hour	Annual
79	638143	5859198	38.2	7.1	0.6	66.7	10.3	1.8
85	638096	5860234	27.8	6.2	0.5	56.1	9.2	1.6
86	634649	5859985	66.4	6.9	0.5	136.2	23.9	1.8
87	638121	5860165	28.5	6.4	0.5	57.1	9.3	1.6
89	638022	5859898	29.8	6.1	0.5	58.1	9.1	1.6
90	638179	5859442	34.3	6.7	0.6	62.5	9.6	1.7
91	636207	5859604	30.7	5.0	0.4	55.1	9.4	1.3
92	636581	5859380	34.8	5.4	0.5	66.3	10.5	1.5
94	634510	5859647	67.9	7.4	0.5	146.7	25.3	1.9
95	634678	5859495	71.9	8.1	0.5	155.6	26.3	2.0
96	636304	5859415	33.5	5.4	0.4	59.0	9.9	1.4
97	636640	5859182	35.7	5.4	0.5	64.3	10.4	1.5
98	637947	5858833	43.7	7.5	0.7	78.8	15.7	2.0
99	636610	5859072	36.6	5.5	0.5	63.1	10.1	1.5
100	637941	5858760	45.8	7.8	0.7	79.1	16.7	2.0
101	636443	5858875	41.1	5.8	0.5	62.2	10.8	1.5
102	637892	5858730	46.5	7.6	0.7	76.2	17.0	2.0
103	636583	5858537	46.9	5.6	0.5	62.3	11.5	1.6
104	637858	5858700	48.1	7.7	0.7	73.9	17.3	2.0
105	637523	5858525	50.2	7.2	0.6	66.8	15.1	1.9
106	636312	5857907	55.9	7.9	0.6	67.5	12.8	1.8
107	636542	5858958	39.6	5.7	0.5	63.6	10.6	1.5
110	641281	5858271	202.8	**33.5**	3.1	**433.3**	117.7	16.8
112	641268	5858220	192.4	**33.1**	2.9	403.2	86.6	16.8
113	636120	5858266	55.6	7.5	0.6	68.1	13.0	1.7
114	636120	5858107	60.1	8.9	0.6	71.1	14.0	1.8
115	641256	5858126	168.9	**33.0**	2.5	376.5	80.3	14.2
116	637564	5858087	65.0	9.1	0.8	79.8	16.0	2.3
117	637567	5858027	68.9	9.7	0.8	83.3	17.3	2.3

Receptor #	UTM E (m)	UTM N (m)	$PM_{2.5}$ (µg/m^3)			NO_x (µg/m^3)		
			1 Hour	24 Hour	Annual	1 Hour	24 Hour	Annual
118	636142	5858000	61.0	9.1	0.7	70.0	13.7	1.9
129	643361	5857543	84.1	8.5	1.1	186.5	41.6	4.2
121	640971	5858278	444.2	**78.9**	9.1	**1233.7**	**599.6**	52.5
122	636155	5857880	62.3	9.2	0.7	67.3	13.4	1.9
124	640790	5857815	158.5	22.1	2.2	243.8	55.1	7.1
126	636113	5857736	69.8	10.4	0.7	69.5	13.9	2.1
128	636076	5857545	75.6	11.2	0.8	69.3	13.6	2.2
120	640785	5857909	187.9	**25.8**	2.3	271.4	54.3	7.6
130	637458	5857492	88.8	13.6	1.0	105.1	17.5	2.7
131	636020	5857328	76.6	11.1	0.8	81.4	12.8	2.4
133	641547	5857428	87.7	14.8	1.2	251.0	55.5	6.5
134	641832	5857274	68.5	10.9	1.0	216.6	48.2	4.3
135	636107	5857197	80.5	11.3	0.9	91.1	12.6	2.4
136	636085	5857085	87.2	11.9	0.9	100.3	12.7	2.6
137	641798	5857046	61.2	9.9	0.9	192.7	42.2	3.7
138	636911	5856921	93.7	16.4	1.2	124.0	19.7	3.0
139	636086	5857040	87.9	11.8	0.9	102.4	12.5	2.7
140	636116	5856825	98.5	12.8	1.1	111.6	15.1	3.1
141	637251	5856653	144.7	**25.6**	2.0	154.8	27.0	4.1
142	636333	5856540	109.3	16.0	1.3	132.4	18.7	3.9
143	636571	5855889	249.2	**47.8**	2.8	171.9	61.7	7.6
146	636377	5856488	113.1	17.4	1.4	139.6	25.4	4.0
144	636394	5856120	166.1	29.5	2.1	186.9	41.7	6.3
145	636340	5856300	179.9	22.9	1.8	170.7	42.4	5.2
147	634667	5855402	252.1	**44.2**	2.2	412.3	45.2	6.5
149	634546	5855504	238.9	**44.9**	2.6	402.2	50.1	7.6
150	636889	5855883	613.7	**121.3**	9.7	151.6	63.7	8.2
151	634622	5855529	258.8	**47.7**	2.4	397.7	47.9	6.9
153	634714	5855771	325.8	**52.6**	2.6	320.2	53.6	7.2
154	636977	5855810	762.5	**154.8**	14.2	153.5	43.8	9.2
158	636719	5855716	468.5	**94.4**	4.4	169.8	74.7	12.0
167	641794	5855094	41.4	5.4	0.6	191.5	21.7	2.5
168	637470	5854747	115.5	18.3	1.4	216.4	29.4	3.9
170	637486	5854714	116.1	18.5	1.4	215.7	27.5	3.8
176	637584	5853982	70.6	14.2	0.9	196.4	18.7	2.7
179	634680	5853241	71.3	9.2	0.6	234.6	32.3	2.2
184	633405	5852612	64.3	8.0	0.4	227.9	29.1	1.9
191	634831	5851658	56.1	6.5	0.4	130.1	22.3	1.5

Receptor #	UTM E (m)	UTM N (m)	$PM_{2.5}$ (µg/m^3)			NO_x (µg/m^3)		
			1 Hour	24 Hour	Annual	1 Hour	24 Hour	Annual
192	635111	5851137	52.2	5.7	0.4	110.9	18.4	1.3
193	635155	5851046	54.0	5.9	0.4	115.9	19.6	1.4
194	632625	5851130	72.8	7.5	0.3	185.4	24.1	1.3
195	633169	5850770	60.5	7.0	0.3	152.1	24.1	1.3
196	635473	5850235	36.2	4.3	0.3	102.3	15.4	1.1
197	636055	5849778	33.0	4.0	0.3	111.9	15.6	1.1
199	635107	5848978	36.7	3.9	0.2	115.2	19.2	1.0
200	635065	5848939	36.6	3.9	0.2	113.8	19.1	1.0
201	634313	5848305	37.7	3.8	0.2	95.3	17.2	0.9
306	637543	5856841	164.3	26.3	2.1	205.2	29.8	4.1
308	636827	5855954	328.2	**57.9**	4.8	174.5	52.5	8.0
309	638211	5859648	34.5	7.0	0.6	63.5	9.7	1.7
310	637489	5858449	51.7	7.3	0.6	70.0	14.4	1.9
312	634694	5853216	70.0	9.1	0.6	235.2	31.6	2.2
313	641288	5858122	185.7	**33.4**	2.5	**441.8**	85.2	14.3
314	641447	5857463	89.9	15.4	1.2	245.0	51.2	9.2
315	641866	5856392	49.2	7.8	0.7	228.4	32.5	3.1
316	630917	5856047	86.7	15.8	0.6	**491.4**	61.4	2.1
317	630872	5856089	84.8	15.0	0.6	**482.0**	58.8	2.0
318	630961	5859399	59.4	6.3	0.4	188.6	34.2	1.7
319	630451	5858893	46.3	5.8	0.3	144.5	24.5	1.3
320	630263	5858739	49.4	6.1	0.3	137.8	22.8	1.3
NL Regulatory Limits			**-**	**25**	**-**	**400**	**200**	**100**

Figure 1.6 1 Hour NOx Concentration

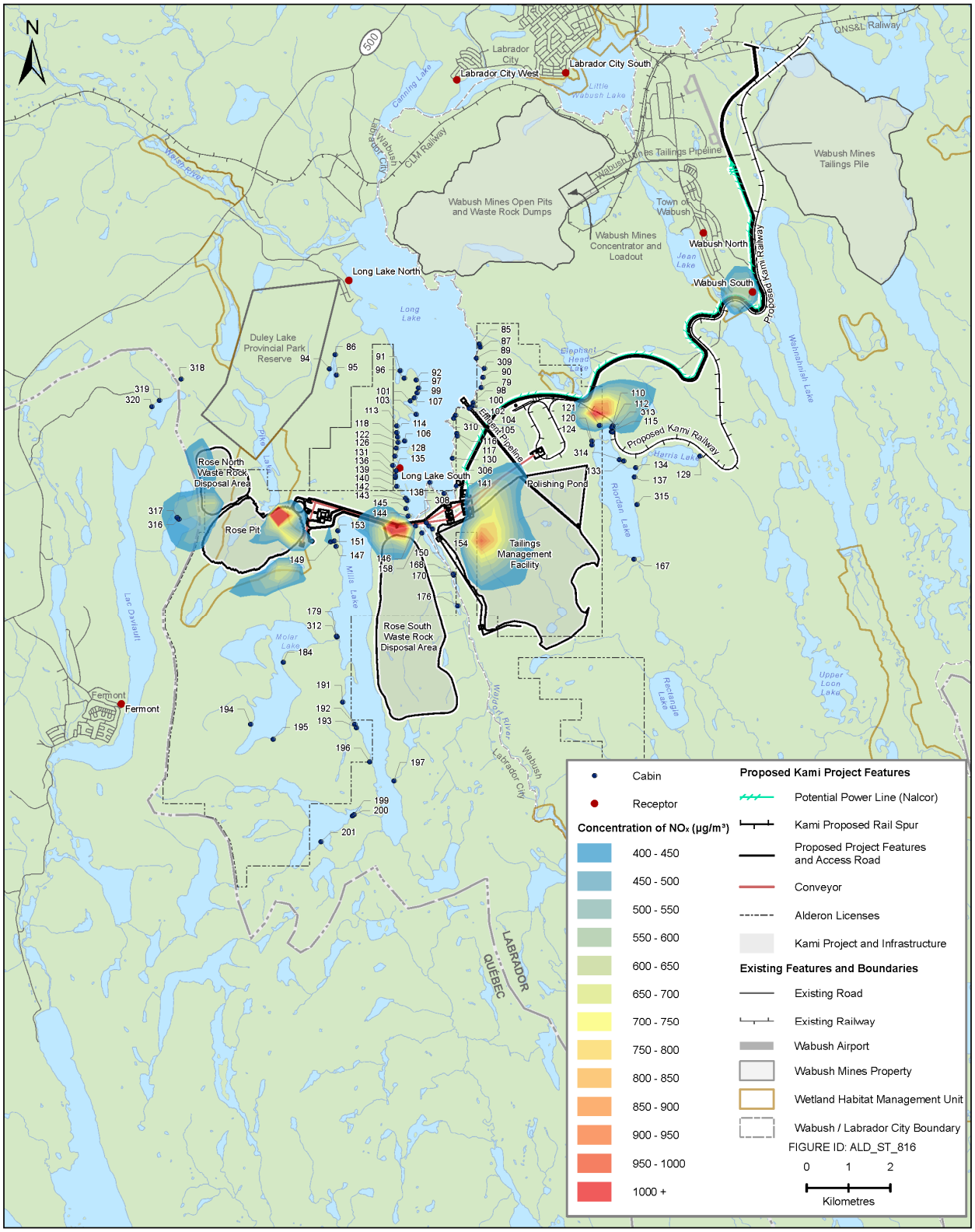


Figure 1.7 24 Hour NOx Concentration

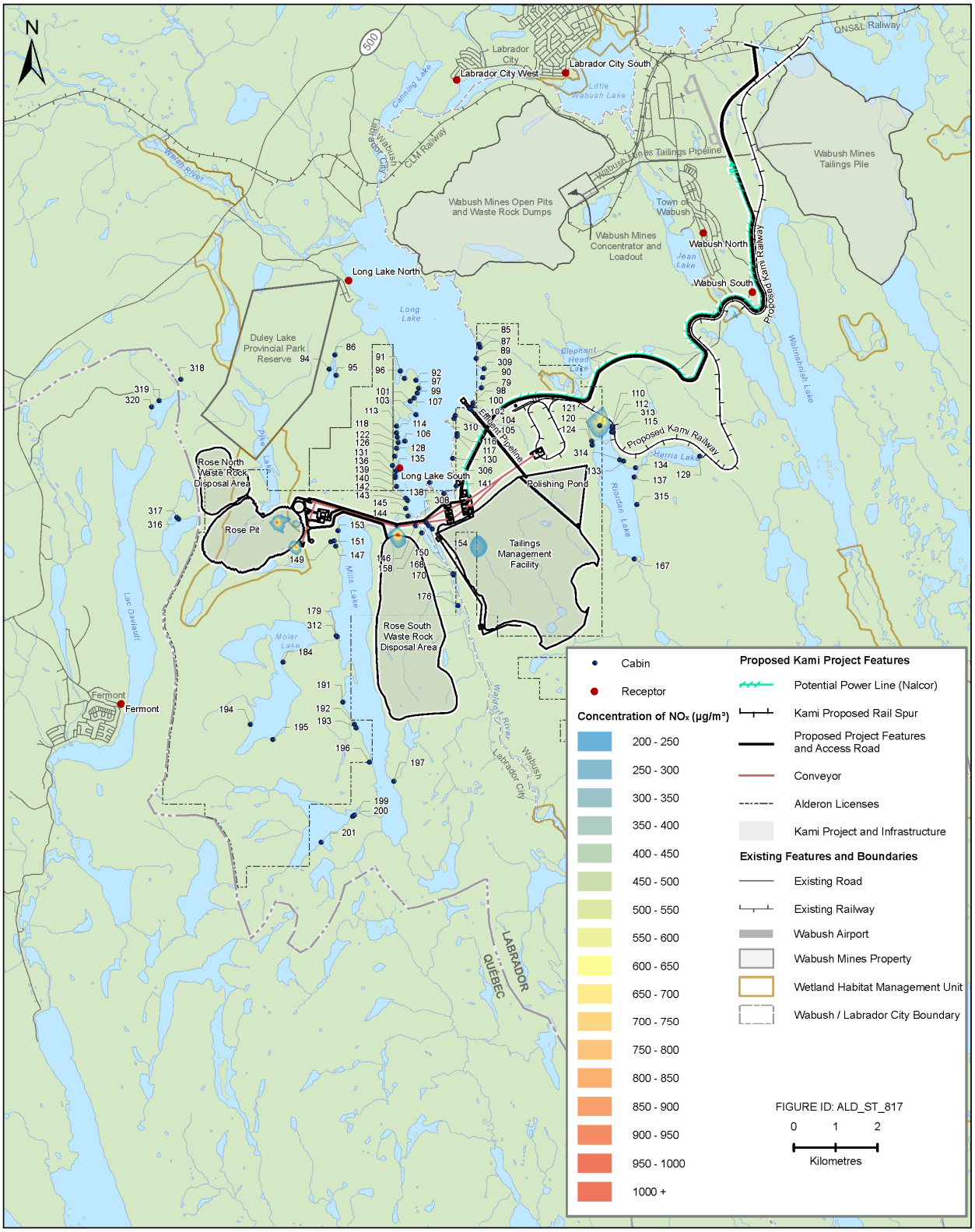
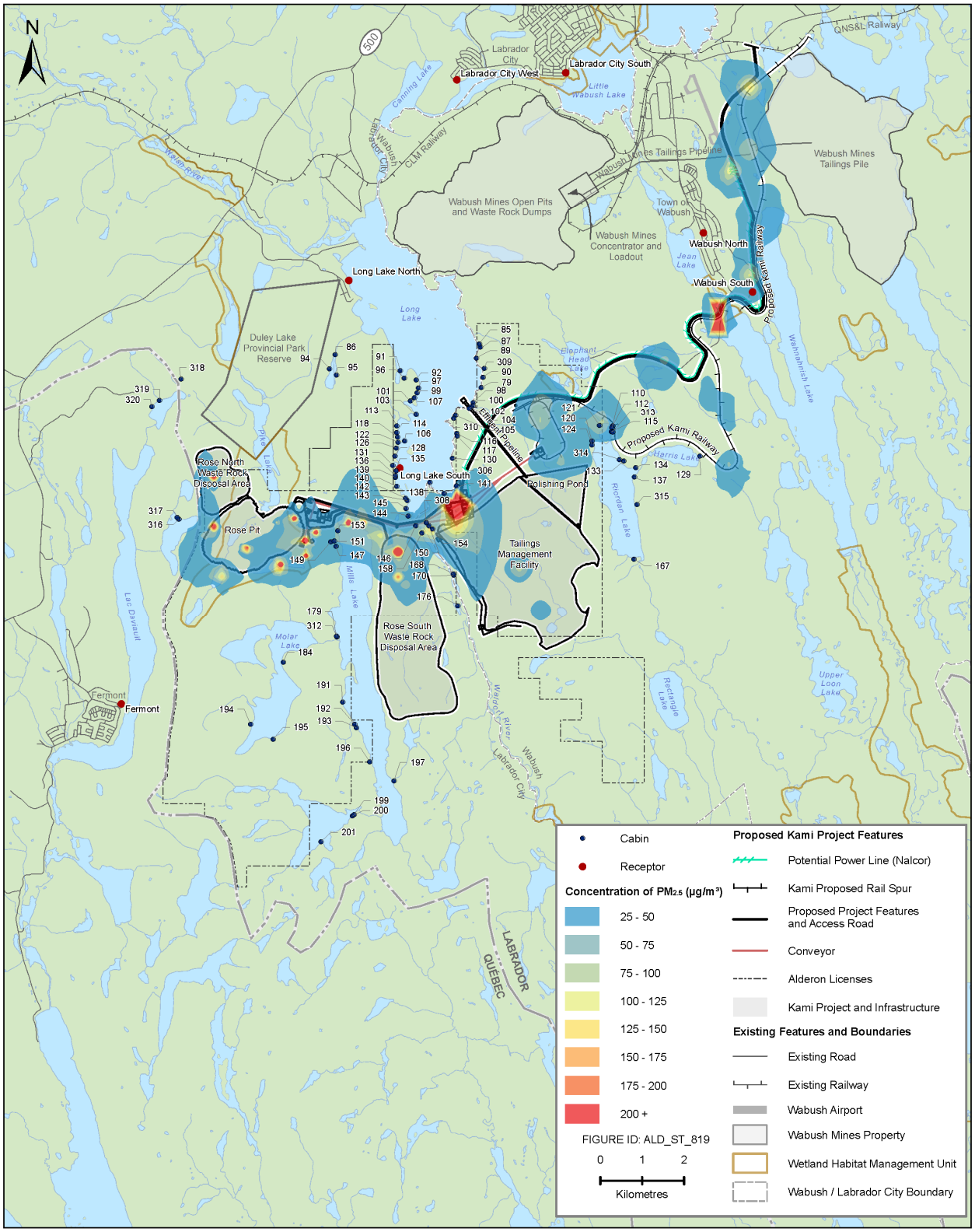


Figure 1.8 24 Hour $PM_{2.5}$ Concentration



The results of the modeling of nitrogen oxides are for all NO_x, not just the regulated NO_2 fraction, following the same procedure as that of the operational phase. The NO_2 fraction is likely to be in the order of 25 percent of the NO_x, thus greatly reducing the exceedances likely for those receptors very near the larger sources, such as the generators. The nitrogen oxide levels are elevated only in proximity to the large source, or groupings of smaller sources. The $PM_{2.5}$ (particulate) levels are elevated along the on-site roads, and exceedances are shown to be possible at the rail turn on the south of Wabush, although mitigation measures, as presented below, are likely to eliminate these exceedances. These results represent the maximum level of activity on the site, with a high level of dust-control mitigation on the roadways. The potential adverse effects are largely mitigated in most of the year by the frozen surfaces or wet conditions that are frequent in this area, and mitigation to control potential exceedances is likely to be required for a minor part of the year only (during hot, dry, dusty conditions), when intense activity in the areas near receptors may occur.

Construction mitigation for this Project is similar to that for operation. Key to the control of road dust will be the regular use of water trucks to suppress dust generation on the roadways. Although much of the construction activity is spatially separated from receptors, this is not the case at the processing area or at the rail loop, particularly at the south end of Wabush; these areas will be monitored for dust potential, and dust-control mitigation (e.g., water spray) will be applied as required. Speed limits will be established and enforced for the purposes of reduction of particulate matter, as well as for site safety considerations. Alderon is planning to offer bus transport for employees, which will reduce the number of vehicles on the site roads, and hence emissions and dust. The pavement, where there is a transition from unpaved to paved road, will be kept free of mud tracked out by vehicles leaving the site especially where such transition is at a public roadway.

Adverse effects of dust generation at the south end of Wabush will be limited as a result of rail construction, which will be a temporary and mobile activity. Dust control measures (e.g., water trucks) will be implemented during construction activities near the town, particularly in hot summer conditions. Generators, laydown areas, and fabrication areas will be located as far as possible from this part of the route.

In the winter, weather conditions may require some vehicles to idle when not in use; parking areas will be located as far as reasonably possible from the receptors. The operation of vehicles and generators will be limited to the times that they are required, avoiding unnecessary idling where possible.

Details on the mitigation measures and monitoring programs will be developed in the Environmental Management System within the Sustainability Management Framework.

1.2.5 Information Request No. NLPP S-05

The updated input files used for the modelling exercise need to be provided to validation purposes.

Alderon Response to IR No. NLPP S-05

The CALPUFF input files, used to model the construction phase of the proposed Project, have been provided to NLPP on May 31, 2013, and a table has been provided as a direct correlation from the source ID, as contained in the input file, and the description of the source.

1.3 Information Requests Received from Newfoundland And Labrador Wildlife Division (NLWD)

1.3.1 General Comments from NLWD

The EIS amendment, as submitted, does not significantly advance the primary question relating to the content of a corporate stewardship agreement between the Town of Labrador City and the Alderon Iron Ore Company. Similarly it does not advance discussion of a separate corporate agreement which is referenced between themselves and the Town of Wabush. Information of the status of these agreements is further referenced in the responses, in particular NLWD #34-37.

IR # NLWD 46 indicates that "as administrator of the municipal stewardship program, the NL Wildlife Division would provide advice to the Town of Labrador City on how the proposed terms of any agreement would impact, or is consistent with, the existing municipal stewardship agreement terms and goals." This is also because the province is a signatory to that 2005 agreement.

Alderon Response to General Comments from NLWD

Alderon acknowledges the interest of the Province in the resolution of issues associated with the potential impacts of the Kami Project upon areas identified as habitat management units in the Municipal Stewardship Agreements which have been concluded with Towns of Labrador City and Wabush.

With respect to the Town of Wabush, Alderon does not intend to pursue a separate corporate stewardship agreement. Any potential impacts of the Project upon the Elephant Head Lake Management Unit have been avoided by change in the rail routing to Option 2 as presented in Section 1.0. No permanent impact on or loss of land within the Jean Lake Rapids Management Unit is predicted. However, Alderon is engaged in ongoing discussions with the Town of Wabush pursuant to a Memorandum of Understanding (MOU) which was concluded on November 13, 2012. If impacts upon these management units are subsequently identified, Alderon will work with the Town to develop a mutually satisfactory resolution.

With respect to the Town of Labrador City, it is Alderon's view that the designation of the Pike Lake South Management Unit as a protected area under the Town's 2007 Municipal Plan is not applicable to the Kami Project. The management unit was legally established after the Kami mineral licence had been issued, contrary to the statutory process that requires the Minister to identify any conflicts, and contrary to the rights of prior third-party mineral licence holders. This is shown by the following chronology:

- **2001** – IOC stakes a portion of the Iron Formation in the Labrador City Area. The Kamistiatusset (Kami) area is recommended as a high priority target.
- **March 7, 2005** – Labrador City and the Province conclude a Municipal Stewardship Agreement. The agreement identifies nine areas, including the Pike Lake South area, as candidates for designation as protected areas under a future Municipal Plan.

- **April 24, 2006** – Licence 11927M issued to Altius Resources Inc. (Altius). Licence 11927M (majority of pit) overlaps the area identified under the Municipal Stewardship Agreement as the Pike Lake South Management Unit.
- **2007** – Development of Labrador City Municipal Plan and Development Regulations
    - Proposed Pike Lake South Management Unit is identified in the draft Municipal Plan as a protected area within a larger area designated as Mining Reserve – Rural.
    - Draft Municipal Plan submitted to Minister of Municipal Affairs for review under section 15 of *Urban and Rural Planning Act, 2000* to "determine provincial and other government agency interests".
    - Minister advises Town that no changes to Draft Municipal Plan are proposed.
    - Draft Municipal Plan submitted to a one-day public hearing.
    - Draft Municipal Plan and Development Regulations approved by Council.
    - Draft Municipal Plan and Development Regulations receive final review by Minister to determine if either are "contrary to law or a policy of the government of the Province".
    - December 28, Municipal Plan and Regulations are gazetted and come into effect.
- **December, 2010** – Altius licences, including Licence 11927M, are grouped and transferred to Alderon as Licence 15980M.

The issuance of mineral licence 11927M to Altius pre-dated the legal establishment of the Pike Lake South Management Unit as a protected area under the 2007 Labrador City Municipal Plan. Moreover, notwithstanding the significance of mining to the region, the known mineral potential of the Kami Project area and the prior existence of Altius' mineral claims, the development, drafting and passage of the Municipal Plan completely failed to take into account the potential conflict between protection of the proposed management unit and mineral development. Procedural defects associated with the process for legal establishment of the Pike Lake South Management Unit in the 2007 Municipal Plan include the following:

- The apparent failure to take into account known mineral potential when identifying the Pike Lake South Management Unit as a candidate for designation as a protected area;
- The lack of notice to Altius that the Pike Lake South area was under consideration for designation as a protected area in any future municipal plan when the mineral licence was issued in 2006;
- The failure to identify Altius' valid mineral licence in the draft Municipal Plan;
- The failure to determine if known mineral resources would be stranded as a result of the establishment of the Pike Lake South Management Unit as a protected area;
- Lack of notice or specific consultation with Altius during the development and drafting of the Municipal Plan; and

- The failure to consider and resolve the conflict between designation of the management unit as a protected area and the development of the known mineral potential of the claim during ministerial review and registration of the draft Plan.

In similar cases in the province where conflicts have arisen between mineral rights holders and competing land uses, the rights of the mineral rights holder have been recognized. For example, in January, 2005, the boundaries of the proposed Torngat Mountains National Park were redrawn to permit mineral development of licences held by Freeport Resources Inc. In addition, other mineral licences held by Freeport in northern Labrador were surrendered to the province in return for a payment of $400,000. These latter licences which were the subject of surrender and compensation related to mineral claims which had been issued to Freeport Resources Inc. by the Province in areas which had been previously identified as lands to be set aside for the future Torngat Mountains national park reserve. More recently, the construction of the new hospital in Labrador City required the consent of the Iron Ore Company of Canada, as holder of subsurface mineral interests.

Alderon is of the view that the management unit restrictions do not apply to the Kami Project and rezoning of the Pike Lake South Management Unit to permit the development of the Kami Project is appropriate. If not, known mineral resources will be 'stranded', the right of Alderon to the issuance of a mining lease in accordance with section 31 of the *Mineral Act* will be defeated and the objective of the Town in pursuing economic development will be impaired.

However, although it is Alderon's position that the establishment of the Pike Lake South Management Unit does not apply (insofar as governmental authorities at the time failed to take into account the rights of the mineral licensee), Alderon is committed to the principles of good corporate citizenship and sustainable development and will continue to work with Labrador City to implement a strategy that will permit the development of the Project while advancing the protection of wetlands.

Alderon has offered to conclude a Corporate Stewardship Agreement with the Town of Labrador City as part of its ongoing negotiations pursuant to the Memorandum of Understanding (MOU) which was concluded with the Town on January 28, 2013. Subsequently, the Town advised Alderon that its preference was to address the Project's impacts on the Pike Lake South Management Unit as part of ongoing discussions under the MOU rather than through a separate agreement. As a result, further to these discussions and consistent with its commitment to sustainability, Alderon is pursuing two distinct initiatives. First, Alderon and the Town are engaged in bilateral discussions respecting potential community conservation initiatives which were developed by Alderon in 2012. Secondly, Alderon is undertaking a constraint mapping exercise that could be used by the Town of Labrador City to identify potential wetland location(s) that could be added to their conservation plan (Appendix C). The mapping exercise uses the results of the Ecological Land Classification completed for the Kami Project, takes into account the characteristics of existing Management Units and is informed by biophysical data collected by Alderon and others in Labrador West. Alderon is providing this information to help the Town identify potential wetland locations which could be incorporated into their municipal plans.

1.3.2 Information Request No. NLWD S-02

The response says that "Global rehabilitation and closure alternatives, including moving waste (rock and tailings) back to the open pit at closure, or the possibility of alternative long term land uses such as agriculture, commercial/industrial, or forestry, have been considered and not deemed feasible for the Project". If these options were considered, the considerations and discussion should be included in the response, in particular, why moving waste back to the open pit is not feasible.

Alderon Response to IR No. NLWD S-02

Moving waste rock, or tailings, to the open pit during operations or at closure is not feasible primarily due to the shape and depth of the pit. The ore deposit, as currently defined through significant exploration and pit modeling work, will result in an inverted conical excavation with a relatively small pit base (lowest excavated level within the pit). As a result of the mining equipment and personnel that must operate at the base of this conical pit, deposit of waste material into the open pit during operations will compromise the safety of the mine workers and will sterilize economic ore which would contravene conditions of the Newfoundland and Labrador *Mining Act*. In order to comply with the requirements of the *Mining Act* and environmental regulations, waste disposal piles must be constructed to be physically stable, and progressively rehabilitated during operations to minimize dust generation. Excavation and replacement of these materials to the open pit at mine closure would result in the destruction of vegetation growth created via progressive rehabilitation and would require additional rehabilitation of the areas covered by the waste piles over the life of the mine. In general, the replacement of waste materials to the open pit at closure would make the Project economically unfeasible.

Long term land uses such as agriculture, commercial/industrial, or forestry were considered in terms of global rehabilitation and closure alternatives. Agricultural activities are not currently practiced in the region due to the short growing season. Changing seasonal constraints, even with improved bio-engineering of potential crops, are not anticipated to improve the viability of this land use alternative. Commercial or industrial activities currently exist in the area, however it is not anticipated that such activities will expand within the projected mine life to require the land area impacted by the Project. Forestry is practiced in the area on a very small scale and generally for private use only. As with agriculture, the general climate is not conducive to forest growth suitable for commercial harvest.

As the Project advances through development and operations the Rehabilitation and Closure Plan filed with the Government of Newfoundland and Labrador will be reviewed and updated until the "final" plan is completed when the closure schedule is confirmed, usually 1 to 2 years prior to the cessation of mining. If and when the current constraints with respect to closure alternatives, such as alternative land uses or waste disposal, change over the life of the project, these closure alternatives will be re-examined as part of the scheduled Rehabilitation and Closure Plan reviews and incorporated into the Plan.

1.3.3 Information Request No. NLWD S-04

A description or discussion of air sampling stations or noise monitoring locations has still not been addressed.

Alderon Response to IR No. NLWD S-04

Air sampling station and noise monitoring station locations will be developed in consultation with NLDOEC during the detailed engineering and construction planning stage of the Project. The sampling / monitoring locations will be selected based on the primary dust and noise generating areas of the site (for both construction and operations), and the location, sampler type, and sampling plan will be developed in consultation with NLDOEC Pollution Prevention Division and incorporated into the Environmental Protection Plan and Construction/Operations Monitoring Plans. The Certificates of Approval for both Construction and Operation of the Project, issued by NLDOEC will stipulate the approved sampling and monitoring locations, sampling type and plans as developed between Alderon and NLDOEC.

1.3.4 Information Request No. NLWD S-08a

What will be done with the harvested timber?

Alderon Response to IR No. NLWD S-08a

Most of the project infrastructure is located in areas of open or scruff spruce, bog, barren, and a previously burned area. There is little or no merchantable timber on the site and no local market where timber could be sold. Alderon is currently planning to blend surficial vegetation (e.g., moss, shrubs, alders) with organic overburden to create an enhanced organic layer for use in progressive and final rehabilitation activities. Similarly, larger vegetation (large alders and trees) can be chipped and blended with overburden to create additional an enhanced organic layer for rehabilitation activities.

1.3.5 Information Request No. NLWD S-08b

How will the run off from the organic piles be controlled?

Alderon Response to IR No. NLWD S-08b

The relatively small quantity of organic overburden material to be temporarily stockpiled in strategic locations within the waste disposal areas will be located in areas where storm water run-off from the piles can be controlled and directed to sedimentation ponds for treatment prior to discharge. The stockpiles will be sloped, compacted and re-vegetated to shed rain water and minimize infiltration to minimize rain-mediated leaching of nutrients and for erosion control to minimize sediment in run-off water. Water in the sedimentation ponds will be monitored for nutrients and biological organic carbon (BOD) associated with organic soils as well as for metals and pH associated with waste rock and tailings. In the event that nutrient or BOD levels exceed effluent standards, the stockpiles will be managed and additional water treatment put in place to reduce the impacts to acceptable levels.

1.3.6 Information Request No. NLWD S-12

The following paragraph (4) still pertains to humans only. Noise can have marked effects on wildlife behaviour, stress, blood chemistry, body condition, reproduction, etc. The modelled noise output level should be discussed in terms of wildlife related-effects, especially for resident animals that do not easily disperse or change home ranges.

Alderon Response to IR No. NLWD S-12

Volume 1 of the EIS, Page 2-70, Paragraph 3 should read:

"Important sources of noise for both construction and operation will be diesel powered heavy equipment and materials and rock movement. The larger sources of noise will occur during operations and will include drilling, blasting, process equipment, crushing and the movement of railway cars. Wildlife can also be affected by the noise; in addition, there will be increased traffic on the railroad."

The noise modelling indicates that noise levels are not predicted to be a concern during construction and operations in the communities of Fermont, Wabush and Labrador City (5 to 10 km away). Noise levels will be elevated during construction and operations (mainly due to the processing plant) and would be detectable in nearby areas such as portions of Long Lake. Wildlife disturbance due to noise is expected to occur primarily during the construction phase of the Project. During construction, a variety of activities will contribute sound to the area. Whether this potential increase in the ambient noise environment would disturb wildlife depends on one or more of the following factors:

1. Certain sounds are more distinctive than others (e.g., associated with a different frequency), and at low levels may be detected at greater than expected distances (e.g., the backup alarm on most construction equipment). Conversely, the collective sound produced by multiple vehicles may be masked at a closer distance by the natural sounds of the wind, even if it is higher at the source. Impulse sounds at levels of about 90 dBA may induce a startle response (i.e., reaction and possible flight of wildlife). The presence of continuous construction sound, serves to acclimatize some wildlife species to sound so that the occasional impulse sound would have less of an effect than an impulse sound in isolation (e.g., gunshot);
2. Although audible, sounds may not be alarming or disruptive to the behaviour of wildlife. Many species will tolerate the presence of humans (and associated noise or other stimuli) if ecological requirements (e.g., foraging and/or breeding habitat) are available; and
3. The construction phase is scheduled to last more than one year, occur during different seasons of the year and, at different times of the day. Wildlife may react differently to the same stimuli over different seasons, and the nature of the stimuli may change from season to season. For example, certain areas may be much more accessible in the winter over frozen ground.

In terms of sound, the two main primary effects include auditory changes (e.g., hearing loss or threshold shift), and the masking of key auditory signals, such as mating calls and prey sounds.

Secondary effects are non-auditory in nature, including increased stress levels and changes in mating and feeding patterns (Manci et al. 1988). Generally, there is little information pertaining to the relationship between the dose of noise (i.e., specific sound levels) and the response of mammals and birds. As a result, the literature provides a qualitative evaluation of noise effects.

For mammals in particular, impulsive sounds over 90 dB are considered to be adverse, and may result in retreat or strong startle reactions. Many mammals are physiologically constrained to produce low-frequency signals, which may be affected by 'masking' noise (Warren et al. 2006). Studies of mammals such as deer indicate a correlation between noise level and heart rate.

The most common concern related to noise and wildlife is the masking effect. Masking becomes an issue when the noise levels are able to mask acoustic signals on which an animal relies for survival, such as defending territory, attracting mates, or delivering distress calls (Warren et al. 2006).

Each wildlife species (including individuals) will exhibit a different level of tolerance, and a different ability to acclimatize to the presence of equipment and construction crews, and the associated noise in the area. Although some animals may be attracted to waste, most species will avoid the footprint of physical disturbance. Different species are expected to be affected at different distances. Along the roads, and in the vicinity of clearing activities, the zone of potential disturbance will be much lower, within a kilometre where the visual cues to wildlife become as important as the auditory cues. In the vicinity of roads, sound also provides a protective warning to wildlife. Distance remains the most important controlling factor in the attenuation of noise from construction activities.

References:

Manci, K.M., D.N. Gladwin, R. Villella and M.G. Cavendish. 1988. Effects of Aircraft Noise and Sonic Booms on Wildlife: A Literature Synthes. USFWS National Ecology Research Centre. Ft. Collins, CO. NERC-88/29.

Warren, P.S., M. Katti and A. Brazel. 2006. Urban Bioacoustics: It's not just noise. Animal Behavior. 71:491-502.

1.3.7 Information Request No. NLWD S-15

The statement (Page 2-139) "work with the Town of Labrador City to implement a strategy that will permit development of the project while advancing the protection of wetlands." remains unclear on what is intended by this statement.

Alderon Response to IR No. NLWD S-15

As noted in its response to NLWD General Comments, it is Alderon's view that the designation of the Pike Lake South Management Unit as a protected area under the Town's 2007 Municipal Plan is not applicable to the Kami Project. This management unit was established after the Kami mineral licence had been issued, contrary to the statutory process that requires the Minister to identify any conflicts, and contrary to the rights of prior third-party mineral licence holders.

This is shown by the following chronology:

- **2001** – IOC stakes a portion of the Iron Formation in the Labrador City Area. The Kamistiatusset (Kami) area is recommended as a high priority target.
- **March 7, 2005** – Labrador City and the Province conclude a Municipal Stewardship Agreement. The agreement identifies nine areas, including the Pike Lake South area, as candidates for designation as protected areas under a future Municipal Plan.
- **April 24, 2006** – Licence 11927M issued to Altius Resources Inc. (Altius). Licence 11927M (majority of pit) overlaps the area identified under the Municipal Stewardship Agreement as the Pike Lake South Management Unit.
- **2007** – Development of Labrador City Municipal Plan and Development Regulations
    - Proposed Pike Lake South Management Unit is identified in the draft Municipal Plan as a protected area within a larger area designated as Mining Reserve – Rural.
    - Draft Municipal Plan submitted to Minister of Municipal Affairs for review under section 15 of *Urban and Rural Planning Act, 2000* to "determine provincial and other government agency interests".
    - Minister advises Town that no changes to Draft Municipal Plan are proposed.
    - Draft Municipal Plan submitted to a one-day public hearing.
    - Draft Municipal Plan and Development Regulations approved by Council.
    - Draft Municipal Plan and Development Regulations receive final review by Minister to determine if either are "contrary to law or a policy of the government of the Province".
    - December 28, Municipal Plan and Regulations are gazetted and come into effect.
- **December, 2010** – Altius licences, including Licence 11927M, are grouped and transferred to Alderon as Licence 15980M.

The issuance of mineral licence 11927M to Altius pre-dated the legal establishment of the Pike Lake South Management Unit as a protected area under the 2007 Labrador City Municipal Plan. Moreover, notwithstanding the significance of mining to the region, the known mineral potential of the Kami Project area and the prior existence of Altius' mineral claims, the development, drafting and passage of the Municipal Plan completely failed to take into account the potential conflict between protection of the proposed management unit and mineral development. Procedural defects associated with the process for legal establishment of the Pike Lake South Management Unit in the 2007 Municipal Plan include the following:

- The apparent failure to take into account known mineral potential when identifying the Pike Lake South Management Unit as a candidate for designation as a protected area;
- The lack of notice to Altius that the Pike Lake South area was under consideration for designation as a protected area in any future municipal plan when the mineral licence was issued in 2006;

- The failure to identify Altius' valid mineral licence in the draft Municipal Plan;
- The failure to determine if known mineral resources would be stranded as a result of the establishment of the Pike Lake South Management Unit as a protected area;
- Lack of notice or specific consultation with Altius during the development and drafting of the Municipal Plan; and
- The failure to consider and resolve the conflict between designation of the management unit as a protected area and the development of the known mineral potential of the claim during ministerial review and registration of the draft Plan.

In similar cases in the province where conflicts have arisen between mineral rights holders and competing land uses, the rights of the mineral rights holder have been recognized. For example, in January, 2005, the boundaries of the proposed Torngat Mountains National Park were redrawn to permit mineral development of licences held by Freeport Resources Inc. In addition, other mineral licences held by Freeport in northern Labrador were surrendered to the province in return for a payment of $400,000. These latter licences which were the subject of surrender and compensation related to mineral claims which had been issued to Freeport Resources Inc. by the Province in areas which had been previously identified as lands to be set aside for the future Torngat Mountains national park reserve. More recently, the construction of the new hospital in Labrador City required the consent of the Iron Ore Company of Canada, as holder of subsurface mineral interests.

Alderon is of the view that the management unit restrictions do not apply to the Kami Project and rezoning of the Pike Lake South Management Unit to permit the development of the Kami Project is appropriate. If not, known mineral resources will be 'stranded', the right of Alderon to the issuance of a mining lease in accordance with section 31 of the *Mineral Act* will be defeated and the objective of the Town in pursuing economic development will be impaired.

However, although it is Alderon's position that the establishment of the Pike Lake South Management Unit does not apply (insofar as governmental authorities at the time failed to take into account the rights of the mineral licensee), Alderon is committed to the principles of good corporate citizenship and sustainable development. It will work with the Town of Labrador City to address the impacts of the Project upon protected areas consistent with the spirit of the Municipal Stewardship Agreement.

Alderon has offered to conclude a Corporate Stewardship Agreement with the Town of Labrador City as part of its ongoing negotiations pursuant to the Memorandum of Understanding (MOU) which was concluded with the Town on January 28, 2013. Subsequently the Town advised Alderon that it was not interested in pursuing a separate agreement on this subject. As a result, as part of its ongoing discussions with the Town and consistent with its commitment to sustainability, Alderon is pursuing two distinct initiatives. First, Alderon and the Town are engaged in bilateral discussions respecting a series of potential conservation measures which were initially identified by Alderon in 2012. Secondly, Alderon is undertaking a constraint mapping exercise that could be used by the Town of Labrador City to identify potential wetland location(s) that could be added to their conservation plan (Appendix C). The mapping exercise uses the results of the Ecological Land Classification completed for the Kami Project, takes into

account the characteristics of existing Management Units and is informed by biophysical data collected by Alderon and others in Labrador West. Alderon is providing this information to help the Town identify potential wetland locations which could be incorporated into their municipal plans.

1.3.8 Information Request No. NLWD S-17

The question referred to the economic and technical feasibility of mitigation rather than the overall project. The response does not adequately address the question and should be addressed.

Alderon Response to IR No. NLWD S-17

The preparation of an environmental assessment represents a combination of professional disciplines that collectively provide input throughout the process. Proposed mitigation measures are typically initiated from a science-based perspective based on demonstrated success in similar applications (i.e., technical feasibility).

The process of selecting mitigation measures to address the Project's environmental impacts identified during the Environmental Assessment may be summarized as follows:

- Alderon developed a project design, investigated the environmental baseline conditions, and identified the potential environmental impacts that would result from the development, operation, closure, and rehabilitation of the Project.
- Alderon proposed environmental mitigation strategies and measures to address these potential impacts. These strategies and measures are based on the applicable provincial and federal legislation, comparable projects in the region, existing technologies and best practices in the mining and related industries.
- Throughout the EA process, the regulator's technical teams review the proposed mitigation strategies and measures to determine if they are in accordance with legislation, comparable projects, and existing technologies and best practice.
- Throughout the EA process (and parallel Project engineering processes), and considering mitigation commitments made, and the conditions of EA release, Alderon has, and will continue to review the economic impact of carrying out these mitigations on the overall economic feasibility of the Project.
- Once all of the project related costs, including environmental mitigations, are known Alderon will assess the economic feasibility of the entire project and decide whether or not to proceed.

As indicated in the process summary above, the technical feasibility is the primary basis for selecting mitigation measures to address the environmental impacts of the Project and this aspect is reviewed and confirmed (via approval) by the various regulatory agencies. The economic feasibility of individual mitigation measures is generally not considered, however the combined cost of mitigation measures is considered in the overall economic feasibility of the Project.

1.3.9 Information Request No. NLWD S-29

What about the tailings pond? Capture and relocation of adult amphibians is certainly possible, whether through pit-fall traps, visual sighting and netting, drift fencing, funnel traps, and hoop nets.

Alderon Response to IR No. NLWD S-29

Alderon will implement an amphibian relocation program at the tailings pond area prior to its disturbance, which is currently scheduled for the fall of 2014. Various life stages would be captured using acceptable techniques, with individuals relocated to alternative habitat beyond the Project footprint in the summer of 2014.

1.3.10 Information Request No. NLWD S-34

See general comments. States that there is a MOU relating to the details of a corporate stewardship agreement.

General Comments

The EIS amendment, as submitted, does not significantly advance the primary question relating to the content of a corporate stewardship agreement between the Town of Labrador City and the Alderon Iron Ore Company. Similarly it does not advance discussion of a separate corporate agreement which is referenced between themselves and the Town of Wabush. Information of the status of these agreements is further referenced in the responses, in particular NLWD #34-37.

Alderon Response to IR No. NLWD S-34

Alderon acknowledges the interest of the Province in the resolution of issues associated with the potential impacts of the Kami Project upon areas identified as habitat management units in the Municipal Stewardship Agreements which have been concluded with the Towns of Labrador City and Wabush.

With respect to the Town of Wabush, Alderon does not intend to pursue a separate corporate stewardship agreement. Any potential impacts of the Project upon the Elephant Head Lake Management Unit have been avoided by the new routing of the rail line, as presented in response to IRs No. NLWR S-01 and NLTW S-03. No permanent impact on or loss of the land within the Jean Lake Rapids Management Unit is predicted. However, Alderon is engaged in ongoing discussions with the Town of Wabush pursuant to a MOU which was concluded on November 13, 2012. If impacts upon these management units are subsequently identified, Alderon will work with the Town to develop a mutually satisfactory resolution.

With respect to the Town of Labrador City, please see Alderon's responses to NLWD General Comments and IR No. NLWD S-15.

Alderon is of the view that the Management Unit restrictions do not apply to the Kami Project and that rezoning of the Pike Lake South Management Unit to permit the development of the Kami Project is appropriate. If not, known mineral resources will be 'stranded', the right of

Alderon to the issuance of a mining lease in accordance with section 31 of the *Mineral Act* will be defeated and the objective of the Town in pursuing economic development will be impaired.

However, although it is Alderon's position that the establishment of the Pike Lake South Management Unit does not apply (insofar as governmental authorities at the time failed to take into account the rights of the mineral licensee), Alderon is committed to the principles of good corporate citizenship and sustainable development. It will continue to work with the Town of Labrador City to implement a strategy that will address the impacts of the Project upon protected areas consistent with the spirit of the Municipal Stewardship Agreement.

Alderon has offered to conclude a Corporate Stewardship Agreement with the Town of Labrador City as part of its ongoing negotiations pursuant to the MOU which was concluded with the Town on January 28, 2013. Subsequently the Town advised Alderon that it was not interested in pursuing a separate agreement on this subject. As a result, as part of its ongoing discussions with the Town and consistent with its commitment to sustainability, Alderon is pursuing two distinct initiatives. First, Alderon and the Town are engaged in bilateral discussions respecting a series of potential conservation measures which were initially identified by Alderon in 2012. Secondly, Alderon is undertaking a constraint mapping exercise that could be used by the Town of Labrador City to identify potential wetland location(s) that could be added to their conservation plan (Appendix C). The mapping exercise uses the results of the Ecological Land Classification completed for the Kami Project, takes into account the characteristics of existing Management Units and is informed by biophysical data collected by Alderon and others in Labrador West. Alderon is providing this information to help the Town identify potential wetland locations which could be incorporated into their municipal plans.

1.3.11 Information Request No. NLWD S-35

See general comments. States that bilateral negotiations are ongoing with the Town of Labrador City.

Alderon Response to IR No. NLWD S-35

Please see Alderon's responses to NLWD General Comments and IR No. NLWD S-15.

Alderon is of the view that the Pike Lake South Management Unit restrictions do not apply to the Kami Project and that rezoning of the Pike Lake South Management Unit to permit the development of the Kami Project is appropriate. If not, known mineral resources will be 'stranded', the right of Alderon to the issuance of a mining lease in accordance with section 31 of the *Mineral Act* will be defeated and the objective of the Town in pursuing economic development will be impaired.

However, although it is Alderon's position that the establishment of the Pike Lake South Management Unit does not apply (insofar as governmental authorities at the time failed to take into account the rights of the mineral licensee), Alderon is committed to the principles of good corporate citizenship and sustainable development. It will continue to work with the Town of Labrador City to implement a strategy that will address the impacts of the Project upon protected areas consistent with the spirit of the Municipal Stewardship Agreement.

Alderon has offered to conclude a Corporate Stewardship Agreement with the Town of Labrador City. Subsequently, the Town advised Alderon that its preference was to address issues associated with the Pike Lake South Management Unit as part of its ongoing negotiations with Alderon pursuant to the Memorandum of Understanding (MOU) which was concluded with the Town on January 28, 2013. As a result, as part of its ongoing discussions with the Town and consistent with its commitment to sustainability, Alderon is pursuing two distinct initiatives. First, Alderon and the Town are engaged in bilateral discussions respecting a series of community conservation measures which were initially identified by Alderon in 2012. Secondly, Alderon is undertaking a constraint mapping exercise that could be used by the Town of Labrador City to identify potential wetland location(s) that could be added to their conservation plan (Appendix C). The mapping exercise uses the results of the Ecological Land Classification completed for the Kami Project, takes into account the characteristics of existing Management Units and is informed by biophysical data collected by Alderon and others in Labrador West. Where a suitable location is identified and not constrained by a conflicting land-use designation, Alderon supports its incorporation into the 2007 Municipal Plan and 2010 Habitat Conservation Plan. Alderon is providing this information to help the Town identify potential wetland locations which could be incorporated into their municipal plans.

1.3.12 Information Request No. NLWD S-37

The proponent's response does not indicate what Alderon actually plans to do. Is there deemed to be any potential for conserving alternate sites within the municipal planning boundaries and if so, where? If not, then how does the company plan to mitigate the lost area in the Rose Pit?

The response misrepresents the Province and Town's verbal discussion of the proposed alternate sites. During the referenced meeting, only one site was known by the parties to be within a mining lease area. The viability of the other two areas was to be determined later and response then made by the Town of Labrador City who would have to accept the viability of any alternate sites within their planning boundaries in light of their existing municipal plan.

More vigor is required to identify potential candidate sites. One suggested tool to further a meaningful discussion would be for Alderon to provide a constraints map that shows feasible sites as defined by specific parameters.

Alderon Response to IR No. NLWD S-37

Alderon strongly disagrees that the previous response “misrepresents the Province and Town’s verbal discussion”. Please see responses to NLWD General Comments and IR Nos. NLWD S-15, S-34 and S-35. On January 28, 2013, Alderon and the Town of Labrador City signed a Memorandum of Understanding (MOU). As part of discussions conducted pursuant to the MOU, Alderon and the Town are engaged in the discussion of a strategy to address the impacts of the Project upon the Pike Lake South Management Unit.

The strategy proposed by Alderon consists of two initiatives. The first initiative relates to a series of community conservation measures which were originally identified by Alderon in 2012. Alderon and the Town are currently engaged in bilateral discussions in respect of these community conservation initiatives. A second initiative involves the identification of potential

wetland location(s) that could be function as replacement habitat for the Pike Lake South Management Unit and be incorporated as an amendment to the 2007 Municipal Plan and included in the Town's 2010 Habitat Conservation Plan. This mapping exercise, presented in Appendix C, avails of the Ecological Land Classification completed for the Kami Project, a description of the characteristics of existing Management Units, and is informed by biophysical data collected by Alderon and others in Labrador West. Alderon is providing this information to help the Town identify potential wetland locations which could be incorporated into their municipal plans.

1.3.13 Information Request No. NLWD S-40

The proponent's response does not address the recommended mitigation stated in the Information Request.

Mitigations should include avoidance of noted important time periods for waterfowl first and then other mitigations only if avoidance is impossible.

Alderon Response to IR No. NLWD S-40

In addition to the mitigation measures listed in the response to IR No. NLWD 40, Alderon will avoid construction activities during the noted important time periods for waterfowl, where possible. Examples of relevant mitigation measures outlined in the EIS and presented in the response to IR No. NLWD 40 to address potential effects include:

- Project infrastructure will be sited (or routed [access roads / trails and rail lines]) to avoid, to the extent practical, important habitats, and the minimum footprint practical will be used for construction activities;
- Sediment barriers will be installed immediately after initial disturbance where heavily sediment-laden surface runoff has the potential to flow into any lake, river, stream, or wetland. Such measures may include (but are not limited to) surface water diversion ditches, silt fences, stone or brush cover, erosion control fabrics, settling ponds and other sediment filtration, and flow management products;
- Sediment barriers will be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete;
- Upon completion of construction, disturbed areas (e.g., exposed mineral soils) and construction staging areas not required for operation / maintenance and/or access of the mine will be graded to establish drainage patterns, blend with the natural terrain and allowed to re-vegetate, either naturally or using an appropriate seed mixture, to promote native vegetation re-establishment. Seed mixtures will be selected as appropriate to the site conditions;
- If clearing occurs during the migratory bird breeding season (i.e., mid-May to July), procedures to reduce or eliminate the possible disturbance of active nests will be included in the EPP; and

- Waterbodies and wetland buffers (e.g., extra work area setbacks, refuelling restrictions) will be clearly marked with signs and/or highly visible flagging until construction-related ground disturbing activities are complete.

These mitigation measures will be implemented if avoidance is not possible.

1.3.14 Information Request No. NLWD S-49

This response does not explain how or what considerations will be used to determine the technical and economic feasibility of mitigation measures.

Alderon Response to IR No. NLWD S-49

See response to IR No. NLWD S-17.

1.3.15 Information Request No. NLWD S-69

What are the ecological parameters considered in the delineation of the RSA? In particular were watersheds considered when delineating the boundaries of the RSA, and how was the RSA quantitatively defined?

Alderon Response to IR No. NLWD S-69

The ecological parameters involved in the identification of the RSA were primarily based on the watershed boundaries encompassing the Project footprint. However, as stimuli such as the viewshed, extent of dust emissions, and noise could extend beyond the watershed boundary in the vicinity of the southern waste rock storage, the RSA was extended into the province of Quebec.

1.3.16 Information Request No. NLWD S-74

Little brown bats colonies should be easily identified using this method. However, the Northern Long-eared bats have been confirmed in Labrador and were not addressed here. These bats tend to roost in cracks in large trees, in smaller numbers than the little brown bats. Given that the study area is not very large, habitat modelling and mapping is not especially necessary here. A simple transect survey with a bat detector would identify any bats in the area.

Northern Myotis habitat should also be discussed. Any surveys proposed should be discussed with WD prior to start. Protocols with regards to decontamination of equipment and supplies, provision of information to WD for management purposes, and submission of any dead bats found must be confirmed with WD prior to implementation of surveys.

Alderon Response to IR No. NLWD S-74

Alderon agrees to complete a transect survey with a bat detector in suitable habitat during the summer of 2013. Techniques specifically designed for the survey, handling and reporting of potential species of interest would be discussed in advance of the surveys with the Wildlife Division.

1.3.17 Information Request No. NLWD S-75

The proponent does not actually define "substantially reduced". More detail with regards to the identified components of a substantial reduction (e.g. direction, magnitude, geographic extent) should be included. For instance how much of a species' geographic extent needs to be affected before it is considered substantially reduced.

Alderon Response to IR No. NLWD S-75

The intent of the term ‘substantially reduced’ was to identify a proportion of the population that if removed, would affect the long-term viability of the population within the RSA. In other words, lead to a significant effect. The proportion would vary by species and would depend on the status of the RSA population. It is suggested to remove the word ‘substantially’ as no additional meaning is inferred. Either the population would or would not, be reduced to the point of causing a significant effect.

1.3.18 Information Request No. NLWD S-80

Reporting should be of all bird species, rather than exclusively those protected under the MBCA.

Alderon Response to IR No. NLWD S-80

The reporting will be of all avifauna species and not limited to those listed under the MBCA.

All avifauna species observed during the dedicated Project surveys and reported in the literature have been reported in the EIS.

1.3.19 Information Request No. NLWD S-101

Response does not address concerns with regards to impacts of the project on particular habitat types and how that impact should be calculated. If included in the Rare Plant Survey report, please indicate where in the report it can be found.

Alderon Response to IR No. NLWD S-101

The incorporation of an ELC in an environmental assessment is based on a description of known habitat relationships that are further informed through field surveys, and portrayed at the scale of the ELC (i.e., where habitat preferences can be discussed in relation to the ecotypes that are present in the Study Area). The ELC mapping is limited to the scale of the ecotypes identified in the ELC. Note that for the example provided by the Reviewer, observations of rare or uncommon plant species including species of conservation concern, were recorded by habitat type (Section 20 of Volume 2 of the EIS, Table 20.9), during baseline surveys in 2011 and 2012.

The details addressing this review comment were originally included in Section 17.5 of Volume 2 of the EIS, Table 17.5 (see Table 1.12). Quantification of the amount of each particular habitat type potentially affected by the Project was determined using information derived from the ELC as completed for the Project.

Table 1.12 Project Ecotypes and Their Representation (%) in the PDA, Local and Regional Study Areas (Revised Table 17.5 from EIS Volume 2)

Ecosystem	Ecotype / Subtype	PDA		RSA		LSA	
		Area (ha)	Percentage (%)	Area (ha)	Percentage (%)	Area (ha)	Percentage (%)
Alpine Ecosystem	Alpine Heath	4.4	0.19	596.8	0.81	22.9	0.14
Forested Ecosystem	Black Spruce-Labrador Tea-Feathermoss	321.6	13.52	17,683.1	23.94	3,633.7	22.58
	Black Spruce-Lichen	47.5	2.00	5,178.2	7.01	554.1	3.44
	Hardwood Forest	26.1	1.10	1,132.7	1.53	223.3	1.39
	Hardwood Forest Burn / Regen	442.5	18.60	5,093.0	6.89	1,706.6	10.61
	Mixedwood Forest	125.8	5.29	3,480.3	4.71	707.3	4.39
	Mixedwood Forest Burn / Regen	44.0	1.85	2,304.1	3.12	246.8	1.53
	Softwood Burn / Regen	464.6	19.53	5,395.2	7.30	1,794.4	11.15
Forested Riparian Ecosystem	Tamarack / Black Spruce Feathermoss (Water Track)	317.6	13.35	5,209.0	7.05	1,399.6	8.70
Non-Forested Riparian Ecosystem	Riparian Thicket	0.7	0.03	37.1	0.05	22.1	0.14
	Riparian Marsh / Fen	0.5	0.02	148.3	0.20	20.2	0.13
Forested Ecosystem (Transitional)	Black Spruce / Tamarack-Sphagnum Woodland	303.8	12.77	10,412.8	14.09	2,064.6	12.83
Non-Forested Wetland Ecosystem	Non-Patterned Shrub (*including Graminoid Fen)	142.3	5.98	1,770.8	2.40	441.9	2.75
	Patterned Shrub Fen	44.8	1.88	708.3	0.96	132.6	0.82
	Shallow Open Water with Vegetation	28.4	1.19	1,081.9	1.46	150.0	0.93
Aquatic Ecosystem	Open Water	19.4	0.82	8,275.3	11.20	2,360.7	14.67
Anthropogenic	Exposed Earth / Anthropogenic	13.9	0.58	3,788.1	5.13	262.4	1.63
Other	Cloud	25.9	1.09	1,180.1	1.60	291.2	1.81
	Shadow	4.7	0.20	401.4	0.54	58.3	0.36
Totals (Rounded)		**2,379**	**100**	**73,877**	**100**	**16,093**	**100**

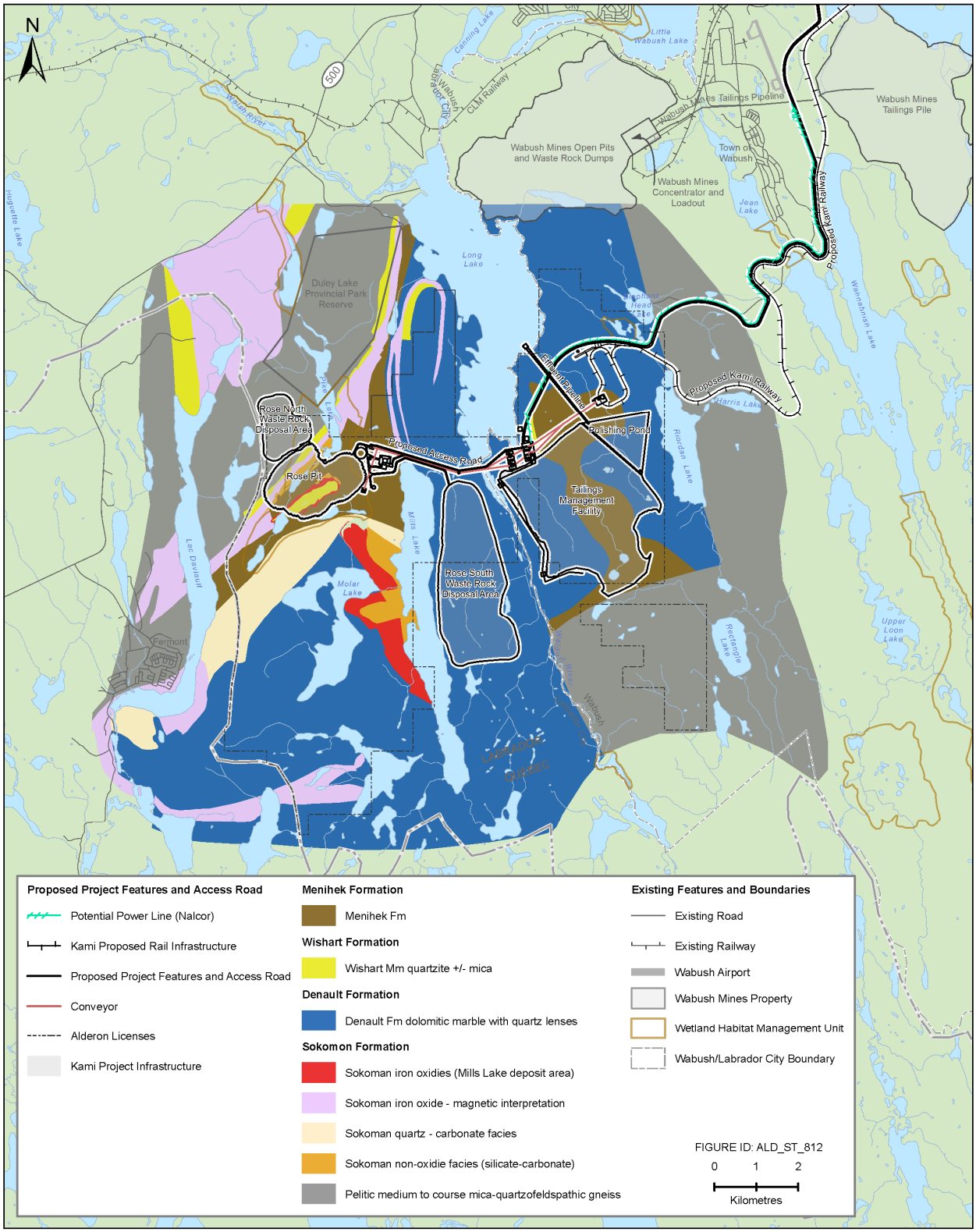
As indicated in EIS Appendix H, Section 6.3 of the *Rare Plant Survey of the Kamistiatusset (Kami) Iron Ore Mine and Rail Infrastructure Project*, portions of the Study Area were characterized by the presence of potentially unique habitats that appeared to yield a disproportionately higher number of rare or uncommon plant species when compared to other areas. In particular, the Study Area contains outcrops of dolomitic marble (from the Denault Formation) and areas of thin, dolomite-derived soils that support an abundance of calcicolous plant species. While several species of conservation interest are known to be associated with dolomitic habitats within the LSA, and more importantly from beneath the proposed Project footprint (i.e., PDA), additional areas of dolomitic rock outcrops and dolomitic-derived soils were observed throughout the LSA and beyond (i.e., the RSA).

Using recently completed detailed geologic interpretation of the Kami Regional Area as prepared by Alderon (Appendix H of Volume 1 of the EIS), Figure 1.9 reflects observations pertaining to the occurrence of rare or uncommon plant species occupying unique habitats (i.e., bedrock geology).

The Project will result in the alteration or loss of approximately 13 percent (1,305 ha of 10,138 ha) of available rare plant habitat characterized by the presence of dolomitic marble (with quartz lenses) in the region (Figure 1.9) that may result in some of the identified locations supporting rare and uncommon plant species being affected by surface disturbance activities as a result of the Project. Expansive areas of dolomitic marble exist within the region, as observed to the north and south of the Project (Figure 1.9).

While habitat conditions for the majority of rare plant species are known, specific factors that control their occurrence are not completely understood. Consequently, a larger search in the RSA has been completed, with additional surveys planned to identify additional occurrences of these species and/or their preferred habitats, the details of which are included in Section 20.6.2 of Volume 1 of the EIS.

Figure 1.9 Dolomitic Marble associated with Rare Plant Species (Obligate Calciphiles) and other Bedrock Geology in the Kami Project Area



1.3.20 Information Request No. NLWD S-102

Explanation of survey technique is appreciated. Mapping of where surveys took place, in addition to where rare species were found would still be helpful.

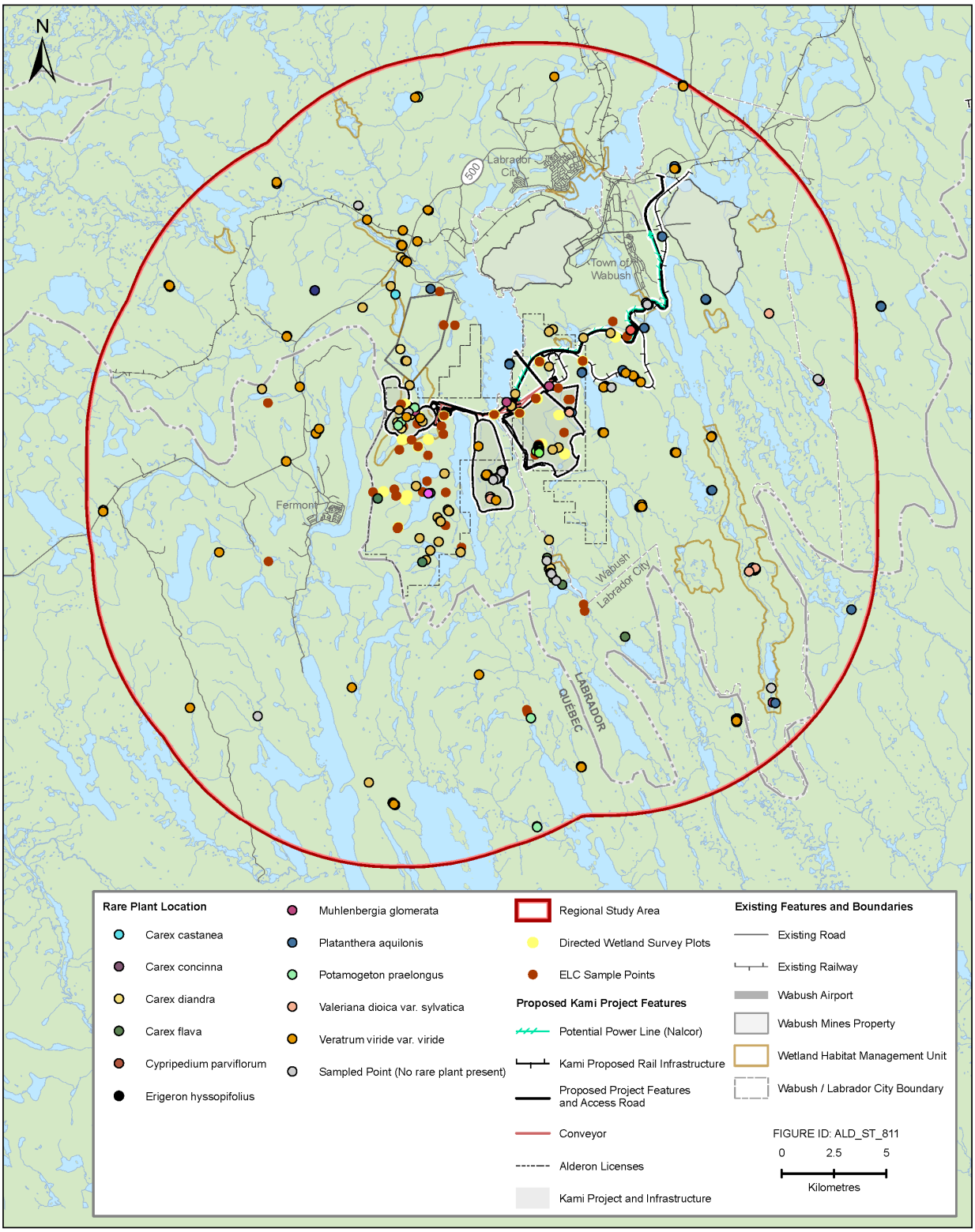
Alderon Response to IR No. NLWD S-102

As presented in response to IR No. NLWD 102, the rare plant surveys were preceded by habitat mapping field studies in July 2011 (see Ecological Land Classification Report, Stantec 2012), with additional studies focusing on wetlands covering the entire Study Area. This prior work allowed Alderon to identify and later survey habitats with potential to support the rare plant species which is where the focused surveys occurred. All rock outcrops, areas supporting thin soils, and other unique geologic areas were surveyed for the target species in detail, including a number of calcicolous plant species.

For clarification purposes, Figure 1.10 below illustrates the locations of all ELC, wetland and rare plant surveys performed in 2011 and 2012, along with the locations of all species of conservation interest as observed within the Study Area, represented in Tables 20.9 and Figures 20.3 and 20.4 of the EIS.

Extensive and thorough searches for rare plants within the LSA and RSA has demonstrated compliance with the goal of maintaining regional biodiversity as promoted by the Newfoundland and Labrador DOEC.

Figure 1.10 ELC, Wetland and Rare Plant Survey Locations and Rare Plant Occurrences within the RSA, LSA, and in Proximity to the PDA (Figure 20.3b from EIS Volume 2)



1.3.21 Information Request No. NLWD S-104

SSAC should be added to the list under 20.1.1.

Alderon Response to IR No. NLWD S-104

As outlined in response to IR No. NLWD 104, “SARA, NLESA, COSEWIC and **SSAC** Status Reports, Recovery and Management Plans (if available) were used throughout the assessment.”

1.3.22 Information Request No. NLWD S-105

Proponent should clarify if CWS has been consulted with regards to Harlequin Duck sightings within the study area.

Alderon Response to IR No. NLWD S-105

Alderon consulted with CWS at a meeting in Mount Pearl in December 2012. There was no additional information brought forward by CWS regarding Harlequin Duck sightings within the Study Area during this discussion.

1.3.23 Information Request No. NLWD S-119

A more quantifiable measure of "minor" or "acceptable" mortality is required. Does this describe mortality of less than 5 individuals? Less than 20? Less than 100? Less than 1000?

Several "rare" plants as considered during this project may be less rare than considered because of low sampling in Labrador. However, this is unlikely to be true for all rare plants found within the footprint of the project and is not an excuse to reduce the stated importance of their loss.

Having a project footprint that is inflexible does not mean that all losses of plants by default are "acceptable". Quantification of the loss would help in the assessment of the Project and its potential impact on the biodiversity of the area.

Alderon Response to IR No. NLWD S-119

Alderon acknowledges the Project’s potential effects on rare and uncommon plants, including SOCC and will implement mitigation measures, as appropriate, to reduce potential adverse effects. Although effects can be reduced, residual effects are predicted to remain through the life of the Project.

A quantifiable measure of "acceptable" mortality related to species at risk (SAR) and SOCC was identified in Section 20.3 of Volume 1 of the EIS, Establishing Standards or Thresholds for Determining the Significance of Environmental Effects. It states, “*although there are no thresholds to assess the potential alteration / loss of individual listed plants or rare plant populations, an accepted guideline in the collection of vascular and non-vascular plant voucher specimens is that an immediate population can withstand the loss of 1 in 20 individuals or*

5 percent of a population (Alberta Native Plant Council [ANPC] Native Plant Collection and Use Guidelines 2000). For the purposes of this assessment, five percent will be used as a benchmark to address the magnitude of effects on rare plant populations."

As previously indicated, rare plant avoidance may not always be feasible as some individual locations of SAR and/or SOCC may not allow for avoidance. Alternate mitigation strategies (i.e., seed collection and sowing, direct transplantation or diaspore dispersal) may be implemented when avoidance is not feasible.

Due to the paucity of information for known element occurrences of rare plants in Labrador, additional knowledge of other individuals or populations within the LSA and RSA (but outside the PDA), will ease concerns about the potential loss of the rare plants or rare plant populations. The predicted changes to distribution of rare plants as a result of the Project are presented in Chapter 20 of Volume 2 of the EIS, Table 20.11 Interactions between the Project and SOCC.

The number of rare plant occurrences within the PDA has changed as a result of minor revisions to the Kami Project design in 2012, with the addition of *Cypripedium parviflorum*, *Erigeron hyssopifolius*, and *Carex concinna* resulting from relocation of the Rose South Waste Rock Disposal Area (see Amendment to the EIS; Information Request No. NLWD 128). In total, there are now eleven rare plants deemed to be of conservation concern to the Province and with potential of being affected by the Project.

Alderon intends to conduct additional rare plant surveys prior to final Project siting to provide the site-specific information needed to potentially develop alternate and specific rare plant mitigation strategies in consultation with provincial agencies.

From an ecological perspective, and in consideration of appropriate mitigation, the loss of rare plant species (i.e., SOCC) is not predicted to have sustained irreversible effect on the regional populations of any species of conservation concern, is not expected to result in the loss of more than five percent of the population, and is therefore considered not significant.

1.3.24 Information Request No. NLWD S-122

Surveying in mid-summer would maximize the number of rare species in flower but could still result in missing of some early or late-flowering species. The limitations on the number and length of surveys is understandable but the reality that some species might be missed should be noted within the methods.

Alderon Response to IR No. NLWD S-122

Alderon acknowledges the reviewer's comments indicating that should conditions result in the delivery of a single survey or surveys at marginal times of year, it is important to document the rationale behind these decisions and the survey effort deemed appropriate in terms of date(s) of survey, number of sites surveyed and confidence level in the survey as completed.

In recognition of the need for appropriate methods and expertise as required in the delivery and completion of a thorough rare plant survey, and in absence of standardized guidelines in this

jurisdiction, Alderon rare plant surveys of the Kami Project were conducted in accordance with the Alberta Native Plant Council (ANPC) Guidelines for Rare Plant Surveys in Alberta (Lancaster 2012).

Minimum requirements for a defensible rare plant survey include:

- The rare plant survey should provide reasonable geographic coverage of the proposed project including:
  - sampling of representative vegetation communities or habitat types;
  - all unique or uncommon plant associations;
  - survey the area at least twice during the growing season for rare vascular plant species, when the probability of encountering both cool and warm season perennials; and early and late season annuals is highest, where possible; and
  - all features or biotic patterns with high probability of supporting rare plants.
- Timing surveys to occur during periods when potential rare species are most visible (when diagnostic features are most identifiable).
- Re-visit all sites where rare plants element occurrences have been previously recorded.

Rare plant surveys of the Kami Project were completed within and in vicinity of the PDA, LSA and RSA during field studies conducted between July 25 and August 4, 2011 and July 17 to 26, 2012. Additional surveys of area wetland habitats were completed later in the field season (September 28 to 30, 2011), at which time observations of rare or uncommon plant species and/or their habitats were also recorded.

The objective of the rare plant survey was to inventory and map rare plants within the combined Kami Project footprint, local and regional study areas. Although surveys of Kami Project were delivered during the period of mid-to late- season blooming flowers, plots were investigated using a floristic survey method with meander searches. A meander search is when the surveyor walks in a spiral pattern, starting at plot centre, in order to cover a greater area more thoroughly. The surveyor searches until no more new species are found, or an entirely different plant community is entered. Unique or special landscape features such as microhabitats, ephemeral habitats, wet areas or transition zones were given special attention as they are considered important habitats for rare plants, in particular early season ephemerals. These areas were also systematically surveyed through the combined efforts of botanical surveyors in the delivery of the ELC, wetlands and rare pant surveys.

This methodology in consideration of site conditions (i.e., elevation, latitude, aspect, soils, geology and local climate conditions) which influence the timing of flowering in Labrador, is considered appropriate for use in the determination of rare plant distributions associated with the Kami Project.

With the majority of the rare plant species identified within the footprint of the Project examined through regional surveys performed in 2011 and 2012, the identification and implementation of mitigation measures, as appropriate, and in recognition of continued early season surveys for

Cypripedium parviflorum, *Erigeron hyssopifolius*, and *Carex concinna*, as identified, to occur in spring / summer 2013, Alderon is confident that the rare plant surveys conducted are adequate and in line with available guidelines.

References

Lancaster 2012. Alberta Native Plant Council (ANPC) Guidelines for Rare Plant Surveys in Alberta 2012 Update.

1.3.25 Information Request No. NLWD S-128

A full field report for the rare plant survey including exact locations of identified species for inclusion in databases to be used for management purposes should be provided to the Wildlife Division.

Alderon Response to IR No. NLWD S-128

Alderon provided rare plant GIS data to the Newfoundland and Labrador DOEC on May 23, 2013. This data can be used by the Wildlife Division and Atlantic Canada Conservation Data Centre (ACCDC) to gain information on species distributions. This information will support the goals of the DOEC by providing information on species occurrences in a fairly remote location of the Province. Baseline information on SAR and SOCC, entitled "*Rare Plant Survey Report Kami Iron Ore Mine and Rail Spur, Labrador",* is available at: http://www.env.gov.nl.ca/env/env_assessment/projects/Y2011/1611/Appendix_H.pdf.

Through this document, and that of Chapter 20 of the Kami EIS, Alderon has endeavored to enhance the certainty regarding the occurrence of rare vascular plant species, in particular those considered of conservation interest to the Province. This objective was achieved through the completion of floristic surveys of the Project area and through the use of additional focused rare plant surveys (completed in 2012) of the RSA directed at maintaining local and regional biodiversity, a policy of the Newfoundland and Labrador DOEC.

1.3.26 Information Request No. NLWD S-133

Olive-sided Flycatcher (and others) often have specific microhabitat or habitat components that may not be captured in an ELC. This limitation of the ELC and the associated risk of inflating primary habitat should be acknowledged.

Alderon Response to IR No. NLWD S-133

The ELC approach examines known habitat relationships that are supplemented through field surveys, and presented at the scale of the ELC. This common approach allows for a broad description of the ecotypes, and although it may not capture all microhabitats, it provides a framework for planning of associated field surveys.

1.3.27 Information Request No. NLWD S-149

Some of the issues surrounding significance of effects for rare plants have not yet been resolved. The planned 2013 surveys may allow this issue to be resolved or may mean that significant additional mitigations need to be considered to prevent significant effects on these populations.

Alderon Response to IR No. NLWD S-149

Once the 2013 surveys are completed, Alderon will be open to discussing the appropriateness of mitigation strategies with NLWD or other stakeholders, as appropriate. As mentioned in Section 20.6.1 Change in Habitat under Mitigation of Project Environmental Effects (see Chapter 20 of Volume 1 of the EIS), alternative mitigation strategies will be developed as required in consultation with NLWD in areas where avoidance is not possible. In Section 12.6.2.8, Alderon has stated its commitment to undertake post-approval follow-up work to better understand rare plant distributions and habitat requirements, as well as develop mitigation options for reducing effects on local diversity of rare plant species, including:

- reviewing habitat conditions associated with SOCC;
- conducting additional surveys for rare plant species of conservation interest to the Province and for which information is currently lacking in the area of the RSA (i.e., *Cypripedium parviflorum*, *Erigeron hyssopifolius* and *Carex concinna*), focusing on appropriate habitat conditions (i.e., north facing near vertical limestone cliffs, steep hills and rock outcrops in thin soil and leaf litter);
- furthering discussions with NLWD representatives for possible mitigation options for limiting effects; and
- developing a rare plant mitigation strategy based on agreements reached with provincial agencies.

Possible site-specific mitigation measures in the case of the identified species for which a suitable number of populations outside the Project footprint (in the area of the RSA and beyond) have not been confirmed may include:

- avoidance through relocating or reconfiguring of facilities followed by the application of an appropriate set back distance;
- transplanting, protecting and monitoring; and
- timing activities to local conditions (e.g., frozen ground).

After implementation of these mitigation measures the effect of the Project on SAR and/or SOCC is considered negligible.

1.3.28 Information Request No. NLWD S-155

Response is adequate. Full explanation of primary habitat, especially for species with complicated requirements is beneficial to the reader's understanding.

Alderon Response to IR No. NLWD S-155

Complete.

1.4 Information Requests Received from Newfoundland and Labrador Department of Transportation and Works (NLDTW)

1.4.1 Information Request No. NLTW S-01

Response to IR NLTW 03b requires further clarification. The access point to Route 500 for construction and operations should be identified as the number of trips indicated in the IR response would require a commercial access construction and possibly improvements to Route 500. Access design should be site specific and will likely require turning lane construction on Route 500 for safety of workers accessing the mine site for construction and operation as well as through traffic on Route 500.

Alderon Response to IR No. NLTW S-01

Technical and design information related to the access point to Route 500 for construction and operations will be provided at the permitting stage as discussed with NLDTW personnel (May 16, 2013).

1.4.2 Information Request No. NLTW S-02

Further information on QNS&L Railway accident history since inception has not been specifically published in the EIS Amendment as requested. Review of links in Appendix K of the EIS Amendment noting national statistics for railway accident history and specific QNS&L railway history indicate specific problems to the region and local industry not consistent with national statistics. Accident frequency outside the reported era in Appendix K and EIS Amendment Volume 3 Chapter 2 pages 2-108 and current investigations and reports point to issues locally. Statistics calculated on annual frequency of derailments rather than gross ton miles would differ between this section and the analysis presented in Appendix K Attachment 2 Section 6.4.3 Accident Probability on the Kami Rail Line. TRB accident investigation reports on QNS&L Railway point to some accidents due to no apparent cause. To alleviate concerns with fuel transport in the PWSA a further analysis of localized accident history would be prudent to assure that the rail routing in the PWSA operation of the new rail route would function and be more consistent with national statistics.

Alderon Response to IR No. NLTW S-02

As noted in the IR, the main purpose for the request for additional analysis of the local accident history was to evaluate the potential for accidents, and therefore the potential of fuel spills, within the PPWSA based on the Option 3A rail route. As described in Alderon's General Comment presented in Section 1.0 above, Alderon has abandoned the rail route Option 3A that passed through the PPWSA in favour of Option 2 which has no impact on the PPWSA and therefore the potential effect (in terms of risk to the public) of an accident and subsequent spill is substantially reduced.

Alderon acknowledges that there is additional rail accident data available beyond what has been provided by Alderon in Appendix K of the Amendment to the EIS. However, as noted, publicly available statistics do not necessarily reflect all of the accidents if they are either still under

investigation or are classified as non-reportable to the Transportation and Safety Board of Canada.

The most current statistics that are publicly available can be found in the 2012 Annual Rail Statistics Report published by the Transportation and Safety Board of Canada (Appendix D). Many of the published statistics are broken down by province, and as QNS&L is the only operating railway in NL, it provides a direct comparison to the national statistics.

1.4.3 Information Request No. NLTW S-03

NLWR 10 IR response was not specific enough and does not detail all information available.

While EIS Amendment Volume 2 pages 2-89 through 2-98 offers some additional information in the dismissal of Option 2 as a railway Alternative Route it is still not specific enough in nature to be accepted by the committee. More technical and cost considerations should be provided including offsetting costs of worst case scenarios in consideration of the different alternatives. Sufficient case study comparison is available to draw these inferences.

Appendix K of the EIS Amendment offers some discussion on technical reasons to rule out all options except for the option crossing through the PWSA but this discussion should be expanded to provide in more sufficient detail the technical aspects. This should at least consider alternatives 2 and 4 in specifics similar in nature to how Options 3A and Option 5 "Feasibility Design Alignment" were compared on available information. This may be achieved by expansion of Table 3-1 of Appendix K to include these options and Table 2.1 in Attachment 2 of Appendix K.

The **Operation Aspects** on page 10 of Appendix K of Option 3A states, "the arrangement eliminates the need for lengthy negotiations with BLR and WLR to obtain service contracts." This appears to be more the focus of the elimination of the other alternatives. The option Assessment for Alternative 3A states the environmental aspects against Option 3A are moderate. This statement is not necessarily supported in the overall response in the Amendment documents. This section also points to the need to provide a clear span bridge across the inlet of Flora Lake and how this could be taken into account as a technical challenge with a reasonable solution. This same statement is not afforded to Option 4 with respect to a possible crossing of the Walsh River. Discussions and negotiations with QNS&L Railway appear to have already commenced on supporting the project. Documentation should be provided supporting this statement. Any other negotiations with BLR or WLR should also be provided with supporting documentation or a supporting correspondence there is not a willingness to negotiate access agreements.

Discussion on Option 4 should be expanded to include possible supporting mitigations available and cost of mitigations to lessen the impact of a rail routing on Long Lake residences and Duley Lake Park. These should include typical sound attenuation techniques and the cost to provide such measures to make this option feasible.

Alternatives to mitigate operational negative issues surrounding Option 4 as either a stub end yard or a loop track with associated earthwork quantities to discount these alternatives against

the others considered more feasible should be detailed for comparisons. The Option 4 Assessment Section of Appendix K refers to " the operation requires agreements with BLR and WLR to provide rail service to access QNS&L interchange at a time when their capacity will be diminished thanks to expansion of the Bloom Lake Mine. This expansion is currently on hold as well as other expansion projects in the area. This should be corrected or expanded upon for a detailed update in this regard.

Alderon Response to IR No. NLTW S-03

Alderon has addressed the comments within this IR in Alderon's General Comment presented in Section 1.0 above, either directly or through the selection of the Option 2 rail route.

1.4.4 Information Request No. NLTW S-04

Table 2.1 in Attachment 2 of Appendix K provides rail geometry designed to date but lacks specific detailed horizontal alignment information. A plan profile drawing for the route should be provided with all geometric details and associated minimum and maximum standards for comparison. Gradelines should be provided for both the empty and loaded train directions. (This is likely available as **Appendix K Section 3.0 FEASIBILITY STUDY ALIGNMENT – OPTION 5** indicates a 3 dimensional terrain model is available for the proposed option and cross-section drawings from the model are available in **Appendix 1 Kami Rail line Alignments of Appendix K Attachment 2) Section 2.2.2 in Attachment 2 of Appendix K** gives details of a possible 26 metre single span bridge structure at the Jean Lake Crossing. A comparable crossing structure dimension for the Walsh River crossing in Option 4 should be provided. It should be noted that the Bloom Lake Railway was constructed with 3 major river crossings in this vicinity which were 3 span concrete arch on the Walsh River and Canning causeway (these two structures had 2 piers in these rivers). See attachment **Bloom Lake Rail Route Redesign of River Crossings Feb 27 09.pdf**.

Alderon Response to IR No. NLTW S-04

Alderon has addressed the comments within this IR in Alderon's General Comment presented in Section 1.0 above, either directly or through the selection of the Option 2 rail route.

1.4.5 Information Request No. NLTW S-05

Any route modelling with a drive through viewing feature should be presented at a public open house session simulated at actual running speeds. **Appendix K Section 3.0 FEASIBILITY STUDY ALIGNMENT – OPTION 5** indicate a 3 dimensional terrain model is available for the proposed option. **Appendix K Attachment 2 Section 5.1.1 Typical Tank Car Design** indicate, "Railway engineering, design simulation and modelling indicate that tank cars with an internal capacity of approximately 29,000 gallons can be used".

Alderon Response to IR No. NLTW S-05

Alderon has addressed the comments within this IR in Alderon's General Comment presented in Section 1.0 above, either directly or through the selection of the Option 2 rail route.

1.4.6 Information Request No. NLTW S-06

Spill containment equipment listing in Section 3.2 should be reviewed in light of worst case scenario need requirements.

Alderon Response to IR No. NLTW S-06

Alderon has selected the Option 2 rail route, as described in Alderon's General Comment presented in Section 1.0 above. Alderon will again review the spill containment requirements for the proposed route and will continue to work with the Towns of Wabush and Labrador City, other local mine operators, and regulators to ensure that sufficient emergency and spill/hazmat response teams and equipment are prepared and available to respond in the unlikely event of a spill or release to the environment.

1.4.7 Information Request No. NLTW S-07

Discussion around moving the public water supply should be backed up with documented support from the Town of Wabush. Previous information provided does not support this activity and it should be supported with details.

Alderon Response to IR No. NLTW S-07

The movement of the Town of Wabush water supply, or the provision of a suitable back-up water supply was documented by the Town in a letter to NLDEC dated April 16, 2013 and attached for reference.

Based on Alderon's selection of Option 2 rail route and abandonment of Option 3A, the alternative water supply is no longer a required mitigation measure.

1.4.8 Information Request No. NLTW S-08

This below link was discovered in researching QNS&L accident history. It has not been substantiated from the TRB though it is on the Government of Canada's web site. http://www.ec.gc.ca/ee-ue/default.asp?lang=en&n=30203C83.

Alderon Response to IR No. NLTW S-08

The link has been reviewed and Alderon acknowledges that the statistics previously presented in the EIS and subsequently in the Amendment to the EIS, or as published in other publicly available rail safety statistics, do not necessarily reflect all of the accidents if they are still under investigation or are classified as non-reportable to the Transportation and Safety Board of Canada.

2.0 Information Requests Received from Aboriginal Groups

2.1 Information Requests Received from Innu Nation (IN)

2.1.1 Information Request No. IN S-01

Innu Nation requested the Proponent to file the noted plans and programs in draft form so that they could be reviewed during the environmental assessment process. In some instances, finalization could occur during the environmental assessment and in other instances as part of permitting, monitoring or during another future project stage.

As noted in our original comments, a “more appropriate approach to that taken in this EIS would be to present many of these plans and programs in draft form in order to facilitate public and Aboriginal consultation and to demonstrate that the measures designed to manage and monitor environmental effects and to deliver economic benefits have been appropriately considered.”

The Proponent has chosen not to avail of the opportunity to file any of these draft plans and programs during the environmental assessment. This could result in additional delays later in the permitting process and during the development and consultation concerning the follow-up and monitoring programs. Lacking the opportunity to review these draft plans and programs, concerns remain about the preparedness of the Proponent and whether its readiness to meet regulatory requirements and achieve high standards of environmental performance.

Alderon Response to IR No. IN S-01

The original information request submitted by Innu Nation requested the Proponent to table draft versions of identified plans and programs or to provide an explanation of why such draft plans could not be provided at the time.

Alderon's response to the original information request indicated that the submission of the identified plans in either draft or final form was not required by the Guidelines and that the information provided in the EIS was in compliance with the requirements of the Guidelines. Outlines of various Plans and a description of their intended objectives, focus and content were provided in the EIS (Alderon 2012) and in the Amendment to the EIS (Alderon 2013), as was a discussion of the Proponent’s overall planned Sustainability Management Framework (SMF), which includes the Environmental Management System (EMS) and other applicable polices and plans for avoiding or reducing the environmental effects of the Project during its construction and operations phases.

In the environmental assessment process, Proponents identify specific mitigation procedures and associated plans for their implementation. However, it is during the detailed engineering and permitting phases that the plans are further developed and defined. Environmental plans and programs are completed and finalized after the completion of the EA process and in many cases a requirement to develop and submit such plans for governmental review and approval becomes an eventual regulatory condition of any EA release.

Information on mitigation procedures and associated plans was presented at a level appropriate for an EA. The lack of current availability (and past submission) of each of these Plans for review under the EA process in no way reflects a lack of "preparedness of the Proponent and...its readiness to meet regulatory requirements and achieve high standards of environmental performance" as suggested by the Reviewer. Rather this approach is consistent with Alderon's obligations and requirements under the EA process, and with standard practice for recent and similar projects in Labrador and elsewhere. Alderon is committed to fulfilling its regulatory obligations and requirements and to achieving a high standard of environmental protection and management throughout the life of the Kami Project, and will do so through the timely finalization and effective implementation of its Environmental Management System and associated plans, programs and procedures as outlined in the EIS.

There will be subsequent and continuing opportunity for review of the identified plans during the permitting process. Alderon will comply with the requirements of all federal and provincial guidelines and policies concerning consultation and engagement with Aboriginal peoples and stakeholders. Alderon will commit to providing draft plans, upon request, to Innu Nation for their information at the same time as it provides these plans to government. Alderon has committed to continued and meaningful engagement with Aboriginal groups, including Innu Nation, during the life of the Project and has reiterated its preparedness to discuss mitigation measures and other matters related to the Project and its implementation. Alderon is confident that the plans and programs referenced will comply with regulatory standards and achieve high standards of environmental performance and will be subject to review by Aboriginal groups, regulators and other stakeholders.

References:

Alderon Iron Ore Corp. 2012. Environmental Impact Statement, Kami Iron Ore Mine and Rail Infrastructure, Labrador.

Alderon Iron Ore Corp. 2013. Amendment to the Environmental Impact Statement, Kami Iron Ore Project—Information Request Responses.

2.1.2 Information Request No. IN S-02

The Proponent has addressed this information request.

Alderon Response to IR No. IN S-02

No further information is required.

2.1.3 Information Request No. IN S-03

The Proponent has addressed this information request.

Alderon Response to IR No. IN S-03

No further information is required.

2.1.4 Information Request No. IN S-04

The Proponent has provided a useful summary of the proposed mechanical treatment process for dealing with tailings effluent in the TMF. While the specific "characteristics of the TMF drainage" remain unknown at this time, and there is a gap in the information concerning the expected specific treatment outcomes for the proposed Project, the Proponent has indicated the precedent use of the proposed technology at other facilities in Canada.

The Proponent has addressed the request for an analysis of the alternative means of disposing tailings and waste rock inside the Rose Pit.

Alderon Response to IR No. IN S-04

Comment noted. Information on the TMF and effluent treatment process was provided in the EIS and EIS Amendment. The specific characteristics of the TMF drainage and details on treatment process, including expected treatment outcomes, will be further developed as part of the detailed engineering phase of the Project. As described in EIS Volume I, Chapters 2 and 16, water from the TMF will be collected and treated to meet regulatory requirements including the Federal *Metal Mining Effluent Regulations* and Provincial *Environmental Control Water and Sewer Regulations*.

2.1.5 Information Request No. IN S-05

Based on recent media releases and the response from the Proponent, Innu Nation understands that the Proponent will be contracting with Nalcor to meet its electricity needs for the proposed Project.

Alderon Response to IR No. IN S-05

No further information is required.

2.1.6 Information Request No. IN S-06

Based on recent media releases and the response from the Proponent, Innu Nation understands that the Proponent will be contracting with Nalcor to meet its electricity needs for the proposed Project.

Alderon Response to IR No. IN S-06

No further information is required.

2.1.7 Information Request No. IN S-07

The Proponent has addressed this information request.

Alderon Response to IR No. IN S-07

No further information is required.

2.1.8 Information Request No. IN S-08

The Proponent has provided additional information concerning the analysis of accidents and malfunctions listed above.

With respect to addressing the requirements of the EIS Guidelines concerning the "nature and scope of a coordinated response to a major accident or malfunction in relation to the proposed Project", the response from the Proponent is not adequate.

> *G.4.6.1 Accidents and Malfunctions*
>
> *Given the potential for accidents and malfunctions to impact two provinces, the EIS should discuss how an accident scenario affecting both jurisdictions would be handled (e.g., notification, response etc.).*

While the above section of the EIS Guidelines could have been more prescriptive, it asks the Proponent to provide its understanding of how multiple jurisdictions will coordinate to respond to an accident or malfunction.

In its response to IR No. EC 20, the Proponent notes that: "A detailed Emergency Response and Spill Response Plan will be developed by Alderon and submitted to appropriate regulatory agencies for review prior to the initiation of Project activities." This is an important document. However, the Proponent has not presented its understanding of the various parties involved in responding to a significant accident, including their roles, responsibilities and capabilities. Without this understanding, the Proponent is unable to present meaningful information concerning multi-party response notification, coordination, implementation, etc., as required by the EIS Guidelines.

In addition to concerns about the "safeguards that have been established to protect against such occurrences and the contingency/emergency response procedures in place in the event that an accident/malfunction occurs", which have been deferred to the Emergency Response and Spill Response Plan, by not presenting its understanding of the complexity of a coordinated jurisdictional response to a major accident, the Proponent may be overestimating the capabilities of government responders, particular in remote locations like Labrador, underestimating its own responsibilities, not allocating sufficient revenues for preparation, and underpreparing as a result.

Restated Information Request

The Proponent is requested to address the requirements of the EIS Guidelines concerning the nature and scope of a coordinated response to a major accident or malfunction in relation to the proposed Project.

Alderon Response to IR No. IN S-08

In accordance with the *Canadian Environmental Assessment Act* (CEAA) and the scope of the EIS Guidelines, the EIS considered the environmental effects of accidents or malfunctions that may occur as a result of Project activities. The environmental effects of accidents or

malfunctions have been considered and assessed for each VEC in Chapters 14 to 26 of the EIS Volume 1. As required by the EIS Guidelines, potential accidents and malfunctions have been described and assessed assuming a worst case scenario, and associated mitigation measures have been described.

As discussed in the original response to IR No. EC 20, Alderon will develop a detailed Emergency Response and Spill Response Plan (ERSPR) that will be submitted to appropriate regulatory agencies for review prior to the initiation of Project activities. The ERSP will be developed in the permitting process, following release of the Project from the environmental assessment process, and in consultation with applicable government departments, emergency services, and other stakeholders. Details regarding a coordinated response to a cross-jurisdictional unplanned event or emergency situation will be provided in the ERSP.

The ERSP will include a detailed site risk analysis, as well as details on responsibilities of parties in both Labrador, and where appropriate, Québec, alerting and notification procedures, and response procedures (see the draft ERSPR Table of Contents provided in Appendix J of the EIS Amendment). Alderon will develop appropriate notification and emergency response procedures for each potential unplanned event or emergency situation, addressing procedures that would involve multi-jurisdictional parties, where required. In the case of a cross-jurisdictional event, the ERSPR will include detailed notification and response procedures involving parties such as the Newfoundland and Labrador DOEC, Environment Canada Québec, and emergency services in western Labrador and Fermont, Québec. A detailed description of emergency services in the area is provided in Volume 2, Chapter 24 of the EIS.

The ERSPR will be developed within the Sustainability Management Framework (SMF). The SMF is a part of the overall Kami Project management system that includes quality management systems, document control, risk management, and Health, Safety and Environment (HSE) systems. The framework is made up of three main systems, the components of which are:

- The Sustainable Project Delivery (SPD) system will provide a high level approach to sustainability management by establishing clear objectives, tracking of key Project commitments, support for engineering and procurement activities and reporting on overall sustainability performance.
- The Environmental Management System (EMS) will provide detailed management of regulatory and permit requirements and includes environmental protection plans and procedures. The EMS will include environmental monitoring and reporting on specific construction and operational activities. Environmental Management Plans will be developed in consultation with relevant regulatory agencies and stakeholder groups.
- The Social Responsibility System (SRS) will manage and track the commitments made in various guidance documents and contracts (e.g., benefits agreement) as well as establish plans for effective Project communications, community liaison and complaints management.

Alderon recognizes the potential for Project related accidents and malfunctions to affect multiple jurisdictions and commits to having appropriate emergency plans and notifications in place prior

to beginning Project activities at the site. In consultation with regulatory agencies, the ERSPR will be developed to include notification and emergency response procedures that address potential cross-jurisdictional events. Alderon is committed to working with appropriate government agencies and stakeholders in both Newfoundland and Labrador and Québec in the development and implementation of effective emergency response measures.

2.1.9 Information Request No. IN S-09

The Proponent has responded to this information request.

Alderon Response to IR No. IN S-09

No further information is required.

2.1.10 Information Request No. IN S-10

The Proponent has addressed this information request.

Alderon Response to IR No. IN S-10

No further information is required.

2.1.11 Information Request No. IN S-11

The Proponent acknowledges that: “Information on the results of rehabilitation at similar mines in the region is generally limited as there have been no mine closures in this area.” Nonetheless, Alderon is proposing to consult with other mining companies in the area to see what can be learned from their experiences. This is a positive step. Concerns remain though that the Proponent will not be in a position to implement progressive rehabilitation without initiating planning, test plots, species selection, etc. several years in advance of the start of proposed rehabilitation. New mines in similar ecosystems – where climate, terrain and a limited range of suitable native vegetation species conspire against rehabilitation – often commence research and vegetation trial plots during the advanced exploration phase to gain insight into the potential effectiveness and cost of rehabilitation.

Considering the acknowledged lack of experience with progressive reclamation in the region, there is a higher degree of uncertainty as to whether or not the objectives of progressive reclamation can be achieved cost-effectively or at all.

Alderon Response to IR No. IN S-11

Nearby operating mines in the region have experience in progressive rehabilitation. In addition to this, both operating and closing/closed mines in other regions with similar climate conditions are also expected to provide some useful information and experience with respect to re-vegetation.

As early construction will commence several months after the Project is released from EA, primarily with access corridors to the site being constructed, it is anticipated that there will be

small construction laydown areas abandoned early in the construction cycle that can be used as test plots for re-vegetation studies. In addition, there will be several years between the commencement of operations and the earliest substantial progressive rehabilitation requirements associated with tailings and waste rock dumps, therefore it is anticipated there will be sufficient time to utilize existing knowledge and early on-site vegetation trials to determine suitable strategies.

In terms of the cost to achieve the re-vegetation of the site, the most substantial cost of re-vegetating the site is generally associated with the availability, movement, and placement of organic rich overburden in thicknesses suitable to support re-vegetation. At the Kami site, there is an abundance of this material and there will be a plan developed to optimize its movement, temporary storage, and placement in support of rehabilitation activities across the site.

2.1.12 Information Request No. IN S-12

The Proponent has indicated that it intends to file a "Rehabilitation and Closure Plan [that] will satisfy the requirements under the *Mining Act* and associated guidelines in Newfoundland and Labrador." No information is provided as to when this document will be filed, or how either the Proponent or government will consult with Innu Nation during the development of the Plan.

The Proponent has not shown how the materials in the EIS and the Amendment satisfy the requirements of the EIS Guidelines with respect to rehabilitation and closure.

Restated Information Request

The Proponent is requested to provide a detailed table of concordance in relation to the rehabilitation and closure requirements of the EIS Guidelines indicating where in the EIS the information is provided and supplementing this information, as appropriate.

Alderon Response to IR No. IN S-12

All mining projects in Newfoundland and Labrador are required to have a Rehabilitation and Closure Plan under the provincial *Mining Act.* The Plan must be submitted to and approved by the Newfoundland and Labrador Department of Natural Resources (NLDNR) Mineral Development Division prior to the start of construction. The Plan will also be subject to review by other provincial and federal regulators with jurisdiction in relation to aspects of the Project. Approval of the Plan cannot be granted until a project is released from the EA process.

Section 4.10.1 of the EIS Guidelines required that the Kami EIS outline the preliminary contents of a Rehabilitation and Closure Plan. The preliminary details of this Plan are provided in Volume 1, Part I, Section 2.6.4 of the EIS. In addition, a draft Rehabilitation and Closure Plan is set out in Appendix A of the Amendment to the EIS. This document is based on the level of Project design developed at the time and on best practices, and the regulations and guidelines applicable in this province. The scope of the Plan is primarily defined by the *Guidelines for the preparation of a Rehabilitation and Closure Plan for submission* published by the NLDNR. These Guidelines are based on the standards and requirements outlined by the provincial *Mining Act*.

The draft Rehabilitation and Closure Plan will be further updated as Project design advances prior to submission to the NLDNR for approval. It is worthy of note that the Rehabilitation and Closure Plan is a "live" document which will continually be reviewed and updated over the life of the mine, and the proposed rehabilitation measures and associated costs will not be considered "final" until the detailed Closure Plan is developed, usually 12 to 18 months prior to the close of operations. At that time, the true footprint is known and supporting operation experience, environmental monitoring studies, and progressive rehabilitation experience is available to support the final plan.

Table 2.1 indicates rehabilitation and closure requirements within the EIS Guidelines, and the locations within the EIS and Amendment to the EIS where these are addressed.

Table 2.1 EIS Concordance Table for Rehabilitation and Closure Requirements

EIS Guidelines Reference	Context	EIS Guidelines Requirements	Location in EIS or EIS Amendment
4.10.1	Planning	The EIS shall also outline a preliminary decommissioning and reclamation plan for the Project.	Volume 1, Part I, Section 2.6.4; Amendment to the EIS, Appendix A
		The plan must address: ownership, transfer and control of the different Project components,	Volume 1, Part I, Section 2.6.4; Amendment to the EIS, Appendix A, Section 4.0
		Responsibility for monitoring and maintaining structures.	Volume 1, Part I, Section 2.6.4; Amendment to the EIS, Appendix A, Section 5.0
		The EIS shall include a conceptual discussion of how decommissioning of permanent facilities may occur.	Volume 1, Part I, Section 2.6.4; Amendment to the EIS, Appendix A, Section 4.0
4.10.2	Follow-Up Program	The EIS must include a framework upon which follow-up, including effects monitoring, would be based throughout the life of the Project, including the post-closure phase.	Volume 1, Part II, Chapter 27; Amendment to the EIS, Appendix A, Section 5.0
4.17.3.1	Acid Rock Drainage and Metal Leaching	Predictions of the ARD/ML potential of all materials (bedrock and surficial) to be disturbed or created during all phases (construction, operation, decommissioning, reclamation and post-closure) of the proposed project.	Volume 1, Part II, Section 15.6

EIS Guidelines Reference	Context	EIS Guidelines Requirements	Location in EIS or EIS Amendment
4.17.4	Landforms, Soils, Snow and Ice—Effects Assessment and Mitigation	The EIS shall provide a description of measures to mitigate effects and list potential residual effects and their significance. The discussion should include a list of: • rehabilitation measures for borrow sources; • proposed commitments to preserve, store and reuse soil (including humus layers and organic soils), as applicable for site rehabilitation;	Volume 1, Part II, Section 15.6
4.17.4.1	Acid Rock Drainage and Metal Leakage	Additional information should be provided for: • mine waste rock, tailings, ore characterization, volumes, segregation/disposal methods, mitigation/management plans, contingency plans, operational and post-closure monitoring and maintenance plans; • estimates of potential lag time to ARD/ML onset for PAG materials (including various waste rock, tailings, ore) and ability to fully saturate appropriate PAG materials during operation and post-closure based on regional experience, if any; • pit water chemistry (existing, during operation, post-closure) and pit closure management measures (e.g., flooding). This should include geochemical modeling of pit water quality in the post-closure period; • surface and seepage water quality from the mine waste rock stockpiles, other stockpiles and other infrastructure during operation and post-closure; and • ARD/ML prevention/management strategies under a temporary or early closure scenario, including ore.	Volume 1, Part II, Section 15.6
4.18.4.2	Surface Water	• provide a detailed operational and post-closure water balance or mine water management plan identifying Project water demands/uses and water source(s), potential effects on water sources and proposed mitigation to avoid or minimize effects;	Volume 1, Section 16.6.2.2

EIS Guidelines Reference	Context	EIS Guidelines Requirements	Location in EIS or EIS Amendment
4.20.3	Freshwater Fish, Fish Habitat and Fisheries	Baseline surveys should be conducted in accordance with direction as provided by DFO and shall be designed to: • contribute to the development of a conceptual reclamation and closure plan;	Volume 1, Appendix H
4.24.4	Current Use of Lands and Resources for Traditional Purposes by Aboriginal Persons	The EIS must describe: any change in the environment due to the Project that would in turn adversely affect: • hunting, fishing, trapping and cultural uses of the land (e.g., collection of medicinal plants, use of sacred sites), as well as related effects on lifestyle, culture and quality of life of Aboriginal groups; • or Aboriginal groups' ability to access areas used for traditional purposes, including deactivation or reclamation of access roads; and • the proponent's efforts to identify the issues and concerns of Aboriginal persons about the Project.	Volume 1, Chapter 22

2.1.13 Information Request No. IN S-13

Besides indicating that its Rehabilitation and Closure Plan will satisfy the requirements under the *Mining Act* and associated guidelines in Newfoundland and Labrador, the Proponent has provided (in response to IR # IN.11) some information concerning the proposed objectives of aspects of the Plan. However, it is unclear how these objectives are tied to the goal of returning the site to conditions suitable for Innu to carry out traditional harvesting activities.

Restated Information Request

The Proponent is requested to provide further information concerning how its proposed objectives will ensure that the Rehabilitation and Closure Plan will result in return of the site to conditions suitable for Innu to carry out traditional harvesting activities.

Alderon Response to IR No. IN S-13

As noted in the EIS Volume 1, Section 2.6.4, Alderon will develop the Rehabilitation and Closure Plan in accordance with the *Mining Act* and associated guidelines and in consultation with appropriate regulatory agencies. The objective of the Rehabilitation and Closure Plan is to return the site to an area that can be safely accessed and that can support flora and fauna species which were present on the site prior to Project development. As described in Volume 1, Chapter 2 of the EIS, there are three key stages of rehabilitation activity that occur over the life of a mine:

1) Progressive rehabilitation;
2) Closure rehabilitation; and
3) Post-closure monitoring and treatment.

Progressive rehabilitation involves rehabilitation that is completed, where possible or practical, throughout the mine operation stage and prior to closure.

Closure rehabilitation involves measures undertaken after mining operations, in order to restore or reclaim the property as close as reasonably possible to its pre-mining condition. This could include demolition and removal of site infrastructure, re-vegetation and any other activities required to achieve the requirements and goals which will be detailed in the Rehabilitation and Closure Plan. Upon completion of the closure rehabilitation activities, a period of "post-closure monitoring" is then required to ensure that the rehabilitation activities have been successful in achieving the prescribed goals. Upon completion of the rehabilitation and closure activities, the site will be returned to conditions that will sustain pre-development uses and activities for both the wildlife resources and the users of that resource. Within a 10 to 20 year period the site will be returned to an area that can be safely accessed and which will support flora and fauna species which were present in the area prior to initiation of Project activities.

2.1.14 Information Request No. IN S-14

Other than indicating that it expects that vegetation communities will be re-established within 10 to 20 years of closure, Alderon has not provided any specific information to indicate that post-closure site conditions will be suitable for sustainable use for traditional purposes by Aboriginal peoples. No evidence is provided from closure activities at other iron ore mines or other mines.

Restated Information Request

The Proponent is requested to provide additional information concerning the expected timeframes for rehabilitation to meet the objectives of the Rehabilitation and Closure Plan (identified in S.2.6.4 or as subsequently revised) and expected site conditions following closure in relation to the following:

- Land use
  - Use for traditional purposes by Aboriginal peoples
  - Non-Aboriginal land use
- Site topography
  - Rose Pit
  - Access roads and rail lines
  - Areas cleared for infrastructure
  - Stockpiles
- Local surface waters and receiving waters

- Local groundwater
- Terrestrial plant and wildlife communities
- Aquatic plant and animal communities

The Proponent is requested to provide further evidence from closure activities at other iron ore mines or other mines (e.g. diamond or metal mines) in similar conditions concerning the timeframes required (for closed projects) or anticipated to be required (for operating projects) to re-establish the diverse biological communities necessary to achieving the objectives of the Rehabilitation and Closure Plan.

Alderon Response to IR No. IN S-14

As noted in the EIS Volume 1, Section 2.6.4, Alderon will develop the Rehabilitation and Closure Plan in accordance with the Mining Act and associated guidelines and in consultation with appropriate regulatory agencies. As discussed in the response to IR No. IN 11 provided in the EIS Amendment and as restated in response to IR No. IN S-11, information on the results of rehabilitation at similar mines in the region is generally limited as there have been no comparable mine closures in this area and no mines have closed in Labrador since contemporary rehabilitation and closure practices and requirements have been developed. For example, Iron Ore Company of Canada was not required to implement a rehabilitation and closure plan when its mining operations near Schefferville were closed in 1982. Alderon will properly implement the Rehabilitation and Closure Plan which will be provided to provincial regulators for approval. Adaptive management principles will be incorporated in the plan to meet industry best practices, which will evolve over the life of mine.

Alderon will properly implement the Rehabilitation and Closure Plan which will be provided to provincial regulators for approval. Adaptive management principles will be incorporated in the plan to meet industry best practices, which will evolve over the life of the mine.

Upon completion of the rehabilitation and closure activities, the site will be returned to conditions with the objective to sustain pre-development uses and activities for both the wildlife resources and the users of that resource. Within a 10 to 20 year period the site will be returned to an area that can be safely accessed and which will support flora and fauna species which were present in the area prior to initiation of Project activities.

2.1.15 Information Request No. IN S-15

Alderon has provided additional information concerning its perspective of its prior engagement efforts. However, the information request is directed at the Crown.

Restated Information Request

The federal Crown is requested to clarify whether its preliminary assessment, contained in its letter of November 21, 2011 to Innu Nation, was provided to the Proponent to assist it in undertaking the environmental assessment.

The Provincial Crown is requested to provide Innu Nation with its preliminary assessment of the nature and scope of the Innu Aboriginal and Treaty Rights potentially impacted by action by the Provincial Crown.

In the event that the preliminary assessments prepared by the respective Crowns were provided to the Proponent for use in preparing the EIS, we are also requesting that the respective Crowns provide Innu Nation their understanding of whether their preliminary assessments were appropriately used by the Proponent in undertaking the environmental assessment and preparing the EIS.

Alderon Response to IR No. IN S-15

Alderon acknowledges that the information request is directed at the Crown. However, Alderon has advised Innu Nation that it will take into consideration any additional information that Innu Nation provides to Alderon regarding potential adverse effects of the Project upon Innu asserted rights. To date, no additional information has been provided by Innu Nation. However, Alderon has committed to continued and ongoing engagement with Innu Nation through the life of the Project.

2.1.16 Information Request No. IN S-16

Alderon has provided additional information concerning its perspective of its prior engagement efforts. However, the information request is directed at the Crown.

Restated Information Request

In addition to its preliminary assessments (see IR.IN#15), the federal and provincial Crowns are requested to clarify what direction, other than the EIS Guidelines, has been provided to the Proponent concerning the historical context that has shaped the Innu exercise of their Aboriginal rights in order that the Proponent can undertake the assessment on Innu rights required by the EIS Guidelines.

Alderon Response to IR No. IN S-16

Alderon acknowledges that the information request is directed at the Crown and is confident that it has properly assessed the potential effects of the Project upon the exercise of Aboriginal rights asserted by the Labrador Innu and has taken into account the historical context that has shaped the exercise of such asserted rights.

Alderon is aware that Innu Nation asserts Aboriginal rights and title to a large portion of central and western Labrador, including lands within the Kami Project area. Accordingly, as described in EIS Volume 1, Part 1, Chapter 10 and EIS Volume 1, Part II, Chapter 22 and in its original responses to Information Requests Nos. IN 15, 16 and 17, Alderon has made every reasonable effort to give full consideration to these asserted rights in order to fully assess the potential effects of the Project upon Innu interests. The engagement process which has been developed by Alderon is directly responsive to an understanding of the rights which have been asserted by Innu Nation. This engagement process which commenced prior to Project registration and which

will continue throughout the life of the Project includes the provision of all relevant Project information, offers to meet with leadership and the communities and the offer of funding to conduct research into traditional knowledge and the current use of land and resources for traditional purposes. This offer was made in order to enhance Alderon's understanding of the potential effects of the Project upon the exercise of Innu asserted rights from both an historical and contemporary perspective but was not taken up by Innu Nation. Alderon is also engaged in the discussion of arrangements to facilitate Innu participation in the benefits of the Project.

Alderon has fully considered all information provided to it by Innu Nation. In addition to this information, Alderon has reviewed all publicly available information respecting Innu land and resource use and has commissioned its own research into historic and contemporary land and resource use by the Labrador Innu in the Project area. Based on its intensive engagement efforts and its review of information relevant to Innu asserted rights and Innu activities in and around the Project area, Alderon submits that it has thoroughly identified and assessed the potential effects of the Project upon the Labrador Innu.

Between September, 2012 and April, 2013, following the submission of the EIS and again subsequent to the submission of the Amendment to the EIS, Alderon made standing offers both in writing and orally to Innu Nation to meet to discuss its findings respecting its assessment of land and resource in the Project area by the Labrador Innu. In addition, Alderon has advised Innu Nation that it will take into consideration any additional information that Innu Nation provides to Alderon regarding potential adverse effects of the Project upon Innu asserted rights. No additional information has been provided by Innu Nation. Alderon has committed to continued and ongoing engagement with Innu Nation through the life of the Project.

2.1.17 Information Request No. IN S-17

The Proponent has pointed to some areas of the EIS where effects pathways are discussed in general terms. This information is neither complete nor sufficiently detailed to determine the implications of the proposed Project for Innu rights.

The Proponent's position appears to be that an assessment of the effects of the proposed Project on the current (interpreted to mean "contemporary" by the Proponent) use of lands and resources for traditional purposes by Aboriginal people necessarily addresses the effects of the proposed Project on Innu rights. The Proponent ultimately defends its position as follows:

> *The purpose of the EIS is not to assess the strength of any particular rights claim or how the proposed Project will affect Aboriginal rights themselves.* **[our emphasis]**

The EIS Guidelines are quite clear on numerous occasions that this is, in fact, supposed to be part of the purpose of the EIS:

G.4.4.2 Alternatives to the Project

In assessing alternatives, the proponent is encouraged to take into account any potentially adverse impacts of the technically and economically feasible alternatives on potential or established Aboriginal and Treaty Rights.

G.4.4.5 Alternatives Means of Carrying Out the Project

Any potentially adverse impacts of the technically and economically feasible alternative means on potential or established Aboriginal and Treaty Rights must also be identified.

G.4.15 Assessment Summary and Conclusions

For all VECs, the EIS must include a table that summarizes:

> ➢ *Relationship of the VEC to an Aboriginal group's potential or established Aboriginal and Treaty right;*

In its response, the Proponent acknowledges the historical context, namely that the Innu have been prevented from exercising their rights in the area of the proposed Project as a result of the development of prior projects and activities. In other words, there is an existing infringement on Innu rights. However, the Proponent does not understand the implications of this historical context for its assessment of the implications of the proposed Project on Innu rights. This is evident from the following:

> *Again, the existing and available information does not indicate that the Labrador Innu currently undertake land and resource use activities within the PDA or even within the larger LSA. Therefore, even with the potential for such indirect effects / effect pathways, a lack of current Innu land and resource use within the likely zone of influence of the Project and its environmental effects leads to the conclusion that there will be no Project related effects (either direct or indirect) on such activities.*

The potential lack of "current" land and resource use activities is not sufficient to conclude that there will be no adverse implications of the proposed Project on Innu rights. Equally important questions to such a determination go unanswered, such as:

- How does the proposed Project have the potential to perpetuate the adverse implications of existing projects and activities on Innu rights, either spatially or temporally, beyond what would otherwise be the case once those other projects are decommissioned?
- How does the proposed Project have the potential to act cumulatively with existing projects and activities to increase the adverse implications of those projects and activities on Innu rights?

Revised Information Request

Pursuant to IR.IN#15 and IR.IN#16, upon receipt of direction from the Crown, the Proponent is requested to prepare a complete list of potential impact pathways for use in the environmental assessment, and to undertake a revised assessment of the relationship between valued ecosystem components and Innu rights pursuant to the EIS Guidelines.

Alderon Response to IR No. IN S-17

Please see Alderon's response to IR No. IN S-16.

Alderon does not agree with Innu Nation's contention that the effects pathways analysis in the EIS was "neither complete nor sufficiently detailed to determine the implications of the Proposed Project for Innu rights" and does not agree that any further reassessment is necessary to comply with the EIS Guidelines.

Alderon submits that it has properly assessed the relationship between valued ecosystem components and asserted or established Aboriginal rights as required by the EIS Guidelines. Alderon is aware that Innu Nation asserts Aboriginal rights and title to a large portion of central and western Labrador, including lands within the Kami Project area. Accordingly, as described in EIS Chapter 10, Volume I, Part I and in its original responses to Information Requests Nos. IN 15, 16 and 17, Alderon has taken into account any treaty rights or asserted or established Aboriginal rights in order to fully assess the potential effects of the Project upon the interests of various Aboriginal groups, including the Labrador Innu. The engagement process which has been developed by Alderon is based its review of the available information regarding asserted Innu rights and activities in and around the Project area. It is directly responsive to the asserted rights and concerns which have been expressed by Innu Nation and the potential effects of the Project upon those asserted right.

It is the contention of Innu Nation that due to the alleged historical infringements of asserted Aboriginal rights, Alderon cannot rely on evidence of current land and resource use for traditional purposes to conclude that Innu Nation does not undertake activities in the Project area. However, the purpose of the EIS is to assess the potential environmental effects of the Project on the current use of Land and Resources for Traditional Purposes by Aboriginal Persons, as specified in the EIS Guidelines, noted in Alderon's initial response to IR No. IN 17 and pursuant to the requirements of the provincial and federal EA legislation. This includes the *CEAA* definition of "environmental effect", which includes: "(a) any change that the project may cause in the environment, ….[and] (b) any effect of any change referred to in paragraph (a) on … (iii) the current use of lands and resources for traditional purposes by aboriginal persons...". The environmental effects assessment therefore focuses upon the current use of land and resources by Aboriginal persons for traditional purposes, and the potential nature and degree of any changes to these activities that may occur (either directly or indirectly) as a result of the Project. This is in keeping with standard approaches and practice in EA, in which changes to the existing (baseline) environment are assessed, evaluated, and where possible and appropriate, mitigated. The purpose of EA is not however to assess the adverse effects resulting from past decisions.

Alderon recognizes and understands the relevance of "historical context in determining the potential existence and nature of any asserted Aboriginal rights. Alderon also acknowledges that asserted rights may be exercised through the current use of land and resources for traditional purposes by Aboriginal persons. These concepts are reflected in the focus and content of the VEC assessment, including the introduction to the chapter (EIS Section 22.1), the historical overview of Aboriginal use and occupancy provided in Section 22.5.1 and Appendix Z, and in other places throughout the EIS and EIS Amendment (previous IR responses).

Alderon's engagement efforts with the Labrador Innu, which are fully documented in the EIS and in the Amendment to the EIS, and which are ongoing, are directed at providing information to the Labrador Innu in order to enhance Alderon's understanding of the Labrador Innu's current use of land and resources in the Project area for traditional purposes. These engagement efforts include meetings and offers to meet with Innu leadership and community residents and the provision of all relevant Project information. In particular, Alderon made repeated offers to the Labrador Innu of funding and resources for the collection of traditional knowledge land and resource use information and traditional knowledge for the Project area in order to seek to more fully understand Innu activities (and any associated rights assertions) could be affected by the Project. Innu Nation chose not to participate in such initiatives.

In the absence of information provided directly by Innu Nation as to its asserted rights and current use of land and resources, Alderon consulted all publicly available information. In addition, Alderon undertook independent research into the historic and contemporary usage of the Project area by the Innu of Labrador and Québec. The results of that research indicate that the Kami Project area was used by many Aboriginal groups on an intermittent and infrequent basis and that such limited use had effectively ceased by the early 1950's. Since the submission of the EIS, Alderon has offered to meet with Innu Nation to discuss these conclusions and has also invited Innu Nation to provide any evidence to counter the conclusions of the EIS respecting historic and contemporary land and resource usage and potential effects on asserted Aboriginal rights. Innu Nation has not accepted any of these offers.

Given its regular engagement efforts, Alderon is strongly of the view that it has adequately and appropriately assessed the potential effects of the project on Labrador Innu land and resource use for traditional purposes (and associated Aboriginal rights assertions, as known) – satisfying the relevant sections of the EIS Guidelines (as cited by the Reviewer) – based on available information. In addition, as described and illustrated in Alderon's response to IR No. IN 17 presented in the Amendment to the EIS, the environmental effects assessment for this VEC also recognizes and considers the potential for any such land and resource use activities to be affected both directly (through direct disturbance) and indirectly (as a result of any associated environmental effects on other components of the biophysical and socioeconomic environments), and these potential "pathways" have been considered integrally within the assessment.

Alderon has concluded that if there is no current Innu land and resource use that occurs in the area (whether based upon an asserted Aboriginal right or otherwise), the current use of land and resources for traditional purposes by Labrador Innu and consequently the exercise of asserted Aboriginal rights will not be affected (directly or indirectly) by the Project.

The cumulative effects assessment for this VEC (EIS Section 22.8) assesses and evaluates the potential for the Project and its effects to overlap in space and time with those of other past, on-going and future projects and activities to result in cumulative environmental effects on Aboriginal (including Labrador Innu) land and resource use activities. It is Alderon's conclusion that the Project is not likely to result in any adverse effects on current Aboriginal land and resource use (including any known assertion of Aboriginal rights in the RSA), and therefore, it cannot and will not result in or contribute (additively) to any such cumulative effects.

2.1.18 Information Request No. IN S-18

The Proponent has pointed to information in the EIS concerning the secondary and tertiary caribou habitat within the RSA and to the area of caribou habitat removed from the inventory of lands capable of supporting caribou within the RSA. It is not entirely clear whether these were measures of current suitability (i.e. “net” habitat of the other projects and activities currently preventing caribou from using portions of the RSA) or ultimate capability (i.e. total habitat in the absence of these other projects and activities). Presumably, in the absence of these other projects and activities, caribou would be using the RSA, including areas within the PDA.

This difference between suitability and capability is relevant in the context of a long-term project, such as the one being proposed. To the extent that the proposed Project perpetuates the adverse effects on caribou use or removes caribou habitat, it has a cumulative effect on caribou. This is the case if the proposed Project continues to exist following the discontinuation of other nearby projects and activities and becomes the sole reason for the adverse effects on caribou habitat and the sole reason why caribou continue to avoid the RSA. To the extent this is the case, Innu will not be able to exercise their right to hunt caribou in the RSA as a result of the proposed Project.

Revised Information Request

The Proponent is requested to assess the relationship between the effects of the proposed Project on capable caribou habitat and Innu Aboriginal rights.

Alderon Response to IR No. IN S-18

As part of the ELC and wildlife habitat study, habitat types were classified as Primary, Secondary or Tertiary habitat for caribou (and other species) within and in the vicinity of the Study Area, based on the existing habitats within that area. Primary habitat is habitat that a species may be dependent on or strongly prefers, and is defined as that which provides the main requirements for a species, such as breeding (nesting), foraging, protection, and resting opportunities. Secondary habitat may provide some but not all of these requirements, and would not be used exclusively. Tertiary habitat provides little of these requirements for a species, though they may occasionally be found there.

The ELC process involved evaluation of ecotypes on the basis of vegetation characteristics. Ecological units within the Study Area were defined and delineated at varying organizational scales on the basis of climate, physiography, bedrock, surficial geology, soils and corresponding vegetation. The classification of individual ELC units themselves does not normally include

consideration of potential effects of adjacent developments. However, individual ELC units that overlapped developed areas were classified as such (e.g., anthropogenic), reflecting the current conditions on the landscape.

The habitat potential for caribou was assessed and ranked based on literature and available data. There were no areas of primary caribou habitat identified within the RSA, and it was estimated that 242 km^2 of potential secondary habitat and 497 km^2 of potential tertiary caribou habitat exists within the RSA (totalling 21 km^2 within the PDA).

The EIS Guidelines required an examination of potential biophysical project effects only in the vicinity of the proposed mine and associated infrastructure in Labrador West, and at the port facilities in Sept-Îles. Alderon has reduced the Project's footprint through engineering design and in consideration of other operations in the Project area. The Project area is located within the existing industrial area of Labrador West that includes several existing developments such as: Rio Tinto's Iron Ore Company of Canada (IOC); Wabush Mines; the municipalities of Labrador City and Wabush, Labrador and Fermont, Québec; and a rail line and other infrastructure associated with the Trans-Labrador Highway.

It is unlikely that the Project will have an adverse effect on the capability of the lands within the vicinity of the Project to support caribou. The George River Caribou Herd (GRCH) has declined substantially over the past decade. While the known range of these migratory caribou has expanded and contracted over the years since the first aerial surveys in 1958, the herd typically remains north and northeast of the Project (Bergerud et al. 2008). Similarly, the recently documented distribution of this herd, including calving and wintering areas and migratory routes between these, lies in an area northeast of the Project (NLDEC 2010), approximately 350 km from the Project. Caribou and other wildlife surveys, and interviews with residents and stakeholders, indicate that caribou are not using the RSA. As the documented former range of the herd does not overlap the proposed Kami Project, it is therefore unlikely that potential effects would interact with the recovery of the GRCH.

Sedentary forest-dwelling caribou herds tend to aggregate in winter and disperse across central Ungava in the spring and summer, but are typically found south of 55^0 N (Bergerud et al. 2008). The reported range of the sedentary Lac Joseph caribou herd is within the area south of the Smallwood reservoir to 51^0 N and between 66^0 and 62^0 W (Bergerud et al 2008), south and southeast of the Project. The closest boundary of their historic home range is approximately 50 km from the Project. Extensive aerial surveys in 2009, covering 7,022 km^2 and including the Study Area, did not locate any caribou in the vicinity of the Project, and observations of caribou were concentrated between 53^0 N and $51'30^0$ N and between $66'30^0$ and 63^0 W (Schmelzer 2011). A group of caribou in the vicinity of the McPhadyen River, approximately 250 km northwest of the Project, has been documented in the past (most recent surveys in 1986), however this "herd" has been shown to lack philopatry to calving grounds (Bergerud et al. 2008) (i.e., they do not return to their place of birth) and is not one of the three sedentary populations currently recognized in Labrador (Schmelzer 2011). Ranges of the other two recognized sedentary caribou herds in Labrador are located further from the Project, in central (Red Wine Mountain, approximately 450 km from the Project) and eastern (Mealy Mountain, approximately 780 km from the Project) Labrador.

Caribou were not observed in the vicinity of the Project during ground based or aerial surveys and interviews with local area residents and stakeholders indicate that caribou are not using the area. Therefore, it is expected that the Project would not have an adverse effect caribou habitat or on recovery of caribou and therefore will have no adverse effects upon Innu harvesting activities in the RSA.

References:

Bergerud, A.T., Luttich, S.N., and Lodewijk, C. 2008. The return of caribou to Ungava. McGill–Queen's University Press, Montréal.

Newfoundland and Labrador Department of Environment and Conservation (NLDEC). 2010. George River Caribou Management. Accessed on October 17, 2012. Available online: http://www.env.gov.nl.ca/env/wildlife/pdf/GRCH_2010_Consultations.pdf.

Schmelzer, I. 2011. An estimate of population size and trend for the Lac Joseph Caribou Herd and the greater region of south central Labrador: Results of a large-scale aerial census conducted during March 2009. Department of Environment and Conservation, Government of Newfoundland and Labrador. Submitted January 2010 and revised May 2011. Available online: http://www.iemr.org/pdfs/R_Caribou/Lac_Joseph_Caribou_Survey_2009_Schmelzer__May%20_9_2011_Revision.pdf.

2.1.19 Information Request No. IN S-19

The Proponent clarifies in its response that "the EIS states that there are no known historic or cultural resources in the Project Development Area" as opposed to the RSA, and goes on to point out six areas within the RSA where archaeological sites are known to exist. This information is helpful, although it does not explain how "knowledgeable informants" failed to identify any cultural or heritage resources within the RSA.

Alderon Response to IR No. IN S-19

EIS Volume 1, Part II, Chapter 21 fully describes the research methodology applied to identify Historic and Cultural Resources in the PDA, LSA and RSA. Certain information was gathered through informant interviews with land users as well as through communication with communities and local organizations as part of Alderon's public consultation process. Alderon also consulted all available information and documentation respecting Historic and Cultural Resources, including information provided by the PAO and information provided directly to Alderon during the course of engagement or otherwise available in the context of the environmental assessment of other projects in the RSA. In addition, as part of its ongoing engagement efforts with Aboriginal groups (see EIS Volume 1, Part I, Chapter 10 and Amendment to the EIS) Alderon made repeated offers to all relevant Aboriginal groups to provide resources to facilitate the collection of traditional knowledge and land and resource use data, including information related to Historic and Cultural Resources. Only one group -- NunatuKavut Community Council – accepted this offer and the results of its research are included in EIS, Volume 1, Appendix L).

As a result of this research, as stated in EIS Volume 1, Part II, Chapter 21 and in its response to IR No. 19, and based on information provided to it by Aboriginal groups and public stakeholders Alderon concluded that while there were no known Historic or Cultural Resources in the PDA, there are known Historic and Cultural Resources in the RSA.

2.1.20 Information Request No. IN S-20

The Proponent has addressed this information request.

Alderon Response to IR No. IN S-20

No further information is required.

2.1.21 Information Request No. IN S-21

The Proponent has addressed this information request.

Alderon Response to IR No. IN S-21

No further information is required.

2.1.22 Information Request No. IN S-22

The Proponent has addressed this information request.

Alderon Response to IR No. IN S-22

No further information is required.

2.1.23 Information Request No. IN S-23

The Proponent has addressed this information request.

Alderon Response to IR No. IN S-23

No further information is required.

2.1.24 Information Request No. IN S-24

The materials requested above are requirements of the EIS Guidelines. Other than citing the potential confidentiality of particular aspects of the benefits agreements with Aboriginal groups, the Proponent has provided no valid reasons for not providing the information specified in the EIS Guidelines. The information provided will not impose any binding requirements on the Proponent with respect to Aboriginal employment and business targets but is important to understanding the potential effects of the proposed Project and to designing appropriate enhancement measures.

Restated Information Request

The Proponent is requested to provide the information requested in the EIS Guidelines in relation to:

- G.4.4.4.3 – Percentage Aboriginal workforce, by gender;
- G.4.28.3 – Aboriginal business capacity baseline, including the capacity of specific Innu businesses with potential to take up opportunities in relation to the Project;
- G.4.28.4 – The expected impacts on the Aboriginal labour force and Aboriginal businesses based on an actual analysis rather than an extrapolation of existing demographics; and
- Materials in the Diversity Plan specific to Aboriginal employment and business (or the entire Diversity Plan).

Alderon Response to IR No. IN S-24

Alderon submits that it has satisfied the requirements of the EIS Guidelines with respect to the provision of information required by Guidelines 4.4.4.3, 4.28.3 and 4.28.4. The Project labour force requirements, baseline conditions for economy, employment and business and the predicted effects of the Project on economic, employment and business opportunities and conditions were fully described in EIS Volume I, Part II, Chapter 26 and in Alderon's response to IR No. IN 24.

Chapter 26 of the EIS contains estimates for employment during the construction phase as well as during operations and maintenance. Employment estimates are made for direct, indirect and induced employment for Canada, Newfoundland and Labrador, Labrador only as well as Economic Zone 2 which encompasses the area in closest proximity to the mine and concentrator. The EIS states that while no estimates for aboriginal employment are contained in the economic model prepared for the Project, it is anticipated that aboriginal employment will approximate the aboriginal share of the labour force which is 37 percent for Labrador and 5 percent for Economic Zone 2. The EIS also suggests that these percentages are expected to increase over time.

In addition, Alderon is currently developing a Diversity Plan and Gender Equity program as part of its Benefits Plan with the Province. It is anticipated that the Diversity Plan will contain targets for aboriginal employment. The Gender Equity program will include a women’s employment plan (WEP) and business access strategy in which Alderon will establish quantifiable objectives and goals. Alderon will take into consideration the availability of women in particular occupational categories as identified by Statistics Canada in its Employment Equity Data Report. The WEP will institute ongoing programs and processes to facilitate employment and participation for women in all phases of the Kami Project, and at all facilities, sites and offices in the Province where work performed by the Alderon and its main contractors relating to the Kami Project will take place.

Total direct, indirect and induced impacts on employment from combined capital and operating expenditures by geographical distribution are summarized in Tables 2.2 and 2.3 (Table 3.4.3

and 3.4.4 from the EIS Amendment Volume 3) and Figures 3.4.2 to 3.4.5 from the EIS Amendment Volume 3. From the capital phase of the project, residents of Labrador can expect to receive 1,253 person years of employment - 670 person years associated with direct capital expenditures; 267 person years associated with companies that supply goods and services to companies that support the construction activities and 316 person years will be felt throughout the service sector. The corresponding impacts expected for the Hyron region are: approximately 536 person years of direct employment, 157 person years of indirect employment and 177 person years of induced employment for a combine employment impact associated with capital expenditures of 869 person years. The impact during the operation phase is 21,295 person years in Labrador, 17,047 person years of which will occur in the Hyron region. To put that in perspective, the annual direct income impact in the Hyron region from the Alderon operations are approximately 560 person years per annum for a total of 11,130 person years.

Table 2.2 Direct, Indirect and Induced Employment Summary (2011$, Millions) (Table 3.4.3 from EIS Amendment)

	CDN	Other CDN	NL	LAB	Hyron
Income Associated with Capital and Operating Expenditures					
Direct	3,147	1,473	1,674	670	536
Indirect	8,582	6,926	1,656	267	157
Induced	8,892	7,470	1,423	316	177
Total Capital	**20,621**	**15,869**	**4,752**	**1,253**	**869**
Direct	11,342	561	10,781	10,781	10,781
Indirect	56,194	41,800	14,394	5,614	3,158
Induced	50,256	40,374	9,882	4,900	3,108
Total Operating	**117,792**	**82,736**	**35,057**	**21,295**	**17,047**
Total Project	**138,413**	**98,604**	**39,809**	**22,548**	**17,916**

Table 2.3 Distribution of Direct, Indirect and Induced Employment Summary (2011$, Millions) (Table 3.4.4 from EIS Amendment)

	Rest of CDN	NL	Rest of NL	Hyron	Other LAB
Income Associated with Capital and Operating Expenditures					
Direct	46.8%	53.2%	31.9%	17.0%	4.3%
Indirect	80.7%	19.3%	16.2%	1.8%	1.3%
Induced	84.0%	16.0%	12.4%	2.0%	1.6%
Total Capital	**77.0%**	**23.0%**	**17.0%**	**4.2%**	**1.9%**
Direct	4.9%	95.1%	0.0%	95.1%	0.0%
Indirect	74.4%	25.6%	15.6%	5.6%	4.4%
Induced	80.3%	19.7%	9.9%	6.2%	3.6%
Total Operating	**70.2%**	**29.8%**	**11.7%**	**14.5%**	**3.6%**
Total Project	**71.2%**	**28.8%**	**12.5%**	**12.9%**	**3.3%**

Aboriginal Baseline Capacity

Chapter 26 of the EIS contains estimates for capital expenditures as well as the company's procurement strategy. The chapter lists the types of goods and services that are available in the area through Aboriginal owned companies, including Innu businesses. While targets are not provided, the EIS does state that the Diversity Plan, will contain provisions for Alderon to provide assistance to aboriginal companies wishing to identify and bid on contracts.

As part of its ongoing engagement efforts with various Aboriginal groups, Alderon will comply with the provisions of any agreement with an Aboriginal group respecting training, recruitment and employment and will in addition make available information related to employment and business opportunities.

2.1.25 Information Request No. IN S-25

The Proponent has addressed this information request.

Alderon Response to IR No. IN S-25

No further information is required.

2.1.26 Information Request No. IN S-26

The Proponent has provided additional details in response to the requirements of the EIS Guidelines. One noted exception concerns the requirement for "a description of the roles and responsibilities for the program and its review process, by government, Aboriginal people and the public". In its response, the Proponent notes that it will be responsible for "managing, conducting, and reporting" in relation to the follow-up program but provides no information concerning the roles and responsibilities of other parties, including government, Aboriginal people and the public.

Restated Information Request

The Proponent is requested to indicate its perspective on the roles and responsibilities of government, Aboriginal people and the public in relation to the follow-up program and to describe its proposed consultation process for development and review of the program.

Alderon Response to IR No. IN S-26

The Guidelines do not require the proponent to speculate on the roles and responsibilities of government, Aboriginal people and the public in respect of follow-up programs. However, the respective roles and responsibilities of government, the proponent, Aboriginal peoples, and the public in relation to follow-up programs are established under the *Canadian Environmental Assessment* Act (CEAA) and regulations and further described in the Operational Policy Statement "Follow-up Programs under the *Canadian Environmental Assessment Act*" issued by the Canadian Environmental Assessment Agency (CEA Agency). As defined by Section 2(1) of CEAA, a follow-up program verifies the accuracy of the environmental assessment of a project and determines the effectiveness of mitigation measures.

As presented in response to IR No. IN 26 provided in the EIS Amendment, a follow-up program is also used in support of adaptive management and to develop more effective measures for managing the environmental effects of a project. Follow-up programs are also valuable in providing information on environmental effects and mitigation that can be used to improve future environmental assessments.

With respect to the role of Government, follow-up programs are a mandatory aspect of environmental assessment under CEAA for all projects assessed by a comprehensive study, mediation or review panel. Government roles and responsibilities with respect to follow-up programs are carried out by Responsible Authorities— those federal authorities whose decisions are required to enable the Project to proceed and who, therefore, are required to ensure that environmental assessment, including follow-up programs, is conducted. As such, follow-up program requirements for the Project will be subject to approval from the appropriate Responsible Authorities (e.g., Fisheries and Oceans Canada and Transport Canada). A summary of candidate follow-up and monitoring programs for each VEC is provided in Table 8.2, Volume 1 of the EIS.

As discussed in Section 8.3 of the EIS, the follow-up program will be finalized after release from the environmental assessment process, prior to the relevant Project phase. In accordance with the CEA Agency's Operational Policy Statement on Follow-up Programs under CEAA, feedback from RAs for the follow-up program will be received on the following topics:

- Requirements and objectives of the program;
- Monitoring program details;
- Duration of program;
- Data collection methods; and
- Roles and responsibilities.

With respect to the role of Aboriginal peoples and the public, as noted in the CEA Agency's Operational Policy Statement on Follow-Up Programs, interested members of the public may be involved in the design and implementation of a follow-up program, as appropriate. In addition, Alderon has committed to continued engagement with various Aboriginal groups and will conduct such engagement consistent with its corporate policies and management systems. Alderon will also comply with the terms of any permits or authorizations and the provisions of any formal arrangements concluded with an Aboriginal group respecting engagement specifically relating to follow-up and monitoring programs.

Throughout the EA process, Alderon addressed issues and concerns raised by the public and Aboriginal groups, and Alderon's proposed measures in response to these issues will be incorporated into follow-up and monitoring programs. Alderon will continue its engagement with Aboriginal groups and the public throughout the life of the Project. Adaptive management will be applied as new issues arise and corrective actions will be undertaken to prevent and mitigate any unanticipated adverse environmental effects.

2.2 Information Requests Received from Naskapi Nation of Kawawachikamach (NNK)

2.2.1 Information Request No. NNK S-01

The Naskapi Nation of Kawawachikamach ("NNK") now understands from Alderon's response that the statements by Alderon in the Plain Language Summary at page B-133 and in Vol. 1, part II at page 22-5 that "*Currently, the Naskapi do not go into Lab West*" mean that the Naskapis do not currently go into the PDA or the area covered by the towns of Labrador City and Wabush. This is because Alderon appears to have defined the term "Lab West" as meaning the PDA or the area covered by the towns of Labrador City and Wabush.

However it is incorrect and misleading for Alderon to state, in Vol. 1, Part II, page 22-50 "*This was further reinforced in the information and comments received during Alderon engagement activities with the NNK, through which it was confirmed that the Naskapi do not currently use the Project area of other parts of Western Labrador*." The reader is left with the impression that the Naskapis acknowledge that they do not carry out traditional activities in Western Labrador.

The NNK suggests that this statement should be modified so that it pertains not to Western Labrador but only to the PDA and the area covered by the towns of Labrador City and Wabash.

Alderon Response to IR No. NNK S-01

Representatives of Alderon met with Chief and members of Council of the Naskapi Nation of Kawawachikamach (NNK) on March 18, 2013 to discuss comments and information requests provided by NNK on the Environmental Impact Statement in December, 2012. At that meeting Alderon and NNK discussed the findings of the EIS respecting the use of land and resources in the Project area by members of NNK and Alderon clarified its conclusions in this regard. As a result of these discussions, Alderon is prepared to modify the statement contained in Volume 1, Part II, p. 22-50 as follows: "*This was further reinforced in the information and comments received during Alderon engagement activities with the NNK, through which it was confirmed that the Naskapi do not currently use the Project area.*"

2.2.2 Information Request No. NNK S-02

The NNK acknowledges and understands that Alderon faithfully followed the EIS Guidelines with regards to the VECs, but the NNK maintains the opinion that the information provided is insufficient.

As previously stated, the EIS Guidelines allow for a degree of interpretation, and the NNK believes that Alderon should not have included birds, wildlife and their habitats and the established protected areas in the same category of VEC when it assessed the potential impacts. The EIS Guidelines must not be regarded as restrictive or exhaustive. Environmental assessment is a planning tool used to ensure that projects are considered in a careful, precautionary manner to avoid or mitigate a development project's possible adverse effects on the environment. The NNK therefore believes that Alderon put in the minimal effort with regards to the assessment completed for the above-mentioned VEC.

Alderon Response to IR No. NNK S-02

As identified by the NNK, Alderon followed the EIS Guidelines prescribed for the Project. To this end, the RSA and LSA were defined to "focus on aspects of the environment that are important for understanding the potential environmental effects of the Project, including: … any existing designated or planned environmentally sensitive or significant areas; national, provincial and regional parks; protected natural areas and watersheds; ecological reserves; wetlands; riverine and lacustrine fish habitats; mature and interior forest habitat for migratory birds; and habitats of provincially- or federally- listed species at risk, including critical habitat for species at risk; areas of concentration of migratory birds or other wildlife; and other sensitive areas and habitat" (The Canadian Environmental Assessment Agency and The Newfoundland and Labrador Department of Environment and Conservation 2012). The assessment focused on the following environmental effects for the VEC "change in habitat; change in distribution and movement; change in mortality risk; change in health; and change in protected areas" (Alderon 2012).

As indicated in the VEC chapter (Alderon 2012), Protected Areas is a VEC in combination with birds, other wildlife and their habitat, because of the potential for interactions between Project activities and existing or planned designated protected areas and the need to protect ecosystems, species diversity, important habitats and ecosystems. To support this, Alderon completed numerous baseline studies (Table 2.4) with complementary objectives to understand the potential effects of their project. The study areas for each of the baseline studies overlapped on the landscape, including the range from protected to currently developed landscapes. This enabled Alderon to understand the complement of species, and their habitats on the broader developed and protected landscape. The assessment of effects in this consolidated manner provides consideration of the inter-relations between the developed and undeveloped landscape, the underlying habitats and the variety of species. With this approach, none of the elements of the valued ecosystem component were considered in isolation.

Table 2.4 Wildlife Baseline Studies Completed for the Project

VEC component study	Purpose	Objectives
Amphibian Surveys	To gather and present information on amphibian species in the vicinity of the Project	To complete amphibian surveys and record all sightings and/or evidence of species present in the Project area;
		Use the information collected to provide insight on the presence and distribution of identified species within the Project footprint and within areas that could be reasonably affected by Project activities
		To address specific requirements of the EA Guidelines
Forest Songbird Survey Report	To gather and present information on key aspects of the environment, and thus, provide an appropriate understanding of the existing environmental conditions within and near the Study Area	Determine species biodiversity, distribution, and relative abundance by habitat type in the Study Area.
		Compile data collected on rare species and provide to the Atlantic Canada Conservation Data Centre.

VEC component study	Purpose	Objectives
Waterfowl Survey	To gather and present information on key aspects of waterfowl in the vicinity of the Project	Complete a series of aerial surveys during spring staging and breeding, brood rearing, and fall staging by waterfowl in the vicinity of the Project
		Record all sightings to species, with a focus on species of special conservation status, such as the Harlequin Duck
		Examine a Study Area of approximately 400 km^2 that encompasses the Project footprint and surrounding area
		Describe the relative temporal and spatial importance of various habitats and locations for waterfowl use.
		Record observations of other wildlife to support the description of the existing environment.
Winter Wildlife Survey	To gather and present information on wildlife species in the vicinity of the Project that are either more easily detected or may only be present during the winter	To complete aerial and record all sightings and/or evidence of species present in the Project Area during winter.
		Use the information collected to provide insight on the presence and distribution of identified species within the LSA. An indication of relative abundance could also be obtained using this technique.

References:

Alderon Iron Ore Corp. 2012. Environmental Impact Statement Kami Iron Ore Mine and Rail Infrastructure, Labrador

The Canadian Environmental Assessment Agency and the Newfoundland and Labrador Department of Environment and Conservation. 2012. Environmental Impact Statement Guidelines for the Kami Iron Ore Project.

Stassinu Stantec Limited Partnership. 2012. Amphibian Surveys | Kami Iron Ore Mine and Rail infrastructure project

Stassinu Stantec Limited Partnership. 2012. Forest Songbird Survey Report | Kami Iron Ore Mine and Rail infrastructure project

Stassinu Stantec Limited Partnership. 2012. Waterfowl Survey | Kami Iron Ore Mine and Rail infrastructure project

Stassinu Stantec Limited Partnership. 2012. Winter Wildlife Survey | Kami Iron Ore Mine and Rail infrastructure project

2.2.3 Information Request No. NNK S-03

No comment, sufficient information was provided.

Alderon Response to IR No. NNK S-03

No further information is required.

2.2.4 Information Request No. NNK S-04

No comment, sufficient information was provided.

Alderon Response to IR No. NNK S-04

No further information is required.

2.2.5 Information Request No. NNK S-05

No comment, sufficient information was provided.

Alderon Response to IR No. NNK S-05

No further information is required.

2.2.6 Information Request No. NNK S-06

No comment, sufficient information was provided.

Alderon Response to IR No. NNK S-06

No further information is required.

2.2.7 Information Request No. NNK S-07

No comment, sufficient information was provided.

Alderon Response to IR No. NNK S-07

No further information is required.

2.2.8 Information Request No. NNK S-08

No comment, sufficient information was provided.

Alderon Response to IR No. NNK S-08

No further information is required.

2.2.9 Information Request No. NNK S-09

Although the EIS Guidelines did not require that Alderon include any analysis or discussion of potential project impacts of the transportation of iron ore from the PDA to the port in Sept-Îles, it is of concern to the NNK. Alderon maintains that the addition of their one to two trains is not significant, yet the NNK believes that this increase in trains could very well have a significant impact on the woodland caribou in the region.

The NNK recommends that Alderon commit to addressing the potential impacts on the caribou by implementing a strict monitoring plan, which would include the transportation on the railway.

Given that the George River caribou herd has experienced significant decline and the forest ecotype is classified as threatened at the federal level, the NNK also suggests that Alderon provide financial assistance to the research group Caribou Ungava to monitor the herd.

Additionally, the NNK recommends that a working group of professionals be created to assess the cumulative impacts of all the projects, current and future, in the Québec-Labrador region. The current enthusiasm for industrial development in the north will inevitably have substantial impacts on migratory and woodland caribou herds.

The NNK therefore recommends that Alderon contribute to the valuable research being conducted by Caribou Ungava and participate in the creation of the above-mentioned working group to assess the cumulative impacts on migratory and woodland caribou. At present, very few mitigation measures are recognized as effective for caribou. This working group could be responsible for developing effective monitoring and mitigation measures (among other things).

Alderon Response to IR No. NNK S-09

Alderon has reduced the Project's footprint through engineering design and in consideration of other operations in the Project area. The railway has been studied for many different potential future projects, with and without the Alderon project. The proposed activities along the railway will be the same as existing activities, with the addition of changes to the volume of rail traffic associated with the Project. As indicated in the EIS, during the operational phase of the Kami Terminal, the maximum rail traffic will be two loaded trains arriving twice daily to the port site.

The George River Caribou Herd (GRCH) has declined substantially over the past decade. While the known range of these migratory caribou has expanded and contracted over the years since the first aerial surveys in 1958, the herd typically remains north and northeast of the Project (Bergerud et al. 2008). Similarly, the recently documented distribution of this herd, including calving and wintering areas and migratory routes between these, lies in an area approximately 350 km northeast of the project area (NLDEC 2010). Caribou were not observed in the vicinity of the Project during baseline surveys and interviews with local area residents and stakeholders indicate that caribou are not using the RSA. As the documented former range of the herd does not overlap the proposed Kami Project, it is unlikely that potential effects would interact with the recovery of the GRCH.

Sedentary forest-dwelling caribou herds tend to aggregate in winter and disperse across central Ungava in the spring and summer, but are typically found south of 55^0N (Bergerud et al. 2008). Animals from the sedentary Lac Joseph herd generally occupy an area south of the Smallwood Reservoir south to 51^o N and between 66^o and 62^o W (Bergerud et.al. 2008), which lies to the east of the Study Areas in Labrador west and Sept-Îles. The closest boundary of their home range to the Project, based on historic data, is approximately 50 km. Extensive aerial surveys in 2009, covering 7,022 km^2 and including the Study Area, did not locate any caribou in the vicinity of the Project, and observations of caribou were concentrated between 53^0N and $51'30^0$N and between $66'30^0$ and 63^0W (Schmelzer 2011). A group of caribou in the vicinity of the

McPhadyen River, approximately 250 km northwest of the Project in Labrador, has been documented in the past (most recent surveys in 1986), however this “herd” has been shown to lack philopatry to calving grounds (Bergerud et al. 2008) (i.e., they do not return to their place of birth), and is not one of the three sedentary populations currently recognized in Labrador (Schmelzer 2011). Ranges of the other two recognized sedentary caribou herds in Labrador are located further from the Project, in central (Red Wine Mountain, approximately 450 km from the Project) and eastern (Mealy Mountain, approximately 780 km from the Project) Labrador.

Since the EIS concludes that the Project is unlikely to have adverse effects upon caribou habitat, Alderon does not intend to develop a monitoring plan with respect to caribou. However, Alderon will continue to engage with the Naskapi Nation of Kawawachikamach. Alderon will also commit to participation as a rail user in any joint Working Group initiatives established to assess the cumulative impacts on migratory and woodland caribou resulting from increased rail transportation of iron ore to the Port of Sept-Îles.

References:

Bergerud, A.T., Luttich, S.N., and Lodewijk, C. 2008. The return of caribou to Ungava. McGill–Queen’s University Press, Montréal

Schmelzer, I. 2011. An estimate of population size and trend for the Lac Joseph Caribou Herd and the greater region of south central Labrador: Results of a large-scale aerial census conducted during March 2009. Department of Environment and Conservation, Government of Newfoundland and Labrador. Submitted January 2010 and revised May 2011. Available online: http://www.iemr.org/pdfs/R_Caribou/Lac_Joseph_Caribou_Survey_2009_Schmelzer__May _9_2011_Revision.pdf

2.2.10 Information Request No. NNK S-10

No comment, sufficient information was provided.

Alderon Response to IR No. NNK S-10

No further information is required.

2.3 Information Requests Received from Innu Taikuakan Uashat mak Mani-Utenam (ITUM)

2.3.1 Information Request No. ITUM S-01

-----Original Message-----
From: Morgan Kendall [mailto:morgan.kendall@orassocies.ca)
Sent: Friday, April 05,2013 1:51 PM
To: McDonald, Derek [CEAA); Keeping, Brent
Cc: André Michel; Laverdiere,Simon [CEAA); ken.rock@itum.qc.ca; Patricia Ochman; James O'Reilly
Subject: RE: Évaluation environnementale du projet de minerai de fer Kami - Itum-808

Bonjour,

Ce courriel est en réponse à votre lettre du 19 février 2013 et traite des réponses d'Alderon aux commentaires des Uashaunnuat sur l'étude d'impact. Les Uashaunnuat ne considèrent pas qu'Alderon ait répondu à leurs préoccupations ni pris au sérieux les droits des Uashaunnuat dans la région de Wabush où ils cherchent à construire leur projet Kami.

Alderon continue à répéter sans cesse que la région de Wabush était historiquement utilisée par beaucoup de groupes autochtones différents et que la région était d'importance secondaire pour ceux-ci. Les Uashaunnuat ont déjà expliqué à quel point ces propos sont erronés et insultants et n'ont donc rien de plus à ajouter à ce moment-ci. Les Uashaunnuat revendiquent le titre et d'autres droits ancestraux ainsi que des droits issus de traité partout où Alderon cherche à construire son projet. lis se considèrent les proprietaires de ces endroits et s'opposent à ce moment-ci au projet Kami.

Il vaut par contre la peine de mentionner que les Uashaunnuat ont tout récemment déposé deux procédures judiciaires afin de défendre leurs droits ancestraux, y compris le titre indien, et issus de traité au Labrador, y compris dans la région de Wabush - une à la Cour supérieure du Québec (avec les Innus de Matimekush-Lac John) et l'autre à la Cour fédérale (avec les Innus de Matimekush-Lac John, d'Ekuanitshit, de Unamen Shipu et de Pakua Shipi). Dans le cadre de ces procédures, les Uashaunnuat visent entre autres une reconnaissance par la Cour de leurs droits dans la région de Wabush et ailleurs au Labrador.

Merci,

Morgan Kendall
--O'Reitfy & Associes -

-----Original Message-----
From: McDonald, Derek [CEAA) [mailto:Derek.McDonald@ceaa-acee.gc.ca)
Sent: February 19, 2013 9:59 AM
To: Mathilda Fontaine
Cc: Morgan Kendall; Andre Michel; betty.cougle@ceaa-acee.gc.ca; Laverdiere,Simon [CEAA); Harvey, Brian; GioiaMontevecchi@gov.nl.ca; Wiesner,Karen: NRCAN; Decker, Randy; Tonya.Warren@dfompo.gc.ca; mdauteuil@portsi.com; bkeeping@gov.nl.ca
Subject: Évaluation environnementale du projet de minerai de fer Kami

S'il vous plait voir la lettre ci-jointe.

Derek McDonald, P.Eng.
Project Manager I Gestionnaire de projets Canadian Environmental Assessment Agency - Atlantic Region I Agence canadienne d'évaluation environnementale - région de l'Atlantique Suite 200, 1801 Hollis Street I 1801, rue Hollis, bureau 200 Halifax, NS I Halifax, N-É B3N 3J4 derek.mcdonald@ceaa-acee.gc.ca 902.426.9458

Alderon Response to IR No. ITUM S-01

Alderon is aware of the recent actions that the Innu of Uashat mak Mani-Utenam (ITUM) have initiated in respect of their assertions of aboriginal rights and title to the land and resources of western Labrador, including the Kami Project area. In addition, Alderon is also aware that the proposed Project area overlaps Saguenay Beaver Reserve Lots 244 and 245 which are the subject of interests claimed by certain traditional ITUM families. Alderon has treated these assertions with utmost seriousness, as evidenced by its extensive engagement efforts with ITUM and has used every reasonable effort to respond to its concerns. These engagement efforts which commenced prior to Project registration and are ongoing, are fully described in EIS Volume 1, Part I, Chapter 10 and in Volume 3 of the Amendment to the EIS.

Alderon's engagement efforts have been directly responsive to ITUM's assertions of aboriginal rights and title and have included meetings and offers to meet, offers of capacity funding to assist ITUM's participation in the EA process and offers to initiate benefits agreement negotiations, supported by funding. In addition, Alderon also offered to provide ITUM with significant financial resources to undertake a land and resource use study in order to obtain information respecting traditional knowledge and ITUM's historic and current use of land and resources in the Project area. These offers have been either rejected or ignored by ITUM.

The purpose of Alderon's engagement efforts has been to provide ITUM with sufficient information in relation to the Project to enable ITUM to identify and provide information respecting its interests, issues and concerns. Since Alderon's efforts to obtain such information directly from ITUM were unsuccessful, Alderon canvassed all publicly available information in order to identify potential Project effects upon ITUM's land and resource use activities. In addition, Alderon engaged two recognized experts to report upon both the historic and contemporary use of northeastern Quebec and western Labrador by the Naskapi and Innu of Quebec and Labrador. Based upon this information, Alderon concluded that the Kami project was historically used to a limited extent by a number of Aboriginal groups and that there is no current use of land and resources for traditional purposes by ITUM in or around the Project area, including Beaver Reserve lots 244 and 245.

Notwithstanding ITUM's statement that "the Uashaunnuat have already explained how these statements are erroneous and insulting", ITUM has not provided any evidence to challenge Alderon's conclusions respecting land and resource use for traditional purposes despite having been afforded repeated opportunities to do so. Following submission of the EIS, Alderon offered to meet with ITUM to discuss the results of its assessment (see Alderon's Response to IR No. ITUM 04). ITUM did not respond to these offers. Subsequent to submission of the Amendment to the EIS, Alderon offered on two occasions (February 18 and March 21, 2013) to meet to

discuss Alderon's responses to information requests submitted by ITUM in relation to the EIS. ITUM declined these offers and reiterated its opposition to the project on April 13, 2013. Since that time, Alderon has on two occasions (April 15 and May 3, 2013) reiterated its willingness to meet with Chief, Council and the Community to discuss the Project, its environmental assessment and community issues and concerns. ITUM has not responded to these offers.

Although ITUM has to date refused to accept Alderon's offers to meet with the community and to initiate benefits agreement negotiations, Alderon has made it clear that it intends to continue to attempt to engage ITUM over the life of the Project and has in fact continued to provide ITUM with Project related information (e.g. transmission of draft application for Exploration Approval and Notice of Planned Mineral Exploration Work on April 12, 2013). In addition, although ITUM has not provided evidence to contradict Alderon's conclusions respecting historic usage and has in fact conceded that there is no current use of land and resources in the Project Area (see Information Request Nos. ITUM 06, 07, 08 and 09), Alderon has advised ITUM that it remains prepared to consider and respond to any evidence of adverse effects of the Project upon ITUM's asserted rights, interests and activities that ITUM may provide to it.

3.0 Information Requests Received from the Public

3.1 Information Requests Received from the Town of Labrador City

3.1.1 Information Request No. PC 06 S-01

Fax To: Department of Environment From: Craig Purves

Attention: Brent Keeping Date: April 3, 2013

Fax Number: 709.729.5518 No. Pages: 2

FACSIMILE MESSAGE

Hello Mr. Keeping,

Please review the attached letter from Mayor Olford. The original document will be forwarded to your office shortly.

If you require any further info please contact me at 709.944.4068, or cralg.purves@labcity.ca.

Thank you.

Craig Purves
Director of Development
Town of Labrador City

Tel: (709) 944-2621 Fax: (709) 944-6353

March 28, 2013

Tom Hedderson
Department of Environment and Conservation
P.O. Box 8700
4th Floor. West Block
Confederation Building
St. John's. NL A1B 4J6
Fax: (709) 729·0112

Re: Kami Iron Ore Project - Amendment to the Environmental Impact Statement Response

Please accept this letter on behalf of the Town of Labrador City in response to the revised and supplemented version of the Environmental Impact Statement (EIS) for Alderon's Kami Iron Ore Project.

In reply to the preliminary EIS submission to the Governments of Canada and Newfoundland and Labrador, the Town of Labrador City, among other information requests, expressed concerns regarding the Kami Project's impact upon community services and infrastructure as well as the Pike Lake South Management Unit.

The Town has entered into a Memorandum of Understanding with Alderon and while they have indicated in the recent EIS amendment that they will continue to assist in the monitoring and managing of local. regional and provincial demands on community services and infrastructure, the Town feels that a more detailed level of commitment is required. The potential impacts to the community are significant and we believe that a satisfactory offset agreement must be in place before the permitting process with the Province is concluded.

Similarly, the potential impacts to the Pike Lake South Management Unit are substantial. As the Town of Labrador City negotiates the particulars of the Corporate Municipal Stewardship Agreement, we believe that this agreement must be In place before the permitting process for the Kami project is finalized.

Given the scale of the proposed project and the inevitable impacts with regard to both the aforementioned concerns, we would like to secure that a requirement of the permitting process with the Province ensures that the Corporate Stewardship Agreement and offset agreements are in place before final approval is granted.

Please feel free to contact me if you have any questions or concerns.

Mayor Karen Oldford

cc. Hon. Nick McGrath, MHA
Gary Norris, Alderon, Executive VP, Government & Community Services
Paul Carter, Executive Director, Department of Natural Resources

Alderon Response to PC 06 S-01

As was noted in the response to IR No. PC 06-3, Volume 3 of the Amendment to the Environmental Impact Statement (February 2013), Alderon has signed an MOU with the Town of Labrador City that is designed to address the potential impacts of the Project on community infrastructure and services, including but not limited to:

- Land Use Planning;
- Accommodations - construction and operations;
- Community Infrastructure;
- Local Services and Amenities;
- Corporate Municipal Stewardship Agreements;
- Cabin Owners and White Wolf Snowmobile Club;
- Permit Fees, Tax and Off-Set Agreements; and

- Any other matter agreed to by the parties of the MOUs.

The MOU allows the town and Alderon to work together to develop a comprehensive approach to infrastructure and services and to explore opportunities to address Project-related infrastructure and accommodations issues through consideration of the following initiatives:

- Examination of existing infrastructure and accommodations programs and services in the towns;
- Identification of Project impacts on community infrastructure and services;
- Consideration of new and creative approaches for the management of Project impacts upon community infrastructure and accommodations;
- Collection of housing and infrastructure data related to the Project and the creation of resource materials for Project employees;
- Exploration of partnership opportunities between the towns and Alderon; and
- Support for comprehensive planning processes to minimize adverse Project effects upon infrastructure and accommodations.

Under the terms of the MOU, the Town and Alderon have agreed to establish committees that will meet quarterly, or more often if mutually agreed, for the purpose of implementation of the MOU. The topics for discussion at these committee meetings include “permit fees, tax and off-set agreements”. The terms of offset agreements are currently the subject of negotiation between the town and Alderon. Alderon is committed to finalizing and signing a mutually satisfactory offset agreement as soon as possible.

With respect to the impact of the Project upon protected areas and in particular the Pike Lake South Management Unit, it is Alderon's view that the management unit was established after the Kami mineral licence had been issued, contrary to the statutory process that requires the Minister to identify any conflicts, and contrary to the pre-existing and continuing rights of a third-party mineral licence holder (Altius Resources Inc.). The issuance of mineral licence 11927M to Altius pre-dated the legal establishment of the Pike Lake South Management Unit as a protected area under the 2007 Labrador City Municipal Plan.

Moreover, notwithstanding the significance of mining to the region, the known mineral potential of the Kami Project area and the prior existence of Altius' mineral claims, the development, drafting and passage of the Municipal Plan completely failed to take into account the potential conflict between protection of the proposed management unit and mineral development. Procedural defects associated with the process for legal establishment of the Pike Lake South Management Unit in the 2007 Municipal Plan include the following:

- The apparent failure to take into account known mineral potential when identifying the Pike Lake South Management Unit as a candidate for designation as a protected area;
- The lack of notice to Altius that the Pike Lake South area was under consideration for designation as a protected area in any future municipal plan when the mineral licence was issued in 2006;

- The failure to identify Altius' valid mineral licence in the draft Municipal Plan;
- The failure to determine if known mineral resources would be stranded as a result of the establishment of the Pike Lake South Management Unit as a protected area;
- Lack of notice or specific consultation with Altius during the development and drafting of the Municipal Plan; and
- The failure to consider and resolve the conflict between designation of the management unit as a protected area and the development of the known mineral potential of the claim during ministerial review and registration of the draft Plan.

Alderon is of the view that the management unit restrictions do not apply to the Kami Project and that rezoning of the Pike Lake South Management Unit to permit the development of the Kami Project is appropriate. If not, known mineral resources will be 'stranded', the right of Alderon to the issuance of a mining lease in accordance with section 31 of the *Mineral Act* will be defeated and the objective of the Town in pursuing economic development will be impaired.

However, although it is Alderon's position that the Pike Lake South Management Unit restrictions do not apply (insofar as governmental authorities at the time failed to take into account the rights of the mineral licensee), Alderon is committed to the principles of good corporate citizenship and sustainable development. It will continue to work with the Town of Labrador City to implement a strategy that will address the impacts of the Project upon the Pike Lake South Management Unit consistent with the spirit of the Municipal Stewardship Agreement.

Alderon has offered to conclude a Corporate Stewardship Agreement with the Town of Labrador City as part of its ongoing negotiations pursuant to the Memorandum of Understanding (MOU) which was concluded with the Town on January 28, 2013. Subsequently, the Town advised Alderon that its preference would be to resolve issues associated with the Pike Lake South Management Unit as part of discussions conducted pursuant to the MOU. As a result, as part of its ongoing discussions with the Town and consistent with its commitment to sustainability, Alderon is pursuing two distinct initiatives. First, Alderon and the Town are currently engaged in discussions related to a series of community conservation initiatives which were originally identified by Alderon in 2012.

Secondly, Alderon is undertaking a constraint mapping exercise that could be used by the Town of Labrador City to identify potential wetland location(s) that could be added to their conservation plan (Appendix C). The mapping exercise uses the results of the Ecological Land Classification completed for the Kami Project, takes into account the characteristics of existing Management Units and is informed by biophysical data collected by Alderon and others in Labrador West. Alderon is providing this information to help the Town identify potential wetland locations which could be incorporated into their municipal plans.

Subsequent to the Town of Labrador City's letter of March 28, 2013 the Town sent a letter to the Minister of Environment on May 03, 2013 (Appendix E) in which it requests that the Provincial government require that Alderon conclude negotiations prior to the project being released from EA.

Regarding the Town of Labrador City's request, it is important to recognize that Alderon initiated discussions with the Towns on August 16, 2013 and proposed that a formal mechanism be established to facilitate the timely conclusion of discussions (Appendices E, F and G). Subsequently, a MOU was signed with the Town of Labrador City on January 28, 2013 (Appendix I) and the Town of Wabush on November 13, 2012 (Appendix J).

The purpose of the MOUs is to set out a framework to identify and respond to issues impacting the town and further the common goal of establishing a constructive and cooperative long-term relationship between Alderon and each of the Town over the life of the Project. The MOU with the Town of Labrador City commits the Parties to work in collaboration to resolve issues in an innovative and meaningful way. In particular, the MOU commits the Parties to develop strategies to address the potential impacts of the Project in a number of subject areas.

Since the signing of the MOUs, Alderon has actively and meaningfully engaged with the Towns to advance discussions and finalize comprehensive agreements (Appendices C and D). In an effort to advance discussions, on April 23, 2013, Alderon requested the Towns provide an indication of the scope of their expectations and commence discussions towards the resolution of a number of issues that will address community benefits, such as mutual aid; grand in lieu of taxes; Project effects on community services and infrastructure; and Project effects on the Pike Lake South Management Unit (Appendices C, D and E). To date, Alderon has not received a response for the Towns which provides clarification of their expectations. The delays have prevented Alderon from advancing negotiations aimed at concluding the respective agreements.

Alderon is committed to making best efforts to settle these agreements with both the Town of Labrador City and the Town of Wabush in a timely fashion. However, the Town of Labrador City's request to have the successful conclusion of negotiations of mutual aid, corporate stewardship agreement, annual grant and offset agreement(s) and industrial permits concluded made a pre-condition of release from environmental assessment is not appropriate.

Further, it would be inappropriate for the Province to impose, as a pre-condition of Environmental Assessment Release, that Alderon finalize agreements with the Town of Labrador City or any third party stakeholder. Such a condition would be an improper delegation of the Province's obligations pursuant to the EA Process, and would give an effective veto over the Project to the Town. Such a condition would create unacceptable uncertainty for the Project.

3.2 Information Requests Received from the Town of Wabush

3.2.1 Information Request No. PC 07 S-01

April 16, 2013

Environmental Assessment Division
Dept. Environment and Conservation
Brent Keeping, Environmental Scientist
P.O. Box 8700
St. John's, NL A1B 4J6

RE: Alderon Kami Iron Ore Project - Registry Reference Number 1611

To Whom It May Concern:

Please find on behalf of the Town Council of Wabush addressing concerns regarding this project within the Towns Protected Watershed Boundaries and of the Jean Lake Rapids Management Unit.

One issue with the Alderon Kami Iron Ore Project within the Town of Wabush Boundaries is the loss of the Jean Lake Rapids Management Unit. The Jean Lake Rapids Management Unit is part of a Habitat Conservation Plan with the Eastern Habitat Joint Venture program and the Town of Wabush. This program focuses largely upon signing wetland stewardship agreements with municipalities. Jean Lake Rapid Management Unit is designated by the Town for recreation and watershed purposes and is one of the few known places where the Endangered Harlequin Duck has been regularly spotted.

The Town of Wabush has been working continuously with Alderon regarding the proposed rail, route within the Town's watershed boundary. The Town of Wabush and Alderon have put together a "Rail Committee Group" regarding issues of the proposed Kami track within the watershed boundaries. The Town and Alderon have been hosting weekly conference calls regarding issues and mitigation matters for the proposed route. All the logged minutes and activity log have been forwarded on a weekly base to Water Resources Management Division & the Environmental Assessment Division. The Town has pre-approved the proposed rail route within the watershed boundaries only if the required strict plans and procedures are to be in place and avoid any contamination or loss to the water supply. Alderon has committed to seeking another back up water supply in an event there is harm to the current water supply. In the event the water supply is contaminated, the back-up supply will be ready at a flick of a switch to be up and running. This is to happen prior to any train movement on the proposed tracks. Listed below are comments/concerns from Council regarding the EA decision on the rail route for Alderon prior to construction of the railway track within the watershed boundaries and what Council wants to see followed through by Alderon:

1. Long term auditing process in place, controlled by the town, funded by Alderon for life of project.

2. Secondary water supply must meet and exceed all portions of quality, quantity and replenishment.
3. Infrastructure in place for back up water supply in case of an interruption to current water supply.
4. This agreement between the town and mine operator will continue regardless of ownership of mine site.
5. Town must remain in control to stop all fuel movements if evidence of environmental or water supply damage.
6. All proposed prevention and mitigation measures be committed to in writing and strictly adhered to for the duration of the project.
7. As much access to recreational areas as possible (Jean Lake Rapids area is a highly travelled access road to cabins, ATV and snowmobilers).
8. In the event there is a spill etc…Council wants a full response team that will be on the ground within minutes to clean up.

The Town of Wabush will be developing an MOU (Memorandum of Understanding) with the Town's solicitor with procedures, fines, ownership (if Alderon is to sell the mine) for Alderon to follow during and after construction season and for the lifetime of the mine within the watershed boundaries.

Thank you for your attention in this matter.

Any questions on this issue please contact the undersigned.

Sincerely,

TOWN OF WABUSH

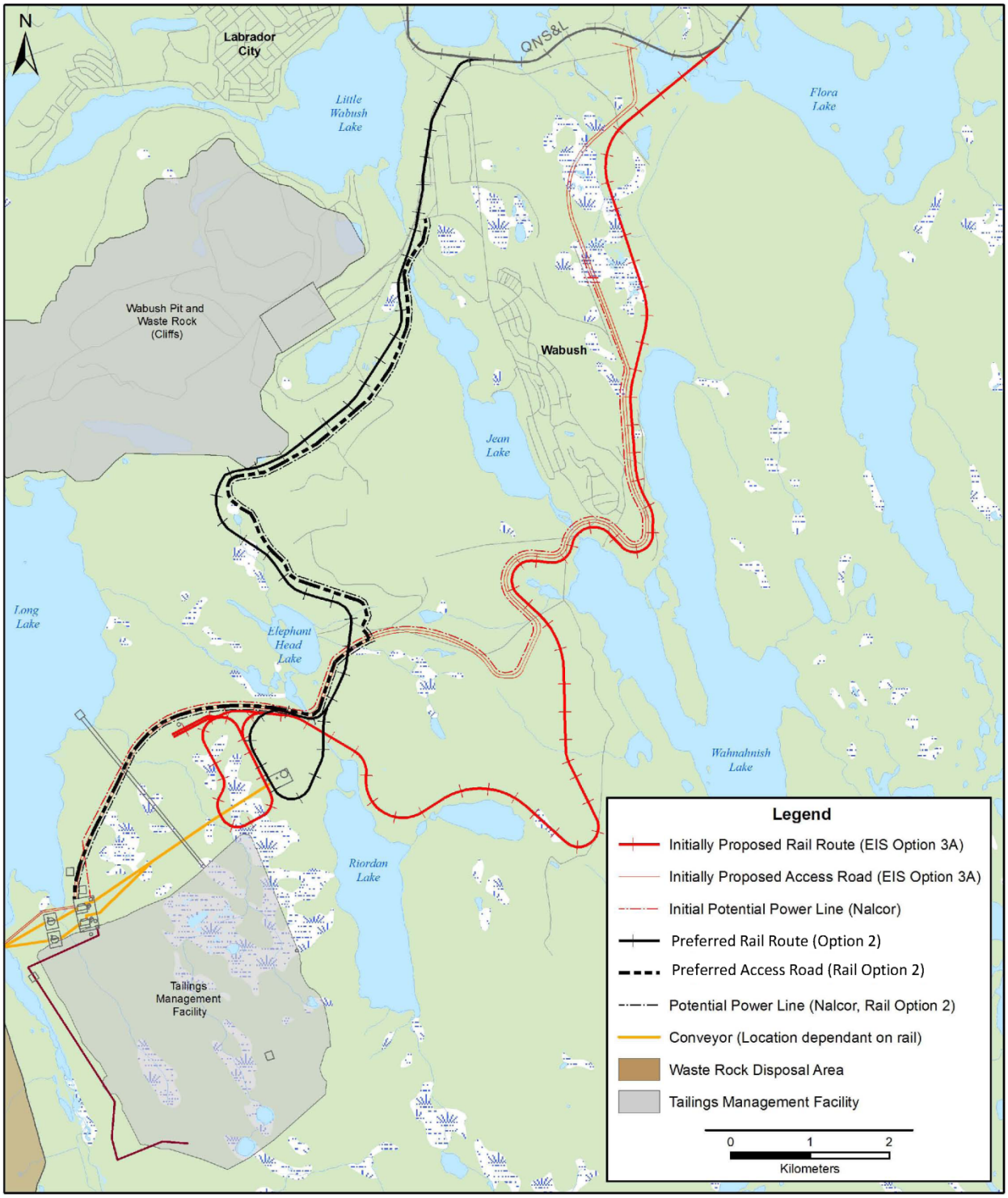
Ron Barron
Mayor
Cc: Ken Anthony/CAO
Melanie LaFosse/Director of Planning & Land Use

Alderon Response to PC 07 S-01

Alderon is committed to continuously engage with the Town of Wabush and has been responsive to issues and concerns raised by representatives from the Town Council and community members. As explained in detail in Alderon's General Comment presented in Section 1.0 above, Alderon has conducted a new rail route options analysis to provide further information to support Alderon's selected rail route Option 3A. As a result of the technical, operational and environmental analyses conducted, Alderon has selected Option 2 route as the new preferred route for the proposed Project. Alderon has therefore abandoned the rail route Option 3A in favour of Option 2 rail route, which does not go through the PPWSA or the Jean Lake Rapids Management Unit. In addition, it is currently planned to locate the permanent mine

site access road and Transmission line along the Option 2 rail route as generally shown in Figure 3.1.

Figure 3.1 Preferred Rail Line Routing (Option 2)



Temporary access during construction will be required from the east of the project site via existing roads, with potentially some minor modifications to address the 150 m buffer zone, which pass through the PPWSA and the Jean Lake Rapids Management Unit. The current road and culvert crossing at Jean Lake are not sufficient to support traffic during construction activities, it is anticipated that a temporary bridge would be installed for use during construction. This bridge will be removed after the construction period and the site will be rehabilitated.

As a result of Project-related activities, the conservation function of the Jean Lake Rapids Management Unit will remain largely unchanged. The mitigation measures to address potential effects on wetlands and waterfowl, which were presented in the EIS and subsequently in the Amendment to the EIS, will still be implemented for temporary access through the Jean Lake Rapids Management Unit during construction. There will be no in-water structures and the on-land footprint will be minimized. In terms of the occasional observations of Harlequin Duck at this location, Alderon recognizes this species may use this location, although it was not observed during any of the dedicated waterfowl surveys completed for the project in 2011 or other aerial and ground surveys in 2012. Detailed mitigation measures will be presented in the EMS and Avifauna Management Plan including:

- Temporary access to site will primarily use existing roads to avoid, to the extent possible, important habitats, and the minimum practical footprint will be used for construction activities.
- Sediment barriers will be installed immediately after initial disturbance where heavily sediment-laden surface runoff has the potential to flow into any lake, river, stream, or wetland. Such measures may include (but are not limited to) surface water diversion ditches, silt fences, stone or brush cover, erosion control fabrics, settling ponds and other sediment filtration, and flow management products.
- Sediment barriers will be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of a trench) until replaced by permanent erosion controls and restoration of adjacent upland areas will be completed.
- Upon completion of construction, all disturbed areas (e.g., exposed mineral soils) and construction staging areas not required for operation / maintenance and/or access of the mine will be graded to establish drainage patterns, blend with the natural terrain and allowed to revegetate, either naturally or with the use of an appropriate seed mixture, to promote native vegetation re-establishment. Seed mixtures will be selected as appropriate to the site conditions.
- If clearing occurs during the migratory bird breeding season (i.e., mid-May to July), procedures to reduce or eliminate the possible disturbance of active nests will be included in the Avifauna Management Plan.

Waterbodies and wetland buffers (e.g., extra work area setbacks, refueling restrictions) will be clearly marked with signs and/or highly visible flagging until construction-related ground disturbing activities are complete and rehabilitation is completed. Activities will be monitored to confirm that mitigation measures are being implemented. Alderon and the Town of Wabush have signed an MOU to, among other things, address land use planning and potential

environmental effects. Although no adverse effects upon the Elephant Lake Head Management Unit and the Jean Lake Rapids Management Unit are currently predicted, if adverse effects upon these management units are subsequently identified, Alderon will work with the Town to develop a mutually satisfactory resolution. As set out in the MOU with the Town of Wabush, Alderon will continue to engage with the Town with the objective of establishing a constructive and cooperative long-term relationship over the life of the Project. Alderon will also continue working with both the Town of Wabush and WRMD to ensure their concerns are addressed.

3.3 Information Requests Received from the Stewardship Association of Municipalities

3.3.1 Information Request No. PC 10 S-01

March 4, 2013

Brent Keeping, Environmental Scientist
Kami Iron Ore Project
Environmental Assessment Division
P.O Box 8700
St. John's, NL A1B 4J6
Email: BrentKeeping2@gov.nl.ca

Re: Kami Iron Ore Project (EA Reg. # 1611) - Environmental Impact Statement Amendment
Proponent: Alderon Iron Ore Corp.

Dear Mr. Keeping;

Please accept this letter as comment from the Newfoundland and Labrador Stewardship Association of Municipalities Inc. on the Environmental Impact Statement (EIS) Amendment recently submitted by the Alderon Iron Ore Corporation in relation to the proposed Kami Iron Ore project. The below comments reiterate, but also build upon, my previous letters in regards to this matter, dated November 18, 2011, March 14, 2012 and November 16, 2012 respectively. SAM provides comment on the Alderon development from the perspective of the two Municipal Wetland Stewardship Agreements signed in 2005, respectively, by SAM members, the Town of Labrador City and the Town of Wabush with the Province of Newfoundland and Labrador.

First, we reiterate our concern with Alderon's continued stated intent to use the Wabush Jean Lake rapids rail/road crossing. Alderon provides little in the way of rationale as to why this route must be chosen when there were three alternate rail-line routes presented in the EIS submission.

Secondly, and more significantly, the Amendment does little to advance the discussion of the content of the corporate stewardship agreement(s) proposed by the company between themselves, and individually it appears, with the Towns of Wabush and Labrador City. These agreements are intended to mitigate/compensate for the project's impact, particularly as it relates to the Rose Pit in Labrador City, but it remains unclear how this will actually occur.

It appears that the company is asking for the project to be released from Environmental Assessment without any guarantee of what will be included in these agreements. It seems less likely that a meaningful agreement will be reached subsequent to project EA signoff.

It is SAM's position that the corporate stewardship agreement(s) need to recognize the dual impact the development will have; first to the impact it will have on one of our members, the Town of Labrador City, but also to the significant provincial impact and precedent it sets for other SAM member municipalities. We are concerned in terms of how other municipalities,

particularly those with less of a tax base than Labrador City, will respond to potential future developments, which may arise in their conserved areas. In this sense, you should be aware that although this development will have a major impact on both of these towns, it also has major implications to other SAM members, particularly in terms of the future integrity of those agreements and how they view the commitment made under these agreements. The Stewardship Association of Municipalities Inc. agrees that a corporate stewardship agreement could be a means to mitigate these impacts, but only if that agreement recognizes the dual impacts already referenced.

If you have any specific questions or concerns about our comments, or would like to discuss the matter in more detail, please do not hesitate to contact me at (709) 786.437.7294.

Sincerely,

Cathy Kleinwort, SAM Secretary

on behalf of

Geoff Gallant, President
Stewardship Association of Municipalities Inc.

Cc Mayor and Councillors, Town of Wabush
Mayor and Councillors, Town of Labrador City

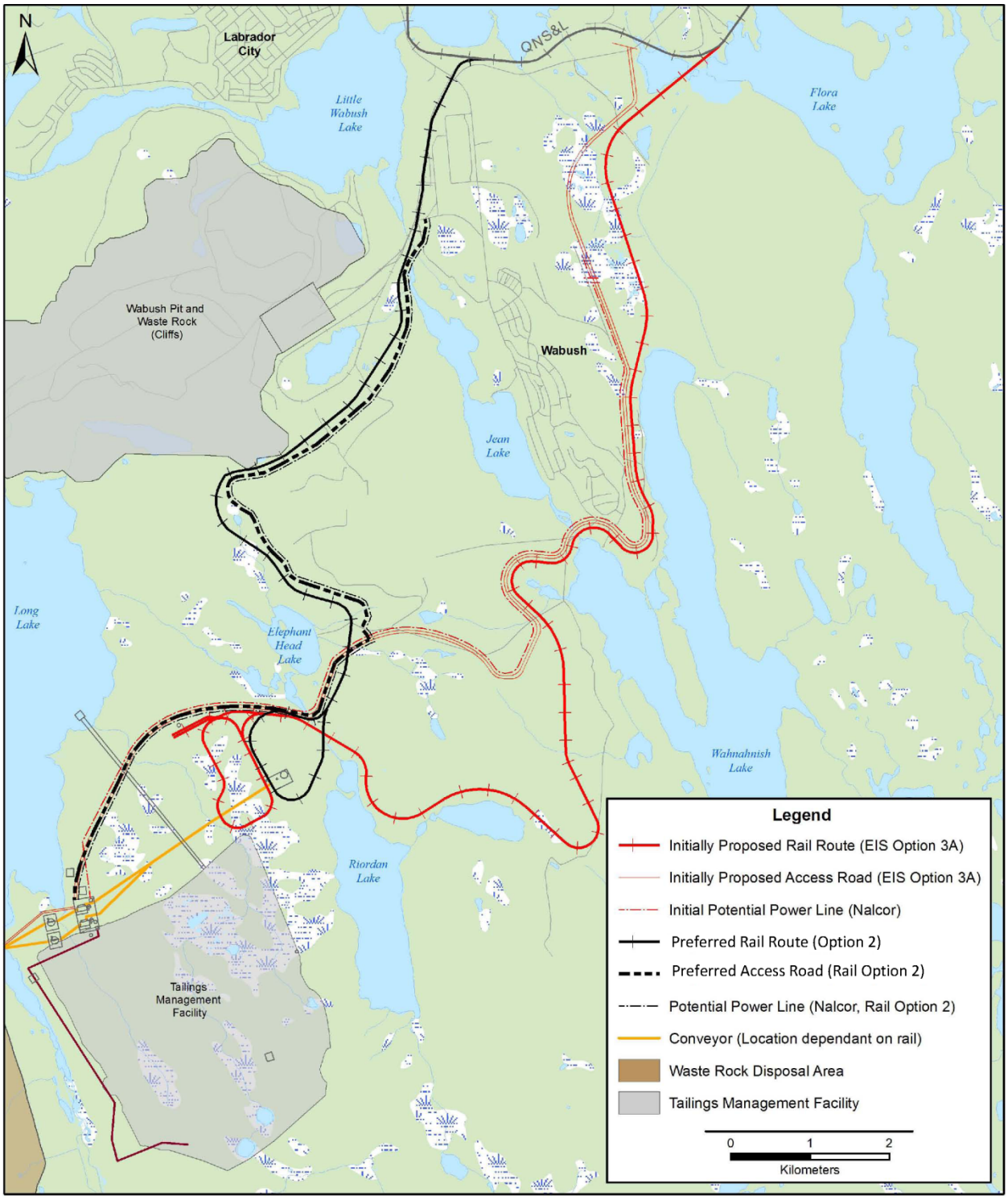
Stewardship Association of Municipalities Inc. Cathy Kleinwort, SAM Secretary

P.O. Box 65, Spaniard's Bay, NL AOA 3XO

Alderon Response to PC 10 S-01

As explained in detail in Alderon’s General Comment presented in Section 1.0 above, Alderon has conducted a new rail route options analysis to provide further information to support Alderon's selected rail route Option 3A. As a result of the technical, operational and environmental analyses conducted, Alderon has selected Option 2 route as the new preferred route for the proposed Project. Alderon has therefore abandoned the rail route Option 3A in favour of Option 2 rail route, which does not go through the PPWSA or the Jean Lake Rapids Management Unit. In addition, it is currently planned to locate the permanent mine site access road along the Option 2 rail route as generally shown on Figure 3.2.

Figure 3.2 Preferred Rail Line Routing (Option 2)



Based on the change to the Option 2 rail route and permanent access road, and general Project planning and design, temporary access during construction will be required from the east of the project site via existing roads, which currently pass through the Jean Lake Rapids Management Unit. Since the current road crossing and culvert at Jean Lake will not support traffic during construction activities, a temporary bridge will be installed. This bridge will be removed after the construction period and the site will be rehabilitated.

As a result of Project-related activities, the conservation function of the Jean Lake Rapids Management Unit will remain largely unchanged. The mitigation measures to address potential effects on wetlands and waterfowl, which were presented in the EIS and subsequently in the Amendment to the EIS will still be implemented for temporary access through the Jean Lake Rapids Management Unit during construction. There will be no in-water structures and the on-land footprint will be minimized. In terms of the occasional observations of Harlequin Duck at this location, Alderon recognizes this species may use this location, although it was not observed during any of the dedicated waterfowl surveys completed for the project in 2011 or other aerial and ground surveys in 2012. Detailed mitigation measures will be presented in the EMS and Avifauna Management Plan including:

- Temporary access to site will primarily use existing roads to avoid, to the extent possible, important habitats, and the minimum practical footprint will be used for construction activities.
- Sediment barriers will be installed immediately after initial disturbance where heavily sediment-laden surface runoff has the potential to flow into any lake, river, stream, or wetland. Such measures may include (but are not limited to) surface water diversion ditches, silt fences, stone or brush cover, erosion control fabrics, settling ponds and other sediment filtration, and flow management products.
- Sediment barriers will be properly maintained throughout and restoration of adjacent upland areas will be completed.
- Upon completion of construction, all disturbed areas (e.g., exposed mineral soils) and construction staging areas not required for operation / maintenance and/or access of the mine will be graded to establish drainage patterns, blend with the natural terrain and allowed to revegetate, either naturally or with the use of an appropriate seed mixture, to promote native vegetation re-establishment. Seed mixtures will be selected as appropriate to the site conditions.
- If clearing occurs during the migratory bird breeding season (i.e., mid-May to July), procedures to reduce or eliminate the possible disturbance of active nests will be included in the Avifauna Management Plan.
- Waterbodies and wetland buffers (e.g., extra work area setbacks, refueling restrictions) will be clearly marked with signs and/or highly visible flagging until construction-related ground disturbing activities are complete and rehabilitation is completed.

Activities will be monitored to confirm that mitigation measures are being implemented. Although no adverse effects upon the Jean Lake Rapids Management Unit are currently predicted, if adverse effects upon this management units are subsequently identified, Alderon will work with the Town to develop a mutually satisfactory resolution.

Pike Lake South Management Unit

With respect to the impact of the Project upon protected areas and in particular the Pike Lake South Management Unit, it is Alderon's view that the concerns of the Stewardship Association of Municipalities are unfounded. The circumstances and process surrounding the establishment of the Pike Lake South Management Unit under the 2007 Labrador City Municipal Plan and associated development regulations are unique and no adverse provincial precedent will be established if the designation of protected status is revoked.

It is Alderon's view that the designation of the Pike Lake South Management Unit as a protected area is not applicable to the Kami Project. The management unit was legally established in the Town's 2007 Municipal Plan after the Kami mineral licence had been issued to Altius Resources Inc. in 2006, contrary to the statutory process that requires the Minister to identify any conflicts, and contrary to prior valid third-party mineral interests. This is shown by the following chronology:

- **2001** – IOC stakes a portion of the Iron Formation in the Labrador City Area. The Kamistiatusset (Kami) area is recommended as a high priority target.
- **March 7, 2005** – Labrador City and the Province conclude a Municipal Stewardship Agreement. The agreement identifies nine areas, including the Pike Lake South area, as candidates for designation as protected areas under a future Municipal Plan.
- **April 24, 2006** – Licence 11927M issued to Altius Resources Inc. (Altius). Licence 11927M (majority of pit) overlaps the area identified under the Municipal Stewardship Agreement as the Pike Lake South Management Unit.
- **2007** – Development of Labrador City Municipal Plan and Development Regulations
    - Proposed Pike Lake South Management Unit is identified in the draft Municipal Plan as a protected area within a larger area designated as Mining Reserve – Rural.
    - Draft Municipal Plan submitted to Minister of Municipal Affairs for review under section 15 of *Urban and Rural Planning Act, 2000* to "determine provincial and other government agency interests".
    - Minister advises Town that no changes to Draft Municipal Plan are proposed.
    - Draft Municipal Plan submitted to a one-day public hearing.
    - Draft Municipal Plan and Development Regulations approved by Council.
    - Draft Municipal Plan and Development Regulations receive final review by Minister to determine if either are "contrary to law or a policy of the government of the Province".
    - December 28, Municipal Plan and Regulations are gazetted and come into effect.
- **December, 2010** – Altius licences, including Licence 11927M, are grouped and transferred to Alderon as Licence 15980M.

The issuance of mineral licence 11927M to Altius pre-dated the legal establishment of the Pike Lake South Management Unit as a protected area under the 2007 Municipal Plan. Moreover,

notwithstanding the significance of mining to the region, the known mineral potential of the Kami Project area and the prior existence of Altius' mineral claims, the development, drafting and passage of the Municipal Plan completely failed to take into account the potential conflict between protection of the proposed management unit and mineral development. Procedural defects associated with the process for legal establishment of the Pike Lake South Management Unit in the 2007 Municipal Plan include the following:

- The apparent failure to take into account known mineral potential when identifying the Pike Lake South Management Unit as a candidate for designation as a protected area;
- The lack of notice to Altius that the Pike Lake South area was under consideration for designation as a protected area in any future municipal plan when the mineral licence was issued in 2006;
- The failure to identify Altius' valid mineral licence in the draft Municipal Plan;
- The failure to determine if known mineral resources would be stranded as a result of the establishment of the Pike Lake South Management Unit as a protected area;
- The lack of notice or specific consultation with Altius during the development and drafting of the Municipal Plan; and
- The failure to consider and resolve the conflict between designation of the management unit as a protected area and the development of the known mineral potential of the claim during ministerial review and registration of the draft Plan.

In similar cases in the province where conflicts have arisen between mineral rights holders and competing land uses, the rights of the mineral rights holder have been recognized. For example, in January, 2005, the boundaries of the proposed Torngat Mountains National Park were redrawn to permit mineral development of licences held by Freeport Resources Inc.. In addition, other mineral licences held by Freeport in northern Labrador were surrendered to the province in return for a payment of $400,000. These latter licences which were the subject of surrender and compensation related to mineral claims which had been issued to Freeport Resources Inc. by the Province in areas which had been previously identified as lands to be set aside for the future Torngat Mountains national park reserve. More recently, the construction of the new hospital in Labrador City required the consent of the Iron Ore Company of Canada, as holder of subsurface mineral interests.

Alderon is of the view that the management unit restrictions do not apply to the Kami Project and that rezoning of the Pike Lake South Management Unit to permit mineral development is appropriate. If not, known mineral resources will be 'stranded', the right of Alderon to the issuance of a mining lease in accordance with section 31 of the *Mineral Act* will be defeated and the objective of the Town in pursuing economic development will be impaired.

However, although it is Alderon’s position that the establishment of the Pike Lake South Management Unit does not apply (insofar as governmental authorities at the time failed to take into account the rights of the mineral licensee, Alderon is committed to good corporate citizenship and sustainable development and will continue to work with the Town of Labrador City to implement a strategy that will permit the development of the Project while advancing the protection of wetlands consistent with the spirit of the Municipal Stewardship Agreement.

Alderon has offered to conclude a Corporate Stewardship Agreement with the Town of Labrador City as part of its ongoing negotiations pursuant to the Memorandum of Understanding (MOU) which was concluded with the Town on January 28, 2013. Subsequently the Town advised that it was not interested in pursuing a separate agreement on this subject. As a result, as part of its ongoing discussions with the Town pursuant to the MOU and consistent with its commitment to sustainability, Alderon is pursuing two distinct initiatives. First, Alderon is working on a series of community conservation measures. Details of these potential conservation measures are currently the subject of discussions with the Town. Secondly, Alderon is undertaking a constraint mapping exercise that could be used by the Town of Labrador City to identify potential wetland location(s) that could be added to their conservation plan (Appendix C). The mapping exercise uses the results of the Ecological Land Classification completed for the Kami Project, takes into account the characteristics of existing Management Units and is informed by biophysical data collected by Alderon and others in Labrador West. Alderon is providing this information to help the Town identify potential wetland locations which could be incorporated into their municipal plans.

3.4 Information Requests Received from Shabogamo Mining & Exploration Ltd.

3.4.1 Information Request No. PC 14 S-01

Shabogamo Mining & Exploration Ltd

P.O.BOX 699
Wabush
Newfoundland& Labrador
AOR IBO
rmalik@crrstv.net
709944 4294/1147

March 26, 2013

Via E-MAIL/POST

To Mr. Brent Keeping
Co-Chair of the Assessment Committee
Government of Newfoundland & Labrador
Dept. of Environment and Conservation
Confederation Building, 4th Floor West Block
St. John's, NL, A1B 4J6

CC:

Minister Tom Hedderson	Minister of Environment Govt. of Newfoundland and Labrador
Minister Tom Marshall	Minister of Natural Resources Govt. of Newfoundland and Labrador
Mr. Derek McDonald	Project Manager, Kami Project, Govt. of Canada

Dear Mr. Brent Keeping,

Re: Submission of Amendment to the Kami Iron Ore Project Environmental Impact Statement

Thank you for your letter dated 21st February 2013 regarding the Submission of Amendment to the EIS.

After a very exhaustive review process of all the documents filed, the amendment fails to address the concerns and business impact on Shabogamo Mining & Exploration ltd (SME).

The proponents of the Kami Project, Alderon and Hebei (Hebei is a 25% owner of the Kami Iron Deposit).

1. Fails to identify Shabogamo Mining & Exploration (SME) as a major stakeholder deeply impacted by the project development.

2. As part of the EIS, The proponents do not address the economic/business impact/damage on SME Mining claims or how they plan to compensate SME.

   North Rose Waste area approximately 25-30 million tonnes of waste rock to be dumped on SME's mineral claims.

   South Rose Waste area 300-350 million tonnes of rock waste to be dumped on SME's mineral claims.

   SME has identified a significant dolomite resource on SME mineral claims where the proponents plan to place the South Rose Waste Dump.

   SME is planning a marketing study and a drill program for this resource and has started discussion with various parties.

   Initially the South Rose waste dump was to be located on the Quebec/Labrador border.

   Because of the outcry and protests from the residents of Fermont, Quebec, the location was changed to the present site.

   Part of the tailings area is on SME mineral claims.

The proponents of the Kami Project address only address SME in one line that thy have submitted requests to the Government of Newfoundland and Labrador for surface rights for SME's mineral claims.

For Shabogamo Mining & Exploration Ltd (SME) to protect and safeguard its business interests requests the following.

1. SME to be identified as a major stakeholder who is severely impacted by the development of the Kami Project.

2. The economic damage to SME be documented and be addressed as a result of this development.

   SME has spent considerable monies on exploration, prospecting on its mineral claims, and kept them in good standing with the Dept. of Natural Resources, Govt. of Newfoundland & Labrador and have identified a significant dolomite resource.

   SME acquired these mineral claims before Alderon's ownership of the Kami Iron Property.

3. Failure of coming to an agreement with the proponents of the project.

   SME requests the proponents submits a new mining/engineering plan that does not impact SME's mineral claims.

Yours Sincerely

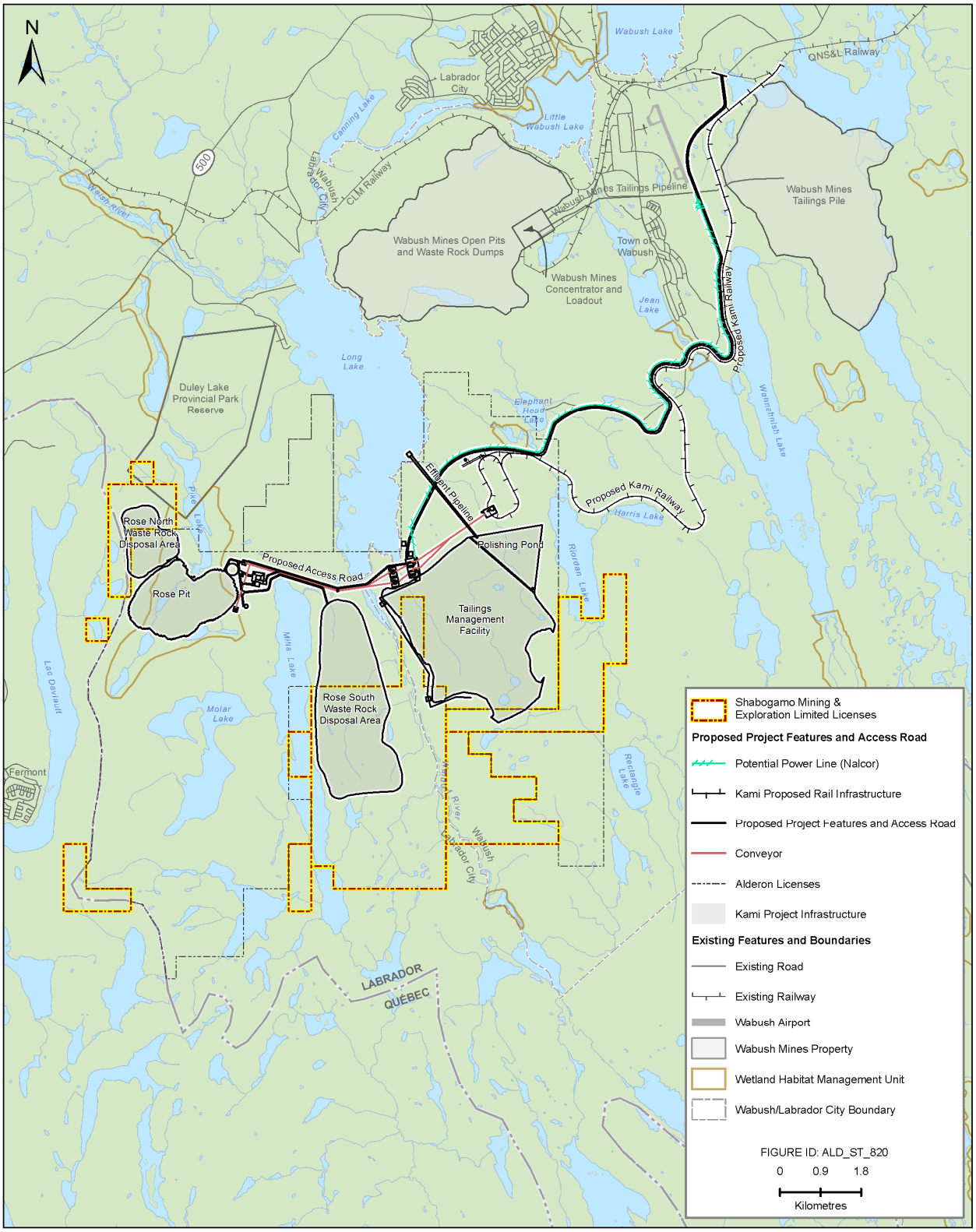
Rehan Malik President Shabogamo Mining & Exploration Ltd

Alderon Response to PC 14 S-01

As outlined in response to IR No. PC 14-1 presented in the Amendment to the EIS, Shabogamo Mining and Exploration Ltd. (SME) currently holds a number of mineral claims adjacent to the Kami properties, as shown in Figure 3.1 below (Figure 4.14.1 from the EIS Amendment Volume 3). In response to concerns expressed by the community of Fermont over the location of the Rose South Waste Rock Disposal Area, Alderon investigated other areas within or in close proximity to the claim blocks held by Alderon. Alderon has been in discussions with SME over accessing geological information in order to help determine the commercial value, if any, of the potential mineralization within these portions of the SME claims. To review this discussion, please refer to the two letters presented in Appendix K (Appendix U from the EIS Amendment, Volume 3). Alderon has entered into a non-disclosure agreement with SME to assess the level of mineralization in this area. On April 23, 2013, Alderon submitted a Geology and Sterilization Report to NLDNR to address this issue.

In order to advance the Project, Alderon will be required to obtain a mining lease and surface rights from NLDNR both inside and outside of Alderon's claim blocks. This process is well defined and is initiated after the completion of the environmental assessment process.

Figure 3.3 Shabogamo Mining and Exploration Ltd. Mineral Claims Adjacent to the Kami Properties (Figure 4.14.1 from EIS Amendment Volume 3)



Appendix A

Technical Summary- Option 2 Rail Alignment Engineering Study

Technical Summary- Option 2 Rail Alignment Engineering Study

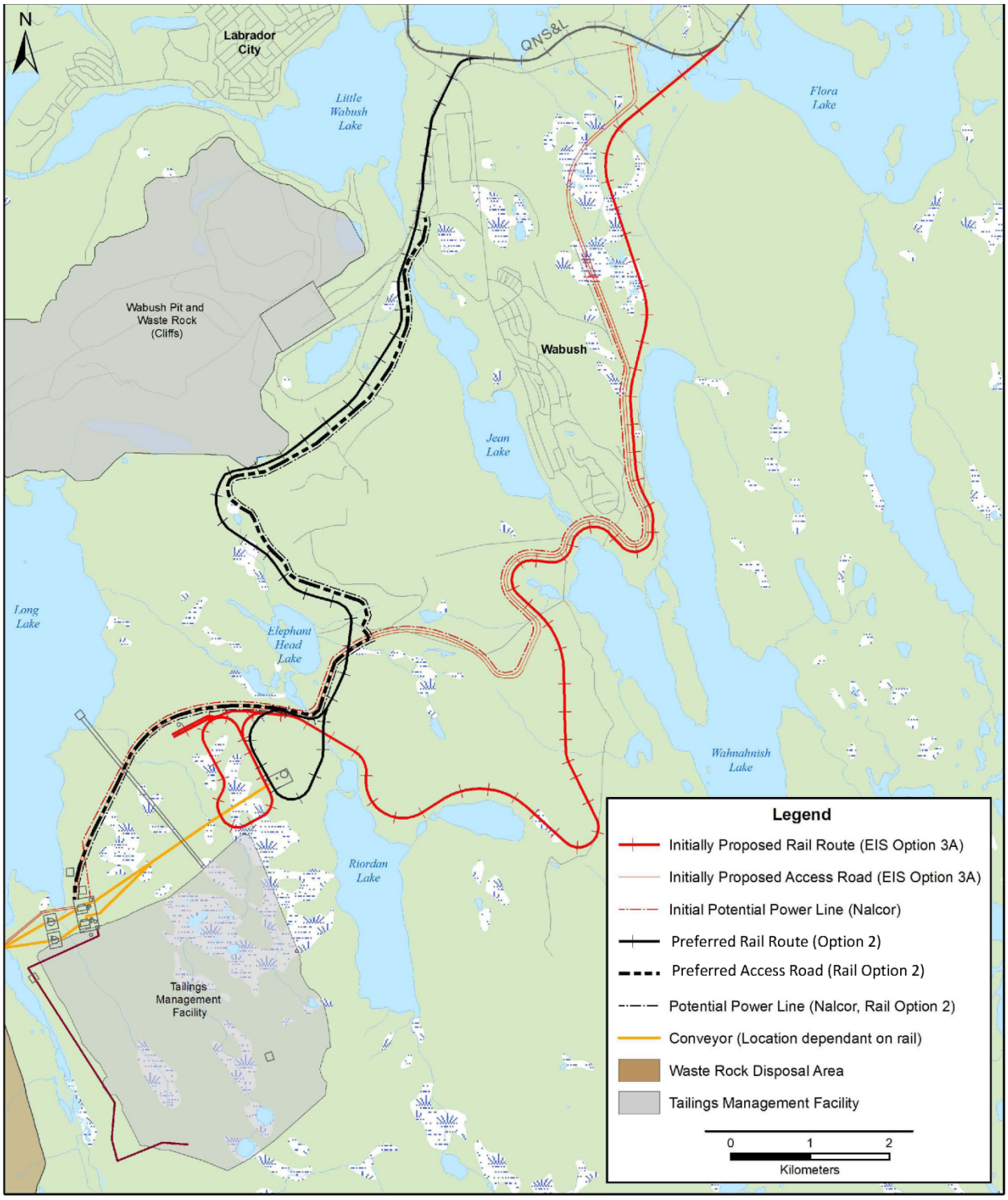
1. INTRODUCTION

In response to comments received from the Government of Newfoundland and Labrador and stakeholder groups, Alderon has conducted a comprehensive analysis on the alternate routes that the railway could take to avoid the Wabush (Wahnahnish Lake) Protected Public Water Supply Area (PPWSA).

In support of the analysis, engineering was advanced on the Option 2 route that was previously assessed for the Project. In order to avoid the Wabush PPWSA (Option 3A), the Option 2 route was deemed to be the most viable route by Alderon and was previously identified as the preferred option to Option 3A by the Town of Wabush and the NL Department of Water Resources as per comments made in previous Information Requests submitted to Alderon. The purpose of the engineering assessment was to review the available literature and data on Option 2, the current Project design, and to consider the general corridor to determine if a viable route existed. The viability of the route was to consider the technical, operating, and environmental constraints.

The engineering assessment, the results of which are further described below, shows that based on changes and advances in the design of the Project, a modified alignment of the previously evaluated Option 2 (as shown in Figure 1) is considered viable and has subsequently been selected as the preferred route for the Project.

Figure 1 Preferred Rail Line Routing (Option 2)



2. ROUTE ALIGNMENT

The Option 2 route comprises 3.9 km of loop track connecting to a 10.6 km line which travels generally northward along the east side of Elephant Head Lake and east of the Wabush Mines' Scully Mine waste rock piles and loop track as shown in Figure 1. The route continues north crossing Wabush Mines' tailings line, Jean River, the Wabush Mines' main access road, and then between the Cliffs (Wabush Mines') rail spur and the Wabush Industrial Park. Near the north end of the industrial park, the route continues to parallel Cliffs' rail spur to the east, across Route 500 where a new rail overpass will be constructed, and then connecting to the Northlands District of the QNS&L rail line.

Details on rail alignment, including the plans and cross-sections are shown in Annex 1. Note that some of the background imagery is dated and does not show the current ground conditions or features in some locations. For example is at the Route 500 crossing - the Cliffs' crossing in the imagery is the grade crossing that existed prior to the construction of the new underpass in 2011.

The rail infrastructure will consist of a newly constructed (single) track designed to match the existing design parameters of the QNS&L to provide technical and operational uniformity. The track will be constructed to main line, heavy haul standards in line with QNS&L and American Railway and Maintenance of Way Association (AREMA) design procedures. The track will be of standard gauge (1435 mm), and the rail will be standard cross section weighing approximately 136 pounds per yard. The rail will be secured to track ties and installed on crushed rock ballast. The railway right of way will be nominally 30 m wide, with boundaries 15 m to either side of the track centerline. A maximum grade of 1% was used in the layout and design of the rail route.

The profile for Option 2, as shown in the attached plan profile, is generally flat from station 0+000 to 1+500, after which there is a 1% gradient between stations 1+500 through 8+000. From station 8+000 to the loop track the profile is relatively flat and only slightly above lake level at Riordan Lake. A vertical curve is needed to elevate the track above the lake level, which increases the fill quantity requirements but will also decrease the cut quantities around the loop track while maintaining sufficient level track in approach to the loop for loading purposes.

Earthworks

Earthworks quantities are based on a digital terrain model (DTM). For the purpose of this assessment the following assumptions were used to determine the cut/fill quantities:

- Batter slopes for cut and fill are the same at 2H:1V.
- The cut slope has been left flatter to balance the earthworks quantities, although it could be made steeper due to the amount of rock in the area
- 5% of all cut material is unsuitable and needs to be disposed
- 30% of all cut is common material
- 65% of all cut is rock material

Total cut quantities for the rail line alone are estimated to be 865,000 m3 and the total fill required for construction of the rail line is approximately 591,000 m3. The suitability of the cut material for fill for the rail line and other areas of the site as structural fill and fill for site rehabilitation will be assessed during the detailed geotechnical investigations.

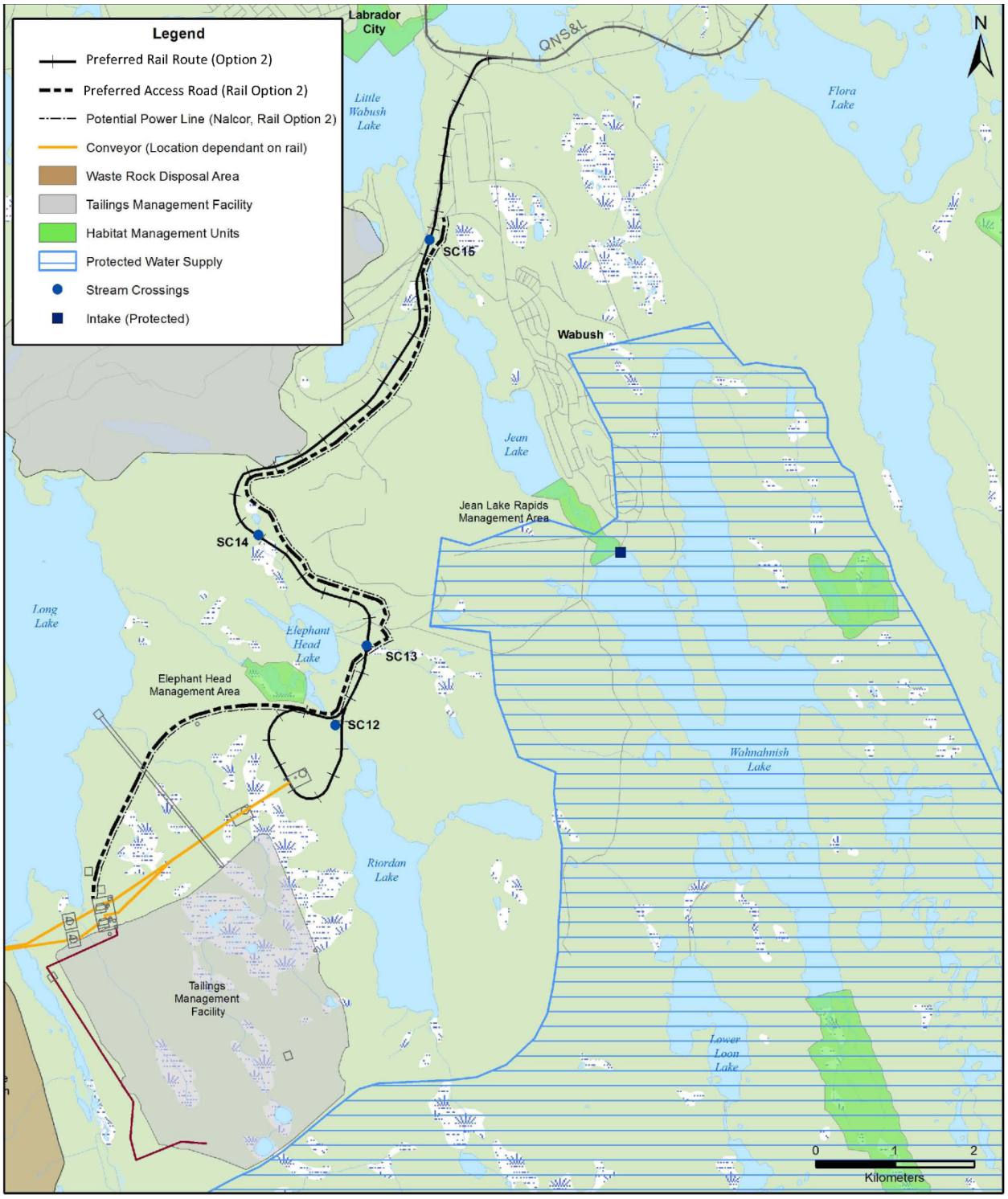
If a significant portion of the cut sections are indeed rock, and the rock is even moderately competent, the sections will have 1:1 or even 1:0.5 side slopes, rather than the 2:1 slopes shown in the template. This will reduce the quantity (and cost) of rock excavation, but will also reduce the quantity of rock excavation available for fill material.

Crossings

Stream crossings will be required at the inflow to Elephant Head Lake (from Riordan Lake), two small tributaries to Elephant Head Lake, and at Jean River as shown in Figure 2. The crossings at the inflow to Elephant Head Lake (from Riordan Lake) and at Jean River will be bridge crossings. The other, small water crossings will comprise small culverts.

The rail will cross existing roads at Route 500, the Wabush Mines' mine access road, and a gravel road known as Elephant Head Lake Road.

Figure 2 Environmental Features and Watercourse Crossings



Constructability

No significant issues unique to Option 2 would interfere with the constructability of this route. As the design process advances, the following issues and opportunities related to the constructability of this route will be addressed which may have minor impacts on the final rail alignment.

- The proposed route passes through a Wabush Mines waste rock pile at station 4+800 to 5+100. An adjustment to the alignment to the southeast will be investigated to avoid the rock pile.
- From station 8+000 to the loop track, the profile is relatively flat and is only slightly above lake level at Riordan Lake. A vertical curve is needed to elevate the track above the lake level which increases the fill quantity requirements, but will also decrease the cut quantities around the loop track.
- The approach and departure curves to the loading loop track are tight for a level track (approximately 233 m radius) at the crossing of the stream between Riordan Lake and Elephant Head Lake. Optimization of the alignment in this area to with respect to the curvatures and the potential stream crossings is required.
- Grade crossings may require minor realignment of the roadways.
- There are potential right-of-way impacts to the Cliffs Railway where the Kami and Cliffs Railways are adjacent to each other.
- The existing Cliffs grade separation at Route 500 is likely designed to have the low point of the roadway underneath the existing Cliffs railroad bridge. This means a new railroad bridge adjacent to the Cliffs bridge will either need to be higher to provide the same vertical clearance to the roadway, or the roadway will need to be lowered. Lowering the roadway may also affect the elevation of the nearby intersection. Also, the drainage system for the existing underpass may present conflicts with the proposed railroad bridge substructure (abutments, etc.)
- The spoil from the existing grade separation at Route 500 was piled adjacent to the Cliffs Railway. If this material was not compacted or only loosely compacted, portions of it may need to be excavated and re-compacted to provide suitable structure fill for the proposed Kami railroad and bridge.
- There are small drainage ditches near the Cliffs connection to the QNS&L. These may need to be partially filled for the new Kami line connection.
- Railroad signaling for the Kami connection needs to be refined in conjunction with the final operating plan. A new control point is necessary on the QNS&L, but one or more intermediate or distant signals may be required on the Kami line to be consistent with the desired operating plan and QNS&L rules/Transport Canada regulations.

3. RAIL OPERATIONS

The operational considerations associated with the previous Option 2 route and connection to Wabush Lake rail have been reduced or eliminated by extending this route directly to QNSL. For the currently proposed Option 2, it is planned that QNSL will operate directly to Alderon's loop track. If for any reason, direct connection to QNSL isn't achievable, Alderon will work to collaborate on a connection to Wabush Lake Rail and an operational scenario suitable for both parties. This would further reduce the footprint of Alderon's rail line.

Trains with empty hopper cars returning from the port by the mainline carrier will enter onto the Kami rail line and be parked on the rail line approach to the loop track. The locomotives will remain with the train. Interchange activities between the mainline carrier and the plant employees or its contracted operator (the plant operator) would be done at that location. Once the train has been accepted, it will be under the plant operator's control. The plant operator will move the train from the receiving track area to the loop track and through the loading tipple for loading. The plant operator will move loaded trains to the approach area and park them awaiting the mainline carrier's outbound crew. After interchange activities are completed and the train is accepted by the mainline carrier crew, the mainline carrier will dispatch the train from the rail line and move it to the port for unloading.

The mainline carrier will also deliver inbound fuel in tank car trains and interchange these cars on the rail line much like the inbound empty hopper car trains. Again, the locomotives will remain with the train. Current plans are for 1 fuel train per week. The plant operator will move the inbound train to the fuel unloading track(s) for unloading and will return the empty tank car train to the outbound to the rail line where the operator will park the train awaiting the mainline crew and interchange activities. The mainline crew will accept the train, move it from the rail line onto the carrier's track and return the empties to origin where they will be reloaded and the process repeated.

The main advantages of having the mainline carrier provide the inbound and outbound service requirements in this manner include:

- Zero locomotive units needed by the plant operator
- No locomotive fueling or servicing facilities required inside the plant
- Lower staffing requirements
- Fewer regulatory compliance issues
- Minimized interchange issues since the mainline crew would accept the outbound trains inside the plant

Facilities and resources required to support the above described operation include:

- Tipple and associated conveyer system from storage pile to tipple
- Loop track for inbound empty hopper cars being moved to and from loading tipple
- Storage/work tracks for fuel train unloading

- Temporary storage/work tracks for bad order cars and locomotives, work trains, etc.
- Possible future spur line capacity for temporary storage of both inbound and outbound trains during the interchange activities

Maintenance and Inspection

Daily track inspection and minor maintenance is required to maintain an efficient and safe rail operation. There are specialized inspection and maintenance practices that will be observed to maintain a safe and dependable rail operation. Daily operation and maintenance activities associated with the rail infrastructure and equipment include:

- Interchange activities, including train inspection and documentation processing
- Loadout activity including empty train movement through loading tipple
- Unloading of fuel tank cars
- In-plant switching and staging of empty fuel tank cars
- Inspection/maintenance of track infrastructure
- Inspection/maintenance of rail cars

Operational Considerations

As the rail design and operational planning advances, the following issues and opportunities related to rail operations will be addressed:

- Frozen ore in loaded hopper cars
- Inefficient handling of fuel tank cars and general railroad freight cars during unloading operations
- Hopper car damage due to derailment
- Hopper car repair costs due to manufacturer defects
- Service disruption causing blocking of dirt road crossings

4. MINE ACCESS ROAD

A separate, preliminary roadway alignment was developed between the Wabush Mines access road and the loading loop near Elephant Head Lake generally paralleling the Option 2 rail route, and based on the following design parameters:

- Uniform roadway horizontal curve radii of approximately 160 meters were used, allowing for an approximately 45 km/h travel speed.
- No allowance was made for horizontal stopping sight distance around obstacles, vegetation, etc.
- Vertical curves are uniformly 70 meters long.
- No allowance for stopping sight distance has been made on vertical curves.

Stream crossings will be required at the inflow to Elephant Head Lake (from Riordan Lake), and two small tributaries to Elephant Head Lake. The crossing at the inflow to Elephant Head Lake (from Riordan Lake) will be coupled to the rail crossing. The other, small water crossings will comprise small culverts.

This alignment has been designed separately from the rail alignment due to the significant cut and fill requirements for the rail route, thereby reducing the overall footprint and cut/fill requirements of the rail and road corridors. As the design process proceeds, optimization of the rail and road alignment will continue. There is an opportunity to balance earthwork for the roadway (as well as improve the alignment and drainage) by moving the road uphill in some areas, where it is in a side-hill location, and, where the road is in a flat location, relocating it to a side-hill location.

As contemplated in the EIS, temporary construction access will be required to the mine construction areas via existing roads and trails, with some upgrades as required to mobilize equipment, on the west side of the property along the existing exploration road to the proposed open pit area, as outlined in Volume 1, Section 2.6.1 of the EIS, and along the existing Elephant Head Lake Road on the east side of the site, which intersects the Option 2 rail and road routes.

5. Next Steps

Alderon will continue to assess and advance the design of the infrastructure associated with the rail route, including the permanent access road to the site, and the power lines to the site. The permanent access road and the power line are planned to fall within the Option 2 rail route corridor. The power line will be constructed and operated by Nalcor. Alderon will consult with Nalcor on the change to the rail and road access route to the mine site.

As the design proceeds, Alderon commits to providing Department of Transportation and Works environmental assessment personnel with regularly updated design information as part of the permitting process submissions.

The following sections summarize some of the key information required to advance the design of the Option 2 rail route.

Geotechnical

Detailed geotechnical data is not currently available for the proposed Option 2 rail route. Alderon will undertake an assessment of the geotechnical conditions along the selected rail route as part of the detailed engineering phase of the Project. This assessment will provide information for the route design on rail alignment subsurface conditions, preparation of embankment foundations, excavation methodology, availability of construction material (general fill and select fill) and recommended field based site investigations programs.

Hydrology

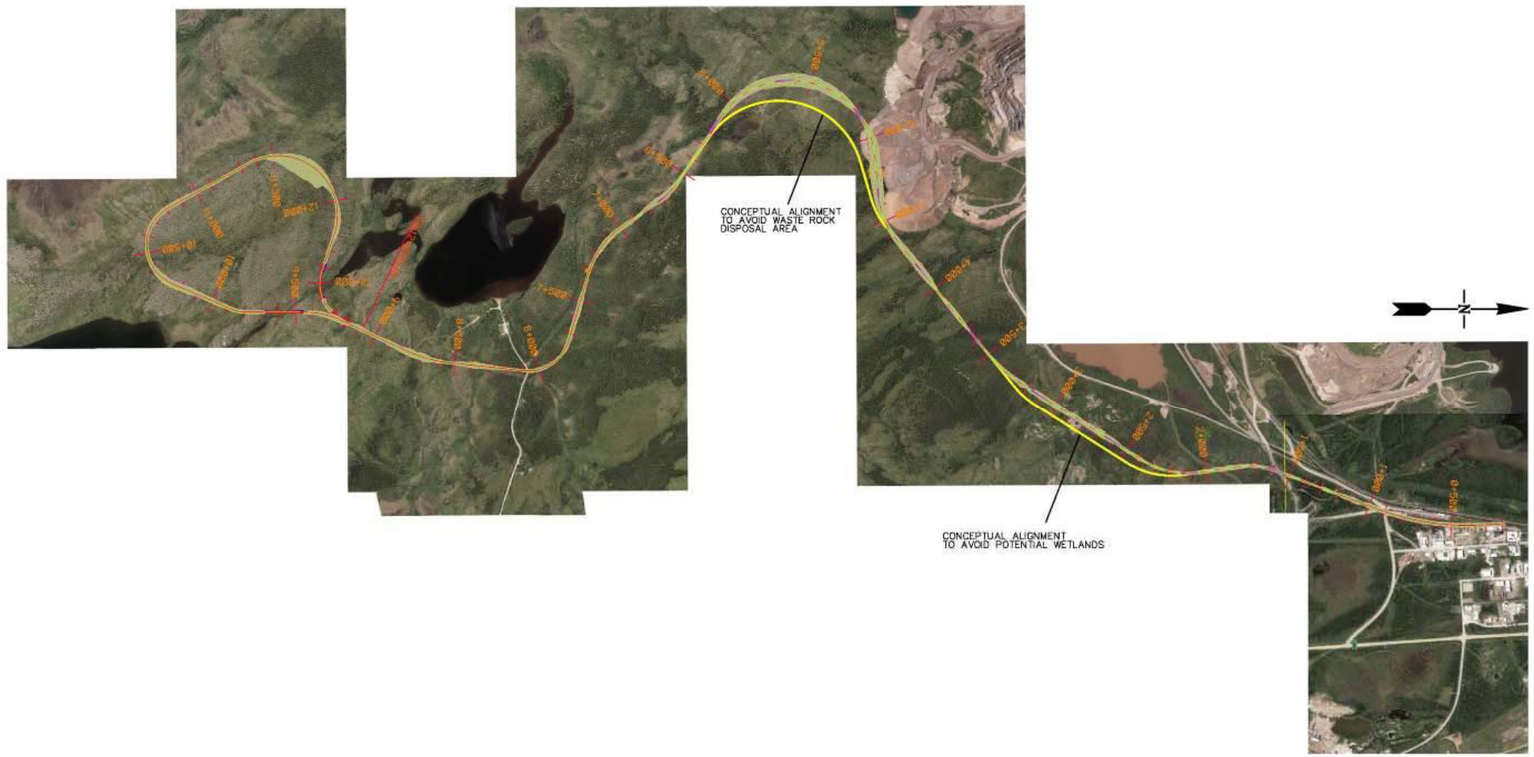
For the purpose of this assessment, culverts and bridge crossings were located based on site reconnaissance and available mapping. Further surface hydrological studies for construction

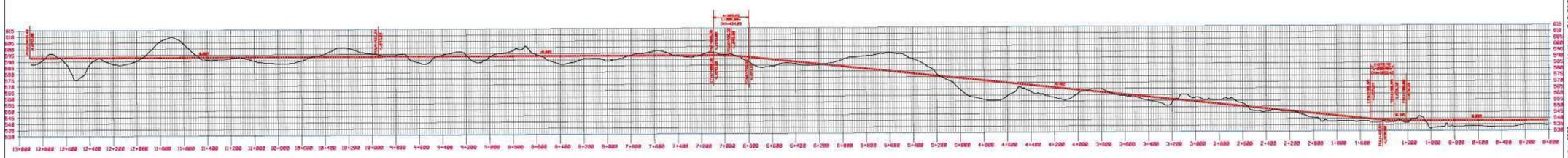
water, flood way design, and other issues will be conducted to support the water crossing design along the proposed route.

Land Tenure

Alderon will undertake a comprehensive land tenure study for Option 2 as planning and design advances. Continued consultation will be required with stakeholders with respect to land tenure and future plans in the area of the proposed Option 2 rail route.

Annex 1
Conceptual Plans and Cross Sections for Option 2





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D SHEET | SCALE -

OneWay to zero harm

WORLEYPARSONS PROJECT No.
207040-00108

ENGINEERING AND PERMIT STAMPS (As Required)

DRAFT

CUSTOMER

WorleyParsons resources & energy

KAMI IRON ORE PROJECT
CONCEPTUAL PLAN - OPTION 2
RAIL ALIGNMENT ONLY

DRG No EX-01

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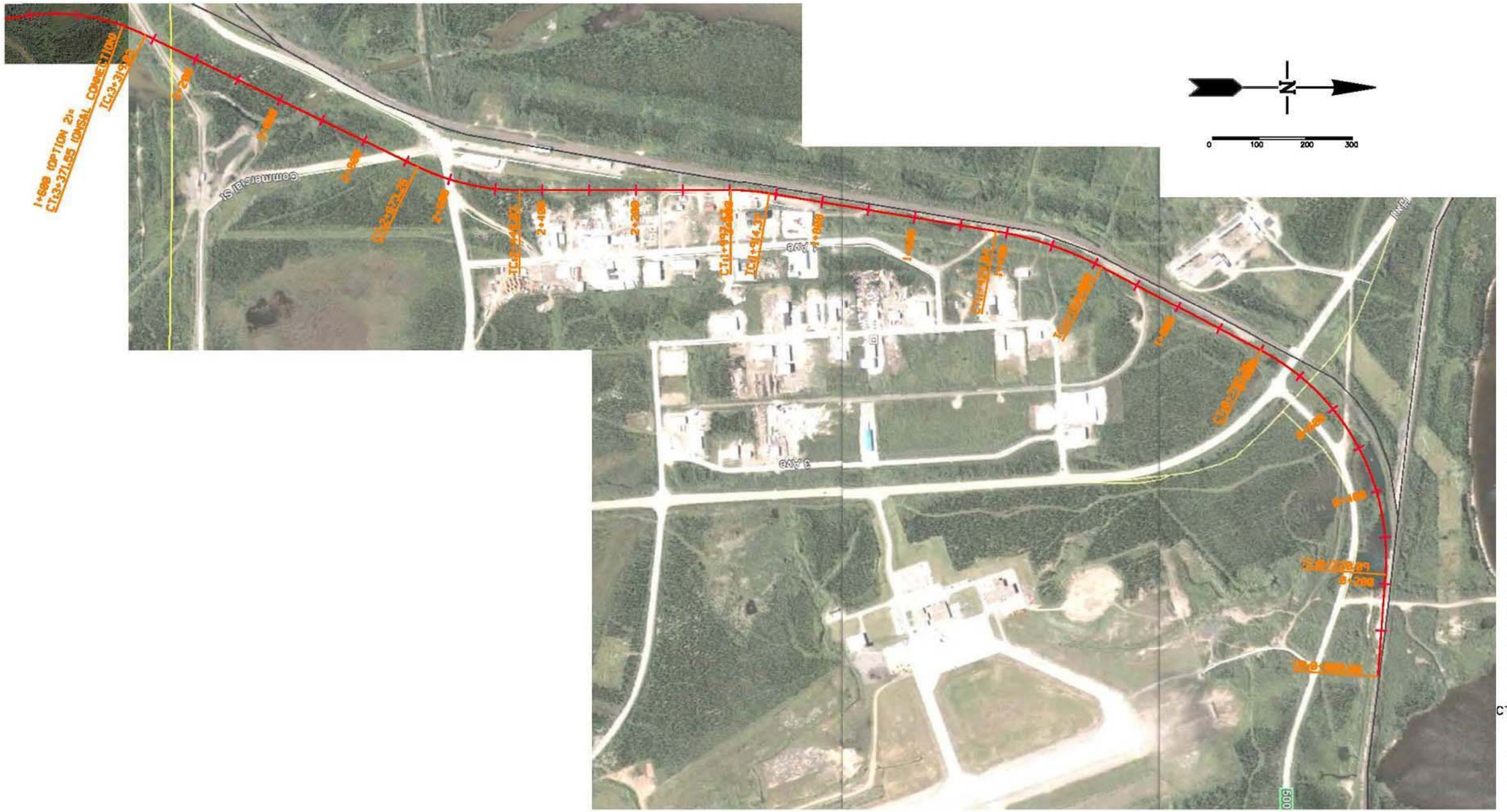

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ENGINEERING AND PERMIT STAMPS (As Required)

DRAFT

CUSTOMER

KAMI IRON ORE PROJECT

CONCEPTUAL CONNECTION TO QNS&L

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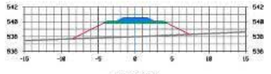

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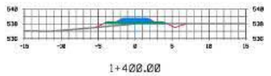

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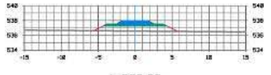

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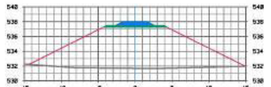

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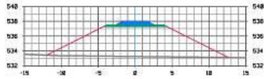

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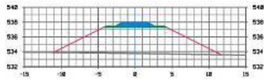

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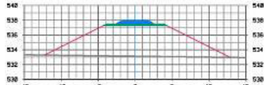

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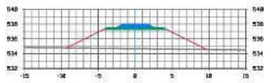

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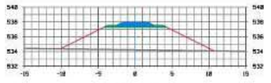

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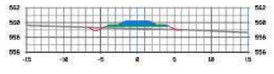

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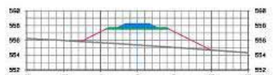

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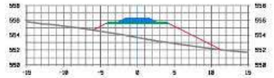

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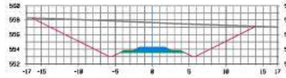

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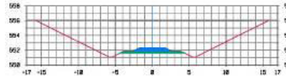

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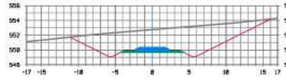

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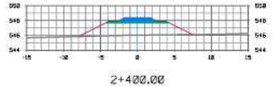

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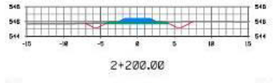

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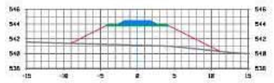

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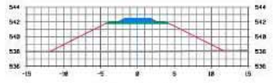

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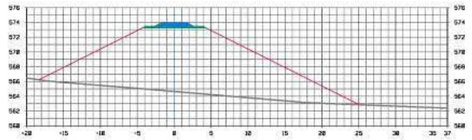

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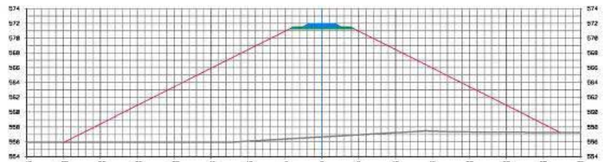

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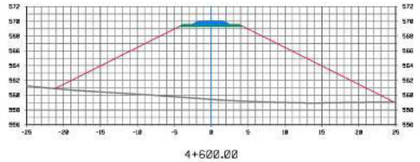

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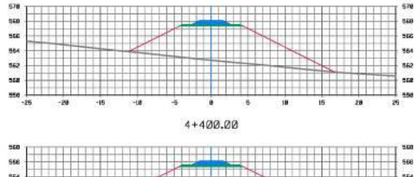

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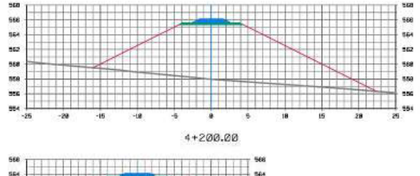

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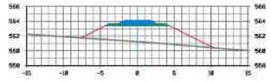

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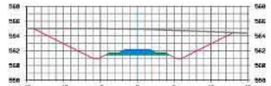

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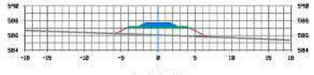

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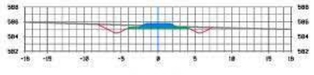

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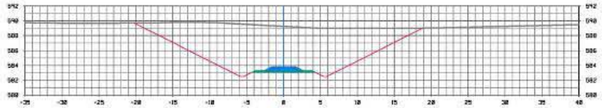

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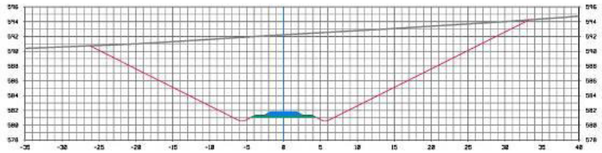

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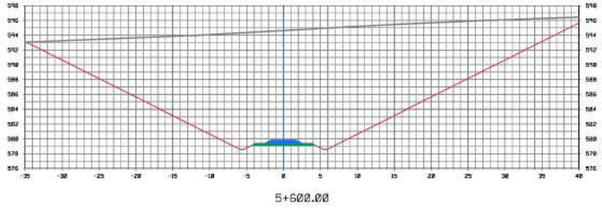

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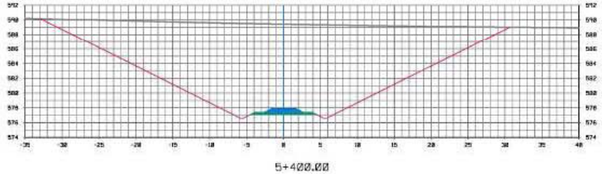

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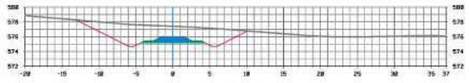

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D SHEET | SCALE

OneWay to zero harm

WORLEYPARSONS PROJECT No
207040-00108

ENGINEERING AND PERMIT STAMPS (As Required)

DRAFT

CUSTOMER

KAMI IRON ORE PROJECT

CONCEPTUAL CROSS SECTIONS
OPTION 2

DRG No
XSC01

REV

VPC-D
VERSION:09-1

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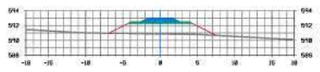

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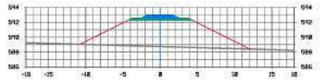

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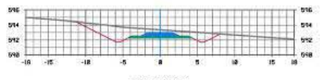

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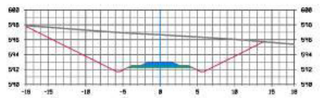

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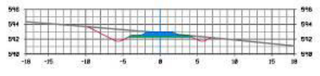

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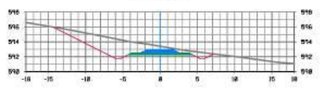

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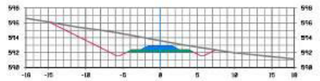

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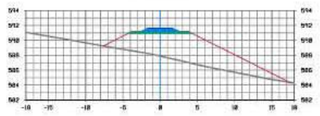

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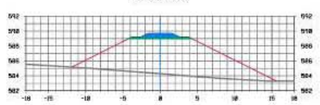

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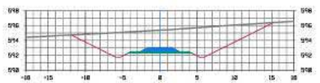

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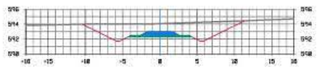

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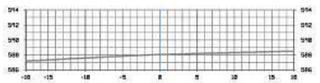

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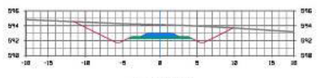

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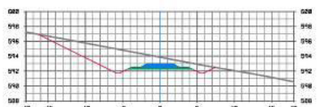

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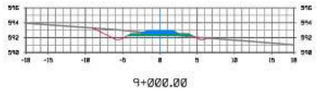

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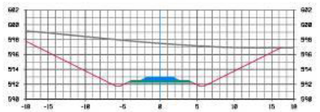

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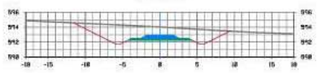

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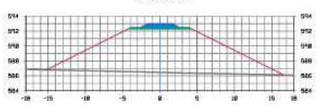

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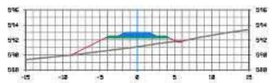

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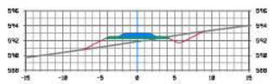

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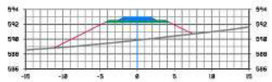

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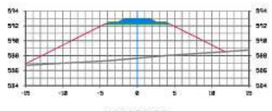

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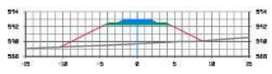

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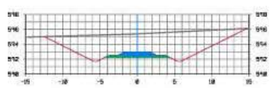

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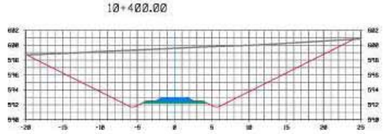

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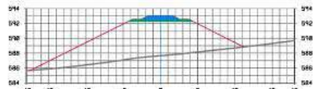

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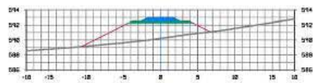

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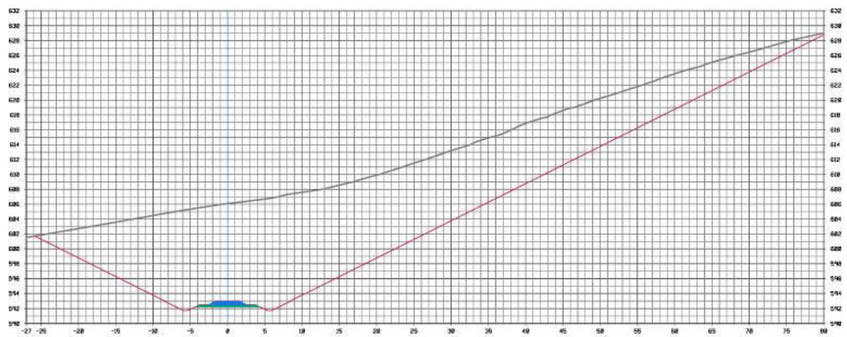

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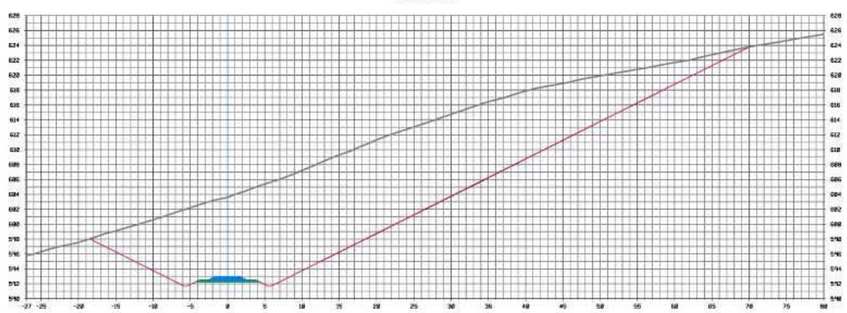

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VERSION:2009-1

D SHEET | SCALE

OneWay™ to zero harm

WORLEYPARSONS PROJECT No
207040-00108

ENGINEERING AND PERMIT STAMPS (As Required)

DRAFT

CUSTOMER

KAMI IRON ORE PROJECT

CONCEPTUAL CROSS SECTIONS
OPTION 2

DRG No XSC02 | REV

PLOT DATE & TIME 23/1/2013 2:43:2 PM
SAVE DATE & TIME 6/2/2013 6:33:49 PM

USER NAME irenea.aguila

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APPENDIX B

Environmental Effects Analysis of Preferred Rail Route (Option 2)

Environmental Effects Analysis of Preferred Rail Route (Option 2)

Alderon conducted an environmental effects analysis of the Option 2 routing and has compared it to the previous preferred alternative route 3A. The environmental analysis, focuses on the Valued Environmental Components (VECs) which were assessed in the EIS:

- Atmospheric Environment;
- Landforms, Soils, Snow and Ice;
- Water Resources;
- Wetlands;
- Freshwater Fish, Fish Habitat and Fisheries;
- Birds, Other Wildlife and Their Habitats, and Protected Areas;
- Species at Risk and Species of Conservation Concern;
- Historic and Cultural Resources;
- Current Use of Lands and Resources for Traditional Purposes by Aboriginal Persons;
- Other Current Use of Lands and Resources;
- Community Services and Infrastructure;
- Health and Community Health; and
- Economy, Employment and Business.

For each VEC, the analysis begins with an overview summary of the key results of the initial (EIS) effects assessment for the originally proposed rail route Option 3A, followed by a discussion of whether and how the likely environmental effects and required mitigation associated with Option 2 would be the same as or different from those assessed and evaluated in the EIS.

1. Atmospheric Environment

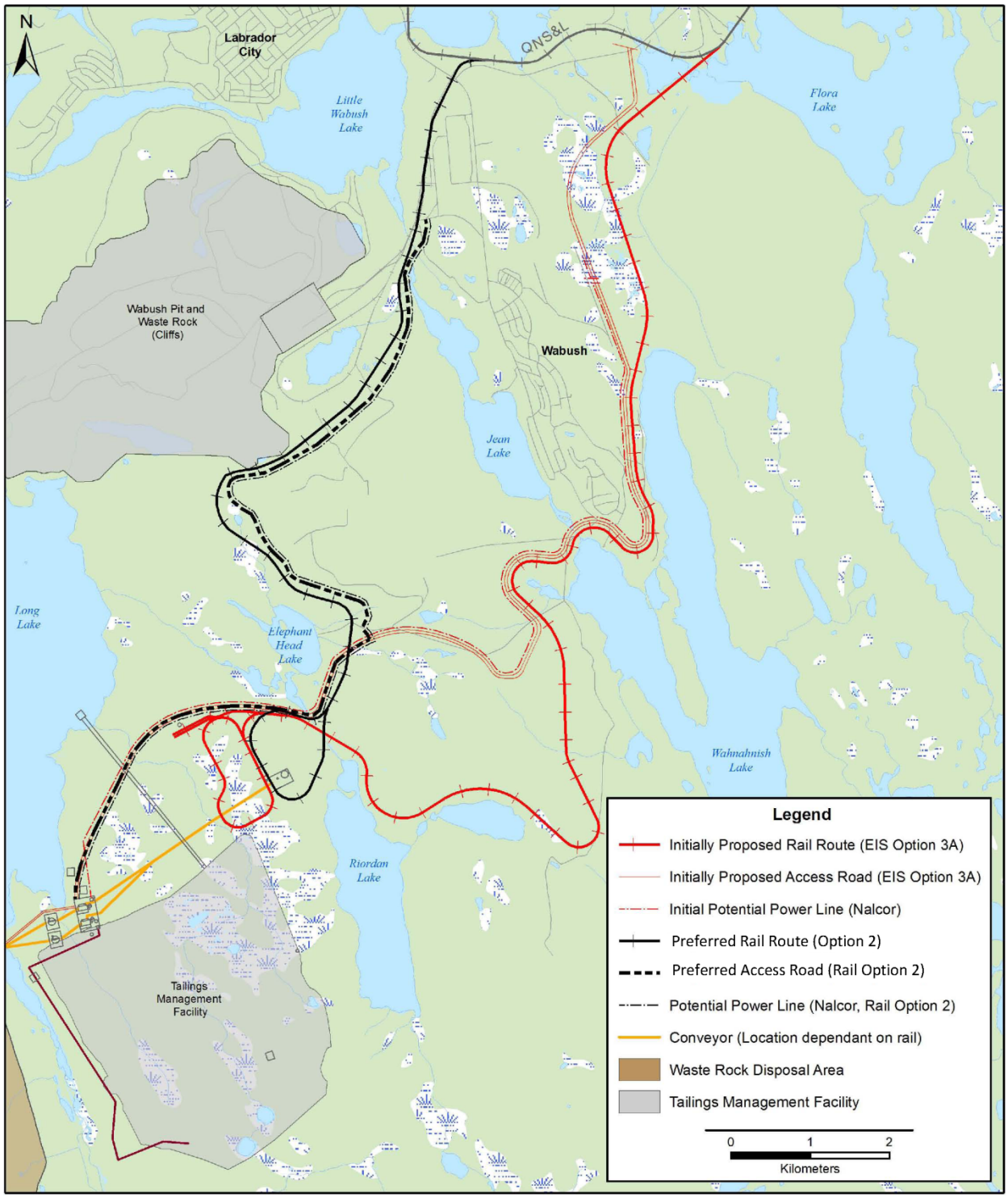
The environmental assessment for this VEC considered potential Project-related effects on various components of the atmospheric environment, including possible changes in air quality, greenhouse gas (GHG) emissions, noise, vibrations and lighting within the Project Development Area (PDA), as well as a larger Local Study Area (LSA) that encompassed the PDA and adjacent communities and surrounding areas. The boundaries for this VEC also included a Regional Study Area (RSA) that included all of Western Labrador and parts of Eastern Québec, including other projects and activities with emissions that contribute to regional effects on the atmospheric environment. Existing environmental conditions were described for these study areas on the basis of existing and available monitoring datasets and other information sources, as well as through an air quality and noise baseline study program completed by Alderon.

These data and Project engineering information were then used to complete a detailed modeling of the magnitude and extents of particulate matter (dust and combustion gasses),

noise and other emissions resulting from the Project. Mitigative measures identified and proposed in the EIS to avoid or reduce any associated effects include those associated with Project design (e.g., covered conveyors), fugitive dust suppression programs, equipment use and maintenance procedures, progressive rehabilitation, buffer zones, vehicle and train speed limits, lighting design, and others. As presented in the EIS, the residual effects of the Project on the Atmospheric Environment included slight, localized and short-term increases in certain air emissions during construction, with most being well within applicable standards and guidelines. Similarly, the modeling also indicated that noise, vibrations and light emissions from the Project would result in minimal interaction with nearby communities and these would also be within relevant standards.

The rail line component of the Project (construction and operations) will not be a major contributor to many of the atmospheric emissions and effects resulting from the Project overall. The proposed rail line routing that was presented in the EIS (Option 3A) would extend to the east and the south of the Town of Wabush, around the south end of the existing residential area and then paralleling the Town on the east side with a separation between about 100 and 500 m (Figure 1). Option 2 rail route would, however, result in a greater distance between the railway and the Town (ranging from almost 3 km in the south to about 1 km to the north of the community). Options 2 rail route has a smaller footprint, being approximately 5 km shorter than Option 3A. The Option 2 alignment would also be near some existing rail lines to the west of the Town. With Option 2, the rail line would more often be upwind of the Town, but would be located at such a distance that the potential for interaction would be lower and any effects are not likely to be measureable.

Figure 1 Preferred Rail Line Routing (Option 2)



With the adoption of Option 2, any air quality issues pertaining to the residential areas of Wabush would therefore likely be further reduced from an acceptable level (for Option 3A) to a level that would not likely even be discernible in current background levels and their fluctuations. The air emissions modeling presented in Appendix F of the EIS indicates that the concentration of nitrogen oxides at a distance 50 m from the rail tracks would be of the order of 1 $\mu g/m^3$ on a one hour average ($1/400^{th}$ of the standard), and points out that distances such as this between residences and rail lines are common in many urban areas of Canada with no recognized adverse effects. The concentrations at the increased distances that would be associated with the Option 2 routing would be further reduced and diluted to the order of 1 ng/m^3. These levels are very low compared to the emissions of heavy diesel equipment, and are not visible in the resolution of the impact mapping. Although not zero, these impacts are of similar levels to those in every city in Canada with a rail line that is near residences, often with much less separation from residences than that between the Alderon line and the town of Wabush.

Noise levels and potential interactions would be similarly reduced with Option 2, due to the increased buffering distance between the rail line and community. A change from 100 m to 1 km would result in a reduction of about 9 to 18 dB for line source noise and point source (horn / whistle) noise, respectively, with even greater reductions at the south end of the Town. The potential level of rail line noise on receptors would be reduced, and no additional or different mitigation is therefore considered necessary over that presented in the EIS.

Although Option 2 would increase the distance of the main line track from cabins at the north end of Riordan Lake as compared to the initial rail route (Option 3A), at the rail loop in the southern portion of the rail line the adoption of Option 2 would reduce the separation distance between the rail car loading activities and these cabins from approximately 750 m to about 200 m. Any associated noise emissions are likely to remain within applicable criteria limits, however, and no material differences in associated effects are anticipated. For either rail route option, any issues will be further considered and addressed as required within Alderon's on-going consultation and mitigation program with local cabin owners.

Given that the EIS demonstrated that the original rail line design (Option 3A) would not result in significant adverse effects on the atmospheric environment, and as Option 2 would be even further removed from most local receptors, no further atmospheric modeling or analysis (air or noise) is required. The environmental monitoring programs that were identified and committed to by Alderon in the EIS will be implemented (and relevant) for whichever rail line option is eventually selected and implemented.

2. Landforms, Soils, Snow and Ice

This VEC includes consideration of potential Project-related changes in landforms, terrain stability, soil quality and quantity, snow and ice, as well as the possibility for acid rock drainage (ARD) and metal leaching (ML) as a result of ground disturbance that will occur during Project construction and operation. The existing environment for this VEC was characterized on the basis of existing and available information on bedrock geology and topography, historical data from past and existing mines in the area and geological materials testing completed by Alderon for the Kami Project. This included characterizing existing conditions within an RSA that fully encompasses both the original (Option 3A) and Option 2 rail line routings.

The proposed rail infrastructure represents a relatively small component of the overall "footprint" of the Kami Project. Its associated construction and operations activities will therefore contribute minimally to its total area of ground disturbance, and thus, to any potential effects on the various elements of this VEC.

Option 2 rail route is shorter in overall length, and thus, has a somewhat smaller footprint than Option 3A. It will, however, involve the same construction techniques, follows through similar geological and topographical environments, and will not increase the Project's interaction with notable landforms in the area. The various mitigative measures presented for this VEC will be equally applicable to both rail routings, and the results and conclusions of the EA will be the same for either option.

3. Water Resources

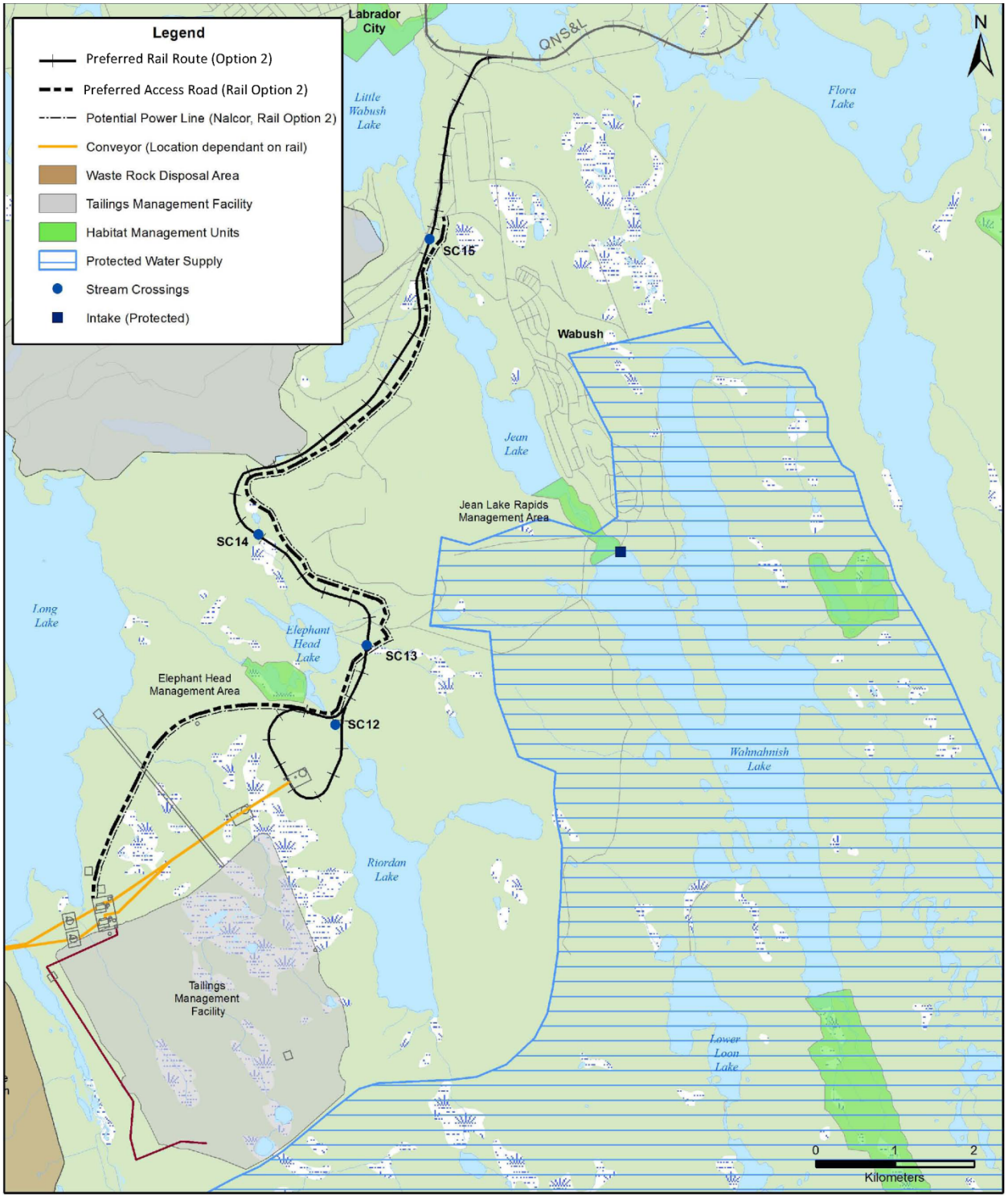
The Water Resources VEC includes consideration of both surface and groundwater, and the potential effects of the Project on these resources due to ground disturbance (construction and operation), in and near water work activities, dust and blasting, waste rock management, drainage from tailings, possible accidental events (including spills from possible train derailments, fires, dyke breaches, fuel spills, etc), and other direct and indirect interactions with water. The PDA, LSA and RSA for the Water Resources VEC encompassed the physical footprint of the Project and the various waterbodies, watercourses and watersheds with which Project-related components and activities may interact. Existing conditions for water quality and quantity and overall hydrological characteristics in these areas was described using available datasets supplemented by on-site surface and groundwater investigations completed by Alderon, and the information presented in equally applicable to both rail options.

Although other Project components and activities are considerably more relevant to potential interactions with water resources, the proposed rail line must inevitably cross over or adjacent to a number of watercourses and waterbodies, and will or may interact with water through, for example, the construction of culverts and bridges, any associated erosion and sedimentation, and in the unlikely event of an accidental spill. Mitigation measures to avoid, reduce or (if necessary) respond to such effects have been identified and presented in the EIS. Although each of these measures will be applicable to (and implemented for) either rail option - and neither is likely to result in significant adverse environmental effects - some relevant differences between the two routings can be identified, and include:

- Option 2 rail route would require less watercourse crossings (see Section 5 below), and in addition to its shorter overall length, much less of its route would be located near waterbodies (Figure 2); and
- Moving the rail line and permanent access road to the west (Option 2) would also result in the Project's rail and road infrastructure avoiding direct interaction with the Town of Wabush's Protected Water Supply Area (Wahnahnish Lake).

The proposed rail line (either option) will not interact with or otherwise adversely affect groundwater in the region.

Figure 2 Key Environmental Features and Watercourse Crossings



4. Wetlands

Wetlands are generally widespread across much of Western Labrador and elsewhere in the province, with approximately 12 percent (nearly 9,000 ha) of the RSA for this VEC being covered by wetlands of various types, including fens and marshes. Wetlands are important and valued because of their hydrologic, biogeochemical and anthropogenic functions, including their role in the natural purification and storage of freshwater, in runoff and flood control, and as habitats for waterfowl, fish and other wildlife. Their protection is also the subject of various federal, provincial and municipal agreements, legislation and policies. Indeed, there are a number of designated wetland areas (Habitat Management Units) in Western Labrador that have been selected for conservation purposes and which were the subject of considerable focus in the EIS.

The Project will interact with wetland areas particularly as a result of the ground disturbance associated with its construction phase. Through its Project planning and design work to date, Alderon has attempted to avoid or reduce interactions with wetland areas where possible and feasible, and has identified and proposed other relevant mitigation measures in the EIS, including maintaining natural drainage patterns where possible, erosion and sediment controls, progressive rehabilitation and others.

Alderon has completed a number of studies related to wetlands within and near the Project area, including a review of existing and available information and datasets, as well as dedicated wetland inventories and other vegetation and wildlife surveys and a larger Ecological Land Classification (ELC) exercise (EIS Volume 1, Part II, Appendix B). These studies have been regional in nature, and therefore covered both the originally proposed (Option 3A) and alternative (Option 2) rail routings. The description of the existing environment for this VEC presented in the EIS is therefore equally relevant to both of the rail routing options under evaluation here.

The regional ELC study has allowed for the calculation and analysis of the total amount of habitat that would be directly lost or altered as a result of the Project, as well as the amount (and relative proportion) of various individual habitat types affected. In the EIS, the total direct loss of habitat within the previously affected area for the railway and road (Option 3A) was estimated at 216.2 hectares. Option 2 would see the area of affected habitat decreased substantially to 165.4 hectares, a change of - 93.2 hectares (Table 2).

The amount of habitat affected in total and for each ELC habitat type is presented in Table 2 for both the original rail line and access road configuration (Option 3A) and the Option 2 rail route. Option 2 would see the proposed rail line shift eastward before heading northwest, encircling an area of upland habitat, before turning northeast again and paralleling the existing Cliffs Natural Resources rail load-out facility and the QSN&L railway.

With particular reference to wetlands, as illustrated in Table 2 and Figure 3, Option 2 would result in considerably less interaction with wetlands areas as compared to Option 3A.

Of particular note, the Option 2 rail line routing would avoid interacting directly with the Jean Lake Rapids Management Unit, as well as increasing the distance between the Project's rail infrastructure and the Elephant Head Management Unit (Figure 3).

Figure 3 Ecological Land Classification Habitat Types

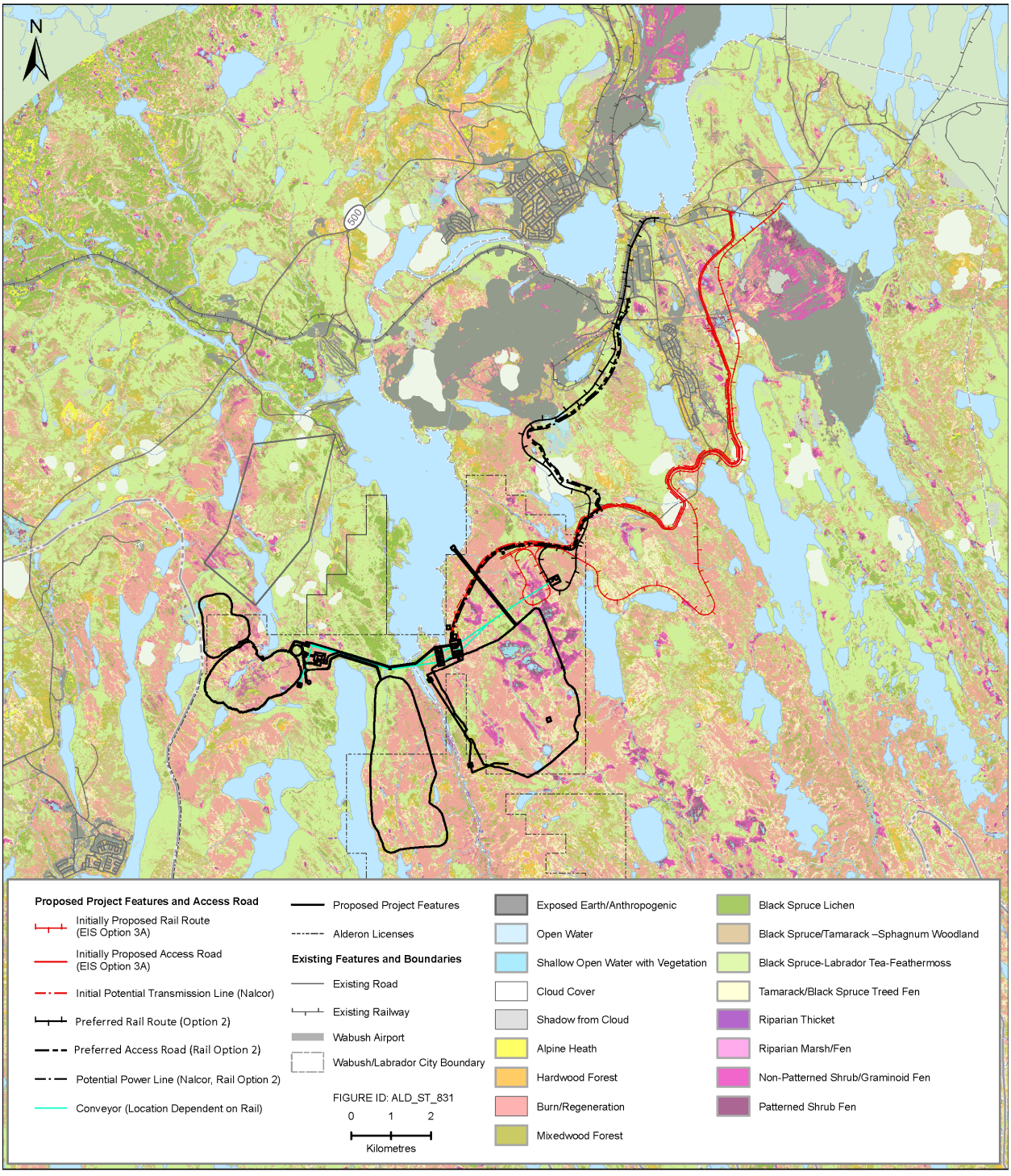


Table 1 Kami Iron Ore Project – Rail Component: Affected Areas by ELC Habitat Type

ELC Habitat Type	Area Directly Affected by ELC Habitat Type (hectares)					
	Rail			Road		
	EIS Option 3A	Option 2	Change	EIS Option 3A	Option 2	Change
Exposed Earth/Anthropogenic	1.40	5.07	3.67	6.22	1.18	-5.04
Open Water	0.15	0.97	0.83	0.00	1.24	1.24
Shallow Open Water with Vegetation	0.44	0.88	0.45	0.32	0.63	0.31
Cloud	4.73	3.69	-1.04	12.92	6.05	-6.87
Shadow	0.47	0.19	-0.28	1.59	1.27	-0.32
Alpine Heath	0.06	0.01	-0.06	0.36	0.03	-0.33
Hardwood Forest	0.36	0.46	0.10	2.63	0.49	-2.14
Hardwood Forest burn/Regen	8.34	2.44	-5.90	12.48	6.14	-6.34
Mixedwood Forest	3.38	2.53	-0.85	10.39	4.85	-5.55
Mixwoord Forest Burn/Regen	0.62	0.13	-0.49	3.77	2.28	-1.49
Black Spruce-Lichen	1.43	1.34	-0.09	2.80	1.22	-1.58
Softwood Burn/Regen	8.18	8.24	0.06	11.40	7.19	-4.21
Black Spruce/Tamarack – Sphagnum Woodland	13.02	6.89	-6.13	24.89	19.34	-5.55
Black Spruce-Labrador Tea-Feathermoss	17.14	6.91	-10.23	31.44	21.43	-10.02
Tamarack/Black Spruce Treed Fen	10.76	2.13	-8.63	15.92	6.06	-9.87
Riparian Thicket	0.09	0.02	-0.07	0.00	0.00	0.00
Riparian Marsh/Fen	0.15	0.01	-0.14	0.01	0.02	0.02
Non-Patterned Shrub/Graminoid Fen	1.30	0.87	-0.43	4.88	0.54	-4.34
Patterned Shrub Fen	0.47	0.16	-0.31	1.74	0.20	-1.55
Totals	**72.45**	**42.90**	**-29.54**	**143.75**	**80.12**	**-63.63**

5. Freshwater Fish, Fish Habitat and Fisheries

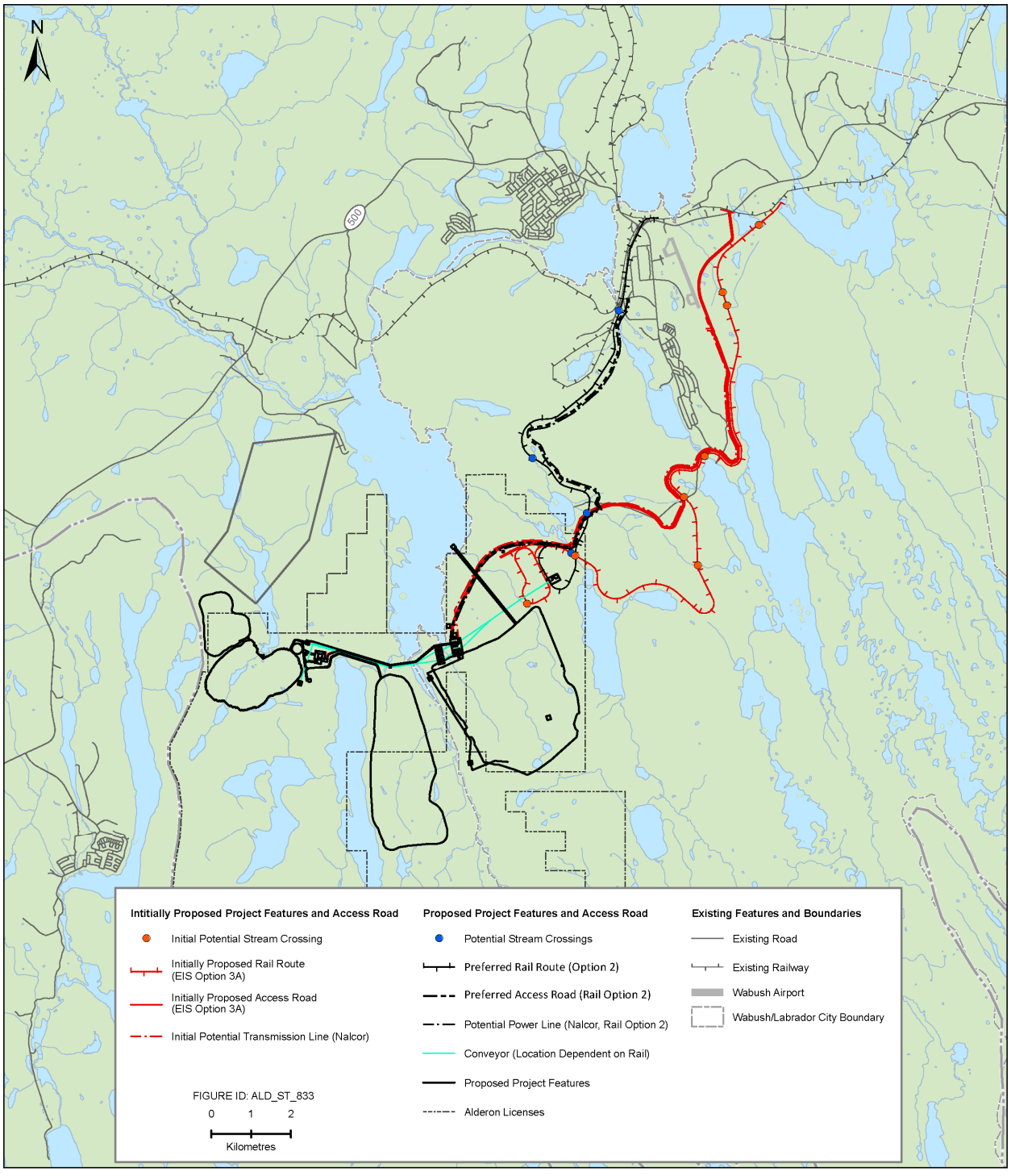
This VEC includes consideration of fish, their habitats and the use of these resources by people, and the potential effects of the Project on these aspects of the environment. Environmental interactions may result from in and near water activities and/or other Project-related disturbances (sedimentation and run-off, dust and blasting, accidental spills, etc), which may cause the alteration or removal of fish habitat, changes in water quality and water flow regimes, interference with fish migration and other issues. The PDA, LSA and RSA for this VEC also encompassed the physical footprint of the Project and the various waterbodies, watercourses and surrounding watersheds with which Project-related components and activities may interact. Existing conditions were described using available information and datasets supplemented by extensive, multi-year fish and fish habitat survey work completed by Alderon.

Although other Project components and activities are more relevant to potential fish and fish habitat and fisheries effects, the proposed rail line will inevitably cross over or adjacent to a number of watercourses and waterbodies, and will or may interact with these through the installation of culverts and bridges, any associated erosion and sedimentation, and in the unlikely event of an accidental spill or other event. Mitigation measures to avoid, reduce or (if necessary) respond to such effects have been identified and presented in the EIS. Although each of these measures will be applicable to (and implemented for) either rail option - and neither is likely to result in significant adverse environmental effects - some relevant differences between the two options in relation to this VEC are outlined below.

The initial (EIS) rail line option (Option 3A) follows a generally northeast route from the Kami Mine ore loading area to the QNS&L rail line near Loon and Flora Lakes. It would involve a total of seven watercourse crossings, as shown on Figure 4, that have been identified as requiring either culverts or other crossing structures, and which could therefore be considered the larger systems with potential fish habitat. These were also identified for assessment under the *Navigable Waters Protection Act* (NWPA) (although it should be noted that five of the seven crossings were characterized as being less than 1.2 m in width and were thus classified as minor waters).

The two larger watercourse crossing locations for Option 3A would be at Jean Lake (#C22) and Riordan Lake to Elephant Head (#C42). Additional details regarding these crossings, and the structure designs for each, are provided in the EIS and in other regulatory submissions made by Alderon. It should also be noted that a crossing within Loon Lake (#P1) would also be required to align the rail with the QNS&L line. This would consist of a large causeway through a portion of the lake with several large culverts to maintain connectivity between the two lake sections. Loon Lake has also recently been enhanced for fish habitat as part of a Fish Habitat Compensation Plan for another project, and therefore the crossing at this location would have to consider and address any potential for disturbance to existing and enhanced fish habitat at this location. Loon Lake is currently being monitored for fish utilization and stabilization as a result of these habitat enhancements.

Figure 4 Watercourse Crossings



Option 2 would follow a more northerly route and align with the Cliffs rail system near their crossings at Knoll and Jean Lakes. This alternative would utilize the existing Cliffs crossing locations at Knoll Lake and Jean Lake to avoid any further new access or development. In doing so, it would avoid all but two of the seven crossings noted above for Option 3A that would require culverts or other structures, with the two remaining crossings being located around Elephant Head Lake. The first remaining crossing is at Riordan Lake to Elephant Head Lake (identified as #C42 in NWPA Application and SC06 in the EIS). This crossing would likely remain in a similar location to that described for Option 3A above, as would the crossing structure. Field data showed that channel widths at this location range from 1.0 – 5.0 m and mean water depths at transects range from 0.11 to 057 m (Figure 5). This stream crossing has been included in Alderon's *Navigable Waters Protection Act* Application, and Transport Canada determined that it is not applicable to the provisions of the Act and is considered a "minor" waterway under the *NWPA*. The proposed structure for this watercourse crossing is a single span open bottom structure that will clearly span the designated watercourse and will maintain navigability by allowing a navigable envelope of at least 2 meters by 1.2 meters above the average summer low flow water levels. The second remaining crossing is on a small drainage flowing into Elephant Head Lake (SC07 within the EIS). Again, this crossing would likely remain in a similar location to that described for Option 3A above, as would the crossing structure. Field data showed this stream to have widths at this location ranging from 0.5 to 1.7 m and mean water depths ranging from 0.10 to 0.2 m (Figure 6). This stream crossing was also included in Alderon's *Navigable Waters Protection Act* Application, and Transport Canada determined that it is not applicable to the provisions of the Act and is considered a "minor" waterway under the *NWPA*.

In summary, for Option 2 there would be an overall reduction in the number of watercourse crossings required, and therefore, in the potential for adverse effects on Freshwater Fish, Fish Habitat and Fisheries. Option 2 would also avoid the Loon Lake area where existing fish habitat compensation enhancements exist for another project. For either rail routing option, watercourse crossings would utilize standard best practices during construction, as well as adhering to the Project Environmental Protection Plan and associated permit conditions to limit erosion, siltation, dust and any other interaction that could affect the VEC.

Additional information on each crossing will be collected in 2013 by Alderon and will be included in documentation submitted to DFO as part of applicable *Fisheries Act* authorizations.

Figure 5 Rail Line Crossing #C42 between Riordan Lake and Elephant Head Lake (June 6, 2013)

Figure 6 Rail Line Crossing SC07, small drainage into Elephant Head Lake (June 6, 2013)

6. Birds, Other Wildlife and Their Habitats, and Protected Areas

This rather broad VEC includes migratory and non-migratory birds (waterfowl, raptors, shorebirds, wetland birds, and other land birds), amphibians, small mammals, ungulates and furbearers, as well as existing or planned protected areas (such as parks, natural areas, reserves). Potential interactions between the Project and this VEC include changes in the presence, distribution, abundance, habitats and health of wildlife and populations in the region, as well as direct or indirect interaction with existing or planned protected areas which may compromise their ecological or social value. Key mitigation measures related to this VEC that were identified and proposed in the EIS include: minimizing Project-related disturbances and footprints, avoiding sensitive species and their known habitats where possible and feasible, prohibitions on hunting and harassment of wildlife by Project personnel, progressive rehabilitation of Project work areas, and other environmental protection measures during the Project's construction, operations and maintenance and decommissioning and reclamation phases.

Alderon has completed a number of studies related to wildlife and their habitats within and near the proposed Project area, including a review of existing and available information and datasets, as well as wildlife surveys in 2011 and 2012 and a larger ELC study to understand habitats and the overall ecological context. Alderon's wildlife surveys and background research for the Project has been regional in nature, and has covered both the originally proposed (Option 3A) and Option 2 rail lines, as has the ELC study area. The description of the existing environment for this VEC as presented in the EIS is therefore equally relevant to both of the rail routing options under evaluation here.

As indicated, in Figure 3, both rail options cross through similar vegetation communities and habitat types overall, and neither crosses through any particularly important or unique habitats in the area. Neither option interacts with the current ranges of the George River or Lac Joseph caribou herds. The mitigation measures outlined in the EIS would be equally applicable to (and implemented for) both rail routing options, and no change in the overall nature or degree of any Project-related effects on wildlife are anticipated with the selection and implementation of either alternative.

In terms of protected areas, the Option 2 rail line routing would avoid interacting directly with the Jean Lake Rapids Management Unit, as well as increasing the distance between the Project's rail infrastructure and the Elephant Head Management Unit (Figure 2).

7. Species at Risk and Species of Conservation Concern

Species at Risk (SAR) and Species of Conservation Concern (SOCC) include plant or animal species and/or their critical habitats that are of provincial, national or international importance, particularly when these are protected under legislation including the Newfoundland and Labrador *Endangered Species Act* (NL ESA) and the Canadian *Species at Risk Act* (SARA).

Alderon has completed a number of studies related to understanding the presence of or potential for SAR and SOCC within and near the Project area, including a review of existing and available information and datasets, as well as vegetation and wildlife surveys in 2011 and 2012

and a regional ELC study. The Olive-sided Flycatcher and Rusty Blackbird are listed under *NL ESA* and/or *SARA* and were observed during Alderon's field study work, whereas other avifauna species such as Harlequin Duck and Common Nighthawk were not observed but are known to occur in the general area. The Project is not anticipated to overlap or interact with the current ranges of either the George River or Lac Joseph caribou herds. A number of plant SOCC were also found in the area during Alderon's vegetation surveys in 2011 and 2012. Key mitigation measures related to this VEC include the identification / delineation and avoidance of locations and habitats for these species in Project planning and implementation, potential movement of plants where required and feasible, reduction and minimization of project-related disturbances, and other such measures.

Alderon's wildlife survey work for the Project has been regional in nature, and has therefore covered both the originally proposed (Option 3A) and Option 2 rail lines, as has the ELC study area and the analysis and mapping of existing and available datasets on SAR and SOCC. Option 2 rail route would not increase the number of known or likely interactions with such species, and as reflected in the ELC mapping, it does not cross through any particularly important or unique habitat types in the area. The mitigation measures outlined in the EIS would be equally applicable to (and implemented for) both rail routing options, and no change in the overall nature or degree of any Project-related effects on this VEC are anticipated with the selection and implementation of either alternative.

Alderon is planning to conduct a field survey for listed and rare plants along Option 2 rail route in 2013, and will provide the results of this study to the applicable regulatory authorities once available.

8. Historic and Cultural Resources

Historic and Cultural Resources include sites, materials and landscapes or places of historic and archaeological, cultural, spiritual, paleontological and/or architectural importance. These may be protected under the Newfoundland and Labrador *Historic Resources Act*, and are also often valued by Aboriginal and other people for their cultural, spiritual, natural and/or scientific importance. The proposed Project will involve vegetation clearing and ground disturbance, which has the potential to disturb or destroy historic and cultural resources if these are present in an area.

Information gathering and analysis for the Project's EA included the completion of a Historic Resources Overview Assessment (HROA) for the Project area, which involved background research, field surveys, archaeological potential mapping and informant interviews. Through the HROA, Alderon did not identify any archaeological sites within the PDA or LSA. Most of the Project area and surrounding region was determined to be of relatively low archeological potential, with some areas of moderate to higher potential around certain waterbodies. No known sites of cultural or spiritual significance are located in the area.

The initial rail route (Option 3A) does not interact with known historic resources, and passes through an area of identified low potential. Option 2 rail route will be shorter in length and thus result in less overall ground disturbance. This route would also extend through an area of low

archaeological potential, and does not pass in close proximity to any waterbodies or other landscape features that may have enhanced potential to contain such resources.

Throughout the various phases of the Project, Alderon will implement standard precautionary and reporting procedures through its EPP to address the unlikely event of an accidental discovery of historic resources. The mitigation measures outlined in the EIS would be equally applicable to (and implemented for) both rail routing options, and no change in the overall nature or degree of any Project-related effects on this VEC are anticipated with the selection and implementation of either option.

9. Current Use of Lands and Resources for Traditional Purposes By Aboriginal Persons

There are no Aboriginal communities in proximity to the Project site, however, five Labrador and Québec Aboriginal communities and organizations claim Aboriginal rights/title to the Project area:

- Labrador Innu (Sheshatshiu Innu and Mushuau Innu of Natuashish);
- NunatuKavut Community Council (NCC);
- Uashat Mak Mani-Utenam Innu (Québec);
- Matimekush - Lac John Innu (Québec); and the
- Naskapi Nation of Kawawachikamach (Québec)

Although the Project will (during its various phases) affect the nature and use of specific land areas and resources, through both its direct ‘footprint” and associated disturbances (noise, dust, visibility), the existing and available information does not indicate that any of these groups, other than individual members of NCC who reside in Labrador West, currently undertake traditional land and resource use activities within the PDA or LSA. There are also no known sites in the area of historical, cultural or spiritual importance to any group which may be affected. As a result, the EIS predicted that the Project is not likely to adversely affect the Current Use of Lands and Resources for Traditional Purposes By Aboriginal Persons, and no additional information has since become available that would suggest otherwise.

Option 2 rail route is located within the same general area as the option assessed in the EIS, and is well within the LSA and RSA for this VEC. Existing and available information does not indicate that any of these groups, other than individual members of NCC who reside in Labrador West, currently undertake traditional land and resource use activities in the vicinity of either of the potential rail line options, and therefore no adverse effects on the Current Use of Lands and Resources for Traditional Purposes By Aboriginal Persons are likely to occur as a result of the selection, construction and operation of either rail option.

10. Other Current Use of Lands and Resources

Other Current Use of Lands and Resources was defined in the EIS as any current (1990 – present) land and resource use activities undertaken by non-Aboriginal communities in Western

Labrador or Fermont, Québec, including municipal, commercial and recreational pursuits. The EIS provides a detailed description of existing land and resource use activities in and near the proposed Project area, including: municipal land use, residences and cabins, fishing, other outdoor recreation, hunting, trapping and guiding, forestry, mineral exploration, agriculture, navigation, transportation, and communications within a large local and regional area (LSA and RSA) that fully encompasses both rail route options and their surrounding environments.

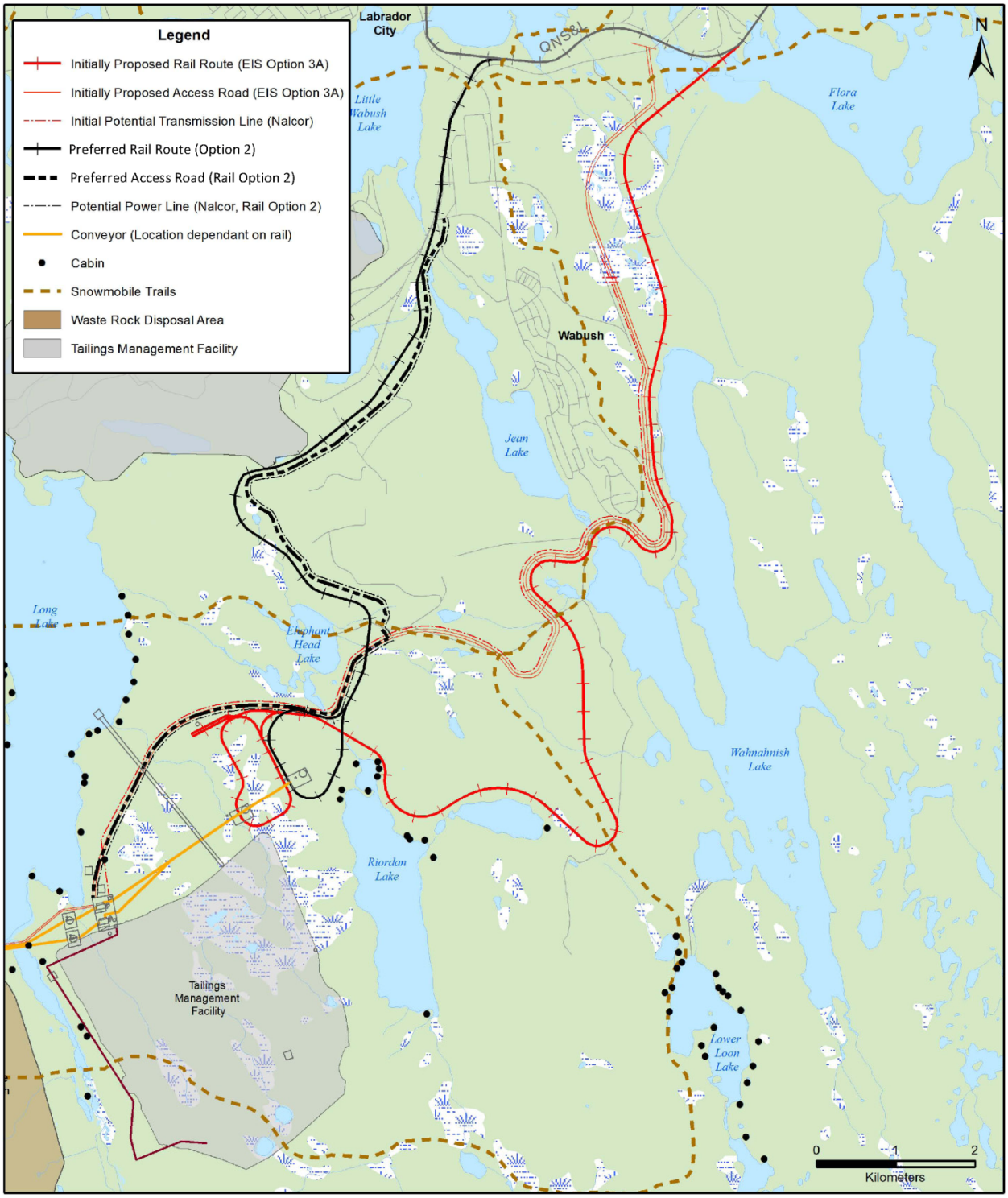
The main potential interactions between Project components and activities and current land and resource use activities include potential alterations of, or restricted access to, certain land areas, as well as other possible disturbances due to Project related noise, dust, visual intrusions or other influences. Although the Project will result in access restrictions to certain Project work sites, and Project features will be visible from some adjacent areas, the overall area to be affected is relatively small and this is not expected to affect the overall nature or intensity of land and resource use activities in the region.

Particular areas of concern and likely interaction that were raised in Project consultations and which were assessed in the EIS include possible effects on cabins and their owners (direct interaction, access issues), recreational areas and snowmobile trails, and noise and visual intrusions upon existing recreational activities and areas. Key mitigations identified in the EIS to avoid or reduce such effects include: Project design and siting; dust and noise control measures; installation of navigation signage; prohibition of harvesting and firearms at the Project work sites; and on-going communication and cooperation with local communities, recreational groups and cabin owners.

Although for many land and resource uses there would be no difference in the potential for, and nature and degree of, any adverse effects resulting from either rail route option, a number of likely or potential differences have been identified (Figure 7), including:

- A lower number of cabins are located within or near Option 2 rail route as compared to that presented and assessed in the EIS, and there would be less potential for interference with access to some cabins, particularly those in the Lower and Upper Loon Lake area and in the Riordan Lake area.
- The Option 2 rail route would also interact with the existing groomed snowmobile trail network at two locations, as compared to multiple crossings that would be associated with the original routing (Option 3A). Again, Alderon will continue to work with local snowmobile clubs to address this as Project planning moves forward.
- The Option 2 rail route is further removed from various waterbodies in the area that have been identified as important fishing areas, as well as several areas where local residents are known to hunt. It would also reduce the number of interactions with existing ski trails and trapping routes, and
- Moving the rail line and access road to the west (Option 2) would also result in the Project's rail and road infrastructure avoiding direct interaction with and/or being located further away from the Town of Wabush's municipal land base (especially areas of potential future expansion to the east) and its roadways and water supply area. Its location may also result in the rail line and its associated activities being less visible to community residents.

Figure 7 Key Environmental Features (Cabins and Trails)



11. Community Services and Infrastructure

Potential Project-related effects on Community Services and Infrastructure would result primarily from the demand for and use of local services and facilities by the Project and its labour force, particularly the transportation of personnel, materials and equipment to and through the region during construction, as well as the eventual population increase in the nearby Towns when Project workers and their families move to and reside in these communities.

The EIS provides a regional description of existing community services and infrastructure characteristics in the municipalities of Labrador City, Wabush and Fermont and the surrounding region including demographics, employment, health and social services, education and training, safety and security, municipal services and infrastructure, recreation and commercial and industrial facilities. Option 2 rail route is located within the same general area (PDA), and is situated well within the LSA and RSA for this VEC as defined in the EIS. The description of the existing environment for this VEC is therefore relevant (and equally applicable) to this rail routing option.

Railway construction and operational activities are not expected to be a key contributor to any such Project-related demands for local services and infrastructure, nor will this component of the Project in and of itself result in any important or different types of such demands and interactions. Key mitigation includes associated transportation and accommodation arrangements during construction, and on-going cooperation and communication with local authorities and organizations.

Overall, Option 2 rail route and its potential interactions with this VEC will be very similar in nature to Option 3A, and the effects management measures outlined in the EIS will be implemented for (and are equally applicable to) either rail routing option.

12. Health and Community Health

This VEC includes information and analysis related to: 1) physical human health and well-being, and 2) community (social) health and quality of life. The EIS provides a description of existing human (physical and social) health and community characteristics in Labrador West and Fermont, Québec based on key health elements and indicators (such as the presence of contaminants in various media, incidence of disease, self-assessed health and well-being, local crime rates, and other characteristics), as well as at the regional and provincial scales for context and comparative purposes. Option 2 rail route is located within the same general area (PDA), and is well within the LSA and RSA for this VEC as defined in the EIS. The description of the existing environment for this VEC is therefore relevant (and equally applicable) to this rail routing option.

Potential effects on human (physical) health would be associated primarily with Project-related emissions and associated changes in the quality of air, water, soil and/or country foods. Although guidelines for ambient particulate matter may be exceeded in localized areas for short periods during certain meteorological events, all other air quality predictions are below relevant standards and guidelines. Residual effects on soil and vegetation quality are predicted to be not measurable, and will therefore not likely have any adverse implications of human health in the

region. Railway construction and operational activities are not expected to be a key contributor to any such issues and both alternatives will be essentially identical in terms of their associated components and their construction and operational activities.

The modeling of noise, vibrations and other emissions from the Project indicates minimal interaction with populations or communities, and that these will be within defined standards and not pose a risk to human health. Option 2 rail route is slightly smaller in overall length than the original route, and thus would likely involve slightly less activity over a proportionally shorter timeframe, as well as being located at a greater distance from some potential receptors (see Section 3.1).

Possible issues related to community health that were identified and assessed in the EIS include the potential implications of the Project for public health and safety (injuries / accidents), substance abuse, crime, and perceptions of quality of life and well-being. Again, the rail component will not be a key contributor of any such issues, and the Option 2 rail route will be very similar in nature and overall location and timing as Option 3A, and will involve similar materials, activities, labour forces and associated arrangements (transportation, accommodation) and other characteristics. The mitigation measures outlined in the EIS will be implemented for (and are equally applicable to) this rail routing option, and no change in the overall nature or degree of any Project-related effects on community health are anticipated. If anything, moving the rail line and permanent access road to the west (and thus, further away from the Town of Wabush and its roadways and water supply) will further decrease the potential for accidental events and safety issues during all phases of the Project.

The Project will not result in significant adverse environmental effects on Health and Community Health. Adopting and implementing Option 2 rail route would not change the nature or degree (including significance) of its likely environmental effects on this VEC.

13. Economy, Employment and Business

The EIS provides a description of the regional economy and associated employment and business characteristics and activities in Labrador West and Fermont, Québec, as well as in Labrador and at the overall provincial scale, as relevant. Option 2 rail route is located within the same general area, and is contained within the LSA and RSA for this VEC as defined in the EIS. The description of the existing environment for this VEC is relevant (and equally applicable) to this alternative rail routing option.

The main potential effects of the Project (all components and activities) on Economy, Employment and Business are positive, and will include the creation of employment and business (procurement) opportunities during construction and operations (direct, indirect and induced) and associated taxation and other benefits at the local, regional and provincial scales. These potential Project benefits were modeled and described in detail in the EIS. Key effects management and mitigation measures include those designed to create and optimize Project-related benefits, including associated information sharing, hiring and procurement policies and procedures, and others.

Option 2 rail route will be very similar in nature to Option 3A, and will involve the same types and levels of labour, materials and other features. Although this rail route is slightly smaller in overall length than the original route, this is not anticipated to materially decrease or otherwise change the nature or magnitude of overall Project economic effects (benefits) in either phase, including the construction and operations labour force, associated business opportunities, and other outcomes. The effects management (benefits optimization) measures outlined in the EIS will be implemented for (and are equally applicable to) both rail routing options.

The Project was predicted to result in significant positive environmental effects on Economy, Employment and Business. Adopting and implementing Option 2 rail route would not change the nature or degree (including significance) of its likely environmental effects on this VEC.

14. Conclusion

The information and findings of the EIS for Route 3A are applicable to, and valid for, assessing the effects of Option 2 rail route. The description of the existing environment presented in the EIS has adequately covered and addressed both options. The local and regional study areas used for the various VECs assessed in the EIS encompassed both rail options, and therefore the environmental effects predictions, identified mitigation measures and other EA outcomes apply equally to both. Option 2 rail route will not likely result in significant adverse environmental effects, and is predicted to have a net reduction in environmental effects overall. No new or additional environmental baseline information, analysis or mitigation is required in order to advance this option through the EA process, or as part of on-going Project planning and design and future implementation.

For some environmental components, the adoption and implementation of Option 2 rail route are predicted to be neutral from an environmental perspective. Several instances were identified through the above analysis where this rail route would reduce the nature or number of likely Project interactions with certain environmental components. Alderon is aware of the various questions and concerns that have been raised with regard to the Option 3A rail route during the governmental, public and Aboriginal review of the EIS - particularly with regard to its location within the Town of Wabush PPWSA and the potential environmental issues and risks that may be associated with this.

As a result, and based on the results of the technical, operational and environmental analyses summarized above, Alderon is advancing Option 2 rail route as its proposed design concept for the rail component of the Kami Project in Labrador and is now seeking EA approval for this rail route.

Appendix C

Constraint Mapping for Wetland Management Units within the Town of Labrador City

Constraint Mapping for Wetland Management Units within the Town of Labrador City

The objective of this constraint mapping exercise is to identify potential areas within the Town of Labrador City that could be incorporated into the Town's Municipal Plan and Habitat Conservation Plan as a Management Unit (MU). Ideally, this area or areas would be similar to that of the Pike Lake South Management Unit and/or encompass habitat types or features of conservation interest. Alderon is providing this information to help the Town identify potential wetland locations which could be incorporated into their municipal plans.

The analysis was completed using the Ecological Land Classification (ELC) completed for the environmental assessment of the Project. Wetland areas were identified within the Labrador City Municipality that were not within a level of conservation protection. An initial layer showing the wetland habitat types that include: Tamarack/Black Spruce Treed Fen, Riparian Thicket, Riparian Marsh/Fen, Non-Patterned Shrub/Graminoid Fen, Patterned Shrub Fen and these parameters indicated potential areas for conservation consideration (Figure 1). To support the constraint mapping the identified areas were also compared to existing mining/mineral licenses (Figure 2).

Four of the five areas of interest (i.e., "Strawberry Lake", "Molar Lake South", "Huguette Lake", and "Nip Lake") were delineated to encompass an area of the same size as the Pike Lake South MU and then compared in terms of habitat type composition. The proposed Beverley Lake extension is an addition to the existing Beverly Lake MU, and is compared to the composition of the existing MU.

Figure 1 Wetland Areas of Interest for Consideration as Management Unit(s) in Labrador City

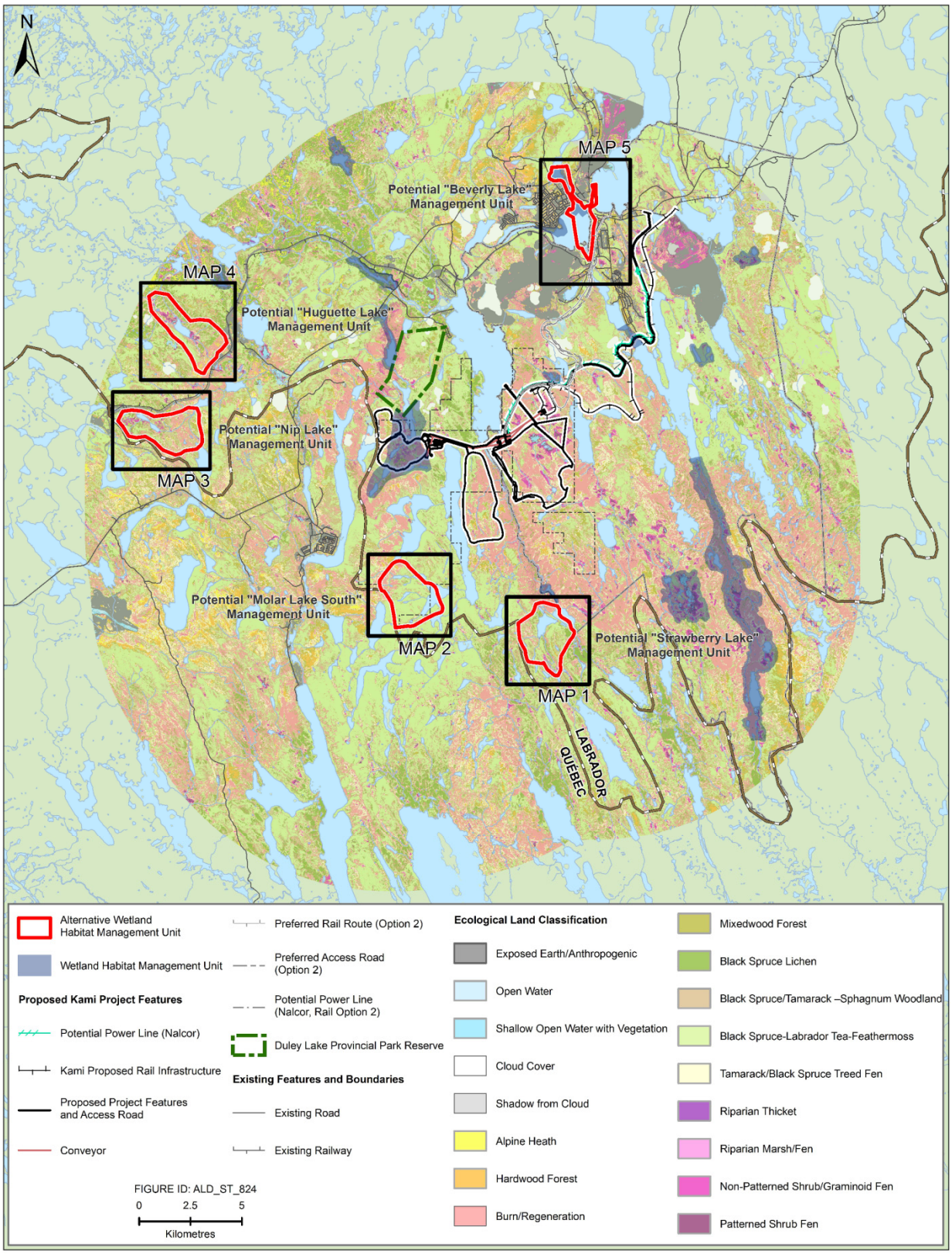
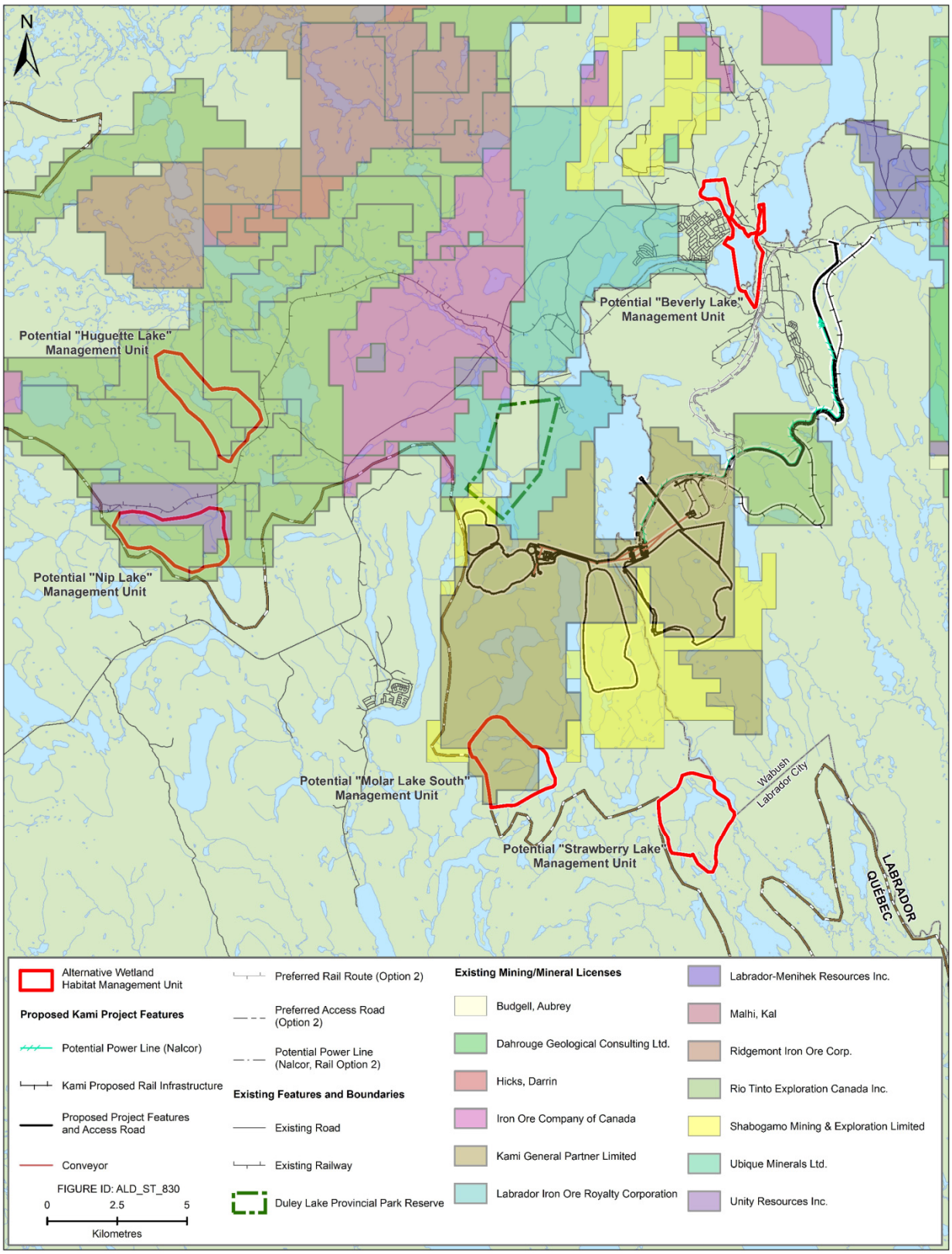


Figure 2: Wetland Areas of Interest for Consideration as Management Unit(s) and Their Overlap with Mining/Mineral Licenses



"Strawberry Lake" Area of Interest

The "Strawberry Lake" area of interest is located at the provincial border encompassing Strawberry Lake and a portion of Swainson Lake (Figure 1). Habitat composition is similar (within one percent) to the Pike Lake South MU for 12 of the 16 classes including: Exposed Earth/Anthropogenic, Open Water, Shallow Open Water with Vegetation, Shadow, Alpine Heath, Hardwood Forest, Mixed wood Forest, Mixed wood Forest burn/Regeneration, Riparian Thicket, Riparian Marsh/Fen and Patterned Shrub Fen (Table 1, Figures 3 and 4). The "Strawberry Lake" area of interest has less Black Spruce-Labrador Tea-Feathermoss and Black Spruce-Lichen, with more Softwood Burn/Regen – as compared to the Pike Lake South MU.

Figure 3 "Strawberry Lake" Area of Interest

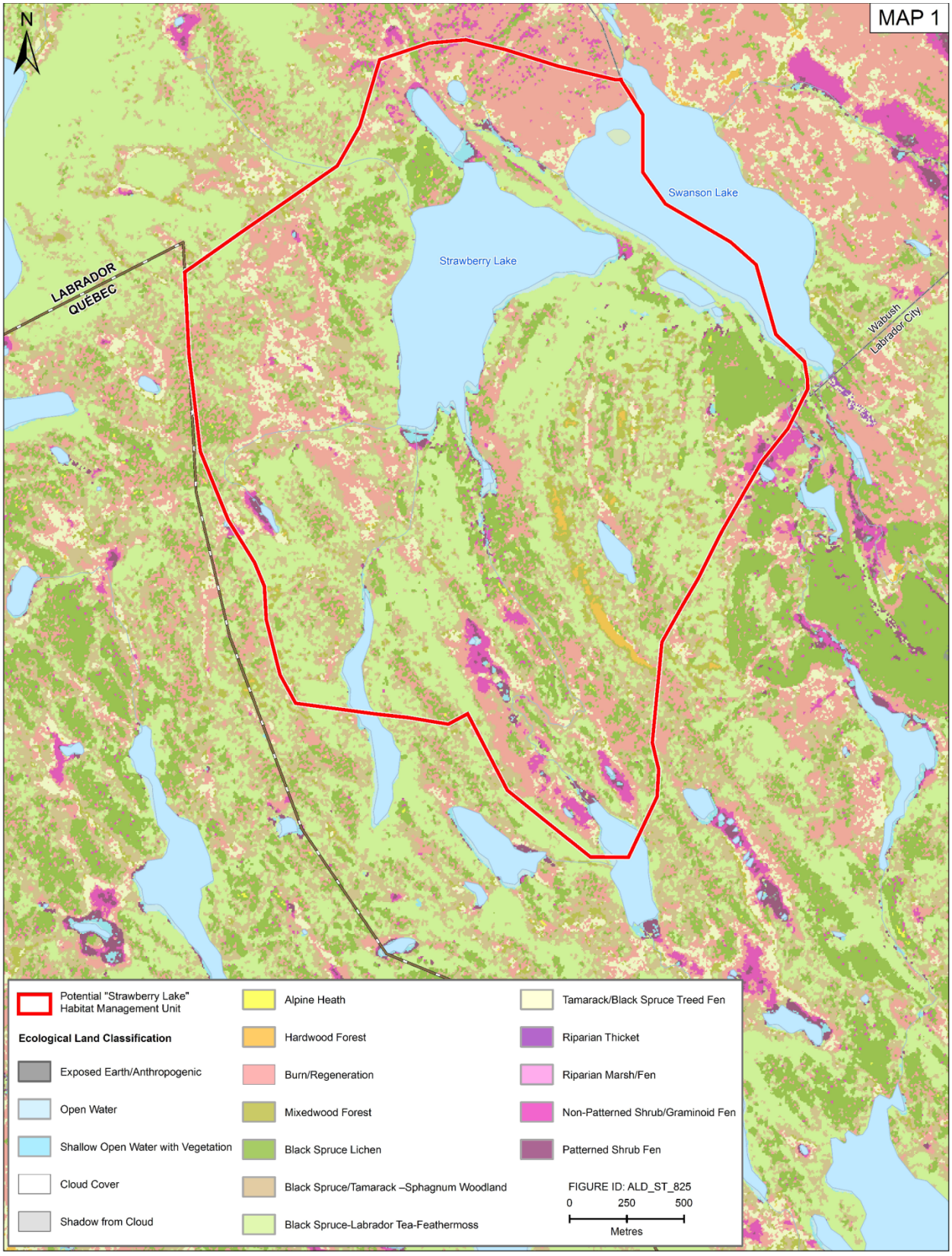
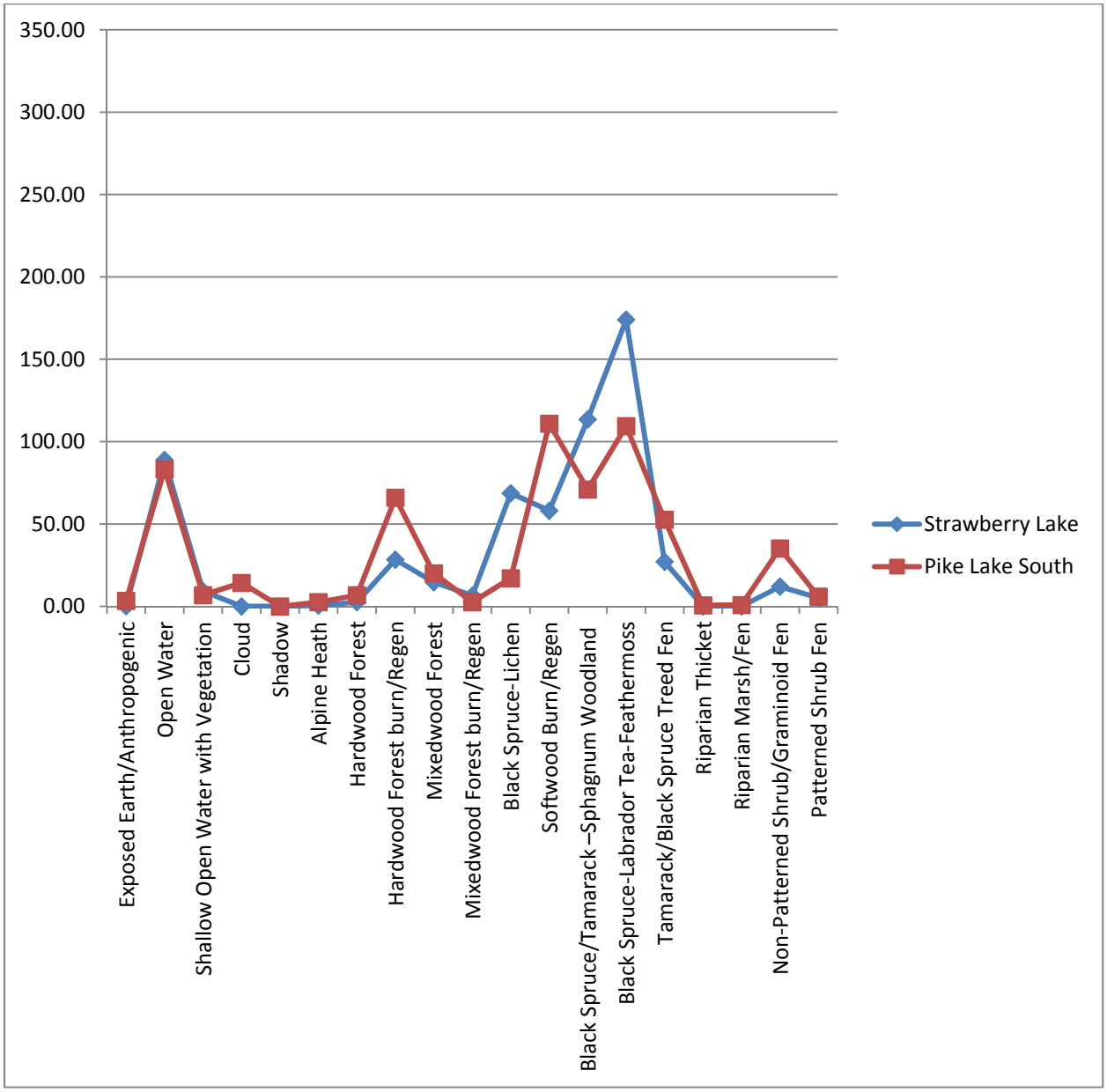


Table 1 Comparison of the Pike Lake South Management Unit with the "Strawberry Lake" Area of Interest

Ecological Land Class	Pike Lake South MU		"Strawberry Lake" Area of Interest		Difference	
	Area (ha)	% of total area	Area (ha)	% of total area	Area (ha)	% of total area
Exposed Earth/Anthropogenic	3.4	0.6	0.1	0.0	-3.3	-0.5
Open Water	83.3	13.7	88.8	14.6	5.5	0.9
Shallow Open Water with Vegetation	6.8	1.1	9.2	1.5	2.4	0.4
Cloud Cover	14.3	2.3	0.0	0.0	-14.3	-2.3
Shadow from Cloud	0.0	0.0	0.0	0.0	0.0	0.0
Alpine Heath	2.6	0.4	0.5	0.1	-2.1	-0.3
Hardwood Forest	6.8	1.1	2.6	0.4	-4.2	-0.7
Burn/Regeneration associated with Hardwood forest	66.0	10.8	28.4	4.7	-37.6	-6.2
Mixed wood Forest	20.0	3.3	14.7	2.4	-5.4	-0.9
Burn/Regeneration associates with Mixed Wood forest	2.6	0.4	6.5	1.1	3.9	0.6
Black Spruce Lichen	17.1	2.8	68.7	11.3	51.6	8.5
Burn/Regeneration associated with Soft Wood Forest	110.9	18.2	58.1	9.5	-52.8	-8.7
Black Spruce/Tamarack – Sphagnum Woodland	71.0	11.6	113.5	18.6	42.5	7.0
Black Spruce-Labrador Tea-Feathermoss	109.4	18.0	174.0	28.6	64.6	10.6
Tamarack/Black Spruce Treed Fen	52.6	8.6	27.1	4.4	-25.5	-4.2
Riparian Thicket	0.6	0.1	0.0	0.0	-0.6	-0.1
Riparian Marsh/Fen	0.8	0.1	0.0	0.0	-0.8	-0.1
Non-Patterned Shrub/Graminoid Fen	35.2	5.8	12.0	2.0	-23.2	-3.8
Patterned Shrub Fen	5.9	1.0	5.1	0.8	-0.8	-0.1
Total	609.6	100.0	609.3	100.0	-0.3	0.0

Figure 4 Difference in habitat (Ha) between the Pike Lake South Management Unit and the "Strawberry Lake" Area of Interest



"Molar Lake South" Area of Interest

The "Molar Lake" area of interest is located in the southern portion of the Labrador City Municipality and encompasses a several smaller water bodies as well as a portion of a larger lake (Figure 1). Habitat composition is similar (within 1 %) to the Pike Lake South MU for 10 of the 16 classes including: Exposed Earth/Anthropogenic, Shallow Open Water with Vegetation, Alpine Heath, Cloud, Hardwood Forest, Mixed wood Forest burn/Regent, Black Spruce/Tamarack- Sphagnum Woodland, Riparian Thicket, Riparian Marsh/Fen, and Patterned Shrub Fen (Table 2, Figures 5 and 6). The "Molar Lake" area of interest has less Softwood Burn/Regen, with more Black Spruce-Labrador Tea-Feathermoss - as compared to the Pike Lake South MU. This area overlaps with approximately 482 ha of Alderon mineral claim in the region.

Figure 5. "Molar Lake South" Area of Interest

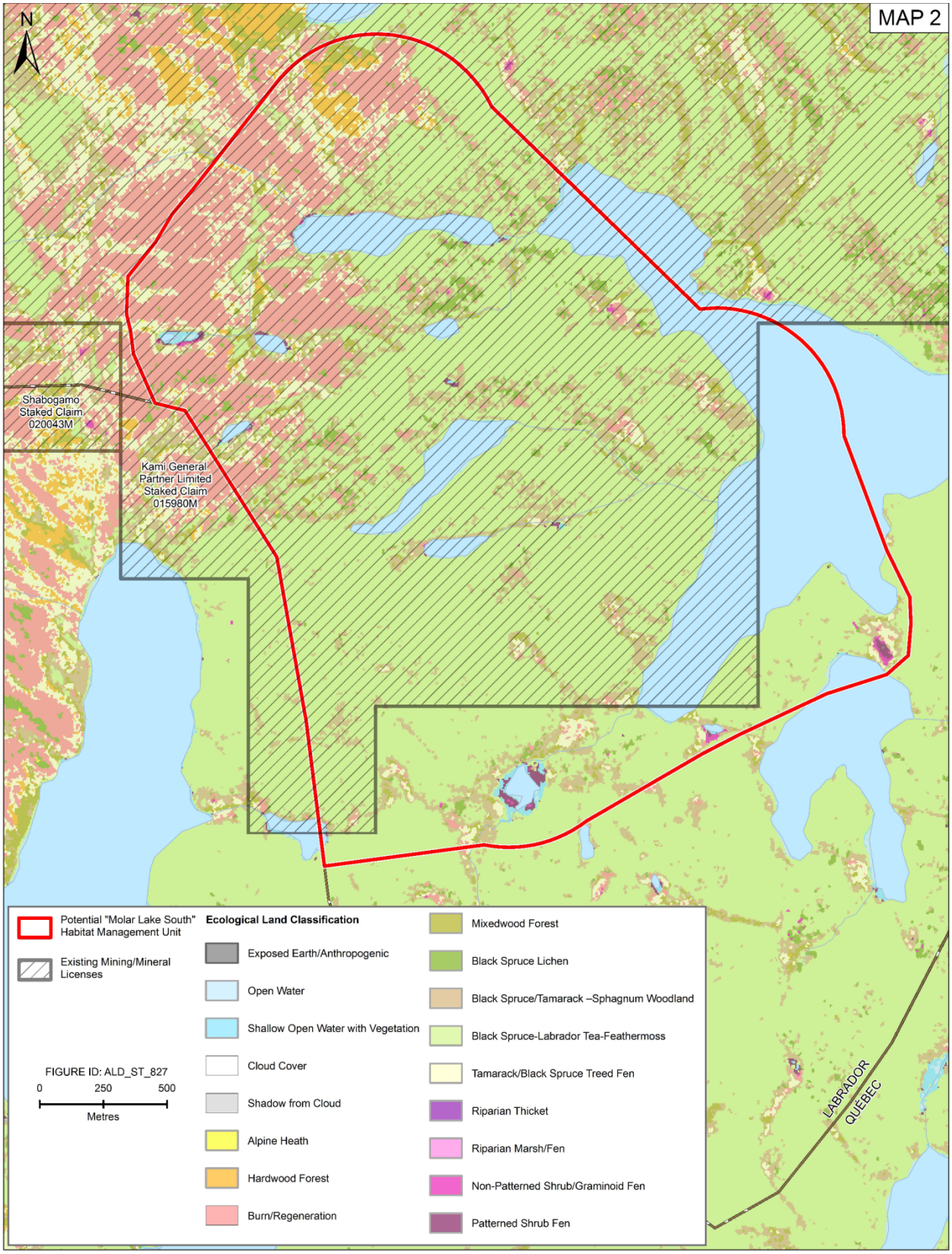
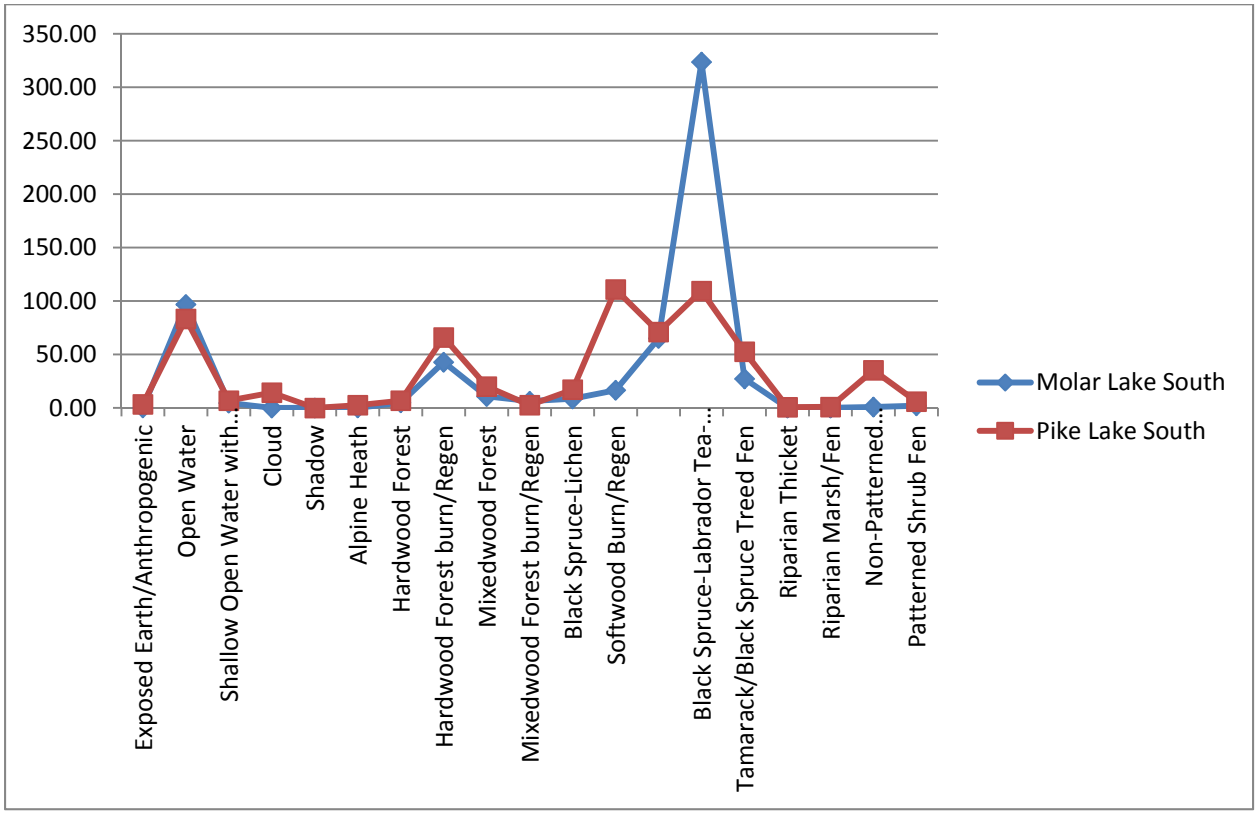


Table 2 Composition of habitat types with in the "Molar Lake South" Area of Interest

Ecological Land Class	Pike Lake South MU		"Molar Lake South" Area of Interest		Difference	
	Area (ha)	% of total area	Area (ha)	% of total area	Area (ha)	% of total area
Exposed Earth/Anthropogenic	3.4	0.6	0.0	0.0	3.4	0.6
Open Water	83.3	13.7	96.8	15.9	-13.5	-2.2
Shallow Open Water with Vegetation	6.8	1.1	4.6	0.8	2.3	0.4
Cloud Cover	14.3	2.3	0.0	0.0	14.3	2.3
Shadow from Cloud	0.0	0.0	0.0	0.0	0.0	0.0
Alpine Heath	2.6	0.4	0.0	0.0	2.5	0.4
Hardwood Forest	6.8	1.1	4.8	0.8	2.0	0.3
Burn/Regeneration associated with Hardwood forest	66.0	10.8	42.8	7.0	23.2	3.8
Mixed wood Forest	20.0	3.3	10.7	1.8	9.3	1.5
Burn/Regeneration associates with Mixed Wood forest	2.6	0.4	6.2	1.0	-3.6	-0.6
Black Spruce Lichen	17.1	2.8	8.5	1.4	8.6	1.4
Burn/Regeneration associated with Soft Wood Forest	110.9	18.2	16.5	2.7	94.3	15.5
Black Spruce/Tamarack – Sphagnum Woodland	71.0	11.6	65.0	10.7	6.0	1.0
Black Spruce-Labrador Tea-Feathermoss	109.4	18.0	323.5	53.1	-214.1	-35.1
Tamarack/Black Spruce Treed Fen	52.6	8.6	27.3	4.5	25.4	4.2
Riparian Thicket	0.6	0.1	0.0	0.0	0.6	0.1
Riparian Marsh/Fen	0.8	0.1	0.0	0.0	0.8	0.1
Non-Patterned Shrub/Graminoid Fen	35.2	5.8	0.8	0.1	34.4	5.6
Patterned Shrub Fen	5.9	1.0	2.0	0.3	3.9	0.6
Total	609.6	100.0	609.7	100.0	0.1	0.0

Figure 6 Difference in habitat (Ha) between the Pike Lake South MU and the "Molar Lake South" Area of Interest



"Huguette Lake" Area of Interest

The "Huguette Lake" area of interest is located in the western portion of the Labrador City Municipality and overlaps with a portion of Rio Tinto Exploration Claim (Figure 1). Habitat composition is similar (within 1 %) to the Pike Lake South MU for less than half, (i.e., 7) of the 16 classes indicating a markedly different landscape (Table 3, Figures 7 and 8).

Figure 7. "Huguette Lake" Area of Interest

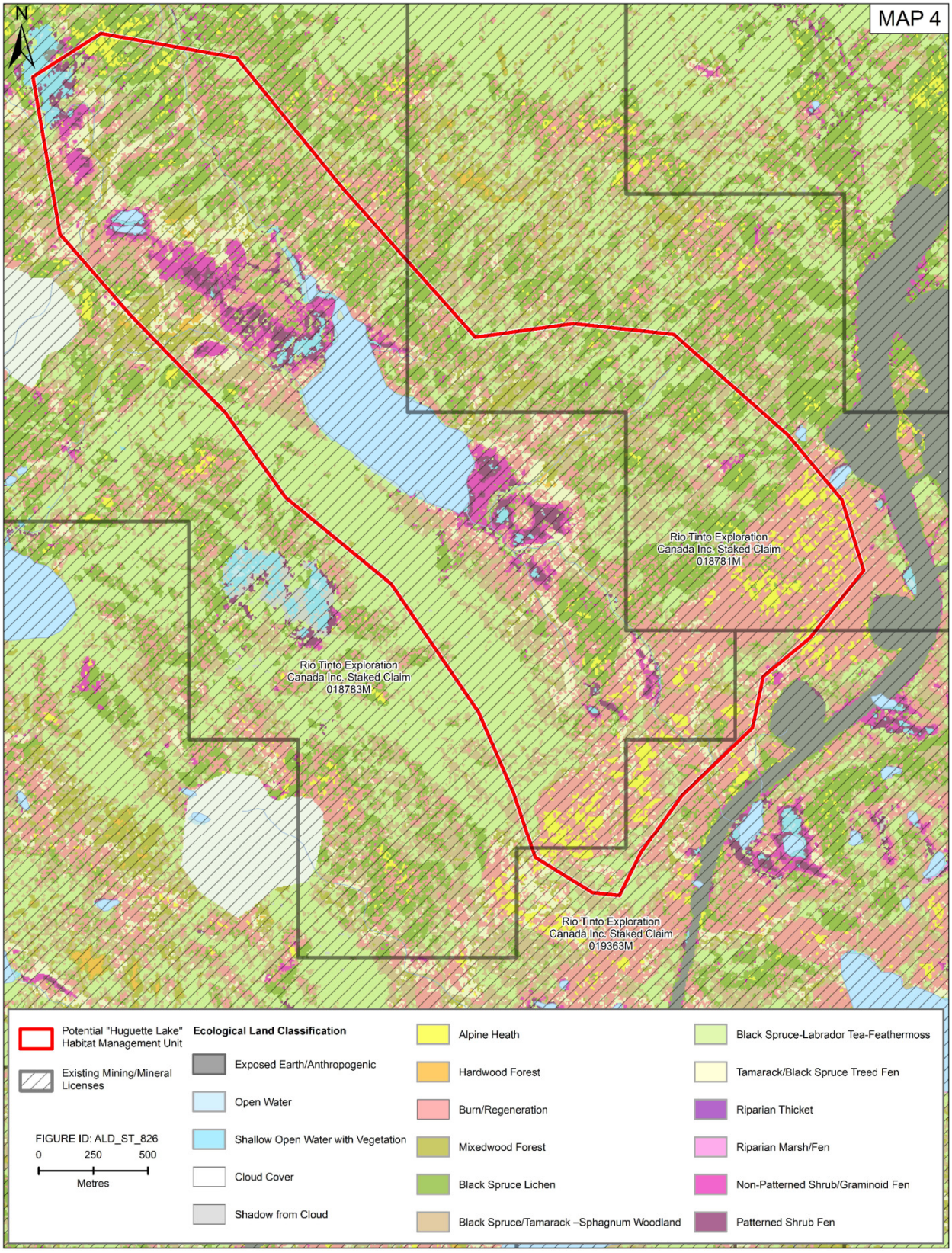
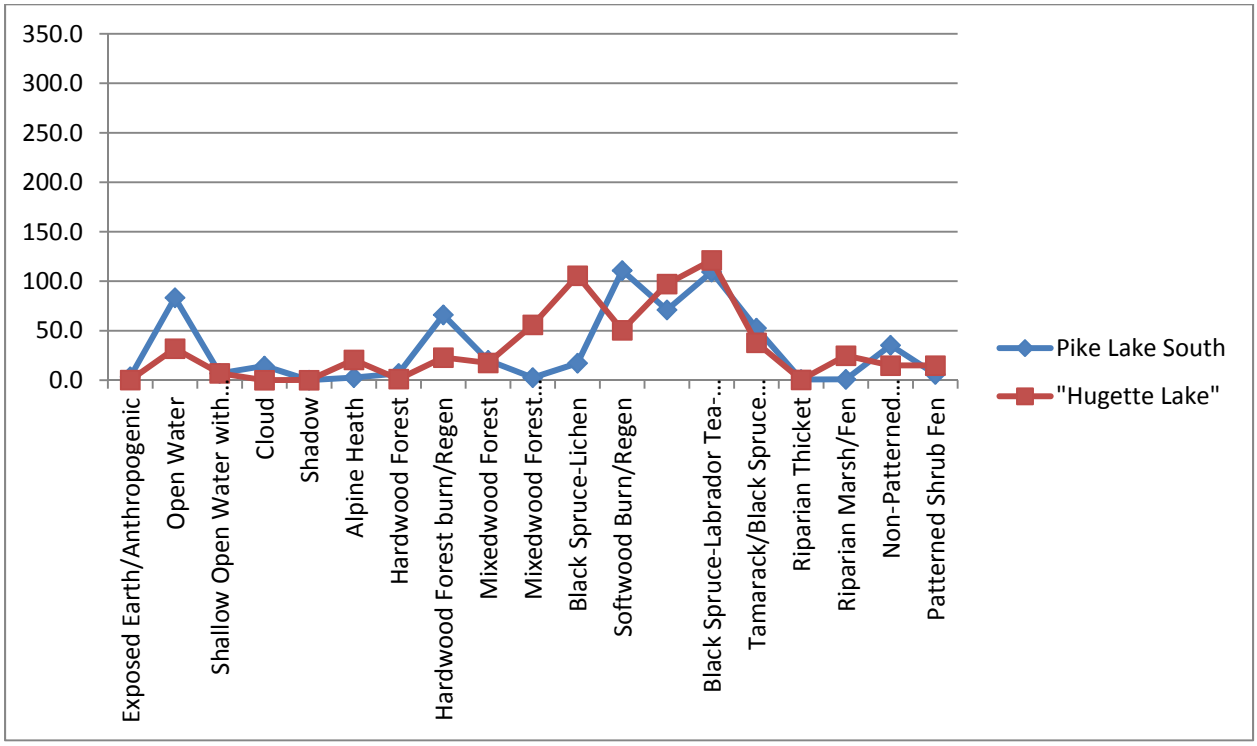


Table 3 Comparison of the Pike Lake South Management Unit and the "Huguette Lake" Area of Interest

Ecological Land Class	Pike Lake South MU		"Huguette Lake" Area of Interest		Difference	
	Area (ha)	% of total area	Area (ha)	% of total area	Area (ha)	% of total area
Exposed Earth/Anthropogenic	3.4	0.6	0.1	0.0	3.3	0.5
Open Water	83.3	13.7	31.9	5.2	51.4	8.4
Shallow Open Water with Vegetation	6.8	1.1	6.9	1.1	-0.1	0.0
Cloud Cover	14.3	2.3	0.0	0.0	14.3	2.3
Shadow from Cloud	0.0	0.0	0.1	0.0	-0.1	0.0
Alpine Heath	2.6	0.4	20.6	3.4	-18.0	-3.0
Hardwood Forest	6.8	1.1	1.1	0.2	5.6	0.9
Burn/Regeneration associated with Hardwood forest	66.0	10.8	22.9	3.8	43.1	7.1
Mixed wood Forest	20.0	3.3	17.4	2.9	2.6	0.4
Burn/Regeneration associates with Mixed Wood forest	2.6	0.4	55.9	9.2	-53.4	-8.8
Black Spruce Lichen	17.1	2.8	105.6	17.3	-88.5	-14.5
Burn/Regeneration associated with Soft Wood Forest	110.9	18.2	50.4	8.3	60.4	9.9
Black Spruce/Tamarack – Sphagnum Woodland	71.0	11.6	97.1	15.9	-26.2	-4.3
Black Spruce-Labrador Tea-Feathermoss	109.4	18.0	121.2	19.9	-11.8	-1.9
Tamarack/Black Spruce Treed Fen	52.6	8.6	37.9	6.2	14.7	2.4
Riparian Thicket	0.6	0.1	0.4	0.1	0.3	0.0
Riparian Marsh/Fen	0.8	0.1	24.8	4.1	-24.0	-3.9
Non-Patterned Shrub/Graminoid Fen	35.2	5.8	14.8	2.4	20.4	3.3
Patterned Shrub Fen	5.9	1.0	14.8	2.4	-8.9	-1.5
Total	609.6	100.0	609.6	100.0	0.0	0.0

Figure 8 Difference in Habitat (ha) between the Pike Lake South MU and the "Huguette Lake" Area of Interest



"Nip Lake" Area of Interest

The "Nip Lake" area of interest is located in the western portion of the Labrador City Municipality and encompasses several smaller water bodies (Figure 1). Habitat composition is similar (within one percent) to the Pike Lake South MU for 10 of the 16 classes (Table 4, Figures 9 and 10). The "Nip Lake" area of interest has less open water and Softwood Burn/Regen, with more Black Spruce/Tamarack –Sphagnum Woodland - as compared to the Pike Lake South MU.

Figure 9 "Nip Lake" Area of Interest

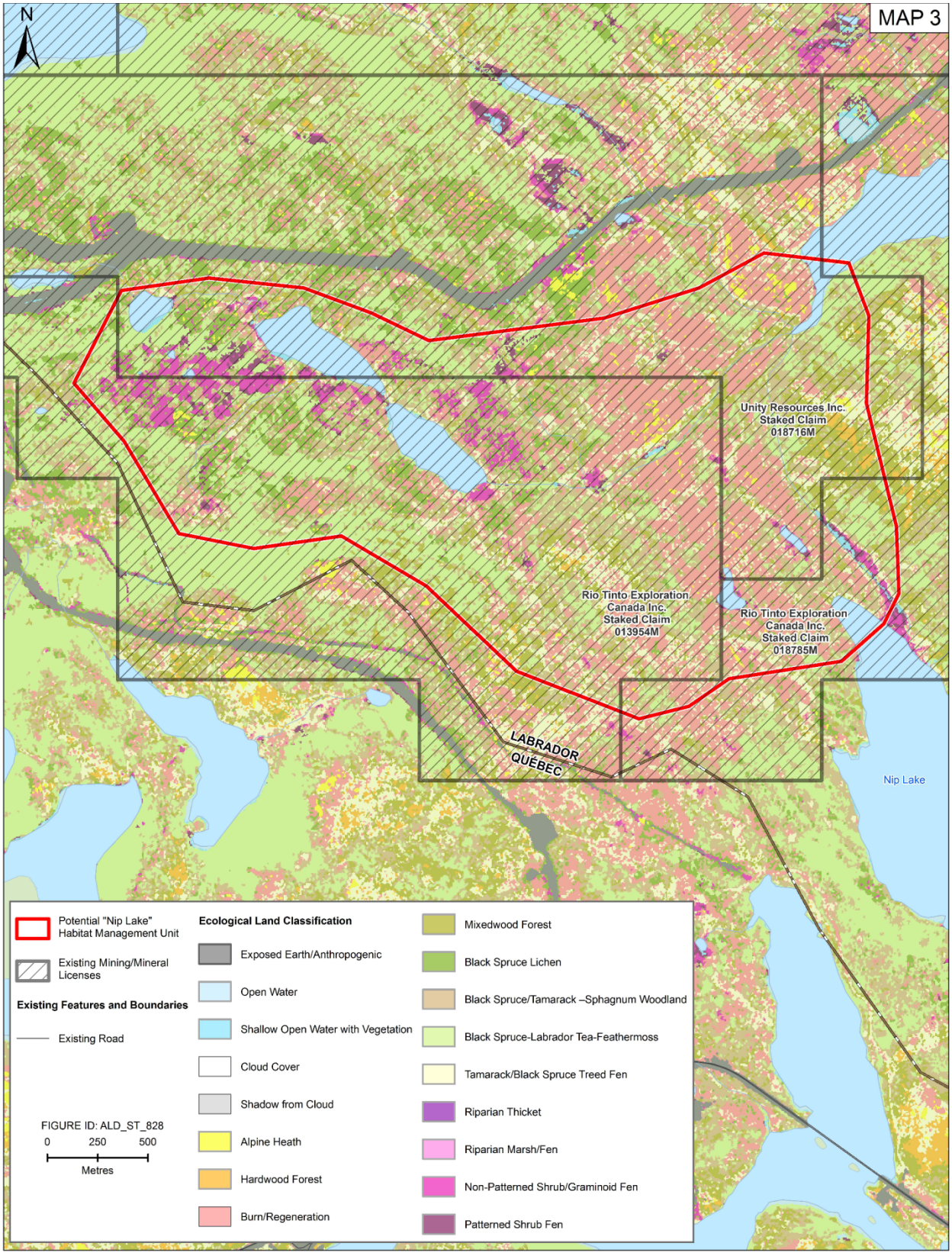
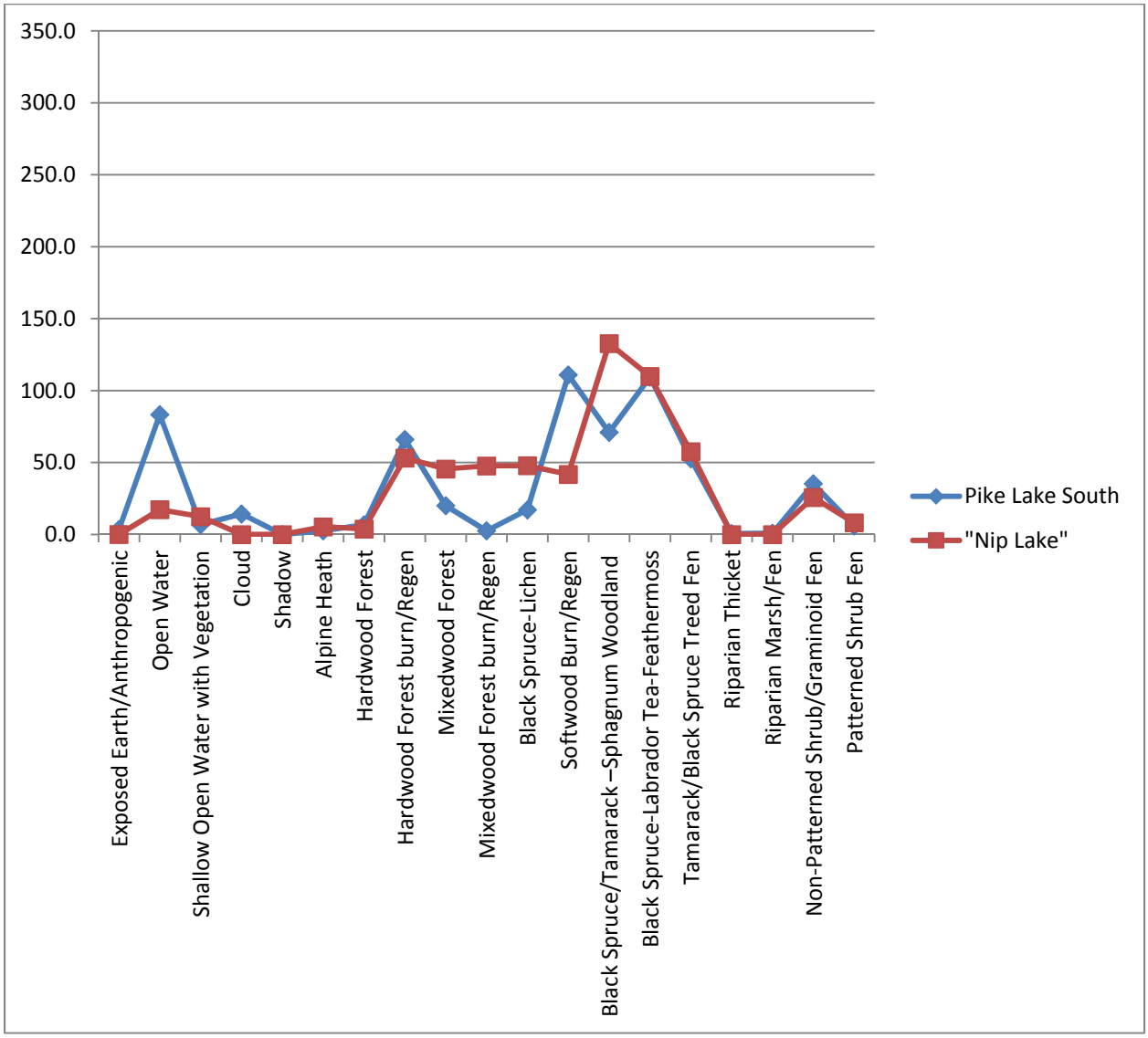


Table 4 Comparison of the Pike Lake South Management Unit with the "Nip Lake" Area of Interest

Ecological Land Class	Pike Lake South MU		"Nip Lake" Area of Interest		Difference	
	Area (ha)	% of total area	Area (ha)	% of total area	Area (ha)	% of total area
Exposed Earth/Anthropogenic	3.4	0.6	0.1	0.0	3.4	0.6
Open Water	83.3	13.7	17.3	2.8	66.1	10.8
Shallow Open Water with Vegetation	6.8	1.1	12.5	2.0	-5.6	-0.9
Cloud Cover	14.3	2.3	0.0	0.0	14.3	2.3
Shadow from Cloud	0.0	0.0	0.0	0.0	0.0	0.0
Alpine Heath	2.6	0.4	5.4	0.9	-2.8	-0.5
Hardwood Forest	6.8	1.1	3.8	0.6	3.0	0.5
Burn/Regeneration associated with Hardwood forest	66.0	10.8	53.2	8.7	12.8	2.1
Mixed wood Forest	20.0	3.3	45.6	7.5	-25.5	-4.2
Burn/Regeneration associates with Mixed Wood forest	2.6	0.4	47.7	7.8	-45.1	-7.4
Black Spruce Lichen	17.1	2.8	47.8	7.9	-30.7	-5.0
Burn/Regeneration associated with Soft Wood Forest	110.9	18.2	41.8	6.9	69.1	11.3
Black Spruce/Tamarack – Sphagnum Woodland	71.0	11.6	132.7	21.8	-61.8	-10.1
Black Spruce-Labrador Tea-Feathermoss	109.4	18.0	109.9	18.0	-0.5	-0.1
Tamarack/Black Spruce Treed Fen	52.6	8.6	57.6	9.5	-5.0	-0.8
Riparian Thicket	0.6	0.1	0.0	0.0	0.6	0.1
Riparian Marsh/Fen	0.8	0.1	0.0	0.0	0.8	0.1
Non-Patterned Shrub/Graminoid Fen	35.2	5.8	25.7	4.2	9.6	1.6
Patterned Shrub Fen	5.9	1.0	8.2	1.3	-2.2	-0.4
Total	609.6	100.0	609.2	100.0	0.4	0.0

Figure 10 Difference in Habitat (ha) between the Pike Lake South Management Unit and the "Nip Lake" Area of Interest



Beverly Lake Extension Area of Interest

Extending the existing Beverly Lake MU would increase the protected area by approximately 182 ha (Figures 1 and 11). The largest increase in protected habitat would be “open water” and “black spruce-Labrador tea-feathermoss”, with an increase of 57% and 18%, respectively. Expanding the existing Beverly Lake MU would also incorporate prime waterfowl habitat as indicated in Figure 11 west of the industrial area near the airport. In comparison to the 609.6 ha Pike Lake South MU, this new combined MU would be 318.5 ha, including 182.5 ha which is already protected by the existing Beverly Lake MU (Figure 12).

Figure 11. Beverly Lake Extension Area of Interest

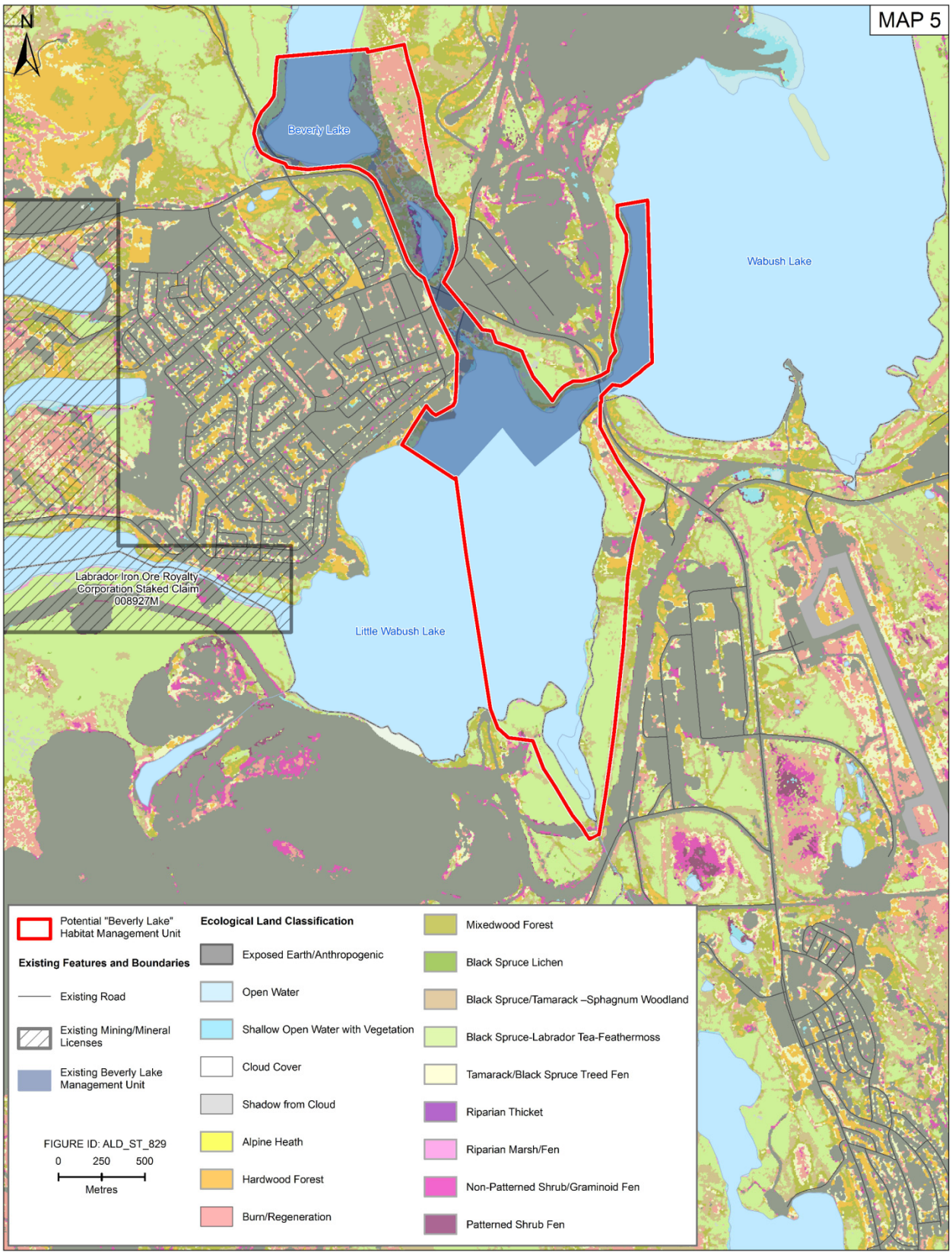
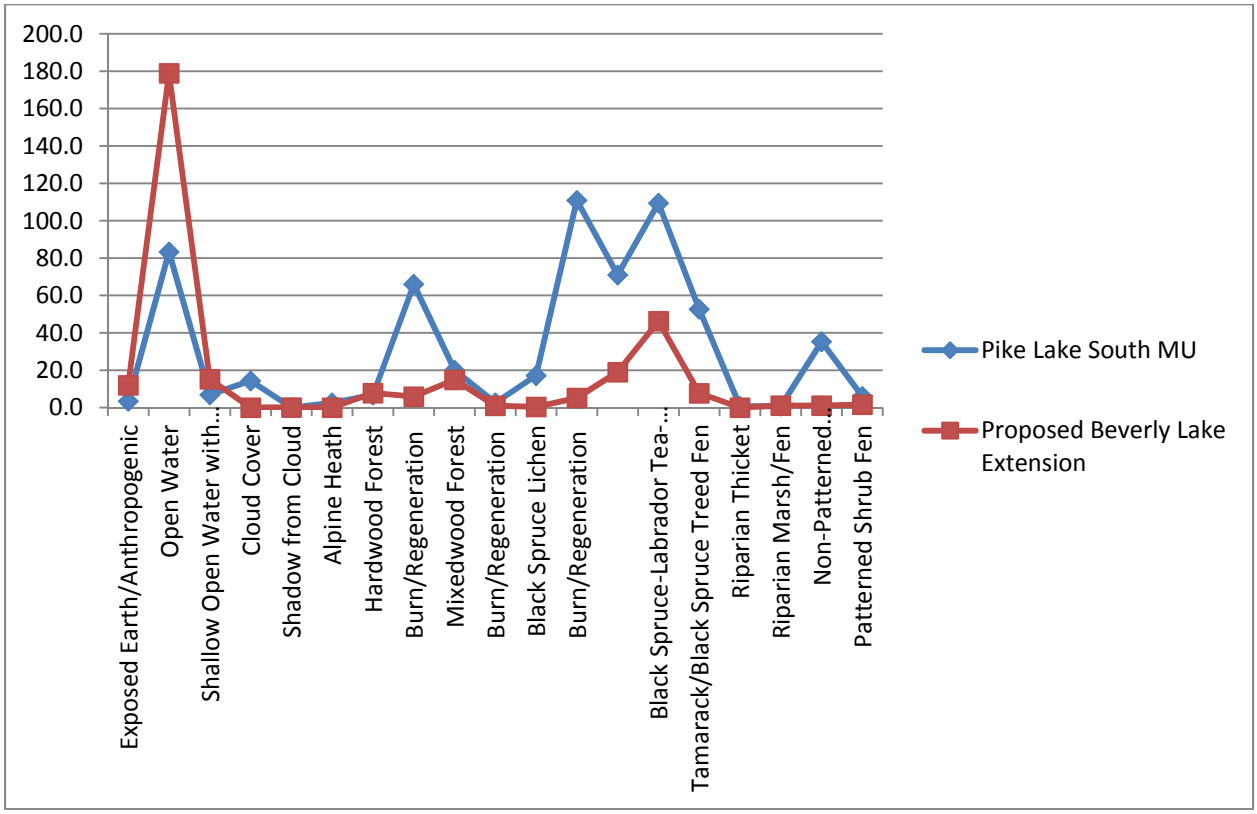


Table 5 Comparison of the Pike Lake South Management Unit and the Beverly Lake Extension Area of Interest

Ecological Land Class	Pike Lake South MU		Beverly Lake		Proposed Beverly Lake Extension		Change between Pike Lake South MU and Proposed Beverly Lake Extension with Existing Beverly		Change between Beverly Lake MU and Beverly Lake Extension	
	Area (ha)	% Area	Area (ha)	% Area	Area (ha)	% Area	Area (ha)	% Area	Area (ha)	% Area
Exposed Earth/Anthropogenic	3.4	0.6	8.9	6.6	12	3.8	-8.6	-3.2	3.1	-2.8
Open Water	83.3	13.7	75.4	55.5	178.9	56.2	-95.6	-42.5	103.5	0.7
Shallow Open Water with Vegetation	6.8	1.1	8.8	6.5	15.2	4.8	-8.4	-3.7	6.4	-1.7
Cloud Cover	14.3	2.3	0.0	0.0	0	0	14.3	2.3	0.0	0.0
Shadow from Cloud	0.0	0.0	0.1	0.1	0.1	0	-0.1	0.0	0.0	-0.1
Alpine Heath	2.6	0.4	0.0	0.0	0	0	2.6	0.4	0.0	0.0
Hardwood Forest	6.8	1.1	5.1	3.7	7.8	2.5	-1.0	-1.4	2.7	-1.2
Burn/Regeneration	66.0	10.8	0.6	0.5	5.9	1.9	60.1	8.9	5.3	1.4
Mixedwood Forest	20.0	3.3	8.3	6.1	14.9	4.7	5.1	-1.4	6.6	-1.4
Burn/Regeneration	2.6	0.4	0.6	0.5	1	0.3	1.6	0.1	0.4	-0.2
Black Spruce Lichen	17.1	2.8	0.1	0.1	0.4	0.1	16.7	2.7	0.3	0.0
Burn/Regeneration	110.9	18.2	0.8	0.6	5.2	1.6	105.7	16.6	4.5	1.0
Black Spruce/Tamarack –Sphagnum Woodland	71.0	11.6	8.0	5.9	19	6	52.0	5.6	11.0	0.1
Black Spruce-Labrador Tea-Feathermoss	109.4	18.0	13.0	9.6	46.3	14.5	63.1	3.5	33.3	4.9
Tamarack/Black Spruce Treed Fen	52.6	8.6	4.0	2.9	7.7	2.4	44.9	6.2	3.7	-0.5
Riparian Thicket	0.6	0.1	0.0	0.0	0	0	0.6	0.1	0.0	0.0
Riparian Marsh/Fen	0.8	0.1	0.6	0.4	1.1	0.4	-0.3	-0.3	0.5	0.0
Non-Patterned Shrub/Graminoid Fen	35.2	5.8	0.4	0.3	1.1	0.4	34.1	5.4	0.7	0.1
Patterned Shrub Fen	5.9	1.0	1.3	0.9	1.6	0.5	4.3	0.5	0.3	-0.4
Total	609.6	100.0	**135.9**	**100.0**	318.5	100	291.4	100	182.3	0.1

Figure 12 Difference in Habitat (ha) between the Pike Lake South Management Unit and the Beverly Lake Extension Area of Interest



Summary

The examination of the four areas of interest of similar size to that of the Pike Lake South MU indicate that in terms of habitat composition the “Strawberry Lake” area of interest is the most similar. The “Molar Lake” and “Nip Lake” areas of interest are next in terms of habitat similarity, however, they fall under existing mining / mineral licences. The “Huguette Lake” area of interest is the least similar. The information presented in this document can be used by the Town of Labrador City to identify potential wetland locations that could be incorporated into the 2007 Municipal Plan and the 2010 Habitat Conservation Plan.

APPENDIX D

Statistical Summary, Railway Occurrences 2012

Statistical Summary, Railway Occurrences 2012

Foreword

This document provides users of Canadian railway safety data with an annual summary of selected statistics on rail occurrences. It covers federally regulated railways only. Non-federally regulated data reported to the TSB are not included in this report.

Users of these statistics are advised that, in a live database, the occurrence data are constantly being updated. Consequently, the statistics can change slightly over time. Further, as many occurrences are not formally investigated, information recorded on some occurrences may not have been verified. Therefore, caution should be used when utilizing these statistics. The 2012 statistics presented here reflect the TSB database updated as of February 1, 2013.

To enhance awareness and increase the safety value of the material presented in the TSB Statistical Summary, Railway Occurrences 2012, readers are encouraged to copy or reprint in whole, or in part, for further distribution of the data presented (with acknowledgement of the source).

The TSB is an independent agency operating under its own Act of Parliament. Its sole aim is the advancement of transportation safety.

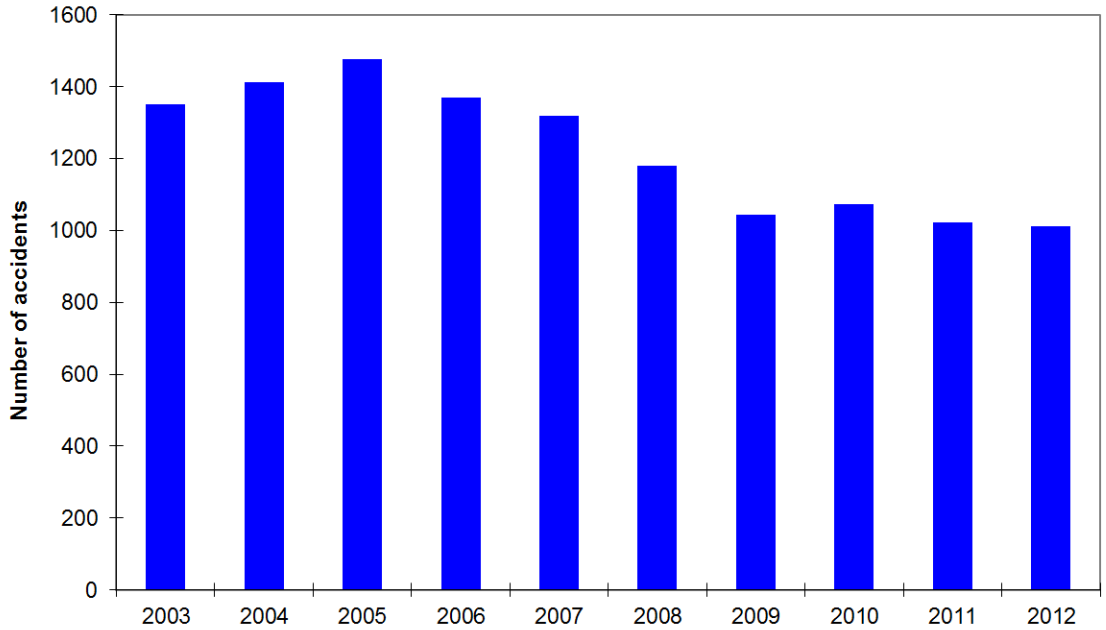
Railway occurrences in 2012

Accidents

Overview of Accidents and Casualties (Tables 1 to 3 - Appendix A)

In 2012, 1,011 rail accidents[Footnote 1] were reported to the TSB (Figure 1), similar to the 2011 total of 1,022 and a 10% decrease from the 2007-2011 average of 1,128.

Figure 1 - Number of Rail Accidents, 2003-2012 [D]



Freight trains accounted for 69% of all trains involved in rail accidents in 2012. A total of 48 were passenger trains (4%) with the remaining 27% comprising mainly single cars/cuts of cars, locomotives and track units.

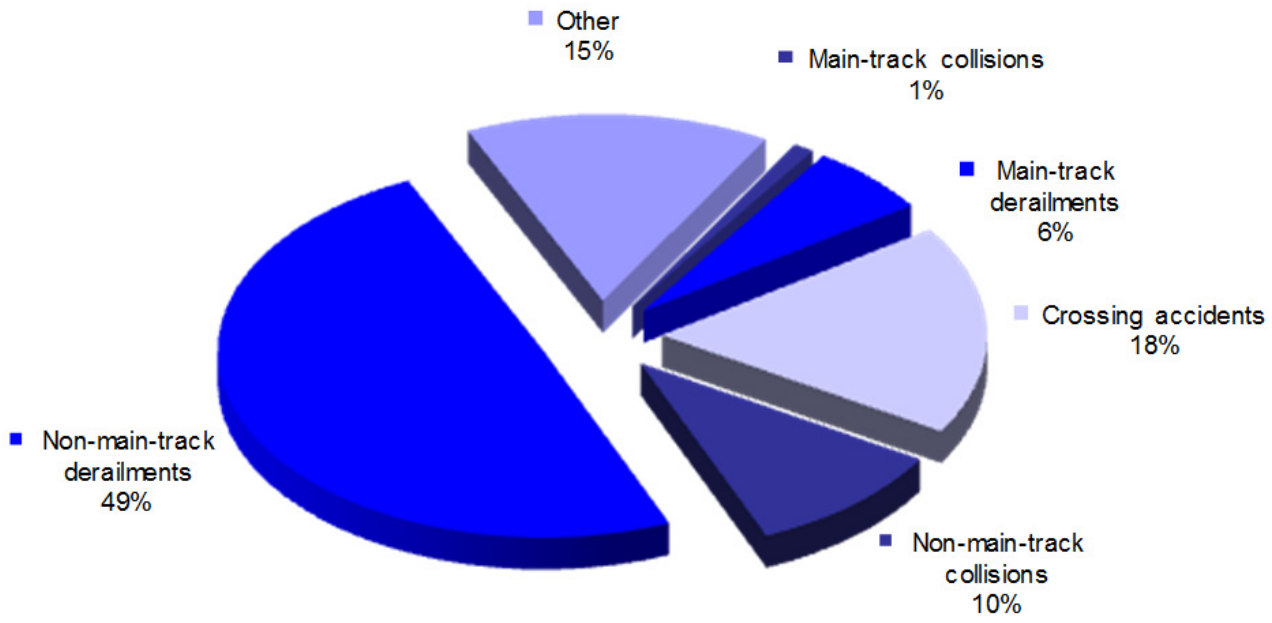
The largest proportion of reported rail accidents are non-main-track related. In 2012, these accounted for more than half of the total (Figure 2). Typically, most non-main-track accidents are minor, occurring during switching operations at speeds of less than 10 mph.

Main-track derailments and collisions accounted for 7% of all accidents in 2012, compared to 10% in the previous year.

In 2012, 18% of rail accidents involved vehicles or pedestrians at rail crossings, nearly unchanged from 17% over the previous five years.

The proportion of other accident types[Footnote 2] (15%) in 2012 is similar to the last five-year average (16%).

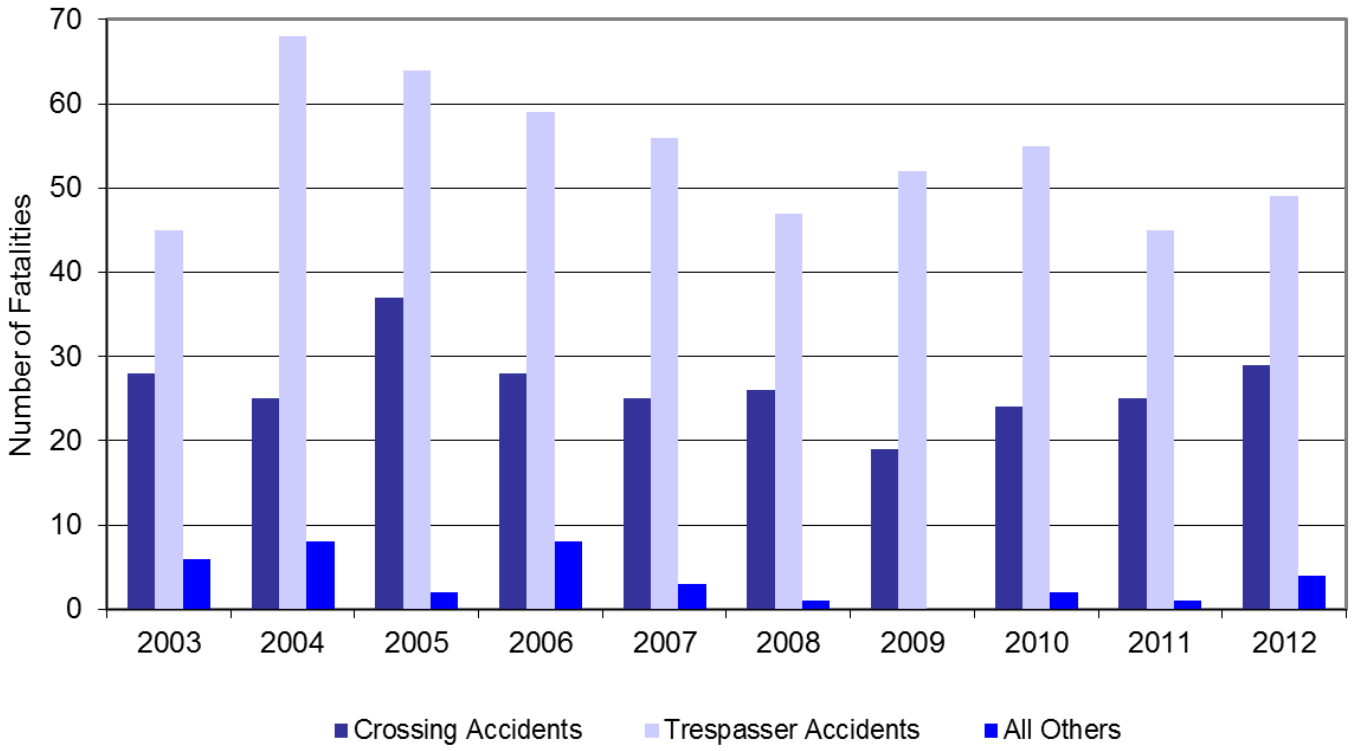
Figure 2 - Percentage of Rail Accidents by Type, 2012 [D]



In 2012, 118 accidents involved dangerous goods[Footnote 3], unchanged from 2011 and down from the five-year average of 147. Of these, 91% were non-main-track accidents. Two accidents resulted in a dangerous goods release in 2012, compared to 3 in 2011, and the five-year average of 3.

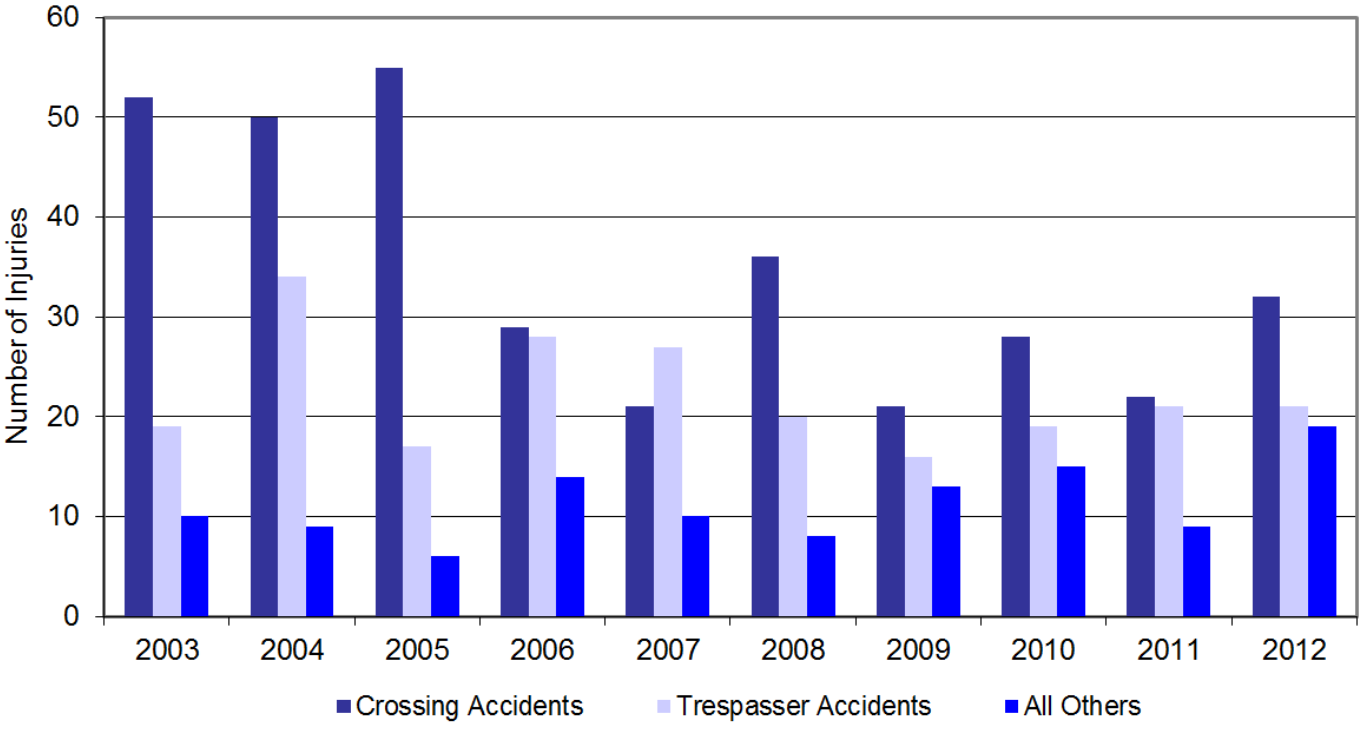
Rail fatalities totalled 82 in 2012, up 16% from the 71 recorded last year and up 8% from the five-year average. Trespasser[Footnote 4] fatalities was the largest fatality category with 49 in 2012, down 4% from five-year average of 51 (Figure 3). Crossing fatalities totalled 29 in 2012, compare to 25 last year and 24 for the five-year average. In 2012, four employees were fatally injured compared to 1 for the five-year average.

Figure 3 - Number of Fatalities by Type of Occurrence, 2003-2012 [D]



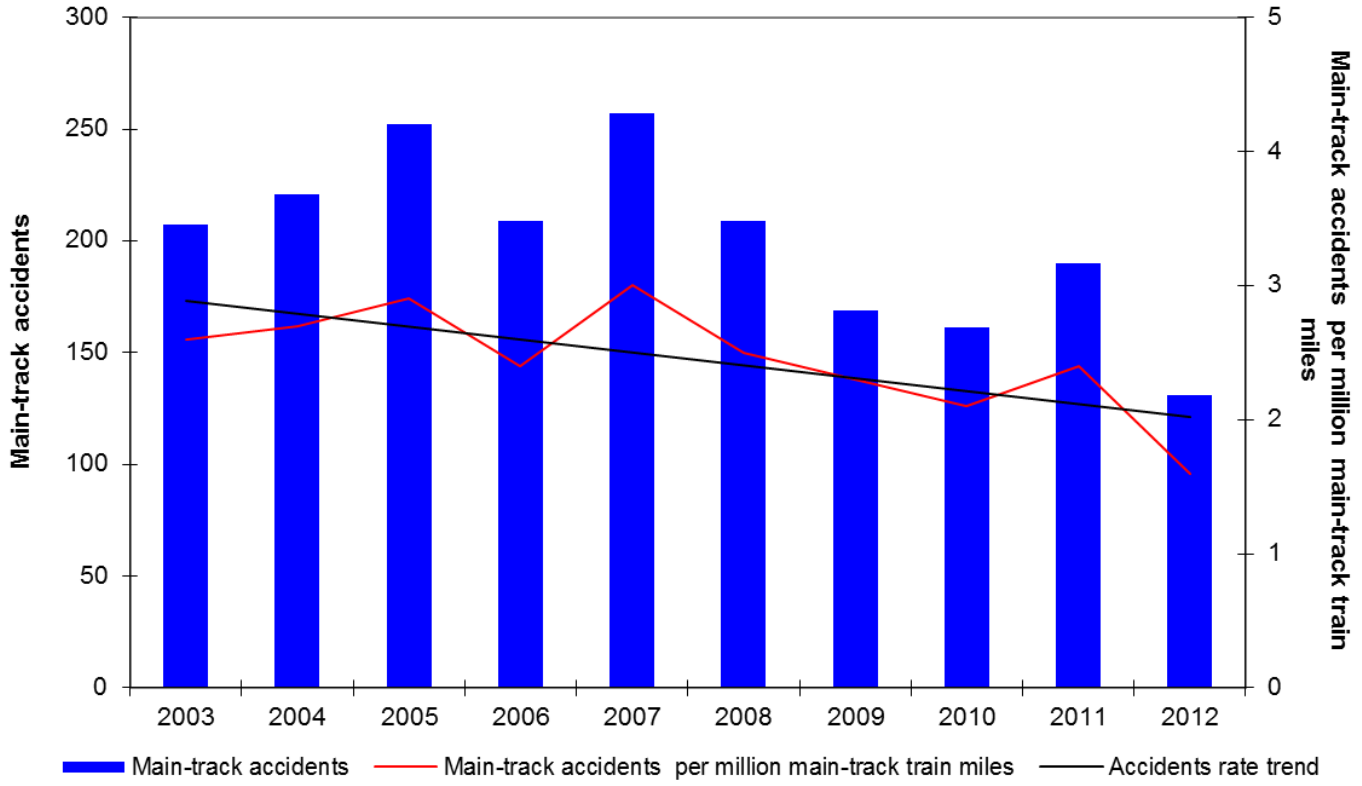
A total of 72 serious injuries resulted from rail occurrences in 2012 (Figure 4), up from 52 in 2011 and up from the five-year average of 57. Note that the VIA rail derailment near Burlington, Ontario, on 26 February, 2012 (R12T0038) resulted in 10 serious injuries to passengers. Trespasser injuries totalled 21 in 2012, the same as last year and the five-year average. Crossing accidents[Footnote 5] resulted in 32 injuries, up from 22 in 2011 and up from the five-year average of 26. The remaining 19 injuries occurred in other types of occurrences. A total of 9 rail employees were seriously injured in 2012.

Figure 4 - Number of Serious Injuries by Type of Occurrence, 2003-2012 [D]



The number of main-track accidents[Footnote 6] totaled 131 in 2012 (Figure 5), down 31% from 190 recorded in 2011 and down 34% from the five-year average of 197. Rail activity on main-track increased by 2%[Footnote 7] from the previous year. The main-track accident rate decreased 33%, from 2.4 main-track accidents per million main-track train-miles in 2011 to 1.6 in 2012. Statistical analysis using linear regression indicates a downward trend in accident rates (statistically at the $p < .02$ level)[Footnote 8] over the past 10 years.

Figure 5 - Number of Main-Track Accidents and Accident Rates, 2003-2012 [D]

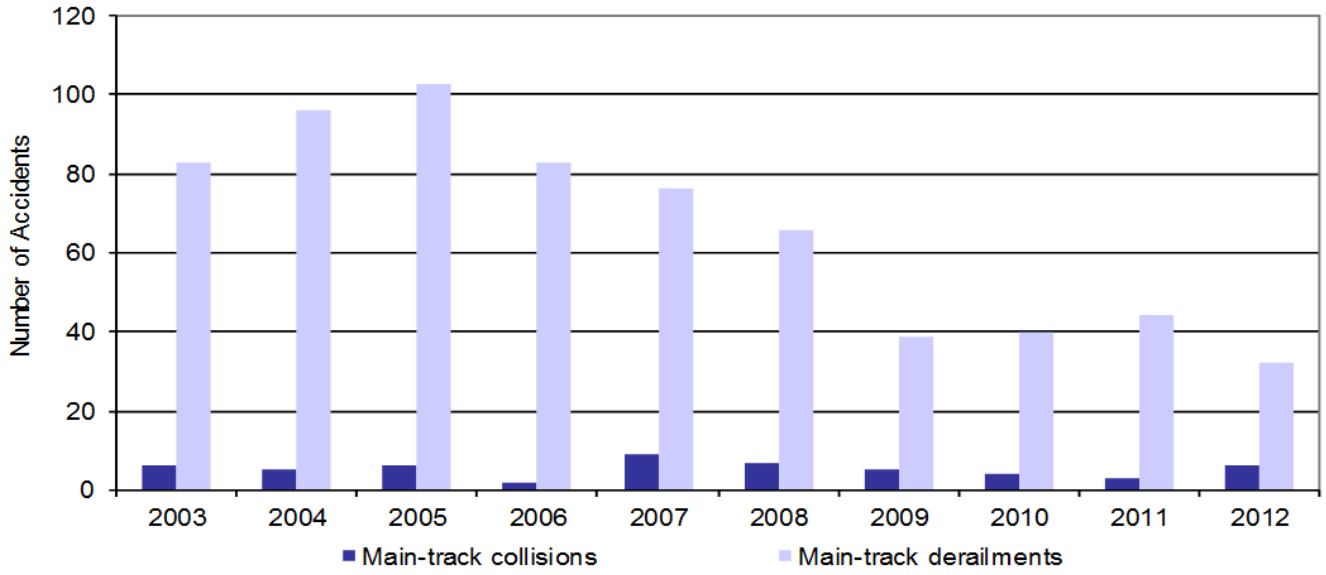


Accidents by Type

Main-track collisions and derailments are the most serious categories of rail accidents in terms of potential risk to the public and financial loss (e.g., when passenger trains are involved or dangerous goods are released from trains that derail while travelling at high speeds in populated areas).

There were six **main-track collisions** (Figure 6) in 2012, up three from the 2011 total and the same as the five-year average of six. No fatalities resulted from main-track collisions in 2012, but there was one serious injury. There was no release of dangerous goods as a result of main-track collisions.

Figure 6 - Number of Main-Track Collisions and Derailments, 2003-2012 [D]



A total of 63 **main-track derailments** (Table 4a & Table 4b) were reported in 2012, a 38% decrease from the 2011 total of 101 and a 41% decrease from the five-year average of 107 (Figure 6). The number of main-track derailments per million main-track train-miles decreased to 0.8 in 2012 from 1.3 the previous year and from the five-year average of 1.4. Statistical analysis using linear regression indicates a downward trend in accident rates (statistically at the $p < .002$ level) over the past 10 years.

Three fatalities and 10 serious injuries resulted from main-track derailments in 2012, all associated with the VIA rail derailments near Burlington on 26 February, 2012 (R12T0038).

In 2012, there were 6 main-track derailments involving dangerous goods, down from 20 for both 2011 and the five-year average. One of these resulted in a release of product, in this case Sodium Chlorate.

In 2012, 40% of assigned factors[Footnote 9] for main-track derailments were Track-related compared to the five-year average of 36%. Equipment-related factors accounted for 30% of all assigned factors compared to 32% for the five-year average. Actions-related factors[Footnote 10] were reported in 22% of main-track accidents in 2012 compare to the five-year average of 14%.

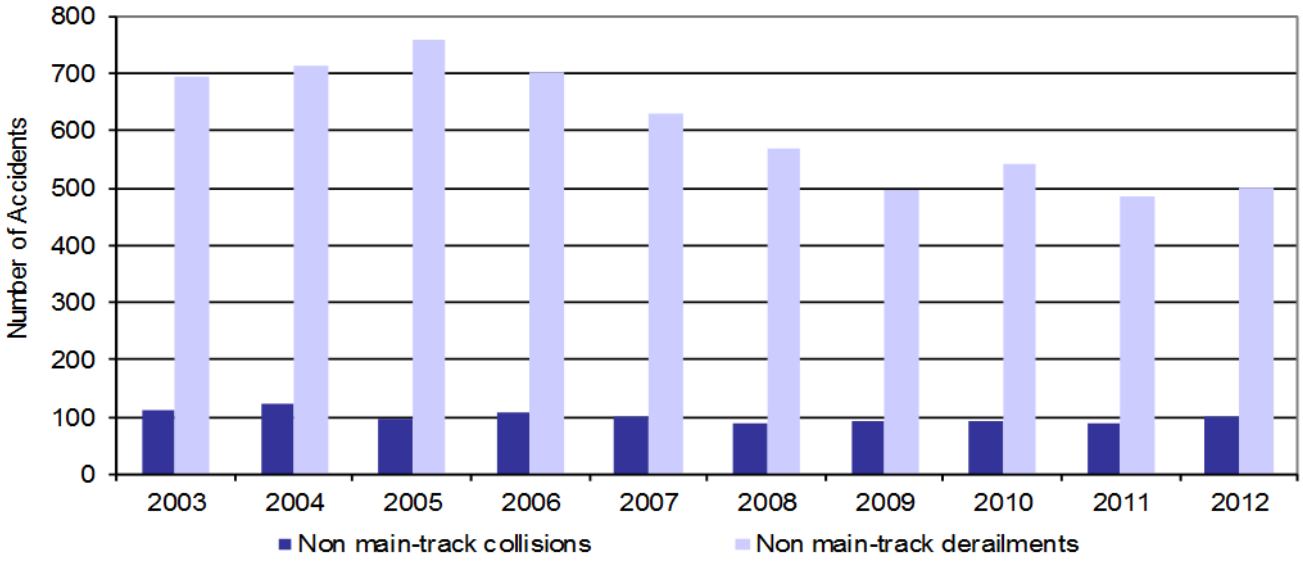
Non-main-track collisions (Table 5a & Table 5b) totalled 101 in 2012, up from 88 in 2011 (Figure 7) and up from the five-year average of 94. Derailments occurred in 38% of non-main-track collisions, and 63% of these non-main-track collisions involved the derailment of one or two cars.

There was one serious injury resulting from non-main-track collisions in 2012.

Dangerous goods were involved in 21% of non-main-track collisions, none of which resulted in a release of product.

Factors assigned to non-main-track collisions were mostly Action-related (88%) compared to 80% for the last five-year average. Failure to protect, such as improper positioning of movements and handling of switches, was assigned most often as a factor.

Figure 7 - Number of Non-Main-Track Collisions and Derailments, 2003-2012 [D]



There were 499 **non-main-track derailments** (Table 6a & Table 6b) in 2012, up 3% from last year but down 8% from the five-year average of 544 (Figure 7). In 21% of these accidents, three or more cars derailed.

One fatality resulted from non-main-track derailments in 2012.

Dangerous goods cars were involved in 17% of non-main-track derailments with none resulting in a release of dangerous goods.

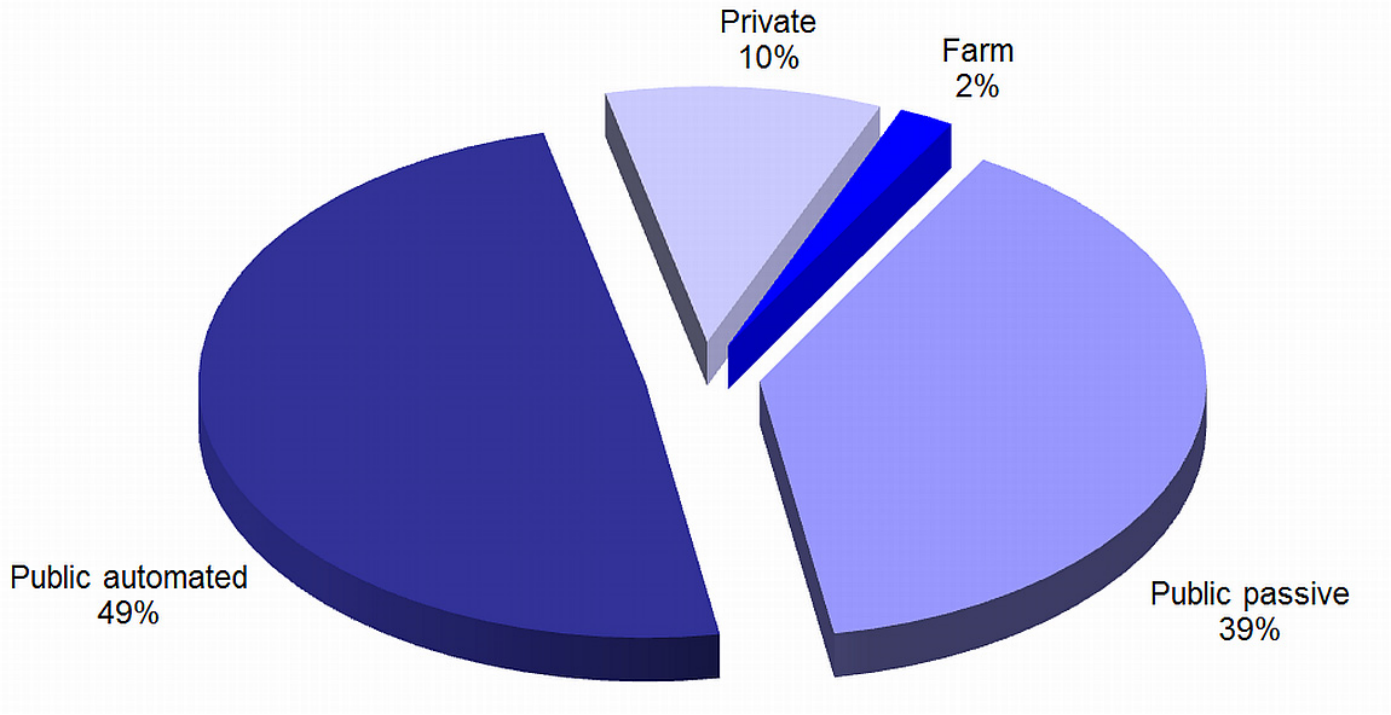
In 2012, Actions-related factors represented 47% of all assigned factors, which is comparable to the five-year average of 44%. Track-related factors assigned to non-main-track derailments represented 36% of all assigned factors, the same as the 5 year average. Environmental-related factors represented 5% of all assigned factors in 2012 compared to 6% for the five-year average.

Crossing accidents (Table 7 and Table 8) represent one of the most serious types of rail accidents in 2012, with 25% of these resulting in either serious or fatal injuries.

There were 187 crossing accidents in 2012, up from 170 recorded in 2011 but down from the five-year average of 195. Accidents at public automated crossings (92) increased 6% from the 2011 total of 87 but decreased 7% from the five-year average of 99. Accidents at public passive crossings (73) increased 14% from the five year average of 64. Accidents at private crossings (18) decreased 35% from the five-year average of 28.

The proportion of crossing accidents that occurred at public automated crossings decreased slightly from 51% in 2011 to 49% in 2012 (Figure 8). Although there are nearly twice as many public passive crossings as public automated ones, the higher number of accidents occurring at automated crossings is due, in part, to higher vehicle and train traffic volumes at these crossings.

Figure 8 - Percentage of Crossing Accidents by Type of Crossing, 2012 [D]



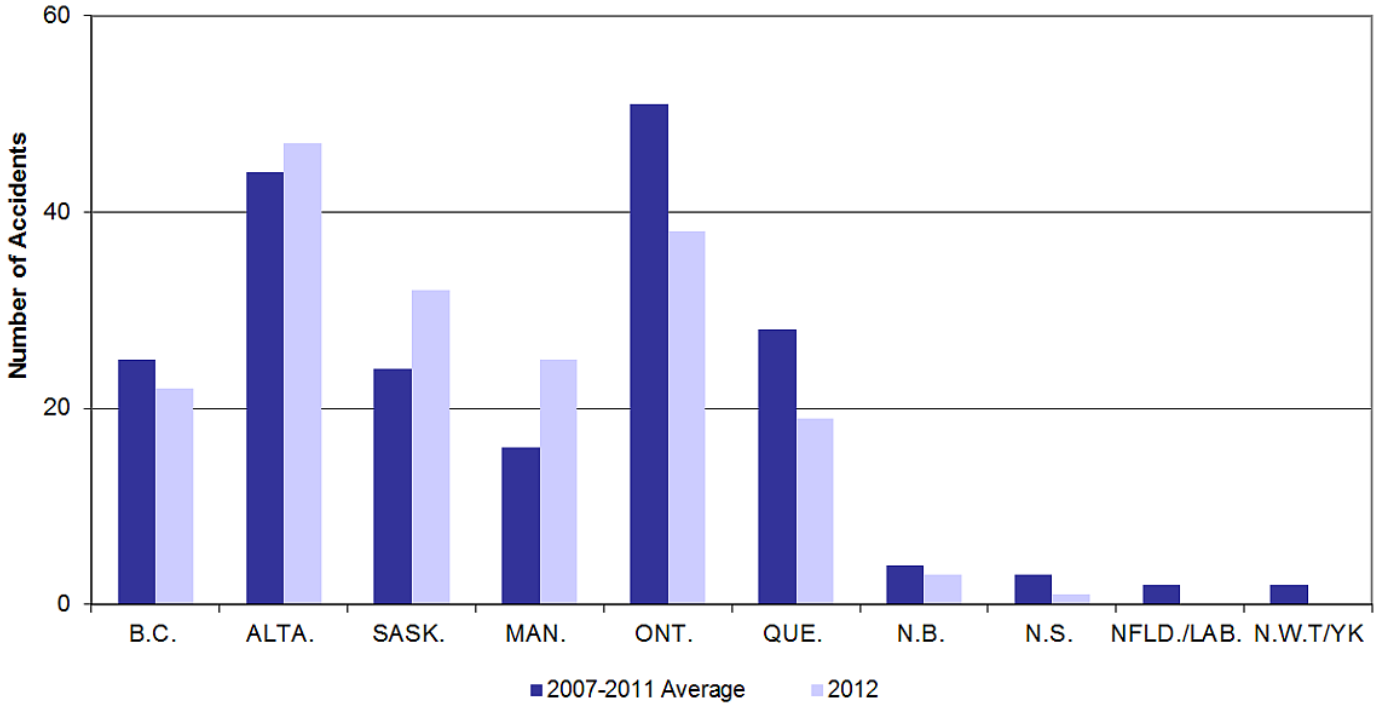
There were 25 fatal crossing accidents in 2012, similar to the 24 recorded in 2011 and up from the five-year average of 21. Although crossing accidents involving pedestrians accounted for 11% (21) of all crossing accidents in 2012, they accounted for 52% (13) of fatal crossing accidents.

Crossing-related fatalities totaled 29 in 2012 compared to 25 last year and to the five-year average of 24. Pedestrians comprised 45% of crossing-related fatalities.

In 2012, 3 crossing accidents resulted in derailments, down from the 2011 total of 4 and also down from the five-year average of 5.

For a second consecutive year, Alberta was the province where the most crossing accidents occurred comprising 25% of all crossing accidents, compared to 23% for the five-year average (Figure 9). Ontario had the second highest total, with 20% of crossings accidents compared to 26% for the 5 five-year average. These two provinces were followed by Saskatchewan with 17%, Manitoba with 13% and British Columbia with 12% of crossing accidents in Canada.

Figure 9 - Number of Crossing Accidents by Province [D]

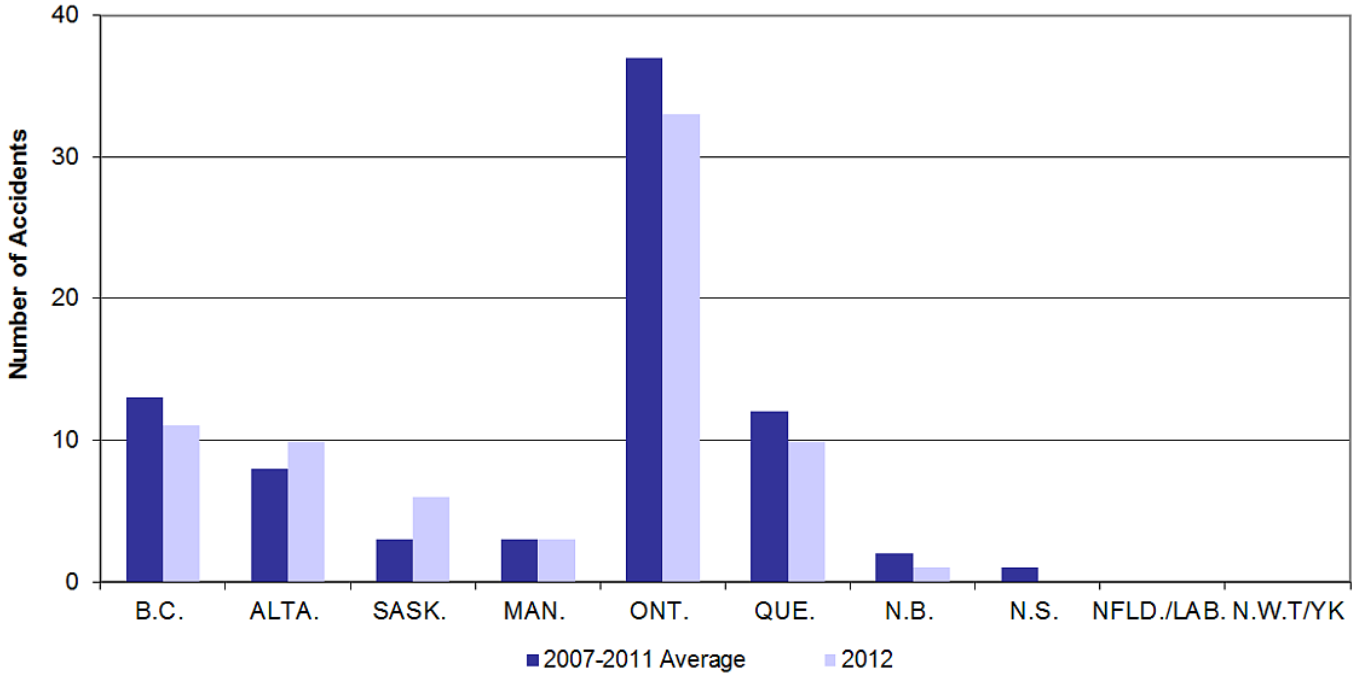


Trespasser accidents (Table 9) involve persons, primarily pedestrians, not authorized to be on railway rights-of-way and who are struck by rolling stock other than at railway crossings. These accidents totaled 74 in 2012, up from the 2011 total of 67 but down from the five-year average of 79.

In 2012, Ontario accounted for 45% of trespasser accidents with a total of 33, British Columbia accounted for 15%, and both Quebec and Alberta accounted for 14% of all trespasser accidents.

In 2012, the proportion of trespasser accidents that were fatal (64%) was the same as the five-year average. The proportion of trespasser accidents resulting in serious injuries (28%) was slightly higher than the five-year average of 26%.

Figure 10 - Number of Trespasser Accidents by Province [D]

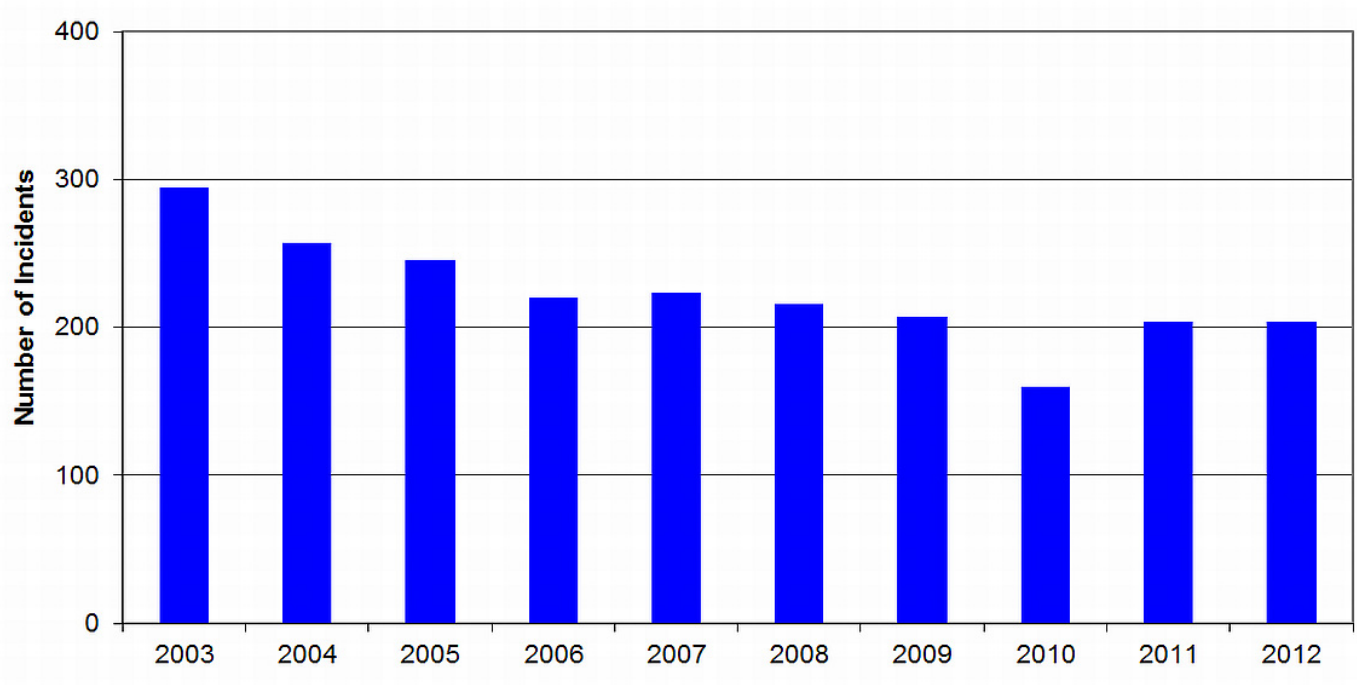


Incidents

Overview of Incidents (Table 10)

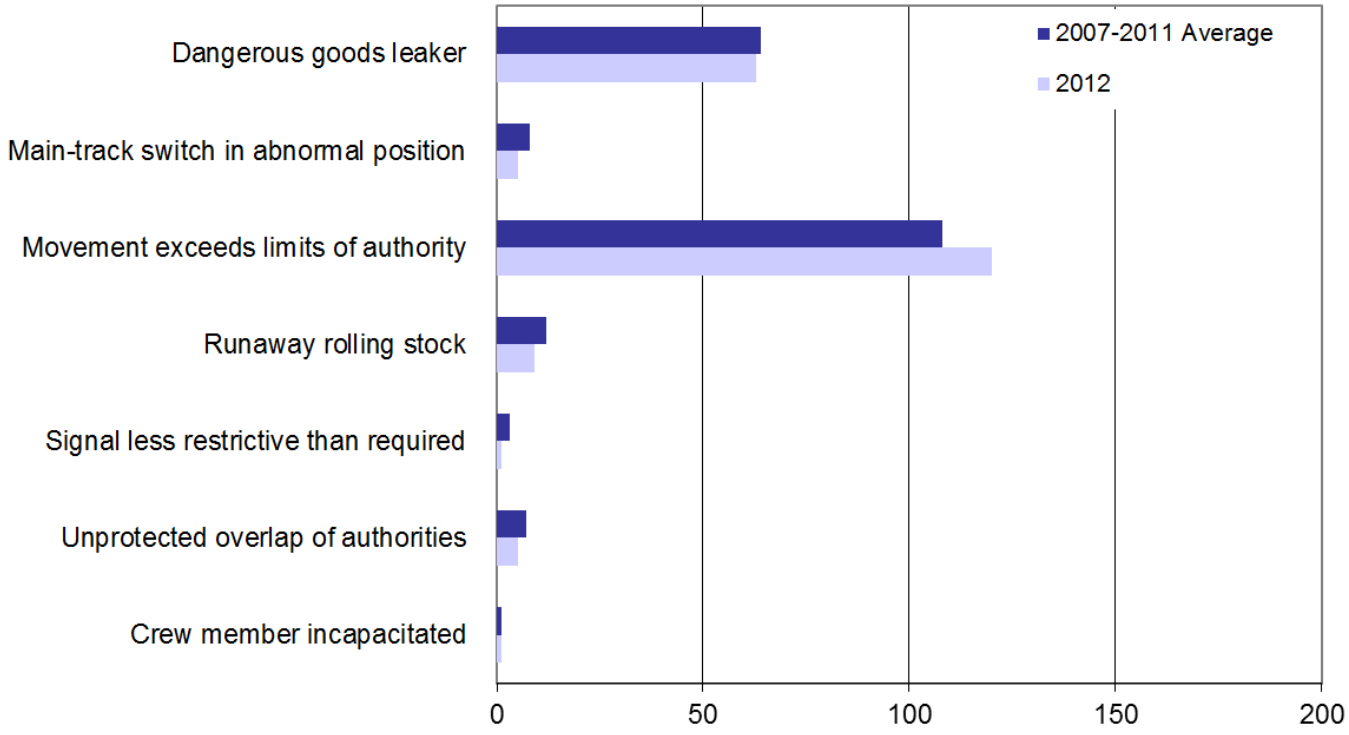
In 2012, there were 204 reported rail incidents, the same as 2011 and comparable to the five-year average of 202. Movement exceeds the limit of authority (120) continued to be the main incident type since 2006, followed by dangerous goods leakers (63) and runaway rolling stock (9).

Figure 11 - Number of Rail Incidents, 2003-2012 [D]



In 2012, there were 120 incidents where the movement exceeded the limit of authority[Footnote 11], a 2% increase from the 118 recorded in 2011 and a 11% increase from the five-year average of 108 (Figure 12).

Figure 12 - Number of Rail Incidents by Type [D]



A dangerous goods (DG) leaker incident is the unintentional release of a hazardous material while in transit and does not involve an accident. The vast majority of these incidents involve small quantities of products. The reported DG leaker incidents totaled 63 in 2012, this is a 24% increase from the 2011 total of 51 but a 2% decrease from the five-year average of 64. In 2003, DG leaker incidents represented 51% of all incidents. In 2012, DG leaker incidents accounted for 31% of reported rail incidents (Figure 12).

Appendices

Appendix A: Rail occurrence tables

Table 1, Railway occurrences and casualties, 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Accidents	**1352**	**1413**	**1476**	**1371**	**1320**	**1179**	**1043**	**1074**	**1022**	**1011**
Main-track collisions	6	5	6	2	9	7	5	4	3	6
Main-track derailments - 1-2 cars	83	96	103	83	76	66	39	40	44	32
Main-track derailments - 3 or more cars	73	64	95	56	83	62	28	40	57	31
Crossing accidents	250	236	269	243	218	221	188	180	170	187
Non-main-track collisions	111	123	98	110	102	91	95	93	88	101
Non-main-track derailments - 1-2 cars (a)	525	562	587	567	456	427	383	430	369	393
Non-main-track derailments - 3 or more cars (a)	170	151	171	136	175	143	114	110	115	106
Collisions/Derailments involving track units	23	26	19	17	30	27	50	34	33	24
Employee/Passenger accidents	7	12	8	16	18	12	12	9	11	7
Trespasser accidents	65	100	83	91	101	73	72	81	67	74
Fires/Explosions	23	15	17	25	25	12	20	30	23	17
Other accident types	16	23	20	25	27	38	37	23	42	33
Reportable incidents	**294**	**257**	**245**	**220**	**223**	**216**	**207**	**160**	**204**	**204**
Dangerous goods leaker	150	131	123	82	88	64	78	40	51	63
Main-track switch in abnormal position	11	12	10	7	7	13	4	5	10	5
Movement exceeds limits of authority	102	95	91	101	106	111	106	101	118	120
Runaway rolling stock	13	11	16	12	13	16	11	5	15	9
Other reportable incidents	18	8	5	18	9	12	8	9	10	7
Main-track accidents (b)	**207**	**221**	**252**	**209**	**257**	**209**	**169**	**161**	**190**	**131**
Million main-track train-miles (MMTTM) (c)	**80.6**	**82.6**	**85.8**	**86.9**	**84.5**	**83.1**	**72.2**	**77.6**	**78.4**	**80.1**
Main-track accidents/MMTTM	**2.6**	**2.7**	**2.9**	**2.4**	**3.0**	**2.5**	**2.3**	**2.1**	**2.4**	**1.6**
Accidents involving dangerous goods	**226**	**208**	**212**	**185**	**190**	**153**	**133**	**141**	**118**	**118**
Main-track derailments	38	37	32	18	35	23	11	13	20	6
Crossing accidents	3	11	15	5	6	4	3	7	1	4
Non-main-track collisions	37	44	44	41	41	33	32	26	20	21
Non-main-track derailments	139	106	112	109	100	84	81	88	71	86
Other accident types	9	10	9	12	8	9	6	7	6	1
Accidents with a dangerous goods release	**9**	**7**	**7**	**4**	**3**	**3**	**3**	**3**	**3**	**2**
Fatalities for reportable occurrences	**79**	**101**	**103**	**95**	**84**	**74**	**71**	**81**	**71**	**82**
Crossing accidents	28	25	37	28	25	26	19	24	25	29
Trespasser accidents	45	68	64	59	56	47	52	55	45	49
Other occurrence types (d)	6	8	2	8	3	1	0	2	1	4
Serious injuries for reportable occurrences	**81**	**93**	**78**	**71**	**58**	**64**	**50**	**62**	**52**	**72**

Table 1, Railway occurrences and casualties, 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Crossing accidents	52	50	55	29	21	36	21	28	22	32
Trespasser accidents	19	34	17	28	27	20	16	19	21	21
Other occurrence types (d)	10	9	6	14	10	8	13	15	9	19

Data extracted February 1, 2013.

Federally regulated railway occurrences.

1. Data from 2003 to 2007 have been adjusted in light of clarifications to industry of TSB's reporting requirements.
2. Accidents which occurred on main-track or spurs, excluding crossing and trespasser accidents.
3. Main-track train-miles are estimated (Source: Transport Canada).
4. See Table 2 for details on occurrences by type.

Source: Transportation Safety Board of Canada.

Table 2, Fatalities and serious injuries (type of occurrence, person type), 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Fatalities for reportable occurrences	**79**	**101**	**103**	**95**	**84**	**74**	**71**	**81**	**71**	**82**
Main-track collisions	0	1	0	0	0	0	0	0	0	0
Main-track derailments	2	2	0	3	1	0	0	1	0	3
Crossing accidents	28	25	37	28	25	26	19	24	25	29
Non-main-track collisions	0	0	0	0	0	0	0	0	0	0
Non-main-track derailments	1	0	0	0	0	0	0	0	0	1
Collisions/Derailments involving track units	0	0	0	0	0	0	0	0	0	0
Employee/Passenger accidents	1	5	2	4	1	1	0	1	1	0
Trespasser accidents	45	68	64	59	56	47	52	55	45	49
Other accident types	0	0	0	0	1	0	0	0	0	0
Reportable incidents	2	0	0	1	0	0	0	0	0	0
Serious injuries for reportable occurrences	**81**	**93**	**78**	**71**	**58**	**64**	**50**	**62**	**52**	**72**
Main-track collisions	0	0	0	0	0	0	0	0	0	1
Main-track derailments	2	0	0	2	2	0	0	8	0	10
Crossing accidents	52	50	55	29	21	36	21	28	22	32
Non-main-track collisions	0	0	0	0	0	0	0	0	0	1
Non-main-track derailments	0	0	1	0	0	0	0	0	0	0
Collisions/Derailments involving track units	0	0	1	0	0	0	2	0	1	0
Employee/Passenger accidents	4	7	4	10	8	7	8	7	7	6
Trespasser accidents	19	34	17	28	27	20	16	19	21	21
Other accident types	1	0	0	0	0	0	3	0	1	0
Reportable incidents	3	2	0	2	0	1	0	0	0	1
Fatalities by person type	**79**	**101**	**103**	**95**	**84**	**74**	**71**	**81**	**71**	**82**
Employees	6	6	2	6	2	1	0	1	1	4
Passengers	0	0	0	2	0	1	0	1	0	0

Table 2, Fatalities and serious injuries (type of occurrence, person type), 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Pedestrians	6	4	11	9	11	13	4	8	6	19
Vehicle occupants	23	23	28	16	17	14	17	15	22	17
Trespassers	44	68	62	60	54	43	49	55	42	42
Other person types	0	0	0	2	0	2	1	1	0	0
Serious injuries by person type	**81**	**93**	**78**	**71**	**58**	**64**	**50**	**62**	**52**	**72**
Employees	11	9	6	14	11	11	13	10	8	9
Passengers	0	0	1	1	0	1	1	7	0	14
Pedestrians	6	2	3	5	6	3	0	4	5	5
Vehicle occupants	44	48	51	25	17	30	22	22	18	23
Trespassers	20	32	17	25	24	19	14	19	21	21
Other person types	0	2	0	1	0	0	0	0	0	0

Data extracted February 1, 2013.
Federally regulated railway occurrences.
Source: Transportation Safety Board of Canada.

Table 3, Number of trains (rolling stock) involved in accidents by train type and accident type, 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Freight trains	**916**	**991**	**1078**	**1015**	**1043**	**991**	**799**	**827**	**806**	**781**
Main-track collisions	10	7	6	2	12	9	8	6	4	8
Main-track derailments	153	149	189	134	155	118	64	74	99	57
Non-main-track collisions	104	119	88	115	96	97	82	93	94	94
Non-main-track derailments	339	413	486	445	476	478	395	410	387	370
Crossing accidents	221	194	220	198	178	186	149	137	133	157
Trespasser accidents	47	73	58	70	69	50	51	54	43	52
Other accident types	42	36	31	51	57	53	50	53	46	43
Passenger trains	**56**	**80**	**84**	**72**	**83**	**79**	**68**	**62**	**70**	**48**
Main-track collisions	1	1	0	0	0	2	0	0	0	0
Main-track derailments	2	3	5	3	0	3	0	3	2	2
Non-main-track collisions	6	5	4	1	4	3	1	1	5	1
Non-main-track derailments	11	10	10	10	8	17	11	8	5	5
Crossing accidents	17	32	37	34	28	24	25	21	18	13
Trespasser accidents	18	26	24	18	32	21	20	26	24	19
Other accident types	1	3	4	6	11	9	11	3	16	8
Track units	**41**	**55**	**40**	**41**	**50**	**49**	**82**	**63**	**59**	**40**
Main-track collisions	0	0	0	0	1	0	0	0	0	0
Main-track derailments	0	0	0	0	0	0	0	0	0	0
Non-main-track collisions	1	0	0	0	0	0	0	0	0	0
Non-main-track derailments	0	0	0	0	0	0	0	1	0	0

Table 3, Number of trains (rolling stock) involved in accidents by train type and accident type, 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Crossing accidents	5	8	8	7	3	6	4	9	7	2
Trespasser accidents	0	1	0	1	0	0	0	0	0	0
Other accident types	35	46	32	33	46	43	78	53	52	38
Single car/Cut of cars	**92**	**93**	**94**	**144**	**145**	**107**	**141**	**117**	**100**	**122**
Main-track collisions	0	0	0	0	0	1	1	0	1	2
Main-track derailments	1	0	0	1	3	1	1	0	0	1
Non-main-track collisions	49	61	49	63	61	52	89	68	52	70
Non-main-track derailments	32	20	37	73	76	49	42	40	36	41
Crossing accidents	0	0	0	1	1	1	2	0	0	1
Trespasser accidents	0	0	0	0	0	0	0	0	0	0
Other accident types	10	12	8	6	4	3	6	9	11	7
Other train/rolling stock types (a)	**349**	**314**	**271**	**209**	**120**	**64**	**84**	**133**	**98**	**139**
Main-track collisions	0	0	1	0	1	0	0	1	0	1
Main-track derailments	3	8	5	1	4	6	2	3	2	3
Non-main-track collisions	14	18	12	13	10	8	8	20	15	27
Non-main-track derailments	322	283	242	182	85	37	59	93	61	87
Crossing accidents	7	2	4	5	10	8	8	13	12	14
Trespasser accidents	0	0	1	2	0	2	1	2	0	3
Other accident types	3	3	6	6	10	3	6	1	8	4

Data extracted February 1, 2013.

Federally regulated railway occurrences.

As some accidents may involve more than one train (rolling stock), the number of trains involved may differ from the total number of accidents.

1. Other train/rolling stock types include mainly locomotive. Note that from 2003 to 2007, the categories also include uncategorized data submitted in June 2007 as a result of clarification to industry of TSB reporting requirements.

Source: Transportation Safety Board of Canada.

Table 4a, Main-track derailments (province, number of derailed cars), 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Main-track derailments by province	**156**	**160**	**198**	**139**	**159**	**128**	**67**	**80**	**101**	**63**
Newfoundland & Labrador	0	0	2	1	1	1	0	3	1	1
Nova Scotia	0	2	0	1	2	0	1	0	0	0
New Brunswick	2	3	3	0	6	1	1	0	0	0
Quebec	27	23	26	21	12	16	8	10	9	5
Ontario	59	52	60	41	39	35	21	19	24	7
Manitoba	6	10	10	9	12	13	4	6	11	8
Saskatchewan	14	15	24	12	18	14	9	14	11	4

Table 4a, Main-track derailments (province, number of derailed cars), 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Alberta	19	23	29	20	30	30	13	14	21	17
British Columbia	29	32	44	34	39	18	10	14	24	21
Northwest Territories/Yukon	0	0	0	0	0	0	0	0	0	0
Derailments per million main-track train-miles (a)	**1.94**	**1.94**	**2.31**	**1.60**	**1.88**	**1.54**	**0.93**	**1.03**	**1.29**	**0.79**
Derailments per billion gross ton-miles (b)	**0.38**	**0.36**	**0.43**	**0.30**	**0.34**	**0.28**	**0.17**	**0.18**	**0.21**	
Derailments by number of derailed cars	**156**	**160**	**198**	**139**	**159**	**128**	**67**	**80**	**101**	**63**
1 car	75	81	87	66	62	54	29	29	35	27
2 cars	8	15	16	17	14	12	10	11	9	5
3 cars	8	6	9	3	10	6	3	2	6	3
4 cars	5	7	9	0	8	5	3	3	6	2
5 to 10 cars	35	22	40	23	27	24	12	18	25	15
11 cars or more	25	29	37	30	38	27	10	17	20	11

Data extracted February 1, 2013.

Federally regulated railway occurrences.

1. The source of the million main-track train-miles is Transport Canada. Data are estimated.
2. The source of the billion gross ton-miles is the Railway Association of Canada.

Source: Transportation Safety Board of Canada.

Table 4b, Main-track derailments (assigned factors), 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total number of assigned factors	**172**	**188**	**227**	**170**	**178**	**151**	**74**	**84**	**108**	**63**
Environmental	5	7	10	8	17	12	6	1	6	2
Equipment	61	70	83	54	60	42	23	26	40	19
Axle	20	14	21	5	14	11	5	7	9	6
Brakes	6	9	13	8	8	3	6	2	5	3
Draft system	5	13	9	5	9	4	4	4	4	4
Superstrucure	6	3	7	6	8	5	0	2	3	2
Truck	13	11	8	8	5	5	1	5	6	2
Wheel	11	18	23	21	16	12	7	6	13	2
Track	67	71	87	64	56	61	29	31	37	25
Geometry	31	23	34	23	22	22	8	14	16	12
Object on track	1	0	4	2	1	1	1	2	2	0
Other track material	1	8	2	4	2	6	5	2	3	2
Rail	21	25	35	25	18	27	7	7	10	7
Roadbed	4	7	2	6	3	4	4	2	4	4
Switch	1	2	2	2	0	1	2	2	1	0
Turnouts	7	3	4	0	6	0	0	1	0	0
Actions	26	23	28	21	20	19	8	20	17	14

Table 4b, Main-track derailments (assigned factors), 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Failure to protect	5	4	4	3	4	8	3	2	4	4
Failure to secure	1	1	0	0	0	0	1	0	0	1
Failure to use equipment properly	11	6	11	6	6	6	4	9	6	2
Improper loading/lifting	0	1	0	2	3	1	0	2	0	2
Improper placement/position for task	2	6	5	1	2	0	0	2	2	2
Inadequate/Inappropriate maintenance of equipment	2	3	4	4	1	3	0	1	1	0
Operating at improper speed	4	1	2	5	1	1	0	3	3	1
Vandalism	0	0	0	0	2	0	0	0	0	1
Other actions	1	1	2	0	1	0	0	1	1	1
Other assigned factors	13	17	19	23	25	17	8	6	8	3
Derailments by number of assigned factors	**156**	**160**	**198**	**139**	**159**	**128**	**67**	**80**	**101**	**63**
One factor assigned	136	140	173	122	148	117	65	77	96	63
More than one factor assigned	13	18	22	15	9	11	2	2	4	0
No factor assigned	7	2	3	2	2	0	0	1	1	0

Data extracted February 1, 2013.

Federally regulated railway occurrences.

TSB does not investigate all occurrences; therefore, assigned factors may not represent TSB findings. Occurrences are normally only reported to TSB with one assigned factor. The TSB may assign additional factors.

Some factors are assigned by highest category (e.g. Equipment or Track), therefore the breakdowns may not sum up to the category total.

Source: Transportation Safety Board of Canada.

Table 5a, Non-main-track collisions (province, number of derailed cars), 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Non-main-track collisions by province	**111**	**123**	**98**	**110**	**102**	**91**	**95**	**93**	**88**	**101**
Newfoundland & Labrador	0	0	0	0	0	0	0	0	0	0
Nova Scotia	3	0	0	0	0	1	0	0	0	0
New Brunswick	2	1	1	5	1	3	1	1	1	1
Quebec	15	20	17	19	11	5	6	11	12	8
Ontario	47	28	28	25	29	26	24	15	16	10
Manitoba	7	14	11	7	13	9	15	14	15	21
Saskatchewan	10	4	5	8	10	10	5	3	8	12
Alberta	20	33	20	24	23	27	25	29	16	34
British Columbia	7	23	16	21	14	10	19	20	20	15
Northwest Territories/Yukon	0	0	0	1	1	0	0	0	0	0
Collisions by number of derailed cars	**111**	**123**	**98**	**110**	**102**	**91**	**95**	**93**	**88**	**101**
No cars derailed	68	69	63	56	41	33	49	51	50	63
1 car	20	26	14	28	23	23	26	23	20	14

Table 5a, Non-main-track collisions (province, number of derailed cars), 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
2 cars	13	14	12	10	15	11	8	7	8	10
3 cars	1	9	5	7	8	9	5	4	3	6
4 cars	4	2	1	4	8	8	3	4	5	5
5 to 10 cars	4	3	3	5	5	5	3	3	2	3
11 cars or more	1	0	0	0	2	2	1	1	0	0

Data extracted February 1, 2013.

Federally regulated railway occurrences.

Source: Transportation Safety Board of Canada.

Table 5b, Non-main-track collisions (assigned factors), 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total number of assigned factors	**122**	**148**	**118**	**128**	**117**	**98**	**95**	**95**	**89**	**101**
Environmental	1	3	4	1	3	1	3	1	2	3
Equipment	6	1	1	1	4	1	1	1	3	4
Track	6	4	10	2	2	4	4	3	1	2
Actions	87	114	83	109	89	72	75	82	76	89
Failure to protect	62	70	52	64	59	49	50	57	55	59
Failure to secure	13	30	16	26	17	6	11	8	9	14
Failure to use equipment properly	4	8	4	6	5	10	9	7	7	8
Improper placement/position for task	0	1	1	1	0	0	0	2	0	0
Inadequate/Inappropriate communications	3	1	2	2	3	0	1	3	2	2
Inadequate/Inappropriate maintenance of equipment	1	0	0	1	0	0	0	0	0	0
Operating at improper speed	2	3	6	8	5	7	4	4	3	5
Vandalism	1	0	0	1	0	0	0	0	0	0
Other actions	1	1	2	0	0	0	0	1	0	1
Other assigned factors	22	26	20	15	19	20	12	8	7	3
Collisions by number of assigned factors	**111**	**123**	**98**	**110**	**102**	**91**	**95**	**93**	**88**	**101**
One factor assigned	97	99	78	93	91	86	95	91	87	101
More than one factor assigned	12	23	19	16	11	4	0	2	1	0
No factor assigned	2	1	1	1	0	1	0	0	0	0

Data extracted February 1, 2013.

Federally regulated railway occurrences.

TSB does not investigate all occurrences; therefore, assigned factors may not represent TSB findings. Occurrences are normally only reported to TSB with one assigned factor. The TSB may assign additional factors.

Some factors are assigned by highest category (e.g. Actions), therefore the breakdowns may not sum up to the category total.

Source: Transportation Safety Board of Canada.

Table 6a, Non-main-track derailments (province, number of derailed cars), 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Non-main-track derailments by province	**695**	**713**	**758**	**703**	**631**	**570**	**497**	**540**	**484**	**499**
Newfoundland & Labrador	0	0	1	1	0	0	2	0	0	1
Nova Scotia	39	23	13	14	6	3	4	4	3	4
New Brunswick	26	19	16	24	11	16	8	9	13	6
Quebec	140	150	133	117	67	70	50	59	59	63
Ontario	227	227	233	201	164	135	108	112	106	91
Manitoba	63	58	57	52	48	65	73	65	53	59
Saskatchewan	45	57	70	48	68	50	43	62	75	68
Alberta	75	94	125	143	146	109	127	147	103	141
British Columbia	80	85	109	103	120	122	80	82	71	66
Northwest Territories/Yukon	0	0	1	0	1	0	2	0	1	0
Derailments by number of derailed cars	**695**	**713**	**758**	**703**	**631**	**570**	**497**	**540**	**484**	**499**
1 car	372	406	419	397	327	291	278	293	261	275
2 cars	153	156	168	170	129	136	105	137	108	118
3 cars	76	61	60	44	79	56	40	50	45	39
4 cars	34	38	34	40	40	24	32	16	29	22
5 to 10 cars	57	46	69	44	53	54	41	41	36	40
11 cars or more	3	6	8	8	3	9	1	3	5	5

Data extracted February 1, 2013.
Federally regulated railway occurrences.
Source: Transportation Safety Board of Canada.

Table 6b, Non main-track derailments (assigned factors), 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total number of assigned factors	**726**	**754**	**796**	**741**	**649**	**593**	**507**	**552**	**486**	**501**
Environmental	45	38	33	18	40	46	21	25	47	24
Equipment	63	71	74	52	52	41	46	45	50	45
Axle	0	0	1	1	3	1	0	0	0	0
Brakes	11	12	21	13	9	12	17	13	11	6
Draft system	11	15	12	8	11	9	15	16	11	9
Superstrucure	15	10	11	9	9	7	4	1	9	7
Truck	13	15	13	11	7	4	3	8	6	14
Wheel	12	17	15	10	9	5	7	6	12	8
Track	205	251	292	282	232	226	194	197	144	180
Appurtenances	1	1	3	2	1	1	1	0	0	3
Geometry	81	91	112	97	98	84	89	90	61	64
Object on track	6	8	8	14	1	6	5	0	2	3
Other track material	19	22	21	25	14	8	11	13	4	5

Table 6b, Non main-track derailments (assigned factors), 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Rail	24	24	24	32	29	30	23	19	17	30
Roadbed	4	13	13	6	7	7	4	9	21	12
Signals	1	1	0	0	1	1	0	0	0	0
Switch	31	42	51	48	34	55	35	46	27	47
Turnouts	35	41	54	48	31	27	23	16	10	11
Actions	348	336	349	329	277	249	210	261	217	233
Failure to protect	197	176	202	193	178	164	145	156	126	131
Failure to secure	22	26	22	7	8	9	3	7	2	10
Failure to use equipment properly	78	81	84	93	65	45	43	66	64	66
Improper loading/lifting	5	1	8	3	0	7	2	5	6	4
Improper placement/position for task	10	9	14	10	6	3	7	5	6	11
Inadequate/Inappropriate communications	2	5	4	4	1	5	2	3	2	1
Inadequate/Inappropriate maintenance of equipment	4	9	2	5	7	0	0	1	0	0
Operating at improper speed	11	11	4	6	4	9	4	13	4	3
Vandalism	12	12	6	7	5	5	3	5	6	3
Other actions	7	6	3	1	3	2	1	0	1	4
Other assigned factors	65	58	48	60	48	31	36	24	28	19
Derailments by number of assigned factors	**695**	**713**	**758**	**703**	**631**	**570**	**497**	**540**	**484**	**499**
One factor assigned	621	643	695	630	597	548	492	531	472	495
More than one factor assigned	50	50	49	51	25	21	5	9	7	3
No factor assigned	24	20	14	22	9	1	0	0	5	1

Data extracted February 1, 2013.

Federally regulated railway occurrences.

TSB does not investigate all occurrences; therefore, assigned factors may not represent TSB findings. Occurrences are normally only reported to TSB with one assigned factor. The TSB may assign additional factors.

Some factors are assigned by highest category (e.g. Equipment or Track), therefore the breakdowns may not sum up to the category total.

Source: Transportation Safety Board of Canada.

Table 7, Crossing accidents by type and protection, 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Crossing accidents	**250**	**236**	**269**	**243**	**218**	**221**	**188**	**180**	**170**	**187**
Public crossings	209	183	231	197	181	177	157	154	147	165
Passive warnings	69	64	70	77	73	63	56	67	60	73
Automated warnings	140	119	161	120	108	114	101	87	87	92
Flashing lights & bells	88	77	105	76	63	73	55	56	50	46
Gates	51	42	53	36	37	39	44	30	36	46

Table 7, Crossing accidents by type and protection, 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Other automated warnings	1	0	3	8	8	2	2	1	1	0
Private crossings	35	49	33	44	31	38	30	24	15	18
Farm crossings	6	4	5	2	6	6	1	2	8	4
Fatal accidents	**24**	**21**	**34**	**25**	**22**	**24**	**17**	**19**	**24**	**25**
Fatalities	**28**	**25**	**37**	**28**	**25**	**26**	**19**	**24**	**25**	**29**
Public crossings	24	25	32	25	23	25	18	23	21	28
Passive warnings	8	6	7	8	5	5	6	5	5	11
Automated warnings	16	19	25	17	18	20	12	18	16	17
Flashing lights & bells	9	11	13	10	8	9	6	8	9	7
Gates	7	8	12	7	9	11	6	10	7	10
Other automated warnings	0	0	0	0	1	0	0	0	0	0
Private crossings	2	0	4	3	2	0	1	1	1	0
Farm crossings	2	0	1	0	0	1	0	0	3	1
Serious injuries	**52**	**50**	**55**	**29**	**21**	**36**	**21**	**28**	**22**	**32**
Public crossings	46	47	48	27	21	30	20	25	20	29
Passive warnings	14	15	9	8	13	12	9	14	3	15
Automated warnings	32	32	39	19	8	18	11	11	17	14
Flashing lights & bells	24	21	23	13	5	16	8	5	9	6
Gates	8	11	15	6	3	2	3	6	8	8
Other automated warnings	0	0	1	0	0	0	0	0	0	0
Private crossings	6	3	6	2	0	4	1	3	1	3
Farm crossings	0	0	1	0	0	2	0	0	1	0
Number of public crossings (a)	**19,732**	**18,678**	**18,216**	**18,553**	**17,450**	**n/a**	**17,425**	**16,718**	**16,413**	**16,229**
Passive warnings	13,442	12,501	12,060	12,138	11,439	n/a	11,722	11,112	10,826	10,628
Automated warnings	6,290	6,177	6,156	6,415	6,011	n/a	5,703	5,606	5,587	5,601
Flashing lights & bells	4,309	4,147	4,059	4,193	3,827	n/a	3,526	3,365	3,308	3,288
Gates	1,958	2,007	2,073	2,175	2,150	n/a	2,116	2,181	2,220	2,254
Other automated warnings	23	23	24	47	34	n/a	61	61	59	59

Data extracted February 1, 2013.

Federally regulated railway occurrences.

1. Source: Transport Canada IRIS database. The data for 2012 was provided on March 1, 2013. Figures for previous years are shapshots provided historically by Transport Canada.

Source: Transportation Safety Board of Canada.

Table 8, Crossing accidents by province, 2003-2012										
	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Crossing accidents	**250**	**236**	**269**	**243**	**218**	**221**	**188**	**180**	**170**	**187**
Newfoundland & Labrador	0	0	1	1	0	0	0	0	2	0
Nova Scotia	2	2	5	4	3	0	3	3	0	1
New Brunswick	9	2	3	2	2	2	4	5	6	3
Quebec	36	62	56	39	39	27	28	21	26	19
Ontario	79	69	92	66	52	66	48	52	39	38
Manitoba	28	19	18	20	20	13	18	20	7	25
Saskatchewan	24	16	19	26	23	28	24	24	23	32
Alberta	38	38	56	56	48	54	36	37	47	47
British Columbia	33	26	18	29	31	31	25	18	20	22
Northwest Territories/Yukon	1	2	1	0	0	0	2	0	0	0
Crossing accidents on main-track (a)	**245**	**229**	**259**	**233**	**211**	**212**	**180**	**174**	**166**	**179**
Crossing accidents per million main-track train-miles (b)	**3.0**	**2.8**	**3.0**	**2.7**	**2.5**	**2.6**	**2.5**	**2.2**	**2.1**	**2.2**
Crossing accidents with derailment	**4**	**9**	**12**	**4**	**6**	**6**	**6**	**3**	**4**	**3**
Fatalities	**28**	**25**	**37**	**28**	**25**	**26**	**19**	**24**	**25**	**29**
Newfoundland & Labrador	0	0	0	0	0	0	0	0	0	0
Nova Scotia	0	0	0	0	0	0	1	1	0	0
New Brunswick	0	0	1	0	0	0	0	1	2	1
Quebec	4	9	7	7	1	6	1	1	4	1
Ontario	15	12	16	13	12	12	3	6	9	11
Manitoba	2	1	2	2	1	2	3	2	2	2
Saskatchewan	4	1	2	1	2	3	5	5	1	8
Alberta	3	2	6	4	5	2	3	6	5	4
British Columbia	0	0	3	1	4	1	3	2	2	2
Northwest Territories/Yukon	0	0	0	0	0	0	0	0	0	0
Serious injuries	**52**	**50**	**55**	**29**	**21**	**36**	**21**	**28**	**22**	**32**
Newfoundland & Labrador	0	0	1	1	0	0	0	0	0	0
Nova Scotia	0	0	2	0	0	0	0	2	0	0
New Brunswick	1	2	0	0	1	1	0	0	0	0
Quebec	5	14	11	4	2	3	3	3	4	1
Ontario	19	11	21	9	7	11	3	5	7	8
Manitoba	4	6	1	4	2	4	3	5	1	7
Saskatchewan	4	3	4	2	4	5	4	2	2	6
Alberta	11	9	12	8	4	7	5	8	4	7
British Columbia	8	5	3	1	1	5	3	3	4	3

Table 8, Crossing accidents by province, 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Northwest Territories/Yukon	0	0	0	0	0	0	0	0	0	0
Number of public crossings (c)	**19,732**	**18,678**	**18,216**	**18,553**	**17,450**	**n/a**	**17,425**	**16,718**	**16,413**	**16,229**
Newfoundland & Labrador	7	7	7	7	5	n/a	5	5	5	5
Nova Scotia	119	119	119	160	119	n/a	180	180	180	180
New Brunswick	251	190	190	308	148	n/a	347	340	340	340
Quebec	1,696	1,680	1,660	1,767	1,662	n/a	1,958	1,964	1,966	1,968
Ontario	4,913	4,772	4,768	4,947	4,083	n/a	4,312	3,996	3,915	3,884
Manitoba	2,398	2,372	2,360	2,363	2,309	n/a	2,027	2,003	2,002	1,939
Saskatchewan	5,995	5,764	5,462	5,439	4,986	n/a	4,065	3,933	3,710	3,656
Alberta	3,484	2,872	2,791	2,655	2,854	n/a	3,009	2,786	2,783	2,777
British Columbia	850	883	840	888	1,265	n/a	1,507	1,485	1,486	1,454
Northwest Territories/Yukon	19	19	19	19	19	n/a	15	26	26	26

Data extracted February 1, 2013.

Federally regulated railway occurrences.

1. Includes crossing accidents on main-track or on spurs.
2. The source for million main-track train-miles is Transport Canada. Data is estimated.
3. Source: Transport Canada IRIS database. The data for 2012 was provided on March 1, 2013. Figures for previous years are shapshots provided historically by Transport Canada.

Source: Transportation Safety Board of Canada.

Table 9, Trespasser accidents by province, 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Trespasser accidents	**65**	**100**	**83**	**91**	**101**	**73**	**72**	**81**	**67**	**74**
Newfoundland & Labrador	0	1	0	0	0	0	0	0	0	0
Nova Scotia	0	2	2	0	2	1	0	0	1	0
New Brunswick	0	0	2	1	4	2	3	1	2	1
Quebec	6	16	14	9	12	13	12	13	9	10
Ontario	38	45	43	43	47	37	35	35	32	33
Manitoba	3	3	6	5	7	4	1	3	1	3
Saskatchewan	2	3	0	2	0	3	4	3	2	6
Alberta	7	16	6	17	14	7	4	9	7	10
British Columbia	9	14	10	14	15	6	13	17	13	11
Northwest Territories/Yukon	0	0	0	0	0	0	0	0	0	0
Fatal accidents	**45**	**67**	**64**	**58**	**56**	**47**	**52**	**53**	**44**	**47**
Fatalities	**45**	**68**	**64**	**59**	**56**	**47**	**52**	**55**	**45**	**49**
Newfoundland & Labrador	0	0	0	0	0	0	0	0	0	0
Nova Scotia	0	1	1	0	1	0	0	0	0	0
New Brunswick	0	0	1	0	3	2	3	0	1	1

Table 9, Trespasser accidents by province, 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Quebec	4	10	12	6	7	10	7	10	8	7
Ontario	30	32	33	31	32	24	30	27	26	21
Manitoba	2	3	4	1	2	2	1	2	1	3
Saskatchewan	0	4	0	1	0	2	2	2	1	4
Alberta	5	11	5	11	7	4	3	6	2	8
British Columbia	4	7	8	9	4	3	6	8	6	5
Northwest Territories/Yukon	0	0	0	0	0	0	0	0	0	0
Serious injuries	**19**	**34**	**17**	**28**	**27**	**20**	**16**	**19**	**21**	**21**
Newfoundland & Labrador	0	1	0	0	0	0	0	0	0	0
Nova Scotia	0	1	1	0	0	1	0	0	0	0
New Brunswick	0	0	1	1	1	0	0	0	1	0
Quebec	2	6	2	3	3	0	3	4	2	2
Ontario	7	13	9	13	7	12	5	5	6	12
Manitoba	1	0	1	3	4	2	0	1	0	0
Saskatchewan	2	0	0	1	0	1	1	1	1	0
Alberta	2	5	1	3	4	2	1	3	4	2
British Columbia	5	8	2	4	8	2	6	5	7	5
Northwest Territories/Yukon	0	0	0	0	0	0	0	0	0	0

Data extracted February 1, 2013.
Federally regulated railway occurrences.
Source: Transportation Safety Board of Canada.

Table 10, Reportable incidents (incident type, assigned factors), 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Reportable incidents	**294**	**257**	**245**	**220**	**223**	**216**	**207**	**160**	**204**	**204**
Dangerous goods leaker	150	131	123	82	88	64	78	40	51	63
Main-track switch in abnormal position	11	12	10	7	7	13	4	5	10	5
Movement exceeds limits of authority	102	95	91	101	106	111	106	101	118	120
Runaway rolling stock	13	11	16	12	13	16	11	5	15	9
Signal less restrictive than required	2	1	1	6	0	3	1	4	3	1
Unprotected overlap of authorities	10	5	3	7	8	7	7	4	7	5
Crew member incapacitated	6	2	1	5	1	2	0	1	0	1
Total assigned factors	**315**	**267**	**257**	**217**	**173**	**225**	**209**	**164**	**207**	**207**
Dangerous goods leaker location/component	144	131	124	78	73	61	77	40	50	62
Equipment	7	2	1	1	0	5	2	2	1	2
Individual/Personal	40	20	17	13	4	3	0	0	0	1
Track	3	0	2	3	0	2	2	1	5	2

Table 10, Reportable incidents (incident type, assigned factors), 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Actions	118	111	112	116	90	148	127	113	141	132
Failure to protect	40	39	35	31	38	55	34	34	53	35
Failure to secure	8	6	11	8	1	10	6	4	10	2
Failure to use equipment properly	5	6	2	5	1	3	3	3	5	1
Inadequate/Inappropriate communication	5	5	7	11	4	6	8	8	11	14
Lap of authority	58	48	50	55	41	65	71	59	59	74
Vandalism	1	4	4	0	3	1	3	1	2	4
Other actions	1	3	3	6	2	8	2	4	1	2
Other assigned factors	3	3	1	6	6	6	1	8	10	8
Incidents by number of assigned factors	**294**	**257**	**245**	**220**	**223**	**216**	**207**	**160**	**204**	**204**
One factor assigned	233	212	199	164	163	206	205	156	201	199
More than one factor assigned	40	27	28	24	5	9	2	4	3	4
No factor assigned	21	18	18	32	55	1	0	0	0	1

Data extracted February 1, 2013.

Federally regulated railway occurrences.

TSB does not investigate all occurrences; therefore, assigned factors may not represent TSB findings. Occurrences are normally only reported to TSB with one assigned factor. The TSB may assign additional factors.

Some factors are assigned by highest category (e.g. Actions), therefore the breakdowns may not sum up to the category total.

Source: Transportation Safety Board of Canada.

Footnotes

1 Refer to Appendix B for a definition of a reportable railway accident.
2 Other accident types are, but not limited to, trespasser, collisions/derailments involving track units, rolling stock collision with object, or employee/passenger accidents.
3 On occasion, accidents involving dangerous goods can include road vehicles carrying or having recently carried dangerous goods.
4 Trespasser accidents involve persons, primarily pedestrians, not authorized to be on railway rights-of-way and who are struck by rolling stock other than at railway crossings.
5 A crossing accident is when a railway rolling stock is involved in a grade-crossing collision with a motor vehicle or pedestrian, resulting in death, serious injury or property damage.
6 Accidents which occur on main-track or spurs (not including crossing and trespasser accidents) are combined in order to match the figures used in the activity data, which is based on combined main track and spur million track miles.
7 As provided to TSB by the Strategic Information Branch of Transport Canada.
8 It is agreed by convention that, for a result to be considered statistically significant, its probability must be lower than 1 in 20 (that is, $p<.05$).
9 Occurrences are normally only reported to TSB with one assigned factor. Since multiple factors can contribute to an occurrence, the TSB may assign additional factors to an occurrence. Note that when multiple factors are assigned to an accident they are considered to have acted in combination to contribute to the occurrence.
10 Actions-related factors are, but not limited to, non-compliance with prescribed procedures such as failure to protect or failure to secure. Note that in previous publications, Actions-related factors were referred to as Rules-related factors.

11 Movement exceeds limits of authority is when a train or track unit movement occupies a main track (including signalled sidings, signalled yard tracks and station tracks) or portion thereof without the required authorization.

Date modified: 2013-06-11

APPENDIX E

Letter from Town of Labrador City, May 3, 2013

TOWN OF LABRADOR CITY
317 HUDSON DRIVE
P.O. BOX 280, LABRADOR CITY, NL A2V 2K5
TELEPHONE (709) 944-2621
FAX (709) 944-6353

OFFICE OF THE TOWN MANAGER

May 3, 2013

Hon. Tom Hedderson, Minister
Department of Environment and Conservation
Government of Newfoundland and Labrador
P.O. Box 8700
St. John's, NL A1B 4J6

Fax: 709-729-0112

Re: Kami Iron Ore Project – Amendment to the Environmental Impact Statement

In addition to the comments raised in correspondence dated March 28, 2013 Council would like to further clarify its position with respect to mitigation of project impacts on community services, infrastructure and the Pike Lake South Management Unit.

Council respectfully requests that as a condition for release from the Environmental Assessment process, the applicant shall be required to have successfully concluded negotiations of with the Town of Labrador City with respect to mutual aid, a corporate stewardship agreement, annual grant and offset agreement(s) and industrial permit fees.

Should further clarification be required, please do not hesitate to contact Diane Gear, Town Manager at 709-944-5537.

Sincerely,

Karen Oldford
Mayor

Cc Hon. Nick McGrath, MHA
Gary Norris, Alderon, Executive VP, Government & Community Services
Paul Carter, Department of Natural Resources

APPENDIX F

Summary of Engagement Activities with the Town of Labrador City

Summary of Engagement Activities with the Town of Labrador City

Date	Activity	Participant(s)	Summary
8/16/2012	Outgoing Letter	Mayor	Letter to Town of Labrador City regarding a proposed Memorandum of Understanding between Alderon and the Town.
9/27/2012	Outgoing Letter	Mayor	Letter re EIS Submission
10/1/2012	Outgoing Letter	Mayor	Letter re EIS Submission - French Translation
10/23/2012	Open House	Representatives from the Town Council and community members	Public information session held in the Town of Labrador City to provide an update on the Kami Project to the community.
11/20/2012	Incoming Letter	Mayor	Town of Labrador City comments on the EIS submitted to CEAA on November 20, 2012.
1/28/2013	Outgoing Letter	Mayor	Letter to Town of Labrador City regarding the Memorandum of Understanding between Alderon and the commitment made by Alderon to enter into a Corporate Municipal Stewardship Agreement with the Town to address issues pertaining to the Pike Lake South Management Unit. A proposed Agreement is attached to the letter.
1/28/2013	Outgoing Letter	Labrador Town Council	Memorandum of Understanding between Alderon Iron Ore Corp. and Town of Labrador City – Signed by both parties- January 28, 2013
2/12/2013	Outgoing Letter	Mayor	Letter of Transmittal of Amendment to EIS to Town of Labrador City.
2/18/2013	Outgoing Letter	Mayor	Letter of transmittal of the courtesy French translation of the Amendment to the Environmental Impact Statement to the Town of Labrador City
3/28/2013	Incoming Letter	Mayor	Letter from Town of Labrador City to NL Minister of Environment and Conservation providing comments on the EIS Amendment. Alderon is copied on the letter.

Date	Activity	Participant(s)	Summary
4/11/2013	Meeting	Labrador Town Council	Meeting with Town of Labrador City to discuss proposed mitigation measures pertaining to potential Kami Project effects on the Wetland Stewardship Area.
4/23/2013	Outgoing Letter	Mayor	Letter to Town of Labrador City to request that the Town provide an initial outline of their expectations and position concerning a number of specific issues in the context of the MOU signed between Alderon and the Town. This information would form the basis of Agreements to be negotiated with the Town.
4/23/2013 to 10/06/2013	Meetings and telephone calls	Town officials	Meetings and telephone calls with officials from the Town reiterating Alderon's request to provide an initial outline of their expectations and position concerning a number of specific issues in the context of the MOU.
5/3/2013	Incoming Letter	Mayor	Letter from Town of Labrador City to NL Minister of Environment and Conservation providing comments on the EIS Amendment. Alderon is copied on the letter.

APPENDIX G

Summary of Engagement Activities with the Town of Wabush

Summary of Engagement Activities with the Town of Wabush

Date	Activity	Participant(s)	Summary
8/16/2012	Outgoing Letter	Mayor	Letter to Town of Wabush regarding a proposed Memorandum of Understanding between Alderon and the Town.
9/27/2012	Outgoing Letter	Mayor	Letter re EIS Submission
10/1/2012	Outgoing Letter	Mayor	Letter re EIS Submission - French Translation
10/24/2012	Open House	Representatives from the Town Council and community members	Public information session held in the Town of Wabush to provide an update on the Kami Project to the community.
11/13/2012	Incoming Letter	Mayor	Town of Wabush Comment on EIS submitted to CEAA on November 13, 2012.
11/13/2012	Outgoing Letter	Mayor	Memorandum of Understanding - Signed by Alderon Iron Ore and Town of Wabush
1/18/2013	Meeting	Wabush Town Council	Meeting with Town Council of Wabush to: provide an update on the Project; and discuss issues pertaining to Alderon's Temporary Construction Camp and the Kami Project Rail Infrastructure.
1/29/2013	Outgoing Letter	Wabush Town Council	Letter to Team Wabush of the 2013 Labrador Winter Games indicating that Alderon has made the decision to make a donation towards the Team's Efforts.
1/31/2013	Outgoing Letter	Mayor	Letter to DOEC Water Resources Management Division establsihing a Working Group to address issues pertaining to the crossing of the Kami Rail Line over the Protected Watershed Area of the Town of Wabush.
1/31/2013	Outgoing Letter	Mayor	Letter to Town of Wabush establishing a Working Group to address issues pertaining to the crossing of the Kami Rail Line over the Protected Watershed Area of the Town of Wabush.
2/11/2013 12:00 AM	Meeting	Wabush Town Council	Meeting with Town of Wabush to discuss the proposed location of the Kami Rail in the Wabush Protected Watershed Area.
2/12/2013 12:00 AM	Face-to-Face/In Person	Wabush Town Council	Meeting with Town Council of Wabush to discuss the proposed location of Kami Rail in the Wabush Protected Watershed Area.
2/12/2013 12:00 AM	Outgoing Letter	Mayor	Letter of Transmittal of Amendment to EIS to Town of Wabush, February 12, 2013

Date	Activity	Participant(s)	Summary
2/18/2013	Outgoing Letter	Mayor	Letter of transmittal of courtesy French translation of the Amendment to the Environmental Impact Statement to the Town of Wabush, February 18, 2013
2/21/2013	Outgoing Letter	Mayor	Letter to Mayor of Wabush indicating Alderon's contribution in support of the Wabush Midget Hockey Team as they represent the Province at the National Hockey Tournament in Nova Scotia.
2/28/2013	Meeting	Mayor, Town Manager and Town staff	Initial meeting of the Rail Working Group. During this meeting, Alderon and the Town of Wabush developed the group structure and objectives. They also discussed the following various issues such as water supply, environmental mitigation, spill response and community engagement.
3/6/2013	Meeting	Mayor, Town Manager and Town staff	Rail working group meeting
3/13/2013	Meeting	Mayor, Town Manager and Town staff	Rail working group meeting
3/20/2013	Meeting	Mayor, Town Manager and Town staff	Rail working group meeting.
3/26/2013	Meeting	Ken Anthony, Ron Barron, Melanie LaFosse, Edna MacDonald, Dwayne Patey, Colin Vardy, Marvin Butler, Jessie Tobin	Meeting with Town Council of Wabush to provide an update on the Project and explain Alderon's plans to locate the Kami rail in the Wabush Protected Watershed Area.
3/27/2013	Meeting	Mayor, Town Manager and Town staff	Rail working group meeting.
4/3/2013	Meeting	Mayor, Town Manager and Town staff	Rail working group meeting.
4/11/2013	Open House	Representatives from the Town Council and community members	Public information session held in the Town of Wabush to provide an update on the Kami Project and present a series of measures aimed at mitigating the effects of locating the Kami Rail in the Town's Protected Water Supply area.
4/12/2013 12:00 AM	Outgoing Telephone Call	Wabush Town Council	Phone Call with Town of Wabush as a follow-up to Alderon's Wabush Public Information Session on April 11, 2013. The discussion pertained to the issue of the location of the Rail.

Date	Activity	Participant(s)	Summary
4/17/2013	Meeting	Mayor, Town Manager and Town staff	Rail working group meeting.
4/23/2013 12:00 AM	Outgoing Letter	Mayor	Letter to Town of Wabush to request that the Town provide an initial outline of their expectations and position concerning a number of specific issues in the context of the MOU signed between Alderon and the Town. This information would form the basis of Agreements to be negotiated with the Town.
4/24/2013	Meeting	Mayor, Town Manager and Town staff	Rail working group meeting.
4/24/2013	Meeting	Mayor, Town staff	Meeting with Town of Wabush to discuss ESS Camp Proposal
4/26/2013	Meeting	Mayor	Meeting with Town of Wabush to discuss ESS Camp Proposal
4/26/2013	Outgoing Telephone Call	Mayor	Phone call with Town of Wabush to discuss ESS Camp Proposal
5/1/2013	Meeting	Mayor, Town Manager and Town staff	Rail working group meeting.
5/1/2013	Meeting	Mayor, Town staff	Meeting with Town of Wabush to discuss ESS Camp Proposal
5/6/2013	Meeting	Mayor, Town Manager, Town staff	Meeting with Town of Wabush and Wabush Fire Chief to discuss ESS Camp Proposal.
5/6/2013	Meeting	Mayor, Town staff	Meeting with Town of Wabush to discuss ESS Camp Proposal.
5/7/2013	Meeting	Town Staff	Meeting #3 with Town of Wabush to discuss ESS Camp Proposal
5/7/2013	Meeting	Town Staff	Meeting with Town of Wabush and ESS to discuss ESS Camp Proposal.
5/7/2013	Meeting	Town Manager, Town staff	Meeting with Town of Wabush to discuss ESS Camp Proposal.
5/8/2013	Meeting	Mayor, Town Manager and Town staff	Rail working group meeting.
5/22/2013	Meeting	Mayor, Town Manager and Town staff	Rail working group meeting.

APPENDIX H

Correspondence with the Towns of Wabush and Labrador City

ALDERON
IRON ORE CORP

16 August 2012

Mayor Ron Barron
Town of Wabush
15 Whiteway Drive
Wabush, NL A0R 1B0

Dear Mayor Barron:

I would like to express my appreciation for the cooperative and constructive approach that you and your council have taken with Alderon Iron Ore Corp. over the past years. Through our engagement and consultations with yourselves and the community, Alderon understands that there are concerns regarding project effects on your town's infrastructure and accommodation needs.

Alderon acknowledges these concerns and, as we have consistently stated, we are committed to work with your community to address these matters in a proactive and mutually-acceptable fashion.

As we move closer to the development of the Kami Project, we feel there is value in formalizing the relationship between ourselves and your community. We would like to suggest that the Town of Wabush and Alderon enter into a Memorandum of Understanding that would provide the foundation of a long-term relationship between both parties.

Attached for your consideration is a draft MOU to initiate discussion on this matter should you desire.

If you have any questions please feel free to contact Gary Norris, Executive VP – Government and Community Affairs. We look forward to hearing from you in the near future.

Yours very truly,

Original Signed By

Tayfun Eldem
President & CEO

cc: Gary Norris

Encl.

Vancouver Office
Phone: 604-681-8030
Suite 1240
1140 W. Pender Street
Vancouver, BC, V6E 4G1

Toronto Office
Phone: 416-309-2138
8th Floor
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St. John's Office
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8th Floor
10 Fort William Place
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Labrador City Office
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70 - 208 Humber Ave,
P.O. Box 214,
Labrador City, NL, A2V 1L0

ADV: TSX
AXX: NYSE MKT

www.alderoniron ore.com

Email: info@alderoniron ore.com

MEMORANDUM OF UNDERSTANDING ("MOU")

BETWEEN

THE TOWN OF WABUSH (the "Town")

AND

ALDERON IRON ORE CORP. ("Alderon")

(collectively "the Parties")

WHEREAS:

1. Alderon proposes to develop the Kami Project (the "Project") in the vicinity of the Town;
2. Alderon and the Town have been engaged in consultation in order to identify and respond to the issues and concerns of the Town related to the Project;
3. The Town has identified the potential impact of the Project upon community infrastructure and accommodations;
4. Alderon has made commitments in the Environmental Impact Statement to address the potential impacts of the Project upon community infrastructure and accommodations; and
5. The Parties share the common goal of establishing a constructive and cooperative long-term relationship over the life of the Project in order to address the potential impacts of the Project upon community infrastructure and accommodations.

THEREFORE the Parties have reached the following understanding:

1. This MOU is not intended to be legally binding or to create legally enforceable rights between the Parties.

2. The Parties agree that the purpose of this MOU is to:

    a. Acknowledge that working in collaboration is necessary and desirable in order to identify and respond to issues related to the potential impact of the Project on community infrastructure and accommodations;
    b. Reflect the commitment of the Parties to exploring innovative approaches to resolve issues related to community infrastructure and accommodations;
    c. Set out a framework to enable the collaborative development of infrastructure and accommodations strategies by the Parties; and
    d. Outline the process and the topics that will be discussed and addressed by the Parties.

3. The term of this MOU shall be for one year and may be renewed or extended by the agreement of the Parties.

4. This MOU may be amended by the written agreement of the Parties.

5. The Parties agree to establish a Committee which will meet at least once a month during the term of this MOU.

6. The Committee will consist of a maximum of two (2) representatives of each Party. At least one representative from the Town must be a municipal councillor. The representatives of each Party are as follows:

    a. For the Town of Wabush:
    b. For Alderon Iron Ore Corp.:

7. The Chairperson of the Committee will be responsible for conducting the meetings and will be designated by Alderon.

8. Each Party will bear its own costs of participation in the meetings of the Committee.

9. The Parties agree to meaningful engagement, collaboration and cooperation in the design, development and implementation of strategies and initiatives to address the potential impacts of the Project upon community infrastructure and accommodations and agree that topics to be discussed by the Committee at meetings will include but are not limited to:

    a. Land Use Planning;
    b. Project employee accommodations;
    c. Community Infrastructure;
    d. Community Services; and
    e. Any other matter agreed to by the Parties.

10. The Parties agree to work together to develop a comprehensive approach to infrastructure and accommodation issues and to explore opportunities to address issues related to the Project through consideration of the following initiatives:

    a. Examination of existing infrastructure and accommodations programs and services in the Town;
    b. Identification of Project impacts upon community infrastructure and accommodations;
    c. Consideration of new and creative approaches for the management of Project effects upon community infrastructure and accommodations;
    d. Collection of housing and infrastructure data related to the Project and creation of resource materials for Project employees;
    e. Exploration of partnership opportunities between the Town and Alderon; and
    f. Support for comprehensive planning processes to minimize adverse Project effects upon infrastructure and accommodations.

11. The Committee shall report on its deliberations and progress on a regular basis to the Parties.

12. All recommendations of the Committee are subject to approval by Parties.

13. The Town agrees to provide any approved recommendations of the Committee requiring amendments to Municipal Plans or to the enactment or amendment of by-laws or municipal regulations to their Council for consideration.

14. In the event that a dispute over any issue related to or addressed under this MOU should occur between Committee members:
    a. The Committee members will meet and attempt to resolve the dispute among themselves; and
    b. In the event that the Committee is unable to resolve an issue, the matter will be referred to the Parties.

15. Internal communications shall be sent via e-mail to the representatives of each of the Parties.

16. The Parties agree to meet quarterly or more often as agreed to discuss any issues related to the implementation of this MOU.

17. Neither Party shall issue any press release or other public announcement related to this Agreement, written or oral, without the prior written consent of the other party, except as required by law or a court order.

IN WITNESS WHEREOF the Parties have executed this MOU.

16 August 2012

Mayor Karen Oldford
Town of Labrador City
317 Hudson Drive
Labrador City, NL A2V 2K5

Dear Mayor Oldford:

I would like to express my appreciation for the cooperative and constructive approach that you and your council have taken with Alderon Iron Ore Corp. over the past years. Through our engagement and consultations with yourselves and the community, Alderon understands that there are concerns regarding project effects on your town's infrastructure and accommodation needs.

Alderon acknowledges these concerns and, as we have consistently stated, we are committed to work with your community to address these matters in a proactive and mutually-acceptable fashion.

As we move closer to the development of the Kami Project, we feel there is value in formalizing the relationship between ourselves and your community. We would like to suggest that the Town of Labrador City and Alderon enter into a Memorandum of Understanding that would provide the foundation of a long-term relationship between both parties.

Attached for your consideration is a draft MOU to initiate discussion on this matter should you desire.

If you have any questions please feel free to contact Gary Norris, Executive VP – Government and Community Affairs. We look forward to hearing from you in the near future.

Yours very truly,

Original Signed by

Tayfun Eldem
President & CEO

cc: Gary Norris

Encl.

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Email: info@alderonironore.com

MEMORANDUM OF UNDERSTANDING ("MOU")

BETWEEN

THE TOWN OF LABRADOR CITY (the "Town")

AND

ALDERON IRON ORE CORP. ("Alderon")

(collectively "the Parties")

WHEREAS:

1. Alderon proposes to develop the Kami Project (the "Project") in the vicinity of the Town;
2. Alderon and the Town have been engaged in consultation in order to identify and respond to the issues and concerns of the Town related to the Project;
3. The Town has identified the potential impact of the Project upon community infrastructure and accommodations;
4. Alderon has made commitments in the Environmental Impact Statement to address the potential impacts of the Project upon community infrastructure and accommodations; and
5. The Parties share the common goal of establishing a constructive and cooperative long-term relationship over the life of the Project in order to address the potential impacts of the Project upon community infrastructure and accommodations.

THEREFORE the Parties have reached the following understanding:

1. This MOU is not intended to be legally binding or to create legally enforceable rights between the Parties.

2. The Parties agree that the purpose of this MOU is to:

    a. Acknowledge that working in collaboration is necessary and desirable in order to identify and respond to issues related to the potential impact of the Project on community infrastructure and accommodations;
    b. Reflect the commitment of the Parties to exploring innovative approaches to resolve issues related to community infrastructure and accommodations;
    c. Set out a framework to enable the collaborative development of infrastructure and accommodations strategies by the Parties; and
    d. Outline the process and the topics that will be discussed and addressed by the Parties.

3. The term of this MOU shall be for one year and may be renewed or extended by the agreement of the Parties.

4. This MOU may be amended by the written agreement of the Parties.

5. The Parties agree to establish a Committee which will meet at least once a month during the term of this MOU.

6. The Committee will consist of a maximum of two (2) representatives of each Party. At least one representative from the Town must be a municipal councillor. The representatives of each Party are as follows:

    a. For the Town of Labrador City:
    b. For Alderon Iron Ore Corp.:

7. The Chairperson of the Committee will be responsible for conducting the meetings and will be designated by Alderon.

8. Each Party will bear its own costs of participation in the meetings of the Committee.

9. The Parties agree to meaningful engagement, collaboration and cooperation in the design, development and implementation of strategies and initiatives to address the potential impacts of the Project upon community infrastructure and accommodations and agree that topics to be discussed by the Committee at meetings will include but are not limited to:

    a. Land Use Planning;
    b. Project employee accommodations;
    c. Community Infrastructure;
    d. Community Services; and
    e. Any other matter agreed to by the Parties.

10. The Parties agree to work together to develop a comprehensive approach to infrastructure and accommodation issues and to explore opportunities to address issues related to the Project through consideration of the following initiatives:

    a. Examination of existing infrastructure and accommodations programs and services in the Town;
    b. Identification of Project impacts upon community infrastructure and accommodations;
    c. Consideration of new and creative approaches for the management of Project effects upon community infrastructure and accommodations;
    d. Collection of housing and infrastructure data related to the Project and creation of resource materials for Project employees;
    e. Exploration of partnership opportunities between the Town and Alderon; and
    f. Support for comprehensive planning processes to minimize adverse Project effects upon infrastructure and accommodations.

11. The Committee shall report on its deliberations and progress on a regular basis to the Parties.

12. All recommendations of the Committee are subject to approval by Parties.

13. The Town agrees to provide any approved recommendations of the Committee requiring amendments to Municipal Plans or to the enactment or amendment of by-laws or municipal regulations to their Council for consideration.

14. In the event that a dispute over any issue related to or addressed under this MOU should occur between Committee members:
    a. The Committee members will meet and attempt to resolve the dispute among themselves; and
    b. In the event that the Committee is unable to resolve an issue, the matter will be referred to the Parties.

15. Internal communications shall be sent via e-mail to the representatives of each of the Parties.

16. The Parties agree to meet quarterly or more often as agreed to discuss any issues related to the implementation of this MOU.

17. Neither Party shall issue any press release or other public announcement related to this Agreement, written or oral, without the prior written consent of the other party, except as required by law or a court order.

IN WITNESS WHEREOF the Parties have executed this MOU.

April 23, 2013

Mayor Ron Barron
15 Whiteway Drive
Wabush, NL A0R 1B0

Dear Mayor Barron:

Re: Agreements between Alderon Iron Ore Corp. and the Town of Wabush

Alderon Iron Ore Corp. (Alderon) is committed to ensure that any potential negative effects from the project are properly mitigated and that the Town optimizes the benefits from the development of the Kami Project. As such, we are pleased to have signed a Memorandum of Understanding (MOU) with the Town of Wabush. Alderon's intent in signing this agreement is to facilitate a long-term relationship with the Town for the benefit of the community.

As you know, the MOU serves as a mechanism to address a comprehensive range of potential effects from the Kami Project on the community. As a follow-up, we wish to commence discussions toward the resolution of a number of specific issues that will address community benefits from the development of the Kami Project. These issues include:

- Mutual Aid;
- Grant in Lieu of Taxes;
- Project effects on Community Services and Infrastructure, and;
- Project effects on the Jean Lake Rapids Management Unit.

Our goal is to commence discussions regarding negotiations shortly and finalize the agreements by the first week of September 2013 so we can commence construction this fall. In order to achieve this schedule, we kindly request that the Town Council provide an initial outline of your expectations and position with respect to the Mutual Aid, Grant in Lieu of Taxes, Community Services and Infrastructure, and the Jean Lake Rapids Management Unit. It would be useful for the Town to prepare a list of proposed initiatives in writing to Alderon by 15 May 2013.

I look forward to hearing from you.

Yours very truly,

Original Signed By

Gary Norris
Executive VP, Government and Community Affairs

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Phone: 604-681-8030
Suite 1240
1140 W. Pender Street
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Email: info@alderonironore.com

April 23, 2013

Mayor Karen Oldford
Town of Labrador City
317 Hudson Drive
Labrador City, NL A2V 2K5

Dear Mayor Oldford:

Re: Agreements between Alderon Iron Ore Corp. and the Town of Labrador City

Alderon Iron Ore Corp. (Alderon) is committed to ensure that any potential negative effects from the project are properly mitigated and that the Town optimizes the benefits from the development of the Kami Project. As such, we are pleased to have signed a Memorandum of Understanding (MOU) with the Town of Labrador City. Alderon's intent in signing this agreement is to facilitate a long-term relationship with the Town for the benefit of the community.

As you know, the MOU serves as a mechanism to address a comprehensive range of potential effects from the Kami Project on the community. As a follow-up, we wish to commence discussions toward the resolution of a number of specific issues that will address community benefits from the development of the Kami Project. These issues include:

- Mutual Aid;
- Grant in Lieu of Taxes;
- Project effects on Community Services and Infrastructure, and;
- Project effects on the Pike Lake South Management Unit

As you are aware, work is currently underway to complete a Corporate Municipal Stewardship Agreement, however, it is important to advance discussions on the remaining matters so that we can commence construction this fall.

Our goal is to commence discussions regarding negotiations shortly and finalize the agreements by the first week of September 2013. In order to achieve this schedule, we kindly request that the Town Council provide an initial outline of your expectations and position with respect to the Mutual Aid, Grant in Lieu of Taxes and Community Services and Infrastructure. It would be useful for the Town to prepare a list of proposed initiatives in writing to Alderon by 15 May 2013.

I look forward to hearing from you.

Yours very truly,

Original Signed By
Gary Norris
Executive VP, Government and Community Affairs

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Phone: 604-681-8030
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APPENDIX I

Memorandum of Understanding With Town of Labrador City

MEMORANDUM OF UNDERSTANDING ("MOU")

BETWEEN

THE TOWN OF LABRADOR CITY (the "Town")

AND

ALDERON IRON ORE CORP. ("Alderon")

(collectively "the Parties")

WHEREAS:

1. Alderon proposes to develop part of the Kami Project (the "Project") within the municipal planning area of the Town;

2. During the construction and operational phase, the Project shall impact the resources of the Town beyond its current capacity;

3. Alderon and the Town have been engaged in consultation in order to identify and respond to the issues and concerns of the Town related to the Project;

4. The Town has identified potential impacts of the Project including but not limited to: community infrastructure, Corporate Stewardship Agreement, cabin owners, White Wolf Snowmobile Club, temporary and permanent accommodations, and delivery of local services and amenities;

5. Alderon has made commitments in the Environmental Impact Statement to address the potential impact of the Project upon community infrastructure and accommodations;

6. The Parties share the common goal of establishing a constructive and cooperative long-term relationship over the life of the Project in order to address the potential impacts of the Project upon the Town.

THREFORE the Parties have reached the following understanding:

1. This MOU is not intended to be legally binding or to create legally enforceable rights between the Parties.

2. The Parties agree that the purpose of this MOU is to:
    a. Acknowledge that working in collaboration is necessary and desirable in order to identify and respond to issues related to the potential impact of the Project on the Town;
    b. Reflect the commitment of the Parties to exploring innovative approaches to resolve issues impacting the Town;
    c. Set out a framework to enable the collaborative development of strategies by the Parties; and
    d. Outline the process and the topics that will be discussed and addressed by the Parties.

3. The term of this MOU shall be for one year and may be renewed or extended by the agreement of the Parties.

4. This MOU may be amended by the written agreement of the Parties.

5. The Parties agree to establish a Committee which will meet at least quarterly during the term of this MOU or more often as mutually agreed by the Parties for the purpose of implementation of this MOU.

6. The Committee will consist of a maximum of two (2) representatives of each Party unless the Parties mutually agree to increase representation of either party based on the proposed agenda. At least one representative from the Town must be a municipal councillor.
    a.
    b. .

7. Chairperson of the Committee will alternate between the Parties with the first meeting of the Committee chaired by Alderon.

8. Minutes of the Committee will be the responsibility of the non-chairing Party and shall be circulated within five (5) business days of the meeting.

9. Each Party will bear its own costs of participation in the meetings of the Committee and unless otherwise agreed by the Parties, all meetings shall be scheduled to take place in Labrador West.

10. The Parties agree to meaningful engagement, collaboration and cooperation in the design, development and implementation of strategies and initiatives to address the potential impacts of the Project upon the Town and agree that topics to be discussed by the Committee at meetings will include but are not limited to:
    a. Land Use Planning;
    b. Accommodations – construction and operations;
    c. Community Infrastructure;
    d. Local Services and Amenities;
    e. Corporate Stewardship Agreement;
    f. Cabin Owners and White Wolf Snowmobile Club;
    g. Permit Fees, Tax and Off-Set Agreements and
    h. Any other matter agreed to by the Parties.

11. The parties agree to work together to develop a comprehensive approach to explore opportunities to address issues related to the Project through consideration of the following initiatives:
    a. Examination of existing infrastructure, accommodations, amenities and services within the Town;
    b. Identification of Project Impacts upon the Town;
    c. Consideration of new and creative approaches for the management of Project effects upon the Town;
    d. Collection of direct, indirect and induced employment, housing and infrastructure data related to the Project;
    e. Creation of resource materials for Project employees;
    f. Exploration of partnership opportunities between the Town and Alderon; and
    g. Support for comprehensive planning processes to minimize adverse Project effects upon the Town.

12. The Committee shall report on its deliberations and progress on a regular basis to the Parties.

13. All recommendations of the Committee are subject to approval by the Parties.

14. The Town agrees to provide at the cost of Alderon in accordance with the Municipal Fee Structure, any approved recommendations of the Committee requiring amendments to Municipal Plan or the enactment or amendment of by-laws or municipal regulations to Council for consideration.

15. In the event that a dispute over any issue related to or addressed under this MOU should occur between Committee members:
    a. The Committee members will meet and attempt to resolve the dispute among themselves;
    b. In the event that the committee is unable to resolve an issue, the matter will be referred to the Parties.

16. Internal communications shall be sent via e-mail to the representatives of each of the Parties.

17. Neither Party shall issue any press release or other public announcement related to this Agreement, written or oral, without the prior written consent of the other party, except as required by law, stock exchange rules, or a court order.

IN WITNESS WHEREOF the Parties have executed this MOU.

Dated at St. John's, NL

this 10 day of January, 2013

ALDERON IRON ORE CORP.

Original Signed by Gary Norris

Original Signed By Witness

WITNESS

January 10th, 2013

Dated at Labrador City, NL

this 28th day of January, 2013

TOWN OF LABRADOR CITY

Original Signed By Witness

WITNESS

Original Signed by Mayor Karen Oldford

APPENDIX J

Memorandum of Understanding With Town of Wabush

MEMORANDUM OF UNDERSTANDING ("MOU")

BETWEEN

THE TOWN OF WABUSH (the "Town")

AND

ALDERON IRON ORE CORP. ("Alderon")

(collectively "the Parties")

WHEREAS:

1. Alderon proposes to develop the Kami Project (the "Project") in the vicinity of the Town;

2. Alderon and the Town have been engaged in consultation in order to identify and respond to the issues and concerns of the Town related to the Project;

3. The Town has identified the potential impact of the Project upon community infrastructure and accommodations;

4. Alderon has made commitments in the Environmental Impact Statement to address the potential impacts of the Project upon community infrastructure and accommodations; and

5. The Parties share the common goal of establishing a constructive and cooperative long-term relationship over the life of the Project in order to address the potential impacts of the Project upon community infrastructure and accommodations.

THEREFORE the Parties have reached the following understanding:

1. This MOU is not intended to be legally binding or to create legally enforceable rights between the Parties.

2. The Parties agree that the purpose of this MOU is to:

    a. Acknowledge that working in collaboration is necessary and desirable in order to identify and respond to issues related to the potential impact of the Project on community infrastructure and accommodations;
    b. Reflect the commitment of the Parties to exploring innovative approaches to resolve issues related to community infrastructure and accommodations;
    c. Set out a framework to enable the collaborative development of infrastructure and accommodations strategies by the Parties; and
    d. Outline the process and the topics that will be discussed and addressed by the Parties.

3. The term of this MOU shall be for one year and may be renewed or extended by the agreement of the Parties.

4. This MOU may be amended by the written agreement of the Parties.

5. The Parties agree to establish a Committee which will meet at least once a month during the term of this MOU.

6. The Committee will consist of a maximum of three (3) representatives of each Party. At least one representative from the Town must be a municipal councillor. The representatives of each Party are as follows;

    a. For the Town of Wabush: Mayor Ron Barron, CAO Ken Anthony, MEO Melanie LaFosse
    b. For Alderon Iron Ore Corp.:

7. The Chairperson of the Committee will be responsible for conducting the meetings and will be designated by Alderon.

8. Each Party will bear its own costs of participation in the meetings of the Committee.

9. The Parties agree to meaningful engagement, collaboration and cooperation in the design, development and implementation of strategies and initiatives to address the potential impacts of the Project upon community infrastructure and accommodations and agree that topics to be discussed by the Committee at meetings will include but are not limited to:

    a. land Use Planning;
    b. Project employee accommodations;
    c. Community Infrastructure;
    d. Community Services; and
    e. Any other matter agreed to by the Parties.

10. The Parties agree to work together to develop a comprehensive approach to infrastructure and accommodation issues and to explore opportunities to address issues related to the Project through consideration of the following initiatives:

    a. Examination of existing infrastructure and accommodations programs and services in the Town;
    b. Identification of Project impacts upon community infrastructure and accommodations;
    c. Consideration of new and creative approaches for the management of Project effects upon community infrastructure and accommodations;
    d. Collection of housing and infrastructure data related to the Project and creation of resource materials for Project employees;
    e. Exploration of partnership opportunities between the Town and Alderon; and
    f. Support for comprehensive planning processes to minimize adverse Project effects upon infrastructure and accommodations.

11. The Committee shall report on its deliberations and progress on a regular basis to the Parties.

12. All recommendations of the Committee are subject to approval by Parties.

13. The Town agrees to provide any approved recommendations of the Committee requiring amendments to Municipal Plans or to the enactment or amendment of by-laws or municipal regulations to their Council for consideration.

14. In the event that a dispute over any issue related to or addressed under this MOU should occur between Committee members:
    a. The Committee members will meet and attempt to resolve the dispute among themselves; and
    b. In the event that the Committee is unable to resolve an issue, the matter will be referred to the Parties.

15. Internal communications shall be sent via e-mail to the representatives of each of the Parties.

16. The Parties agree to meet quarterly or more often as agreed to discuss any issues related to the implementation of this MOU.

17. Neither Party shall issue any press release or other public announcement related to this Agreement, written or oral, without the prior written consent of the other party, except as required by law or a court order.

IN WITNESS WHEREOF the Parties have executed this MOU.

Signature:	Original Signed By **Mayor Ron Barron, Town of Wabush**	**Witness:**	Original Signed By Witness
Date:	Nov/13/2012	**Date:**	November 13, 2012
Signature:	Original Signed By **Gary Norris, Alderon Iron Ore Corp.**	**Witness:**	Original Signed By Witness
Date:	Nov 13/2012	**Date:**	13 November 2012

Appendix K

Communication with Shabogamo M.E.
(Appendix U from EIS Amendment Volume 3)

ALDERON
IRON ORE CORP

VIA EMAIL

October 31, 2012

Dr. Rehan Malik, President
Shabogamo Mining & Exploration Ltd.
P.O. Box 699
Wabush, NL
A0R 1B0

Dear Dr. Malik:

Re: Kami Iron Ore Environmental Impact Statement

As you are aware, Alderon Iron Ore Corp. acknowledges that Shabogamo Mining & Exploration Ltd. (Shabogamo) has and continues to acquire mineral claims directly adjacent to the Kami properties. Alderon has met with you and your representatives on two separate occasions, most recently on September 13, 2012. During that meeting, we agreed to have Alderon look at the Shabogamo data room to better assess the amount of information they have on the claims they hold so that the assertion of "significant mineralization" can be validated. Since then, we have entered into a non-disclosure agreement with Shabogamo and are preparing to assess the data on your adjacent claims. Discussions, if any, regarding compensation for the potential impact of the Kami project on adjacent claims are of a commercial nature and will be addressed prior to applying for a mining lease.

Regarding your request to the Co-Chair of the Provincial Environmental Assessment Committee that the "approval of the Kami Iron Ore Project be delayed until a satisfactory agreement is reached between Alderon and SME", Alderon feels that it is inappropriate to attempt to delay the environmental assessment process pending the resolution of a potential commercial arrangement.

Alderon has met with Provincial regulators to better understand the process for acquiring a mining lease. As with any other permit or license, application for a mining lease will only be initiated after the environmental assessment is completed. Alderon will continue to engage regulatory bodies and stakeholders to explore all alternatives to ensure that any interference with third-party interests is either avoided or otherwise addressed in a fair and timely manner.

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Dr. Rehan Malik, President
Shabogamo Mining & Exploration Ltd.
Page 2 of 2

We look forward to reviewing your claims data in the near future.

Yours truly,

ALDERON IRON ORE CORP.

Original Signed By

Tayfun Eldem
President & CEO

cc: Minister Tom Hedderson, Minister of Environment,
Government of Newfoundland & Labrador

Minister Jerome Kennedy, Minister of Natural Resources,
Government of Newfoundland & Labrador

Brent Keeping, Co-Chair of the Assessment Committee,
Government of Newfoundland & Labrador

Todd Burlingame, Executive VP Environment & Aboriginal Affairs,
Alderon Iron Ore Corp.

November 16, 2012

VIA EMAIL

Shabogamo Mining and Exploration Ltd.
P.O. Box 699
Wabush, NL A0R 1B0

Attention: Rehan Malik, President

Dear Mr. Malik:

Re: Alderon Iron Ore Corp. ("Alderon")

This letter is further to your November 5, 2012 meeting with Alderon's Chief Geologist Edward Lyons. After reviewing the assessment reports that Shabogamo has filed and the PowerPoint presentation that was given to Mr. Lyons at this meeting, Mr. Lyons has concluded that the assessment report (the "Report") covering mineral licenses 017882M, 017927M, 017959M, and 018553M for 2012 works contained a factual error that Alderon would like to see formally corrected for the public record.

In the Report under the heading 5.0 - Conclusions and Recommendations, Ed Montague, PGeo wrote:

"Iron formation bedrock samples show possible commercial deposits within the SME claims particularly in the Riordan Lake area *where airborne geophysics that were flown recently by Alderon Iron Ore Corp. indicate a large electro-magnetic anomaly that straddles both Alderon and SME licenses.*" [Alderon italics]

The italicised part is factually wrong. SME took the property geology map from Alderon's May 20, 2011 technical report, which was done before Alderon had the geophysical analysis. The anomalies on the property map contained in the technical report, made by Mr. Lyons, were derived from old government airborne surveys that, for technical reasons explained by him to you at the meeting, did not correct for elevation so that topographic highs can often give a "false anomaly". These were sketched on the geology map, but they are not based on Alderon data as Mr. Montague says in the Report. In fact, Mr. Lyons shared with you all that Alderon's survey showed was that there was absolutely no electro-magnetic anomaly at all on the several old anomalies. Alderon also know from mapping the anomaly in Shabogamo's reference that there is no iron formation in the local outcrops on the Alderon claims.

Given the nature of our mutual dealings underway and since the Report is a matter of public record, Alderon requests that Shabogamo correct this error. In order to do this, Shabogamo must submit a revised report to the Newfoundland Department of Natural Resources with a correction made to the erroneous passage highlighted in this letter. Alderon also requests that a copy of the revised report be sent to Alderon at the time it is submitted to the Newfoundland Department of Natural Resources. This will clarify any potential confusion.

Alderon requests that Shabogamo send an acknowledgement of the receipt of this letter and confirmation that it will submit this revised report by November 30, 2012.

Yours very truly,

ALDERON IRON ORE CORP.

Original Signed By

Tayfun Eldem
President & CEO

/oja

cc: Edward Lyons, Chief Geologist
Gary Norris, Executive VP Government & Community Affairs
Olen Aasen, Corporate Secretary and General Counsel