IRON ORE COMPANY OF CANADA
WABUSH 3 GROUNDWATER EXTRACTION PROJECT
LABRADOR WEST

Description of a Designated Project
Pursuant to the *Canadian Environmental Assessment Act, 2012*

Summary Document (English)

Submitted by:
Iron Ore Company of Canada
2 Avalon Drive
Labrador City, Newfoundland & Labrador
A2V 2Y6

Prepared with the assistance of:
AMEC Environment & Infrastructure,
A division of AMEC Americas Limited
133 Crosbie Road, PO Box 13216
St. John's, Newfoundland & Labrador
A1B 4A5

May, 2013

Rev 1 – June 6, 2013

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICIES

1.0 GENERAL INFORMATION AND CONTACTS

1.1 Nature of the Project

The Iron Ore Company of Canada is proposing to construct and operate a new open pit mine at its Labrador West mine site in the Town of Labrador City, Newfoundland and Labrador. The proposed Wabush 3 project is needed to expand IOC's iron ore resources to allow flexibility in providing iron ore feed to the concentrator plant to achieve production at the plant's rated capacity and to provide a new source of iron ore to extend the operating life of the Carol Project. A component of the Wabush 3 open pit project will be the extraction of groundwater from the open pit area (the Project), through deep well pumping and seepage into the open pit and the handling and ultimate disposal of the water.

The Project is a designated project under *Canadian Environmental Assessment Act*, *2012* (CEAA 2012) and is subject to the Federal environmental assessment (EA) process. Specifically, the project falls under Section 8 of the *Regulations Designating Physical Activities* which declares that "The construction, operation, decommissioning and abandonment of a facility for the extraction of 200,000 m^3/a or more of ground water or an expansion of such a facility that would result in an increase in production capacity of more than 35%" is a designated project.

1.2 Proponent Contact information

Name of Project:	Wabush 3 Groundwater Extraction Project
Name of Proponent:	Iron Ore Company of Canada
Address:	2 Avalon Drive, Labrador City, NL Canada A2V 2Y6

President and Chief Executive Officer:	Zoë Yujnovich 1000 Sherbrooke Street W, Suite 1920, Montréal, QC, Canada H3A 3R2
Principal Contact Person for the Purposes of Environmental Assessment:	Lee Preziosi Manager Environment & Social Responsibility 2 Avalon Drive, Labrador City, NL Canada A2V 2Y6 Cell: 709-987-0796 Tel: 709-944-8400 ext 8654 Email: Lee.Preziosi@riotinto.com

1.3 List of Jurisdictions

Consultations in various forms have been held with the following government agencies, public and Aboriginal organizations either during the planning for the Wabush 3 open pit project and its groundwater extraction component or for expansion focused projects, some of which are no longer in IOC's planning cycle. For most of the expansion consultation activities Wabush 3 was included in the discussions. Further details on the consultations are provided in Sections 6 and 7.

Government Agencies:	Canadian Environmental Assessment Agency
	Environment Canada
	Fisheries and Oceans Canada
	NL Department of Environment and Conservation
	NL Department of Natural Resources
	NL Intergovernmental and Aboriginal Affairs Secretariat
Aboriginal Organizations:	Innu Nation, Happy Valley-Goose Bay, Labrador
	NunatuKavut Community Council, HV-GB, Labrador
	Matimekush – Lac John First Nation, Schefferville, Quebec
	Naskapi Nation of Kawawachikamach, Schefferville, Que
	Uashat Mak Mani-Utenam, Sept Iles, Quebec

Public and Community Groups:	Town of Labrador City
	Community Advisory Panel
	Labrador West Regional Task Force
	Labrador City-IOC Joint Planning Committee
	Smokey Mountain Ski Club
	Menihek Nordic Ski Club
	White Wolf Snowmobile Club

1.4 Environmental Assessment Processes and Requirements

The *Canadian Environmental Assessment Act* (*CEAA 2012*) is the legislative basis for federal environmental assessment (EA) in Canada. As per Section 5 of *CEAA 2012*, a federal EA focuses on potential adverse environmental effects that are within federal jurisdiction, including:

- fish and fish habitat;
- other aquatic species;
- migratory birds;
- federal lands;
- effects that cross provincial or international boundaries;
- effects that impact on Aboriginal peoples, such as their use of lands and resources for traditional purposes;
- changes to the environment that are directly linked to or necessarily incidental to any federal decisions about a project.

As the Responsible Authority, the Canadian Environmental Assessment Agency (the Agency), is responsible for determining whether a federal EA is required and, if so, for conducting the EA. Proponents must provide the Agency with a description of their proposed project if it is captured by the *Regulations Designating Physical Activities*. The project then undergoes a 45-day screening process to determine whether a federal EA is required.

The Wabush 3 open pit project falls under Section 8 of the designated project regulations: "The construction, operation, decommissioning, and abandonment of a facility for the extraction of 200, 000m^3/a or more of groundwater or an expansion of such a facility that would result in an increase in production capacity of more than 35%". As such, the CEAA 2012 screening and potential EA, will be focused on the potential environmental effects on areas within federal jurisdiction that are related to the groundwater extraction facility *i.e.,* excluding the open pit mine.

The Wabush 3 open pit project, including the groundwater extraction component is also subject to the Provincial EA process under the *Newfoundland and Labrador Environmental Protection Act* (*NL EPA*) that requires anyone who plans a project that could have a significant effect on the natural, social or economic environment to present it for examination through the provincial EA process. Under the *NL EPA*, the proposed Wabush 3 open pit project is considered an undertaking subject to Part 10 of *NL EPA* and pursuant to Section 33(2) of the associated *Environmental Assessment Regulations* regarding an undertaking that will be engaged in mining. The Wabush 3 open pit project, including the groundwater extraction component, would also be subject to the conditions and regulations associated with provincial and federal permits.

The proposed Project area has not been subject to a regional environmental study.

2.0 PROJECT INFORMATION

IOC has been operating the Carol Project in Labrador West since the early 1960s. The company's current mining operations consist of open pit mines, mineral processing (concentrator and pellet plants) and tailings and waste rock management facilities, as well as transportation infrastructure and other associated components and activities. The facilities cover an area of approximately 11,000 hectares. IOC is the largest producer of iron ore concentrate and pellets in Canada, and a leading global supplier of the same.

The company's existing mining operations in Labrador West consist of five operating open pits – Humphrey Main, Sherwood, Luce, Humphrey South and Lorraine South. Reactivation of the Spooks Pit is also planned. IOC's Labrador West properties also contain significant quantities of additional iron ore resources and potential resources for future development. IOC's existing concentrator has an annual production capacity of approximately 23 million tonnes of iron ore concentrate, of which up to 13 million tonnes is pelletized and the balance is sold directly as concentrate. The annual production capacity has increased from 18 million tonnes of concentrate with the recent completion of the Concentrator Expansion Program (CEP).

The Wabush 3 open pit mine will be a conventional open pit mine which will serve the IOC operations in two fundamental ways:

- allow flexibility in providing iron ore feed to its existing concentrator plant to achieve and maintain production of iron concentrate at the plant's rated capacity; and,
- provide a new source of iron ore to extend the operating life of its Carol Project.

The main source of iron ore to feed the mill for the past seven years has been Luce Pit and IOC has experienced challenges in recent years in maintaining sufficient mine production to realize full concentrate production, in part due to operational difficulties in the Luce pit. IOC is investigating options to increase mining productivity in the existing pits,

but also needs to increase operational flexibility by developing additional working areas, for quality blending, balancing of waste stripping and to provide alternative mining areas. Development of the Wabush 3 deposit will provide this operational flexibility, which is considered essential to ensuring that the new rated capacity of 23 million tonnes per annum of concentrate production can and will be achieved on a consistent basis.

The submission of the Wabush 3 project to the Federal EA process is predicated on Section 8 of the *Regulations Designating Physical Activities* which declares "The construction, operation, decommissioning and abandonment of a facility for the extraction of 200,000 m^3/a or more of ground water or an expansion of such a facility that would result in an increase in production capacity of more than 35%" as a designated project.

The extraction of groundwater through the use of boreholes and groundwater pumps will be a component of the Wabush 3 open pit project. Groundwater modeling will be conducted in 2013 and the results will be used to determine the extent of groundwater pumping (extraction) and provide certainty to the locations of the groundwater extraction sites. The development of the Wabush 3 open pit mine will realize the lowering of the groundwater table as the pit is deepened and a groundwater extraction program will reduce the rate of groundwater seepage into the pit. The combination of pumping groundwater and groundwater seepage into the pit will likely exceed the 200,000 m^3/a threshold in Section 8 of the *Regulations Designating Physical Activities*. Again, the groundwater modeling will help to estimate quantities or flow rates. This information will be important to design the mine water pumping and treatment systems.

2.1 Components and Activities

The Project will be comprised of the following components:

- a mine water collection, pumping and treatment system; and
- a groundwater extraction system.

As the Wabush 3 open pit project is the addition of an open pit mine to an existing and very large iron ore mining and concentrating facility, the rest of the infrastructure associated with extracting, transporting, concentrating, pelletizing and shipping the ore to Sept Iles, maintaining all plant and mobile equipment and managing the tailings and other waste is already in place. The operation of Wabush 3 will not result in an overall increase in iron ore production and the mining equipment (trucks, shovels, drills and other mobile fleet) and the needed workforce will be deployed from other mines within the IOC property. Accordingly, the Wabush 3 open pit mine is considered an extension to an existing mining complex and not a new mine.

The Wabush 3 open pit mine will increase the measured, indicated and inferred resource iron ore tonnage of the IOC Carol Project by 903 M tonnes. The combined proven and probable reserves and the measured, indicated and inferred resources at the Carol Project

(including Wabush 3) are 4407 M tonnes. Wabush 3 represents 20.5 percent of this total and a 25.8 percent increase in tonnage. The Project will not result in any increase in concentrate or pellet production capacity. Accordingly, the Wabush 3 open pit mine is not an expanded mine as defined in the *Regulations Designating Physical Activities*

The overall Wabush 3 open pit mine project area, including the mine pit, waste rock disposal and overburden storage areas and haulage roads, will cover a total area of approximately 464 ha. The ground water extraction component includes the collection of groundwater seepage throughout the 271 hectare open pit, the extraction and removal of groundwater from the pit through deep well pumping, treatment where necessary and disposal. The principle objectives for managing inflows into the Wabush 3 open pit are to create and maintain a dry environment for drilling, blasting and excavating iron ore and waste rock, and to reduce adverse effects of groundwater on the development of sinking cuts. These objectives will be accomplished by the following:

- Diverting flows around pit areas with diversions;
- Collecting groundwater seepage and surface runoff and conveying it into designated sumps within the pits;
- Directing inflows away from the active mining areas and into sumps with ditches;
- Intercepting groundwater flow with deep dewatering wells;
- Maintaining drawn down conditions in the sumps by pumping to sedimentation ponds or other designated discharge sites; and
- Treating collected mine water to meeting Federal and Provincial water quality regulations before discharge to the receiving environment.

An environmental benefit of maintaining a dry working area is a reduction in the quantity of blasting emulsion that is flushed or leached from the blast holes. This in turn reduces the amount of ammonia in the pit sump inflows, and ultimately in the mine discharge and receiving water.

Groundwater seepage into open pit mines occurs as the pits extend below the water table. Water would typically be pumped from the pit, treated and discharged to the environment to maintain mining operations. In Phase 1 of mining development and operation, gravity drainage will be used to drain water accumulated in the pit north into a creek leading to a proposed settling pond and eventually into Dumbell Lake. Once the bottom of the pit becomes lower than the settling pond (between years 5 – 10 of the operation), all runoff and groundwater seepage will be drained south towards the Leg Lake system. Initially, accumulated water would be pumped into Pumphouse Pond, the water body within the pit footprint, which will provide primary settling. Discharge from Pumphouse Pond would flow naturally through Drum Lake and into Leg Lake. In the Phase 2 development (after year 17 of the operation), Pumphouse Pond will be removed and will be replaced for mine water treatment with a possible combination of Drum Lake and a constructed settling and treatment system. The design details will be determined with the groundwater modelling

results and the experience gained through the early stages of mine development. Depending on the water quality, an alternative would be to pump accumulated pit water to the currently used Luce Lake pit water discharge point.

Regardless of which phase of mine development or into which watershed the treated mine water is discharged, the treatment system will be designed and operated to meet the federal and provincial regulatory standards for effluent quality at the point of release to the environment. Two issues that are favourable to simplifying treatment design and the resultant management of wastewater quality are:

- the geology of the area is characterized by non-acid generating (NAG) rock; and
- IOC is assessing options for modifying blasting practices, with the intention of providing better control over toxicity associated with ammonia.

The detailed design of the groundwater extraction system through the use of boreholes and groundwater pumps has not been prepared. Groundwater modeling will be conducted in 2013 and the results will be used to determine the extent of groundwater pumping (extraction) and the locations for the extraction wells and facilities.

Previous hydrogeological investigations (Piteau 2002) of IOC open pit mines north of the Wabush 3 area have estimated groundwater seepage into each pit for mitigation purposes. Groundwater seepage ranges from as low as 80 USGPM (~440 m^3/d) for Humphrey South Pit up to 1,000 USGPM (~5,400 m^3/d) for the Humphrey Main Pit. At Spooks Pit seepage has been estimated at 1,740 USGPM (~9,500 m^3/d) associated with seepage through the weathered eastern face from Lake Lorraine (Piteau 2002).

A conceptual, preliminary design of groundwater extraction systems is provided in Figure 2.1. Groundwater extraction wells will be installed within the Wabush 3 footprint during the Phase 1 development. Some of these wells will be installed in advance of any overburden clearing and waste rock removal and some after mining has established suitable areas for development of the wells. During Phases 2 and 3 groundwater extraction systems will be installed outside the pit perimeter along the southern edge of the pit. The exact locations and the number of groundwater extraction systems will be determined after the groundwater modeling is conducted and will likely change as experience is gained from previous systems installed during the life of the Project. The determination of the locations for the groundwater extraction wells will also be aided by drilling programs which will be undertaken within and around the Wabush 3 Pit footprint. Drill holes which encounter the most productive water bearing zones will be selected as the sites for the dewatering wells. The groundwater extraction program will likely be a long-term measure to help mitigate the groundwater seepage into the Wabush 3 pit.

Transmission lines will be built from the main electrical supply line (built to power the mining equipment) to the wells within the Wabush 3 pit. The effects that the wells will have on the groundwater flow regime in the Wabush 3 area will be assessed using the pumping records and piezometric data. These data will be tracked by hydrogeological personnel within IOC's Mine Technical Services group.

It is anticipated that most boreholes for groundwater extraction will be placed outside the pit and most of those within the pit will be established before mining activity occurs. Accordingly, the water collected should not be affected by in-pit activities (suspended solids and chemicals associated with blasting) and the need for treatment of the extracted groundwater is not anticipated. Should treatment be determined to be needed, the well discharges will be directed to the pit water treatment system. The quantities, quality and discharge location(s) will be determined during the detailed system design stage. Design of groundwater extraction discharges will be such that erosion protection will be included. The need to determine if these discharge points will be required to be declared as Final Discharge Points under the *Metal Mining Effluent Regulations* will be determined with Environment Canada during the detailed design stage.

Figure 2.2 provides a typical layout for a groundwater extraction site.

The pit dewatering and groundwater extraction operations for the Wabush 3 open pit project will be similar to other nearby IOC mining operations. With a few exceptions, the mine dewatering and treatment of the existing IOC pits over the past 50 years have resulted in minimal effects on the aquatic environment.

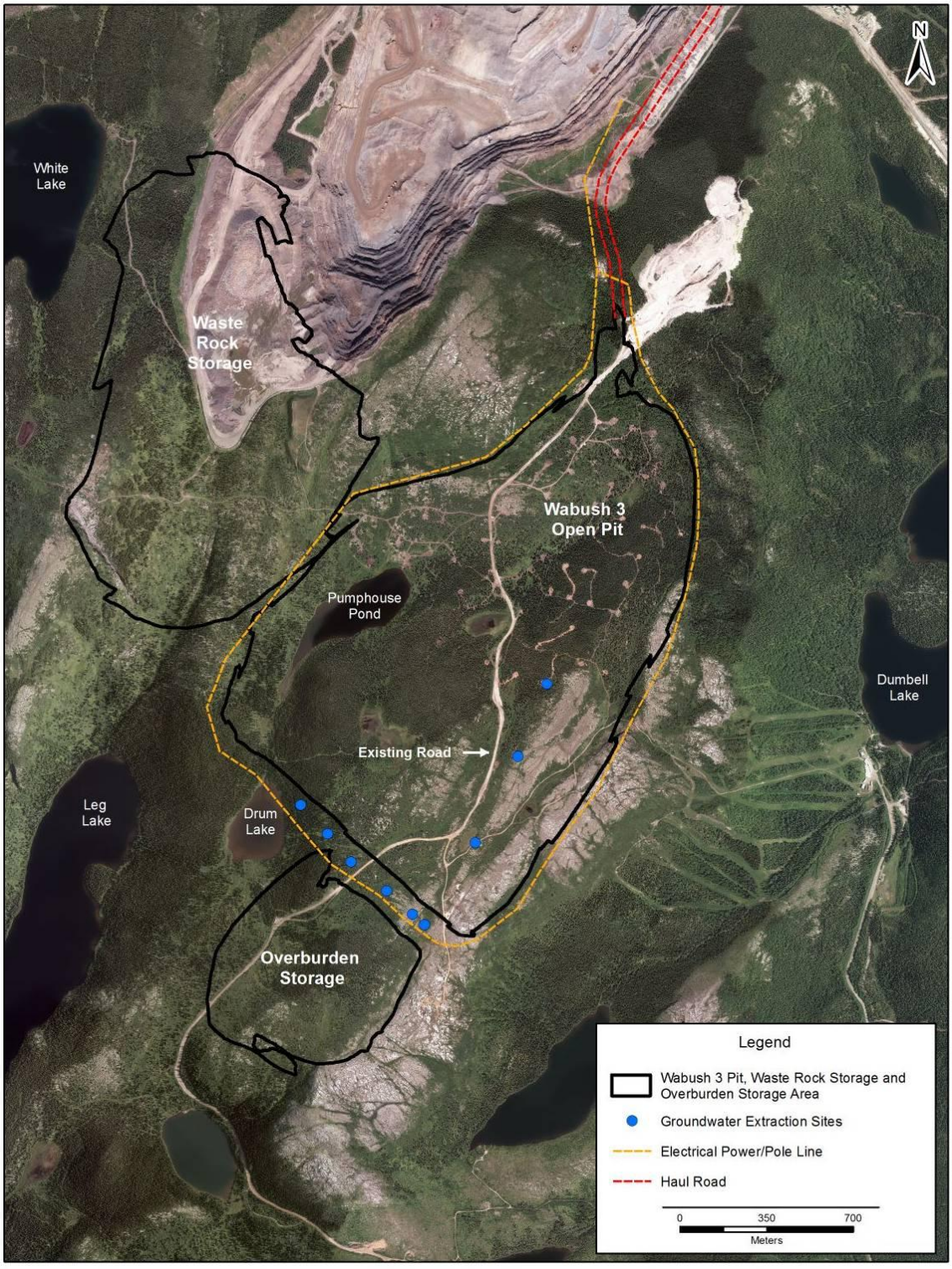


Figure 2-1, Wabush 3 Groundwater Extraction Project – Potential Groundwater Extraction Locations

Figure 2-2, Wabush 3 Groundwater Extraction Project – Typical Layout for a Groundwater Extraction Site

2.2 Emissions, Discharges and Waste

Criteria Air Contaminants (CAC) and greenhouse gases (GHG) associated with the groundwater extraction component of the Project will be limited to emissions from vehicles and drills used to develop service and maintain the facilities at the approximately nine groundwater extraction sites and the water treatment systems for pit dewatering. Power to operate pumps will be supplied from the central electrical supply for the full IOC operation. The power demands for the groundwater extraction and water treatment systems for Wabush 3 will be a small portion of the power demands for the Wabush 3 open pit project. The release of particulate matter (PM) from borehole drilling will be controlled through the use of wet drilling. Fugitive dust will be controlled as necessary using water as a dust control agent. Due to the distance from the Project site, it is not expected that there will be any major impacts to air quality for the community of Labrador City. The ongoing air quality monitoring network in Labrador City and Wabush will continue to assess air quality and would support the determination of if and when additional mitigation efforts would be required. Noise generated by vehicles and drilling equipment will be intermittent and variable in magnitude. Noise levels are projected to be similar in nature to existing operating water pumping and treatment systems on the IOC property.

Groundwater and runoff that flows into the pit will be discharged to the Dumbell Lake and Leg Lake systems during varying stages of the Wabush 3 open pit mine development. The geology of the area is characterized by NAG rock which simplifies the management of wastewater quality. The water treatment system associated with pit water management will be designed to consistently comply with federal and provincial government regulatory standards, prior to pit water being discharged to the environment. Pumped groundwater, if determined to be needed, will be pumped into settling ponds to minimize release of fine materials into the receiving environment.

No harmful or hazardous materials are expected to be released to the environment as part of the groundwater extraction and pumping. However, a spill of chemicals or fuel or other accidental events during Project construction and/or operations may have environmental effects on water resources and fish and fish habitat around the Project area. The resulting environmental effects of such an incident would depend upon the nature and magnitude of the event.

IOC has various measures, plans and procedures in place to prevent a spill or other associated event at its existing mines and its overall Labrador West operations, as well as to respond to such an accident should one occur. These measures will be applied to (and refined as required for) the Project, as well as further reinforced through the various federal and provincial government permits that will be required for the construction and operation of the Project.

IOC also has plans and procedures to effectively manage industrial liquid and solid wastes, including hazardous waste materials. These measures will also be applied to (and refined as required for) the Project.

2.3 Construction, Operation and Decommissioning and Abandonment Phases and Scheduling

The Project will be developed in four phases, in association with the Wabush 3 open pit mine development, which will include a mix of site development, operations and decommissioning.

- Phase 1 will include the mine development in the northern section and the installation of groundwater extraction wells within the open pit footprint. Mine dewatering will occur through a settling and treatment system and into the Dumbell Lake watershed. Subject to completion of the EA process and the receipt of government approvals, the development of the in-pit extraction wells could begin as early as mid 2016. Phase 1 will occur during the first 16 years of the operation.
- Phase 2 will include the extension of the mine into the central section and the installation of groundwater extraction wells outside the southern edge of the open pit footprint. Mine dewatering will be relocated and will occur through a settling and treatment system and into the Leg Lake watershed. This will occur during years 17 – 28 of the operations.
- Phase 3 will include the extension of the pit into the southern section and the completion of the installation of groundwater extraction wells outside the southern edge of the open pit footprint. Mine dewatering will continue as per Phase 2. This will occur during years 29 - 40 of the operations.
- Phase 4 will include the mine site closure and rehabilitation. Closure will occur after completion of the mining activity, sometime after year 40. The IOC site Closure Plan will be amended to include the Wabush 3 operation with the next update. Progressive rehabilitation will be an important factor in the amended Closure Plan and will be implemented where possible during the earlier phases.

Throughout all phases pit dewatering, including any groundwater extraction, treatment and release to the receiving environment will occur. The rates of dewatering will likely increase with each phase as the pit size increases. Better quantitative estimates of groundwater handling will be prepared in 2013, as discussed in Section 2.1.

3.0 PROJECT LOCATION

IOC has operated in Labrador West since the 1960's.The full operating site, including mines (operating and closed), tailings and waste rock management areas, concentrator and pellet plants, associated infrastructure, railway lines, conveyors and roads within the site comprise an area of approximately 11,000 hectares.

The iron ore mining is taking place on Mining Leases issued under the *1938 Labrador Mining and Exploration Limited Act* (*LM&E Act*). The Mining Leases were issued for a term of 30 years in the early 1960s and were re-issued for an additional 30 year term in the

1990's. A further 30 year term can be issued in the 2020's. The planned Wabush 3 Open Pit Mine is within Mining Lease 15 - Block 22-5. It is situated to the south of and adjacent to the operating Luce Mine and to the west of and adjacent to the Smokey Mountain ski hill. The southern edge of the proposed Wabush 3 pit is approximately three km to the north of Highway 500 and Tanya Lake in the Town of Labrador City. The approximate centre of the proposed Wabush 3 pit is at coordinates 638006.69 E and 5872212.93 N (NAD83 UTM NAD 27 Zone 19) or 52°59'3"N and 66°56'33"W (Coordinates in NAD27).

Included are drawings that locate the Wabush 3 open pit mine relative to various existing features. Figure 3.1 provides a broad overview of western Labrador showing provincial borders and the nearest communities. Figure 3.2 provides an aerial photograph showing the IOC Carol Project – existing mines, facilities, the location for the Wabush 3 activity and the groundwater extraction sites. Figure 3.3 provides a map showing various biophysical and community features - the Towns of Labrador City and Wabush, Wabush airport, Trans Labrador Highway, spur railway lines which connect to the QNS&L Railway, water bodies, Habitat Management Units, Conservation Zones, recreational areas and nearest cabins to the Wabush 3 open pit mine. Figure 2.1 provides the locations for groundwater extraction within and adjacent to the southern edge of the Wabush 3 open pit mine footprint.

There are no federal lands or Aboriginal communities anywhere near the IOC property. The closest Aboriginal communities are near Schefferville, over 200 km to the north (see Table 4.1 and Figure 3.4).

Currently there are no Aboriginal organizations that have settled land claims which include the Project area or any part of the 11,000 ha Carol Project site.

The Innu of Labrador has signed with Canada and the Province a non-binding land claims Agreement-in-Principle which sets out certain jurisdictions, rights and benefits for the Labrador Innu. While the land claim area is focused in central and coastal Labrador, there is a linear corridor along the Trans Labrador Highway between Churchill Falls and the eastern boundary of the Town of Wabush where the Labrador Innu will have fish and wildlife harvesting rights. Figure 3.5 provides the Labrador Innu land claims area.

There are four other Aboriginal organizations which have either asserted Aboriginal rights and title to or include as traditional territory sections of Labrador that include the Project area and the full area of the IOC Carol Project. These are the NunatuKavut Community Council in Labrador (see Figure 3.6), the Matimekush – Lac John First Nation and the Uashat mak Mani-Utenam (see Figure 3.7) and the Naskapi Nation of Kawawachikamach (see Figure 3.8), all in Quebec. The claims remain outstanding and have not been accepted by the Province of Newfoundland and Labrador for negotiation. Only the Uashat Mak Mani-Utenam claim was accepted by Canada, but negotiations on the land claim were suspended in 2008.

As also shown in Figure 3.4, the Inuit of Labrador are primarily resident on the Labrador North Coast in the communities of Nain, Hopedale, Makkovik, Postville, and Rigolet, as

well as in other Labrador communities and elsewhere. The *Labrador Inuit Land Claims Agreement* was signed by the Labrador Inuit and the provincial and federal governments in January 2005 and came into effect on December 1st of that year. The Agreement is a modern comprehensive treaty, and sets out the details of land ownership, resource sharing and self-government in the area it covers in Northern Labrador. The proposed Project does not extend through or otherwise interact with land areas that are covered under the treaty.

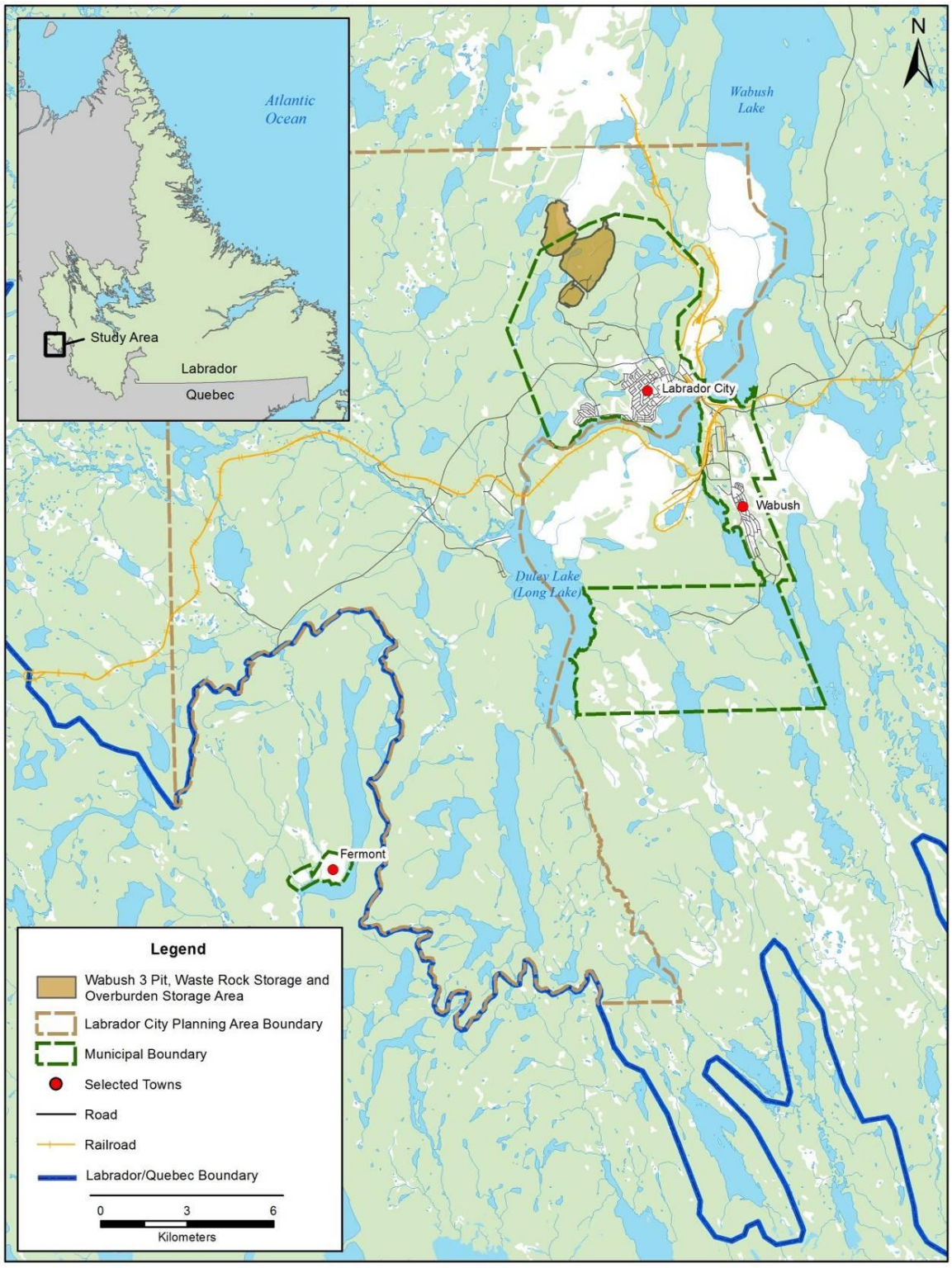


Figure 3-1, Wabush 3 Groundwater Extraction Project – Geographical Location

Figure 3-2, Wabush 3 Groundwater Extraction Project – Project Location Plan within IOC Site

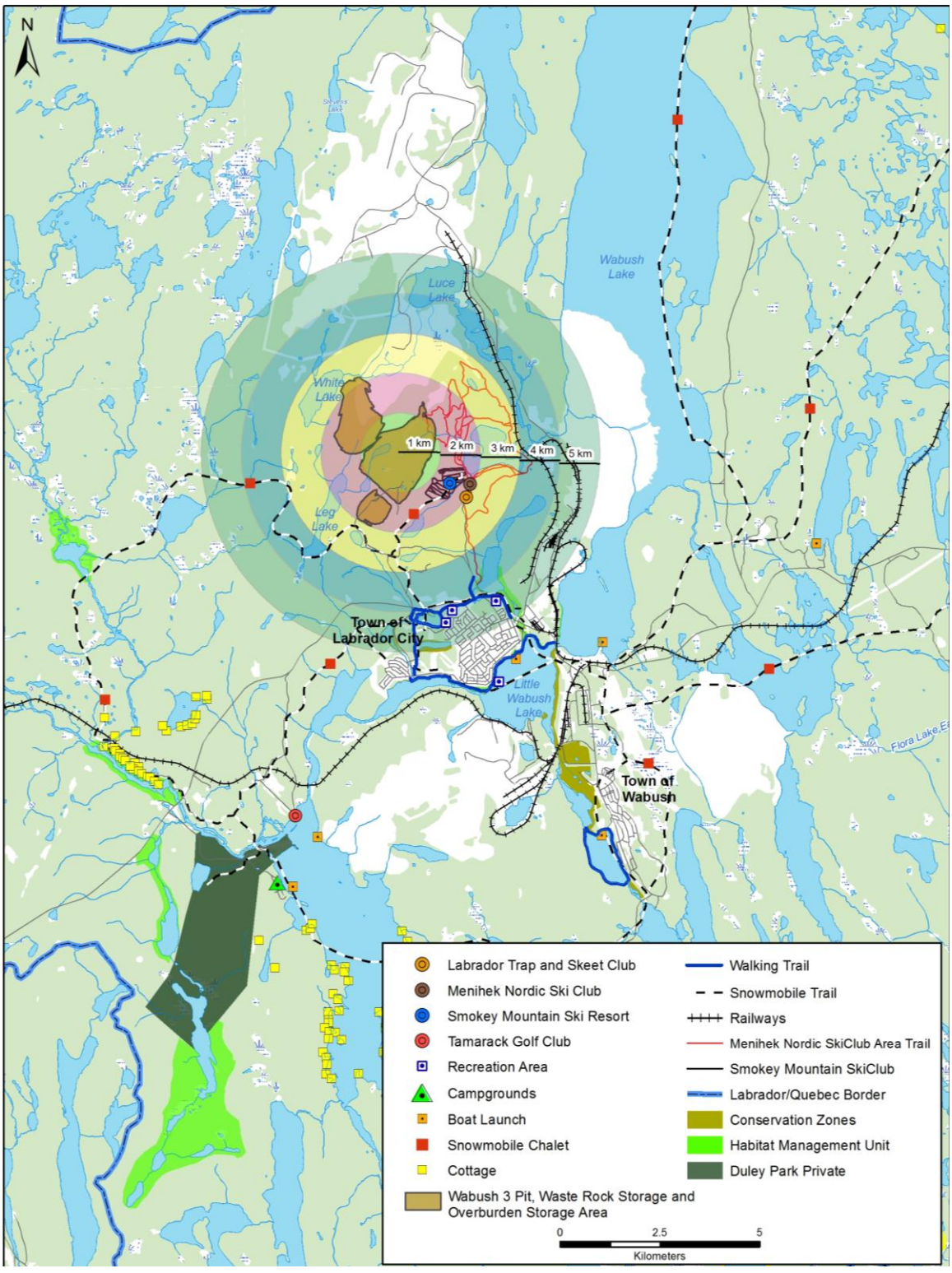


Figure 3-3, Wabush 3 Groundwater Extraction Project – Existing (Regional) Socioeconomic Environment

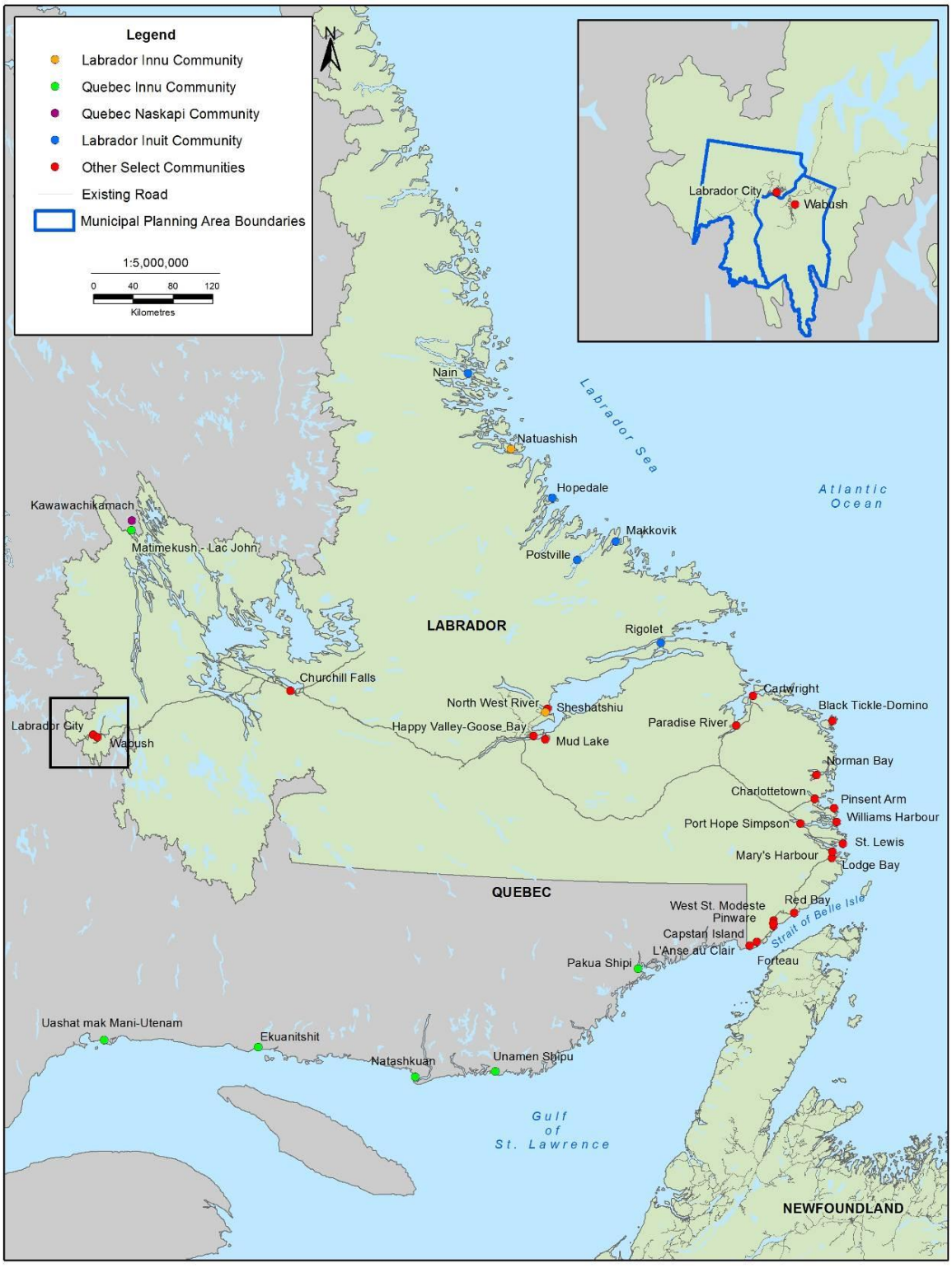


Figure 3-4, Wabush 3 Groundwater Extraction Project - Aboriginal Communities in Labrador and Quebec

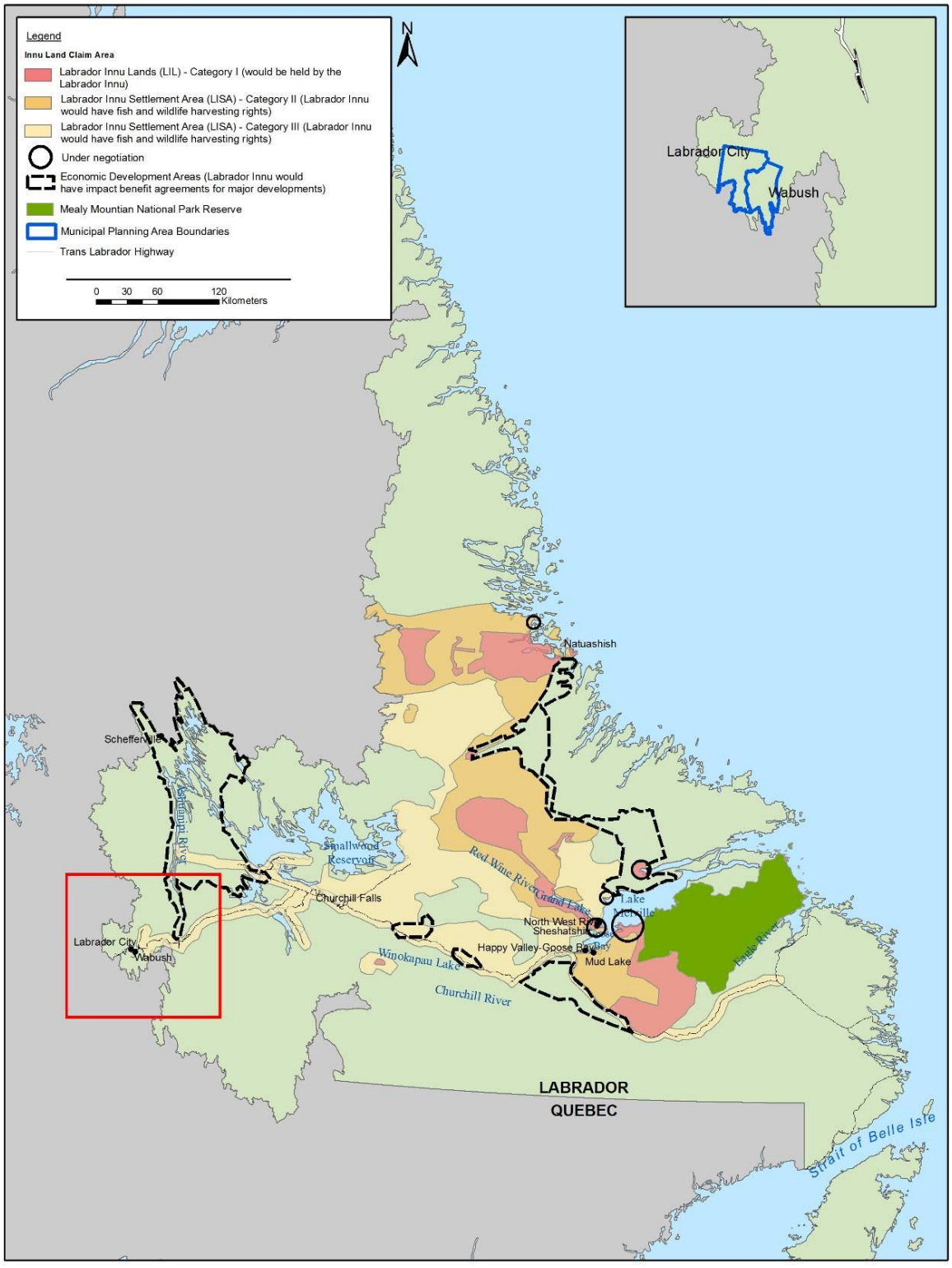


Figure 3-5, Wabush 3 Groundwater Extraction Project – Labrador Innu Land Claim Area

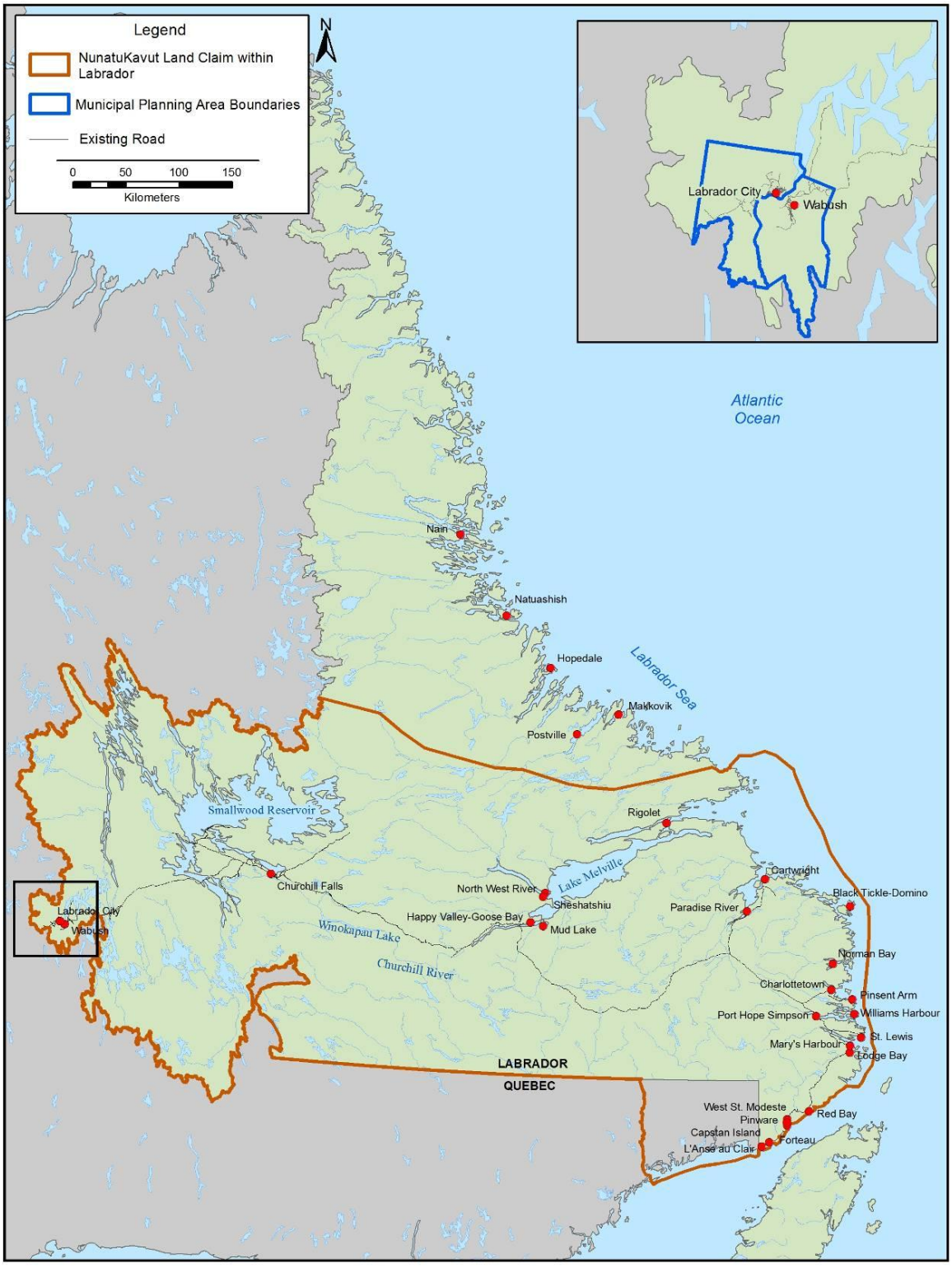


Figure 3-6, Wabush 3 Groundwater Extraction Project – NunatuKavut Land Claim within Labrador

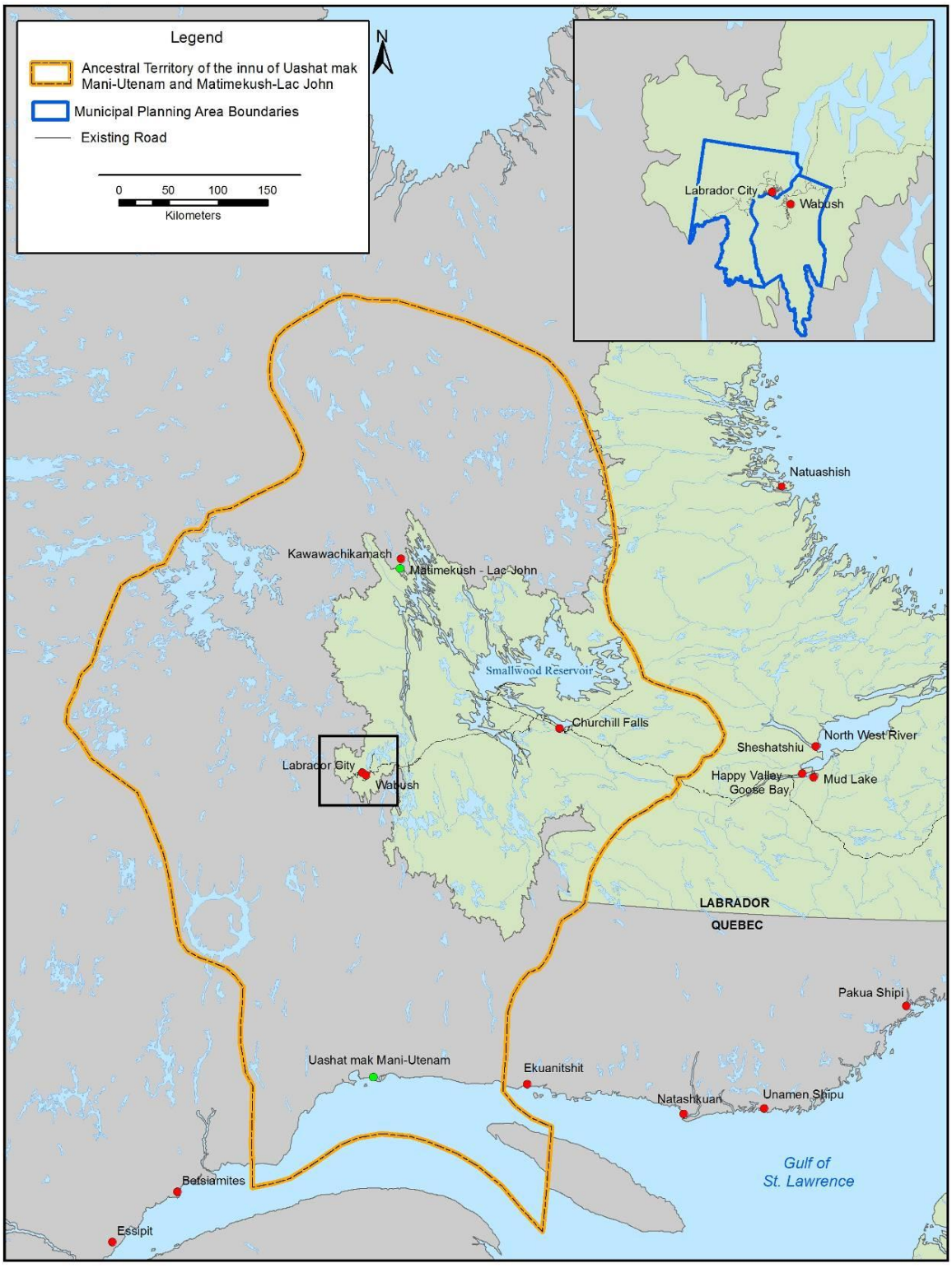


Figure 3-7, Wabush 3 Groundwater Extraction Project – Traditional Territory of the Innu of Uashat mak Mani-Utenam and Matimekush-Lac John

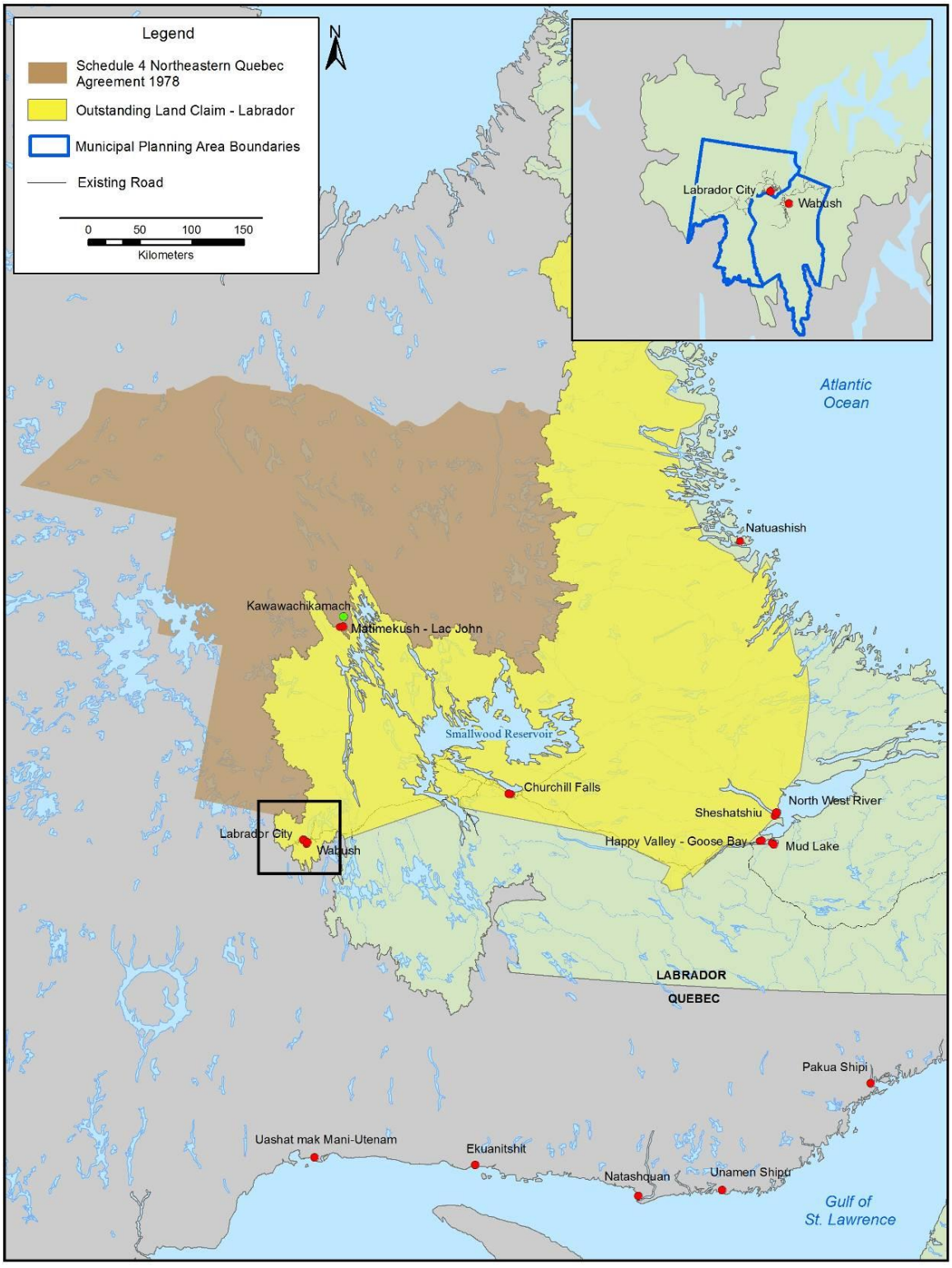


Figure 3-8, Wabush 3 Groundwater Extraction Project – Naskapi Land Claim Treaty Area in Quebec and Outstanding Land Claim in Labrador

3.1 Land and Water Use

The *LM&E Act* has provision to issue Surface Leases to areas where development is planned within the Mining Leases. While the Project area is not included in IOC's current Surface Lease, IOC plans to make application for surface rights to cover the planned footprint of the Wabush 3 open pit mine and associated activities, including the groundwater extraction sites during the environmental review of the Project. This will allow for timely issuance of the Surface Lease upon release of the Project.

The proposed Project footprint is within the Town of Labrador City's Planning Boundary and most of the proposed footprint is within its Municipal Boundary. Much of the development is located within the Town's Mineral Extraction land use zone. Mineral workings are a permitted use within this zone. Approximately 50% of the proposed pit and groundwater seepage collection area covers 17.5% of the Dumbell Lake protected watershed on its western side and is, therefore, within the Town's Protected Municipal Watershed (PMW) zone for Dumbell Lake. The Town's Planning Regulations will need to be amended to allow mining and groundwater extraction activity within the PMW zone. The proposed footprint is west of the Beverly Lake protected watershed. The proposed footprint is also north east of the Leg Lake watershed which eventually flows into Harrie Lake. The proposed footprint is Greenfields and the pit development will result in the removal of Pumphouse Pond (7.5 ha) and Drum Lake (5.6 ha) that flow into Leg Lake.

The Project area is surrounded by water bodies; Trout Lake, Dumbell Lake, Leg Lake and White Lake. Dumbell Lake is designated by the Town of Labrador City as its backup water supply. Within the proposed footprint is Dumbell stream and Pumphouse Pond, a small water body connected to and upstream of Drum Lake which flows into Leg Lake. Drum Lake will remain just outside of the proposed footprint.

The 11,000 ha IOC Carol Project has operating since the 1960's and the recreational areas used by residents of and visitors to Labrador West have also been heavily utilized throughout most of that timeframe. The Project is situated between the mining activities to the north, the ski hill to the east, the Town of Labrador City to the south and is surrounded by developed cross country ski and snowmobile trails.

Existing and available information does not indicate that Labrador and Québec Aboriginal groups currently undertake traditional land and resource use activities within or near the proposed Project area (Armitage and Stopp 2003). Current land and resource use by the Labrador Innu, for example, appears to be focussed in other areas of central and south eastern Labrador, and while there is reportedly some activity in Western Labrador (particularly along the TLH), the available information does not indicate that such activities take place in or near the Project area. The Québec Innu of Uashat Mak Mani-Utenam continue to use their traditional territory, especially the southern portions and other areas that are accessible by railway and road, and the Matimekush - Lac John Innu also primarily use the area surrounding their communities and well to the north of the Project area. The Naskapi Nation of Kawawachikamach also primarily undertakes land and resource use activities in the areas

around their community and others that are accessible by railway and road. NCC members live and work in the Labrador West area and undertake contemporary recreational land and resource use activities throughout the region, which are considered integrally within the overall assessment of current land and resource use in and near the Project area.

The lack of known and documented Aboriginal land use activity within or near the proposed Project site is consistent with the fact that this overall area has been the site of on-going mining activity since the 1960s. As a result of this significant and long-standing industrial activity within and surrounding the proposed Project area, and the associated public site access restrictions that have been in place on IOC's property since that time, traditional land and resource use activities do not occur in this area. IOC is likewise not aware of any future, planned Aboriginal land and resource uses that may occur within or near the Project area and which may therefore be affected.

4.0 FEDERAL INVOLVEMENT

The development of the proposed Project will not require federal financial support and will not occur on federal lands. The proximity of the Project area to federal lands such as National Parks, Indian Reserves, Port Authorities and Canadian Forces Bases is shown in Table 4.1.

The groundwater extraction component of the Project will be subject to conditions outlined in permits and regulations associated with the full Project including, but not limited to, the *Fisheries Act*, the *Migratory Birds Convention Act* and the Federal Policy on Wetland Conservation.

Table 4.1 Proximity of Project Area to Federal Lands

Nearest Federal Lands	Approx Distance from Wabush 3 (via straight line)
Newfoundland and Labrador	
Torngat Mountains National Park Reserve	740 km
Mealy Mountain National Park Reserve	555 km
Sheshatshiu (Labrador Innu community)	455 km
Natuashish (Labrador Innu community)	515 km
5 Wing Goose Bay (Canadian Forces Base)	435 km

Table 4.1 Proximity of Area to Federal Lands

Quebec	
Kawawachikamach (Quebec Naskapi community)	220 km
Lac John (Quebec Innu community)	210 km
Matimekush (Quebec Innu community)	210 km
Uashat mak Mani-Utenam (Quebec Innu community)	310 km
Sept Iles Port Authority	310 km
Mingan Archipelago National Park Reserve	400 km

5.0 ENVIRONMENTAL EFFECTS

The pumping of groundwater from the Wabush 3 open pit area will likely affect the hydrology, hydrogeology, fish, fish habitat and waterfowl of the Project area. While the Project area has not been subject to a regional environmental study, the Project area and the surrounding area have been subject to various baseline environmental studies that characterize the existing environment.

The proposed Project is situated in a Greenfields area that is characterized by sections of alpine shrub, conifer forest, interspersed with black spruce and lichen cover. Baseline surveys of the open pit and groundwater extraction area found no vegetation species at risk to be present.

There are seven wetlands complexes within the Wabush 3 open pit mine and groundwater seepage footprint area. They range in size from 0.4 ha to more than 5 ha, with a combined area of 14.4 ha. While these wetlands areas were determined to have an elevated level of functionality within the footprint area, they are not considered vital to the larger ecosystems of Leg Lake and Dumbell Lake to which the wetlands ultimately drain. There are no wetlands Habitat Management Units in the general area of the Wabush 3 site. The nearest Habitat Management Unit is at Beverly Lake, approximately four km to the southeast, which should not be affected by the Wabush 3 groundwater extraction operations.

Water bodies that surround the proposed Wabush 3 Project area are shown in Figure 3.2. The ground elevation of the proposed pit location ranges from approximately 780 to 820 metres above sea level (masl). The north-east half of the proposed pit (comprising 140 ha) includes Dumbell Stream which drains a small wetland area and flows east into Dumbell Lake. The Dumbell Lake watershed area is about 829 ha in total, and is made up of coniferous forest, lakes, ski runs and walking trails (AMEC 2012a, EcoMetrix 2012). The south-western half of the proposed pit (comprising 131 ha) is located in the Leg Lake watershed and contains the two small water bodies that connect to Leg Lake. The Leg Lake watershed area is about 1,616 ha in total, and is made up of coniferous forest, lakes, walking trails, roads and residential areas of Labrador City (AMEC 2012a, b).

A review of the hydrogeology of current and historic operations of the IOC Carol Operation to the north of Wabush 3 has been undertaken by Piteau Associates (2002). This provides information on the basic hydrostratigraphy that occurs at the existing and historic IOC mine operations to the north of Labrador City. An important part of the hydrostratigraphy is the occurrence of deep pre-glacial weathering that occurs to depths of the order of 100 metres below ground surface (mbgs). According to Piteau (2002), the most permeable hydrostratigraphic unit is the Lower Iron Formation (LIF), which has the highest content of carbonate materials. The relatively high hydraulic conductivity of this unit is caused by weathering associated with leaching of silica and carbonate and/or oxidation of iron minerals (magnetite and specularite) to goethite and limonite. The weathering is noted to be strong along fractures in the LIF and is more prevalent in open pits operating at lower elevation (*e.g.*, Humphrey Main to the north of Wabush 3) where the weathering has not been removed by glacial action. The hydraulic conductivities of the weathered zones are quoted as being as high as 1E-04 to 1E-03 m/s, which suggests that the LIF and possibly the base of the Middle Iron Formation (MIF) is a reasonable aquifer capable of providing baseflow to local streams/rivers and supporting flows to lakes.

In 2011, initial hydrogeological investigations were undertaken by Golder (2011) at the Wabush 3 Project area. The geology of the Project area as illustrated in Figure 5.1 is characterized by Sokomon (Wabush) Formation surrounded by Wishart Formation. An assessment of the hydraulic conductivity of the Sokomon Formation within the core of the syncline was performed using packer testing methods in five boreholes up to 210 m deep within the footprint of Wabush 3. The magnitudes of estimated hydraulic conductivity are consistent with those found by Piteau (2002).

Golder also installed five multi-level monitoring wells in the same boreholes. The main conclusion from the groundwater level data is that downward gradients prevail within the Wabush 3 footprint (*i.e.*, groundwater recharge occurs to the Sokomon Formation) and that groundwater flow is towards the north-east to the stream flowing to Dumbell Lake as well as southwest towards Leg Lake, which is likely a zone of groundwater discharge. At Wabush 3 the recorded groundwater levels in the Sokomon Formation are at over 700 masl. It is noteworthy that Dumbell Lake is at 580 masl at approximately 1 km to the east, which implies a steep hydraulic gradient suggesting the hard quartzite of the Wishart Formation has a relatively low hydraulic conductivity. Other information from the existing and historic pits (Piteau 2002) also suggests the Wishart Formation may have significantly lower hydraulic conductivity than the Sokomon Formation. This suggests that there is high groundwater flow from the Wabush 3 project area towards the north-east to the stream flowing to Dumbell Lake as well as southwest towards Leg Lake (AMEC 2012a, Golder 2011, Piteau 2002).

Development of the Wabush 3 open pit area will result in 17% of the Dumbell Lake watershed being displaced, resulting in an equivalent decrease in runoff and streamflow to that watershed. This is due to the dewatering of the pit into the Leg Lake watershed. It is estimated that the annual surface runoff to the Dumbell Lake watershed will decrease by 740,000 m^3. Mitigation to reduce the loss of flow to the Dumbell watershed can be realized through the pumping of

extracted groundwater, at least from the earlier in-pit wells, back into the Dumbell watershed at locations chosen to enhance the flow in the Dumbell Stream and designed to control erosion. Pit and rock disposal area development will result in the increase of the Leg Lake watershed by 8.1%. In addition to the pit dewatering associated with groundwater seepage, there will be an approximate 14% increase in runoff or 1,170,000 m^3, relative to baseline conditions. These figures will likely be readjusted in 2013 after groundwater monitoring and a groundwater model is completed.

Wildlife species that are known or likely to occur in the general region include red fox, marten, voles, porcupine, lynx, wolf, moose and black bear. The presence of large-scale mining activity in and around the Project area for the past five decades has, however, limited the use of the site itself by most wildlife. While there is potential for wildlife and avifauna species to occur in Labrador West that are considered Species at Risk; recent baseline studies did not record observations of any within the Project area (AMEC 2012c, d). A recent caribou baseline survey found that no caribou were observed in a 1,600 km^2 area centered on the IOC operations in western Labrador (SNC 2012). The available literature has confirmed that the area is not within the current range of the migratory and sedentary caribou populations which occur in Western and Central Labrador (Schmelzer 2010).

A review of available data sources on avifauna in the vicinity of Labrador City recorded 133 bird species, 106 of which are migratory birds as defined in the *MBCA*. Baseline surveys conducted by IOC in 2012 have identified 66 avian species present within the proposed Project area of which 59 are migratory bird species. Table 5.1 provides a list of all birds observed and reported in and near the Labrador City area. Migratory birds as determined under the *Migratory Birds Convention Act* are identified in the table.

Table 5.1 Bird Species Reported In and Near the Labrador City Area

Group	Common Name	eBird[1]	CBC[2]	2012 Surveys [3]	Migratory Birds [4]
Waterfowl	Snow Goose	x			x
	Brant	x			x
	Canada Goose	x		s	x
	Wood Duck	x			x
	Gadwall	x			x
	Eurasian Wigeon	x			x
	American Wigeon	x			x
	American Black Duck	x		f	x
	Mallard	x		f	x
	Blue-winged Teal	x			x
	Northern Shoveler	x			x
	Green-winged Teal	x			x
	Ring-necked Duck	x			x
	Greater Scaup	x			x
	Lesser Scaup	x	x		x
	Common Eider	x			x
	Harlequin Duck	x			x
	Surf Scoter	x		s	x
	White-winged Scoter	x			x
	Black Scoter	x			x
	Long-tailed Duck	x			x
	Bufflehead	x			x
	Common Goldeneye	x			x
	Barrow's Goldeneye	x			x
	Hooded Merganser	x		f	x
	Common Merganser	x	x		x
	Red-breasted Merganser	x		s	x
Game Birds	Ruffed Grouse	x			
	Spruce Grouse	x	x	s,w	
	Willow Ptarmigan	x	x	w	
	Rock Ptarmigan	x			
Diurnal Raptors	Osprey	x		s	
	Bald Eagle	x			
	Northern Harrier	x			
	Northern Goshawk	x	x		
	Red-tailed Hawk	x		s	
	Rough-legged Hawk	x	x		
	Golden Eagle	x			
	American Kestrel	x			
	Merlin	x			
	Gyrfalcon	x			
	Peregrine Falcon	x			

Table 5.1 Bird Species Reported In and Near the Labrador

Shorebirds	Sora	x			x
	American Coot	x			x
	Black-bellied Plover	x			x
	American Golden-Plover	x			x
	Semipalmated Plover	x			x
	Killdeer	x			x
	Spotted Sandpiper	x		f	x
	Solitary Sandpiper	x			x
	Greater Yellowlegs	x			x
	Lesser Yellowlegs	x			x
	Hudsonian Godwit	x			x
	Ruddy Turnstone	x			x
	Red Knot	x			x
	Sanderling	x			x
	Semipalmated Sandpiper	x			x
	Least Sandpiper	x			x
	White-rumped Sandpiper	x			x
	Baird's Sandpiper	x			x
	Pectoral Sandpiper	x			x
	Purple Sandpiper	x			x
	Dunlin	x			x
	Short-billed Dowitcher	x			x
	Wilson's Snipe	x		s,f	x
	Red-necked Phalarope	x			x
Other Aquatic Birds	Red-throated Loon	x			x
	Common Loon	x		s,f	x
	Double-crested Cormorant	x			x
	Great Cormorant	x			x
	American Bittern	x			x
	Great Blue Heron	x			x
	Bonaparte's Gull	x			x
	Ring-billed Gull	x			x
	Herring Gull	x	x	s,f	x
	Iceland Gull	x			x
	Glaucous Gull	x			x
	Great Black-backed Gull	x			x
	Black Tern	x			x
	Common Tern	x			x
	Arctic Tern	x			x
Nocturnal Raptors	Great Horned Owl	x			
	Snowy Owl	x			
	Northern Hawk Owl	x			
	Long-eared Owl	x			

Table 5.1 Bird Species Reported In and Near the Labrador

	Short-eared Owl	x			
	Boreal Owl	x			
Terrestrial Birds	Mourning Dove	x	x	s	x
	Common Nighthawk	x			x
	Belted Kingfisher	x			x
	Downy Woodpecker	x	x	s	x
	Hairy Woodpecker	x	x	s	x
	American Three-toed Woodpecker	x	x		x
	Black-backed Woodpecker	x	x		x
	Northern Flicker	x		s	x
	Olive-sided Flycatcher	x			x
	Yellow-bellied Flycatcher	x		s	x
	Alder Flycatcher	x		s	x
	Least Flycatcher	x			x
	Eastern Kingbird	x			x
	Blue-headed Vireo	x			x
	Red-eyed Vireo	x		s	x
	Northern Shrike		x		x
	Gray Jay	x	x	w,s,f	
	Blue Jay	x			
	American Crow		x		
	Common Raven	x	x	w,s,f	
	Horned Lark	x			x
	Tree Swallow	x		s	x
	Barn Swallow	x			x
	Black-capped Chickadee	x	x	s	x
	Boreal Chickadee	x	x	w,s,f	x
	Red-breasted Nuthatch	x	x	s	x
	Brown Creeper	x		s	x
	Winter Wren			s	x
	Golden-crowned Kinglet	x		s,f	x
	Ruby-crowned Kinglet	x		s,f	x
	Eastern Bluebird	x			x
	Gray-cheeked Thrush	x			x
	Swainson's Thrush	x		s,f	x
	Hermit Thrush	x		s	x
	American Robin	x	x	s,f	x
	Gray Catbird	x			x
	Northern Mockingbird	x	x		x
	European Starling	x	x		
	American Pipit	x		f	x
	Bohemian Waxwing	x	x		x
	Cedar Waxwing	x	x	s	x

Table 5.1 Bird Species Reported In and Near the Labrador

	Northern Waterthrush	x		s	X
	Black-and-white Warbler	x		s	x
	Tennessee Warbler	x		s	x
	Orange-crowned Warbler	x		s	x
	Nashville Warbler			s	x
	Mourning Warbler			s	x
	American Redstart			s	x
	Magnolia Warbler			s	x
	Yellow Warbler	x		s	x
	Chestnut-sided Warbler			s	x
	Blackpoll Warbler	x		s	x
	Palm Warbler			s	x
	Yellow-rumped Warbler	x		s	x
	Wilson's Warbler	x		s	x
	American Tree Sparrow	x			x
	Chipping Sparrow	x	x	s	x
	Savannah Sparrow	x		s	x
	Fox Sparrow	x	x	s,f	x
	Song Sparrow	x		s,f	x
	Lincoln's Sparrow	x		s	x
	Swamp Sparrow	x		s	x
	White-throated Sparrow	x	x	s,f	x
	White-crowned Sparrow	x	x	s	x
	Dark-eyed Junco	x	x	s,f	x
	Lapland Longspur	x			x
	Snow Bunting	x	x	w	x
	Rose-breasted Grosbeak	x	x		x
	Red-winged Blackbird	x	x		
	Rusty Blackbird	x		s	
	Common Grackle	x	x		
	Brown-headed Cowbird	x			
	Pine Grosbeak	x	x	w,s,f	x
	Purple Finch	x	x		x
	Red Crossbill	x			x
	White-winged Crossbill	x	x	s	x
	Common Redpoll	x	x	w	x
	Hoary Redpoll	x	x		x
	Pine Siskin	x		s,f	x
	American Goldfinch	x		w,s,f	x
	Evening Grosbeak	x			x
	House Sparrow	x			

[1] eBird data for a radius of approximately 20 km around Labrador City, including all available data from 1931 to October 2012
[2] Christmas Bird Count data for 1998 - 2011. Accessed October 2012
[3] Summary of observations from present surveys of the three study areas. w = winter survey, s = summer (June and July), f = fall
[4] Migratory bird in accordance with the Migratory Birds Convention Act

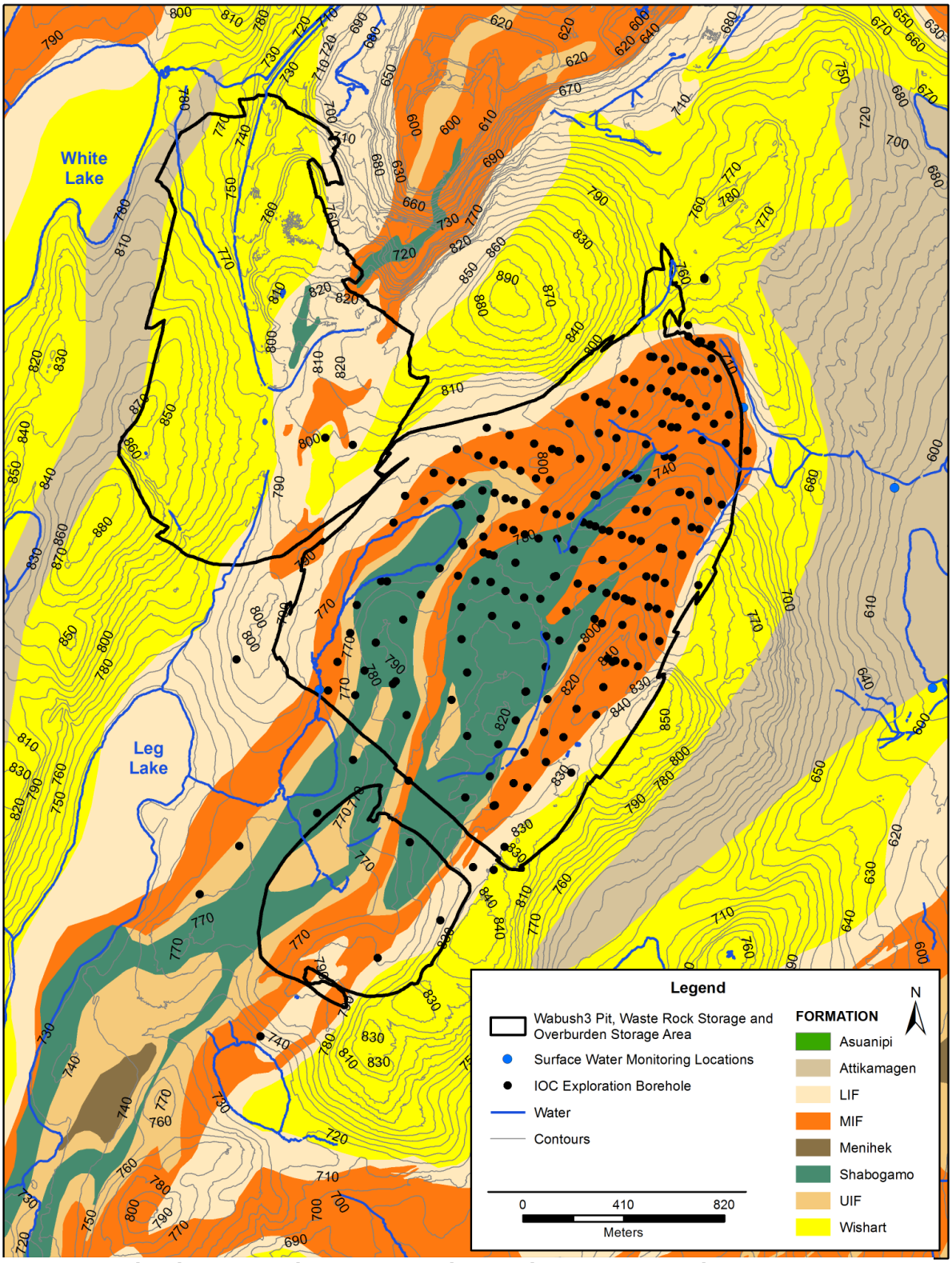


Figure 5-1, Wabush 3 Groundwater Extraction Project – Area Geology

Past surveys have identified six fish species present within the proposed Project area including brook trout (*Salvelinus fontinalis*), lake trout (*Salvelinus namaycush*), lake chub (*Couesius plumbeus*), burbot (*Lota lota*) and sculpin species (mottled - *Cottus bairdi* and slimy - *Cottus cognatus*) (AMEC 2004, 2012e, 2012f, EcoMetrix 2012). While these species are not listed under provincial or federal species at risk legislation, fish and fish habitat are protected from disturbance by the habitat protection provisions of the *Fisheries Act*.

For the groundwater extraction component of the Project, there are no significant adverse residual environmental effects anticipated on the components of the aquatic and terrestrial environments which are discussed above. The plans to pump extracted groundwater into the Dumbell Lake watershed will serve to mitigate effects to Dumbell Lake caused by the full Project.

Given that the Project is located more than 200 km away from the nearest federal lands (see Table 4.1), it is considered unlikely that changes to the environment will occur on federal lands as a result of implementing the Project. Also, given that the Project is approximately 15 km from the provincial border with Québec, it is considered unlikely that changes to the environment could occur in Québec as a result of implementing the Project. Given the longer distances from the Project to other provinces and international borders, it is considered unlikely that changes to the environment could occur in any other provinces or in other countries as a result of implementing the Project.

Studies of the Wabush 3 area have indicated that there were no known archaeological sites within 50 km of the Project. The closest archaeological site on record in Labrador was approximately 4 km north of the proposed Project and consisted of a spot find of ground slate tools. Three other known sites were at least 14 km east of the Project and consisted of contemporary (post 1950) Innu camps. Field investigations of potential sites, identified through aerial photography analysis, did not find any archaeological sites in the Project footprint (Arkeos 2012). It is not expected that the Project will have any effects on local historic resources.

Although the Project will affect the nature and use of specific land areas and resources, through both its direct ‘footprint” and associated disturbances, as indicated in Section 3.1, the existing and available information does not indicate that Labrador and Québec Aboriginal communities and groups currently undertake traditional land and resource use activities within or near the Project area. In all cases, other areas of Labrador and/or Québec have been documented as being much more important for the land and resource use activities of each of the groups under consideration, and in no cases are there known sites of historical, cultural or spiritual importance to either group which may be adversely affected by the Project. Moreover, the Project is not likely to result in significant adverse effects to vegetation, fish, migratory birds or wildlife resources themselves.

As a result, and based on the information currently available, the Project is not likely to adversely affect the location or timing of the current use of land and resources for traditional purposes by Aboriginal persons, nor the overall type or level of such activities by Aboriginal peoples and groups. The various mitigation measures outlined throughout the Project Description and this Summary Document will serve to even further avoid or reduce the potential

for any such adverse effects. No associated and consequent decrease in the overall quality or underlying cultural value of the current use of land and resources for traditional purposes by Aboriginal persons is therefore anticipated during either phase of the Project.

A summary of environmental effects assessment for federal areas of jurisdiction is provided in Table 5.2.

Table 5.2 Environmental Effects Assessment Summary of the CEAA 2012Designated Project (Groundwater Extraction): Federal Areas of Jurisdiction

Environmental Component *	Potential Environmental Interactions	Mitigation Measures	Future Environmental Planning and Protection Measures
Fish and fish habitat	• Potential accidental spills; • Decrease in flow to the Dumbell Lake watershed, associated with groundwater extraction.	• Compliance with regulations and permits; • Design mitigation (spill containment); • Accidental event prevention and response; and • Discharge of extracted groundwater within the surface watersheds of Dumbell Lake. This will mitigate for water losses to Dumbell Lake also and mostly associated with open pit operation.	• IOC will prepare and implement a Fish Compensation Plan to compensate for lost fish habitat, if necessary.
Aquatic Species (defined in *SARA*)	• No aquatic species as defined in Section 2(1) of *SARA* occurring in this area.	• No mitigation needed.	
Migratory bird species	• Loss of habitat due to clearing of vegetation at each of the possible nine groundwater extraction sites (approx 0.5 ha each).	• Monitor the clearing activity for bird nests during the May- July construction periods and avoid disturbance if possible.	• IOC will adhere to ENVC and CWS guidelines on how to minimize disturbance to bird nests near or in the groundwater extraction sites.
Federal lands	• None within 200km of the Project.	• No mitigation needed.	
Other provinces and areas outside of Canada	• Quebec border is 15 km away and international borders are more than 200 km away.	• No mitigation needed.	
Aboriginal peoples	• Available information does not indicate any land and resource use by Aboriginal peoples within the Project area.	• No mitigation needed.	

*Environmental Components as listed in Section 5 of *CEAA 2012*

For the groundwater extraction component of the Project, there are no significant adverse residual environmental effects anticipated on areas of federal jurisdiction (fish and fish habitat, other aquatic species, migratory birds, federal lands, provincial or international boundaries, and use of lands and resources by Aboriginal peoples for traditional purposes).

6.0 PROPONENT ENGAGEMENT AND CONSULTATION WITH ABORIGINAL GROUPS

IOC is committed to ensuring that relevant Aboriginal groups are consulted appropriately regarding its proposed development activities, including the Wabush 3 open pit mine project and associated groundwater extraction component. Discussions with relevant Aboriginal groups to date by IOC have been carried out through a number of existing forums, such as, for example, the involvement of (or invitations to) Innu communities in the Labrador West Community Advisory Panel (CAP) which is discussed in Section 7.0.

In terms of Aboriginal consultation activities specific to the proposed Wabush 3 open pit project and associated groundwater extraction component, IOC has initiated communications with and provided information to each of the five Aboriginal groups referenced in Section 1.3.

As described in Section 3.1, existing and available information does not indicate that Labrador and Québec Aboriginal groups currently undertake traditional land and resource use activities within or near the proposed Project area. This is in keeping with the fact that significant mining activity has occurred on IOC's Labrador West properties since the early 1960s, with associated and long-standing public site access restrictions which has prevented the site's use for traditional and recreational land use activities. This, along with the relatively small land area that will be affected by the proposed Project, means that there is very low potential for any level of impact upon Aboriginal activities or interests in Western Labrador or elsewhere. IOC's Aboriginal consultation initiatives related to the proposed Wabush 3 project to date have therefore been planned and implemented with consideration of, and are commensurate to, this low potential for effects to Aboriginal persons and communities, as well as reflecting the relatively early stage of Project planning and EA review.

On December 11, 2012, IOC wrote to each of the five Aboriginal groups and through that correspondence provided (and requested) the following information:

- A general overview of IOC and a description of the proposed Wabush 3 open pit mine project (including a project map illustrating its location and key components); and
- An invitation to contact IOC if the group had questions, concerns or overall interests related to the proposed project, through either a written reply and/or through future discussions and consultation with IOC (including a future meeting or other potential consultation mechanisms as suggested by the group itself).

A sample copy of the cover letter and information package provided to each Aboriginal group is included as Appendix B of this report.

To date, the NunatuKavut Community Council (NCC) is the only organization that has responded to this correspondence from IOC. In its response, the NCC indicated a general concern about the project and its potential environmental effects, with a particular emphasis on the potential cumulative environmental effects of this and other similar projects in Western Labrador. The NCC also expressed an interest in further discussions with IOC in relation to the Wabush 3 open pit project. In early 2013 IOC responded to the NCC and indicated its willingness to meet with the NCC and other interested parties to provide a presentation and additional information on the project and an opportunity for further dialogue, the arrangements for which are currently in progress.

IOC also understands that the Project Registration and Project Description document will be made available by the provincial and federal governments to all interested parties, including relevant Aboriginal organizations, for their information, review and comment as part of the EA process, and that any concerns or other input received will be considered in governmental decisions around whether the project may proceed, and if so, under what terms and conditions.

IOC will also continue to be available to meet with and/or receive information or input from any other relevant Aboriginal group regarding the Project and its potential effects, for consideration as Project planning, design, permitting and implementation proceed in order to seek to avoid or mitigate such effects where possible.

7.0 CONSULTATION WITH THE PUBLIC AND OTHER PARTIES

Consultations in various forms have been held with government agencies, public and Aboriginal organizations either during the planning for the Wabush 3 open pit mine project or for expansion focused projects where discussions on Wabush 3 were included. Meetings have not been held specific to the groundwater extraction component, but groundwater issues were included in the discussions.

A listing of consultations with government agencies is listed in Table 7.1.

Table 7.1 Listing of Government Consultations regarding the Wabush 3 Project.

Date	Agency	Event Type	Event Summary
13-Dec-11	• Department of Environment and Conservation	Meeting	Meeting to provide information and discuss specific issues regarding fish habitat and compensation, including the Wabush 3 area.
13-Dec-11	• Department of Environment and Conservation • Department of Natural Resources • Department of Fisheries and Oceans • Environment Canada	Meeting	Meeting with Provincial Government Agencies for Planning. Scheduling for Development of IOC projects, including Wabush 3 open pit mine and groundwater issues.
10-Jul-12	• Intergovernmental and Aboriginal Affairs Secretariat • NL Department of Natural Resources	Meeting	Meeting with Intergovernmental and Aboriginal Affairs Secretariat (IAAS) to discuss the agency's role and expectations including “duty to consult” with Aboriginal organizations, addressing the concerns of Aboriginal organizations and regulator permitting for Wabush 3.
11-May-12	• Department of Environment and Conservation • Environmental Assessment • Pollution Prevention • Department of Natural Resources	Meeting	Meeting with Provincial Government Agencies regarding IOC projects, including Wabush 3 open pit mine and groundwater issues.
30-May-12	• Canadian Environmental Assessment Agency	Meeting	Meeting with CEAA regarding IOC projects, including Wabush 3 and groundwater extraction.
11-Jul-12	• Department of Environment and Conservation	Meeting	Update the EA Division on timing for the various projects, including Wabush 3.
18-Sep-12	• Department of Environment and Conservation	Meeting	Update of various activities and projects and relation to water / fish habitat, including Wabush 3.
18-Sep-12	• Department of Environment and Conservation • Environmental Assessment • Water Resources • Pollution Prevention	Meeting	To update the EA Division on timing for the various projects and to discuss potential approaches to Project Registration of the Wabush 3 Project. Groundwater issues discussed with Water Resources.
18-Sep-12	• Intergovernmental and Aboriginal Affairs Secretariat • NL Department of Natural Resources	Meeting	Meeting with Provincial Government to discuss Aboriginal engagement requirements for development projects, including Wabush 3.

Table 7.1 Listing of Government Consultations regarding the Wabush 3 Project

19-Oct-12	• Canadian Environmental Assessment Agency	Phone Meeting	Discussion of Wabush 3 and CEAA expectations under the new Legislation.
24-Oct-12	• Department of Fisheries and Oceans	Meeting	Update to DFO on various activities and projects. Discuss associated water and fish habitat, including Wabush 3 Project Registration
25-Oct-12	• Department of Environment and Conservation • Water Resources	Meeting	Update the Water Resources management on various activities (including Wabush 3) and discuss water and groundwater issues.
26-Oct-12	• Department of Environment and Conservation • Water Resources • Pollution Prevention	Meeting	Update to government regarding ongoing water related challenges associated with mine operation as well as upcoming development plans. The Wabush 3 Project was described and discussed.

IOC has maintained regular engagement with Labrador West community stakeholders for many years. Beginning in April 2006, IOC initiated a multi-stakeholder forum modeled after the Mining Association of Canada's External Outreach guidelines. The forum, known as the Community Advisory Panel (CAP), includes representatives of approximately 16 community based organizations and meets quarterly (2012 meetings were held on January 25, April 18, June 15 and November 15).

In preparation for future projects (*e.g.,* Wabush 3), IOC participated in twenty community meetings (*e.g.,* CAP, Labrador West Regional Task Force, Labrador City-IOC Joint Planning Committee, Smokey Mountain Ski Club) between January 1, 2012 and December 31, 2012. The most recent CAP, Labrador West Regional Task Force, Labrador City-IOC Joint Planning Committee and Smokey Mountain Ski Club meetings focused on Wabush 3.

Based on the consultations, IOC has developed three internal community baseline and issues analysis reports (2008, 2010 and 2012) that focus on key issues raised by Labrador West's residents and key stakeholders. These issues include: demography, health and social services, education and training, crime and policing, housing, labour force, day care, recreation, recruitment and retention (mining and non-mining) and land tenure. Through CAP, IOC is working to address some of these issues (*e.g.,* housing, day care). Some IOC issues are being addressed through internal programs and policies *(e.g.,* day care for employees).

Where joint responsibility exists, IOC is working with appropriate organizations to collectively address these issues. For example, IOC is working with recreation groups and recreation planners and designers to address regional recreation needs and to address the needs of recreational facilities such as Smokey Mountain Alpine Ski facilities, Menihek Nordic Ski trails and White Wolf Snowmobile trails that might be affected by the Project. IOC is also investing in community initiatives to address issues (*e.g.*, Habitat for Humanity builds, CT Scanner).

Consultations with Aboriginal organizations are discussed in Section 6.

REFERENCES

AMEC. 2004. Iron Ore Company of Canada, Fish and Fish Habitat Monitoring, White Lake Works. Project No. PP4-017-CR. pp. 59.

AMEC. 2012a. Surface Water and Hydrology Baseline Report for Proposed Wabush 3 Mine Site, Labrador City, Newfoundland and Labrador. Project No. TF1243033.2003. pp. 30.

AMEC. 2012b. Fish Habitat Characterization for Proposed Wabush 3 Mine Site, Labrador City, Newfoundland and Labrador. Project No. TF1243033.2009. pp. 60.

AMEC. 2012c. Baseline Avian Surveys for Proposed Wabush 3 Mine Site and Potential Ski Hill Location, Labrador City, Newfoundland and Labrador. Project No. TF1243033.2007. pp. 41.

AMEC. 2012d. Baseline Small Mammal and Furbearer Surveys for Proposed Wabush 3 Mine Site and Potential Ski Hill Location, Labrador City, Newfoundland and Labrador. Project No. TF1243033.2008. pp. 27.

AMEC. 2012e. Fish Habitat Characterization – Genesis Project. Iron Ore Company of Canada, Labrador City, NL. Project No TF1143025. pp. 129

Armitage, P. and M. Stopp. 2003. Labrador Innu Land Use in Relation to the Proposed Trans Labrador Highway, Cartwright Junction to Happy Valley-Goose Bay, and Assessment of Highway Effects on Innu Land Use. Submitted by Innu Environmental Limited Partnership to Department of Works, Services and Transportation.

EcoMetrix Inc. 2012. Baseline Aquatic Assessment of Magy, Trout and Dumbell Lakes and Two Wabush 6 Area Ponds 2011. Ref 11-1864. pp. 82.

Golder Associates. 2011. Wabush 3 and Wabush 6 Hydrogeological and Hydrological Technical Report. Project No. 11-1152-0116. Draft. pp. 235.

Piteau Associates Engineering Ltd., 2002. Geotechnical and Hydrogeological Review; Iron Ore Company of Canada. Project No. A1-053-CR. pp. 104.

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, Wildlife Division Government of Newfoundland and Labrador. pp. 24.

APPENDIX A

Prescribed Information for Project Regulations Table of Concordance

Table A.1 Prescribed Information for Project Regulations Table of Concordance

General Information		
Item	**Description**	**Section / Chapter**
1	The project's name, nature and proposed location	1.0 General Information And Contacts 1.1 Nature Of The Project 1.2 Proponent Contact information
2	The proponent's name and contact information and the name and contact information of their primary representative for the purpose of the description of the project.	1.2 Proponent Contact information
3	A description of and the results of any consultations undertaken with any jurisdictions and other parties including Aboriginal peoples and the public.	1.3 List of Jurisdictions 7.0 Consultation With The Public And Other Parties Table 7.1: Listing of Government Consultations regarding the Wabush 3 Project.
4	Other relevant information, including:	
4(a)	Environmental assessment and regulatory requirements of other jurisdictions; and	1.4 Environmental Assessment Processes and Requirements
4(b)	Information concerning any environmental study that is being or has been conducted of the region where the project is to be carried out.	1.4 Environmental Assessment Processes and Requirements
Project Information		
5	Description of the project, including the context and objectives of the project.	2.0 Project Information
6	Regulations designating physical activities setting out the designated activities.	1.4 Environmental Assessment Processes and Requirements
7	A description of the physical works related to the project including their purpose size and capacity.	2.1 Components and Activities
8	Anticipated size or production capacity of the designated project and a description of the production processes to be used, the associated infrastructure and any permanent or temporary structures.	2.1 Components and Activities
9	Description of all activities to be performed in relation to the designated project.	2.1 Components and Activities
10	A description of any solid, liquid, gaseous or hazardous waste that is likely to be generated during any phase of the project and a plan to manage those wastes.	2.2 Emissions, Discharges and Waste
11	A description of the anticipated phases of and the schedule for the project's construction, operation, decommissioning and abandonment.	2.3 Construction, Operation and Decommissioning and Abandonment Phases and Scheduling
Project Location Information		
12	A description of the project's location including:	
12(a)	Geographic coordinates;	3.0 Project Location

Table A.1 Prescribed Information for Project Regulations Table of Concordance

12(b)	Site maps produced at an appropriate scale in order to determine the project's overall location and the spatial relationship of the project components;	Figure 3.1 Wabush 3 Groundwater Extraction Project – Geographical Location Figure 3.2 Wabush 3 Groundwater Extraction Project – Project Location Plan within IOC Site
12(c)	The legal description of land to be used for the project, including the title, deed or document and any authorization relating to a water lot;	3.0 Project Location
12(d)	The project's proximity to any permanent, seasonal or temporary residences;	Figure 3.1 Wabush 3 Groundwater Extraction Project – Geographical Location Figure 3.3 Wabush 3 Groundwater Extraction Project – Existing (Regional) Socioeconomic Environment
12(e)	The project's proximity to reserves, traditional territories as well as lands and resources currently used for traditional purposes by Aboriginal peoples; and	Figure 3.4 Wabush 3 Groundwater and Extraction Project - Aboriginal Communities in Labrador and Quebec Figure 3.5 Wabush 3 Groundwater Extraction Project – Labrador Innu Land Claim Area Figure 3.6 Wabush 3 Groundwater Extraction Project – NunatuKavut Land Claim within Labrador Figure 3.7 - Wabush 3 Groundwater Extraction Project – Traditional Territory of the Innu of Uashat mak Mani-Utenam and Matimekush-Lac John Figure 3.8 Wabush 3 Groundwater Extraction Project – Naskapi Land Claim Treaty Area in Quebec and Outstanding Land Claim in Labrador
12(f)	The project's proximity to any federal lands.	3.0 Project Location 4.0 Federal Involvement Table 4.1 Proximity of Project Area to Federal Lands
Federal Involvement		
13	A description of any financial support that federal authorities are, or may be, providing to the Project.	4.0 Federal Involvement
14	A description of any federal land that may be used for the purpose of carrying out the project.	3.0 Project Location 4.0 Federal Involvement Table 4.1 Proximity of Project Area to Federal Lands

Table A.1 Prescribed Information for Project Regulations Table of Concordance

15	Any federal legislative or regulatory requirements that may be applicable including a list of permits, licences or other authorizations that may be required in order to carry out the project.	4.0 Federal Involvement
Environmental Effects		
16	A description of the physical and biological setting.	5.0 Environmental Effects
17	A description of any changes that may be caused, as a result of carrying out the project, to:	5.0 Environmental Effects
17(a)	Fish as defined in Section 2 of the *Fisheries Act* and fish habitat as defined in subsection 34(1) of that Act;	5.0 Environmental Effects Table 5.1 Environmental Effects Assessment Summary: Federal Areas of Jurisdiction
17(b)	Aquatic species, as defined in sub-section 2(1) of the *Species at Risk Act*; and	5.0 Environmental Effects Table 5.1 Environmental Effects Assessment Summary: Federal Areas of Jurisdiction
17(c)	Migratory birds, as defined in sub-section 2(1) of the *Migratory Birds Convention Act*	5.0 Environmental Effects Table 5.1 Environmental Effects Assessment Summary: Federal Areas of Jurisdiction
18	A description of any changes to the environment that may occur, as a result of carrying out the project, on federal lands, in a province other than the province in which the project is proposed to be carried out or outside of Canada.	5.0 Environmental Effects Table 5.1 Environmental Effects Assessment Summary: Federal Areas of Jurisdiction
19	Information on the effects of Aboriginal peoples of any changes to the environment that may be caused as a result of carrying out the project, including effects on heath and socio-economic conditions, physical and cultural heritage, the current use of lands and resources for traditional purposes or any structure, site or thing that is of historical, archaeological, paleontological or architectural significance.	3.1 Land and Water Use 6.0 Proponent Engagement And Consultation With Aboriginal Groups
20	A summary of the information required under Sections 1 to 19	Sections 1.0-7.0

APPENDIX B

Letter and Information to Aboriginal Groups

Iron Ore Company of Canada
1000 Sherbrooke Street West
Suite 1920
Montreal, Quebec
H3A 3G4
T 514 764-8856
F 514 285-8412

December 11, 2012

By e-mail

Subject: Wabush 3 Open Pit Project, Labrador West

Dear Sir:

We would like to inform you that Iron Ore Company of Canada (IOC) is in the planning stages of developing Wabush 3 (the "**Project**"), a new open pit mine located southeast of the existing Luce Pit in Labrador West.

In relation with the Project, IOC intends to submit a Project Registration to the Government of Newfoundland and Labrador and a Project Description with the Federal Government early 2013. Please find enclosed an information package of the Project. This information is confidential and proprietary to IOC.

We would appreciate receiving any comments you may have with respect to the Project by January 18, 2013. In the meantime, we remain available to answer your questions and meet as necessary. Please contact Marsha Power-Slade, IOC Advisor - External Relations, who is responsible for Aboriginal consultation, at (709) 722-4200 or marsha.power-slade@riotinto.com.

Sincerely,

Lee Preziosi
Manager, Environment & Social Responsibility

IRON ORE COMPANY OF CANADA
OPEN PIT MINE (Wabush 3 Project), LABRADOR WEST

The Iron Ore Company of Canada (IOC) has been operating the Carol Project in Labrador West since the early 1960s. The company's current mining operations consist of open pit mines, mineral processing (concentrator and pellet plant) and tailings management facilities, as well as transportation infrastructure and other associated components and activities. The facilities cover an area of approximately 11,000 hectares.

IOC's has a production capacity of 23 million tonnes of iron ore concentrate and pellets. Its product is transported from the mine site in Labrador West along the 418 km Quebec North Shore and Labrador (QNS&L) railway to its port facilities in Sept-Îles, Quebec on the St. Lawrence Seaway. From Sept-Îles, it is transported by ships as large as 255,000 tonnes to major North American, European and Asian steel makers.

Approximately 2,250 persons are employed at the IOC mining, processing, rail and port operations.

IOC is in the planning stage of the development of Wabush 3, its tenth open pit mine at the Carol Project. Wabush 3 is located southeast of the existing Luce Pit (see Figure 1 of enclosed map).

The proposed Wabush 3 open pit mine will be a conventional open pit mine which will serve the IOC operations in two fundamental ways:

- allow flexibility in providing iron ore feed to its existing concentrator plant to achieve and maintain production of iron concentrate at the mill's rated capacity; and

- provide a new source of iron ore to extend the operating life of its Carol Project.

The proposed project, as currently planned, will include:

- an open pit mine with a planned operating life of 25 years;
- a waste rock disposal site, to be located to the west of the pit; and
- a haulage road to the northeast of the pit, linking the pit with existing ore conveyor and concentrator facilities.

The mine and waste rock sites are situated to the south of and adjacent to the operating Luce Mine and to the west of and adjacent to the Smokey Mountain ski hill. The southern edge of the proposed Wabush 3 pit is approximately 3 km to the north of the Fermont Highway and Tanya Lake in the Town of Labrador City

The project is not expected to result in any expansion in concentrator plant capacity or tailings waste production; or any new milling, crushing, service or transportation facilities. It is also not expected to result in any increase in employees after the project is developed, as mines employees will be redeployed from the other operating open pits.

IOC plans to submit a Project Registration to the Newfoundland and Labrador Government and a Project Description to the Federal Government to initiate their respective Environmental Assessment processes. The submissions are expected to occur in early 2013. These documents will provide information on the mine planning that has occurred to date and a summary of existing biophysical and social environmental information for the mine area. This information will include summaries of baseline studies that were conducted in 2012 on several environmental components, including:

- Air Quality
- Noise
- Hydrology
- Hydrogeology
- Soils
- Vegetation
- Wetlands
- Avifauna
- Furbearers and Small Mammals
- Caribou
- Fish – Aquatic Habitats
- Visual Environment
- Physical and Cultural Heritage
- Socioeconomics

The project submissions will be made available to the public by both governments and their reviews and deliberations on the project will include consideration of public comments.

IOC has in place a comprehensive environmental management system (EMS) certified to the ISO 14001 Environmental Standard, including various associated plans and procedures designed to avoid or reduce the environmental effects of its activities. The proposed Project will be constructed and operated in accordance with applicable legislation, regulations, permits, the environmental protection and planning measures contained within EMS and in compliance with IOC policies, procedures and standards.

Rio Tinto

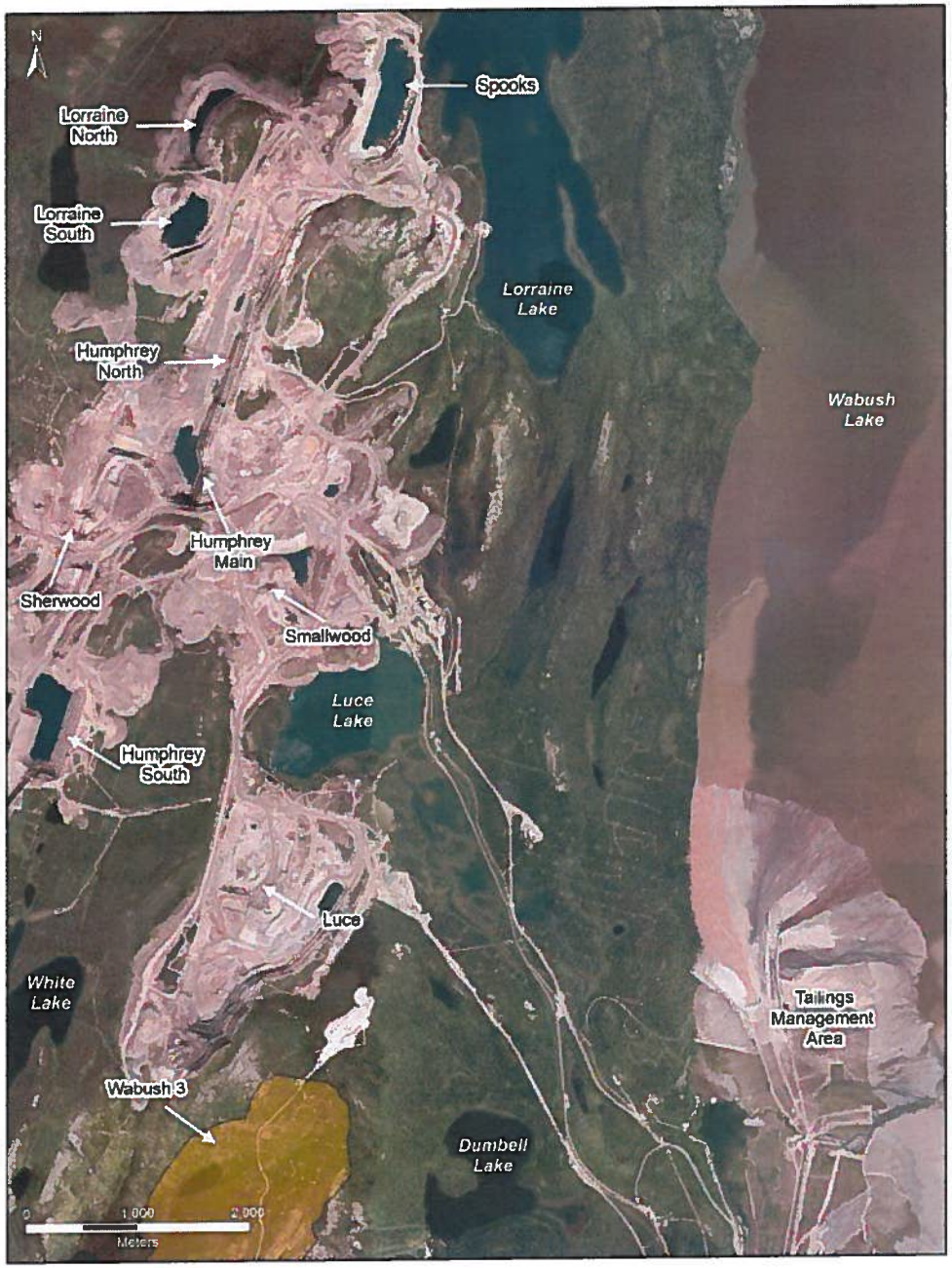
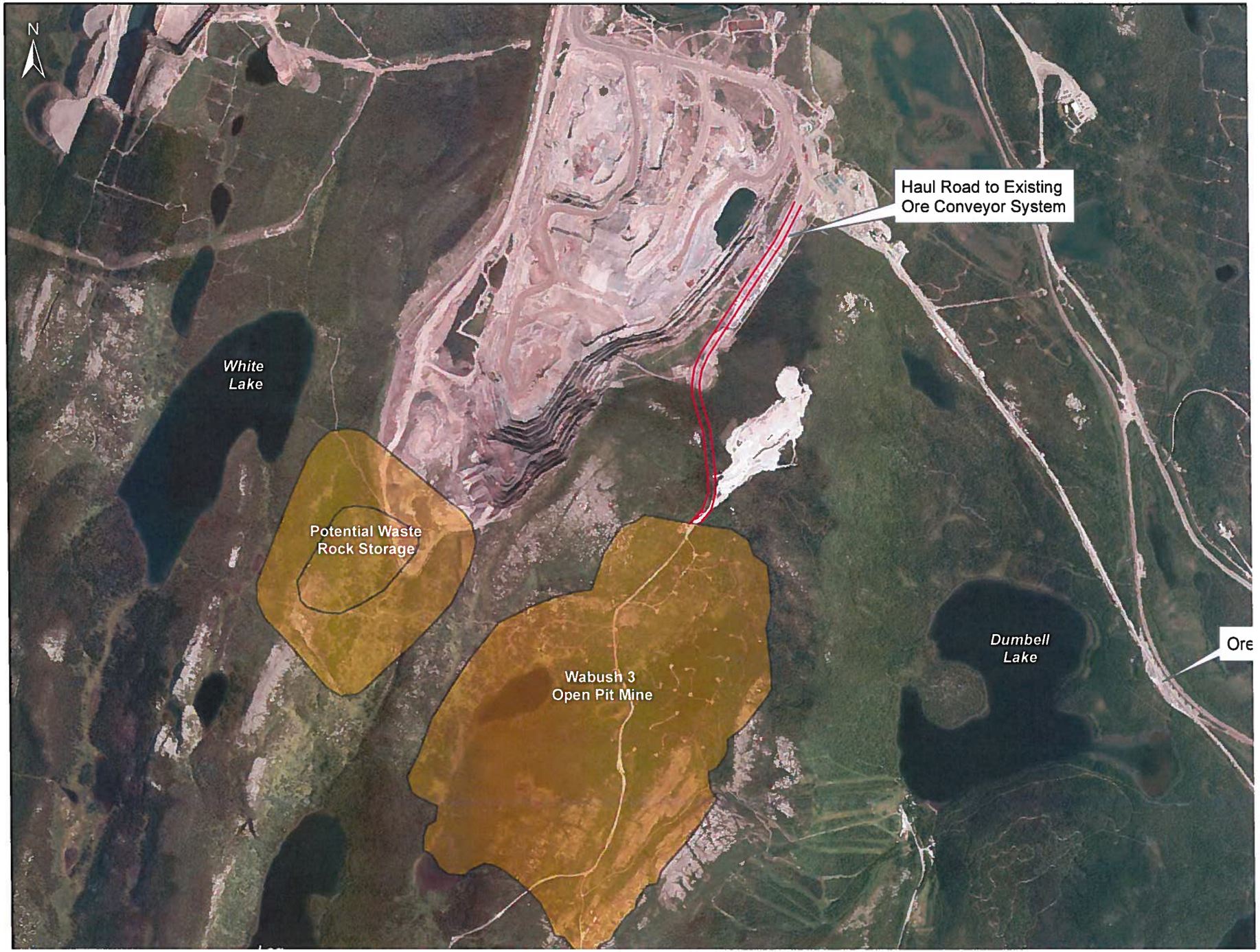


Figure 1: Overview of the IOC Operation


N
Haul Road to Existing
Ore Conveyor System
White
Lake
Potential Waste
Rock Storage
Wabush 3
Open Pit Mine
Dumbell
Lake
Ore

Compagnie minière IOC
1000, rue Sherbrooke Ouest
Bureau 1920
Montréal (Québec)
H3A 3G4
T 514 764-8856
F 514 285-8412

Le 12 décembre 2012

Sujet: Projet de mine à ciel ouvert Wabush 3, Labrador Ouest

Monsieur,

Nous aimerions vous informer que la Compagnie minière IOC (IOC) est en cours de planification du développement de Wabush 3 (le **«Projet»**), une nouvelle mine à ciel ouvert située au sud-est de la mine Luce Pit au Labrador ouest.

En relation avec le Projet, IOC a l'intention de soumettre un Enregistrement de Projet auprès du Gouvernement de Terre-Neuve et du Labrador et une Description de Projet auprès du Gouvernement Fédéral au début de l'année 2013. Veuillez trouver ci-joint un document d'information sur le Projet. Cette information est confidentielle et appartient à IOC.

Nous apprécierions recevoir les commentaires que vous pourriez avoir à l'égard du Projet d'ici le 18 janvier 2013. Dans l'entremise, nous demeurons disponibles pour répondre à vos questions et se rencontrer si nécessaire. À cet effet, veuillez contacter Marsha Power-Slade, conseillère relations externes chez IOC, laquelle a la responsabilité des consultations avec les autochtones, au 709-722-4200 ou marsha.power-slade@riotinto.com.

Sincèrement,

Lee Preziosi

Lee Preziosi
Directeur, Responsabilité sociale & environnementale

COMPAGNIE MINIÈRE IOC

MINE À CIEL OUVERT (Projet Wabush 3), LABRADOR OUEST

La Compagnie minière IOC (IOC) exploite le site du Projet Carol situé au Labrador ouest depuis le début des années 1960. L'exploitation minière actuelle de la compagnie comprend les mines à ciel ouvert, le traitement des minerais (concentrateur et usine de bouletage) et les installations servant à la gestion des résidus ainsi que les infrastructures pour le transport et autres activités et éléments connexes. Les installations couvrent une surface d'environ 11,000 hectares.

IOC a une capacité de production de 23 millions de tonnes de concentré et de boulettes de minerai de fer. Ses produits sont transportés de la mine au Labrador ouest le long des 418 km de chemin de fer de la ligne Quebec Northshore and Labrador (QNS&L) jusqu'à ses installations portuaires à Sept-Îles, Québec, situées sur la route maritime du Saint-Laurent. À partir de Sept-Îles, les produits sont transportés par bateau pouvant transporter jusqu'à 255,000 tonnes pour atteindre les aciéristes de l'Amérique du Nord, de l'Europe et de l'Asie.

Environ 2,250 personnes sont employées par IOC dans les mines, les usines de traitement et le le transport ferroviaire et maritime.

IOC est à l'étape de la planification du développement de Wabush 3, sa dixième mine à ciel ouvert au Projet Carol. Wabush 3 est situé au sud-est de la mine existante Luce Pit (voir la figure 1 sur la carte ci-jointe).

Le Projet proposé Wabush 3 prévoit une mine à ciel ouvert conventionnelle qui va servir les opérations d'IOC de deux manières fondamentales :

- Permettre une flexibilité dans l'apport en minerai de fer au concentrateur actuel pour atteindre et maintenir la production de concentré de minerai de fer au même débit que la capacité du moulin; et
- Fournir une nouvelle source de minerai de fer pour prolonger la durée de vie du Projet Carol.

Le Projet proposé, tel que planifié, inclura :

- Une mine à ciel ouvert avec une durée de vie prévue de 25 ans;
- Un site de stockage des déchets de roche qui sera situé à l'ouest de la mine; et
- Une route de transport au nord-est de la mine, reliant la mine avec les convoyeurs de minerais actuels et le concentrateur.

La mine et le site de stockage des roches sont situés au sud et à proximité de la mine Luce Pit ainsi qu'à l'ouest et à proximité de la montagne de ski Smokey Mountain. La partie septentrionale de la mine proposée Wabush 3 est à environ 3 km au nord de l'autoroute Fermont et du lac Tanya dans la ville de Labrador City.

Il n'est pas prévu que la capacité du concentrateur et que la production de déchets de résidus soient augmentés ni l'ajout d'un nouveau moulin, d' installations de concassage, ou infrastructures de services ou de transport. Il n'est pas non plus prévu d'augmenter le nombre d'employés après la phase de développement du projet, étant donné que les employés de la mine vont provenir d'autres mines à ciel ouvert en opération.

IOC planifie de soumettre un Enregistrement de Projet auprès du Gouvernement de Terre-Neuve et du Labrador et une Description de projet auprès du Gouvernement Fédéral pour déclencher leur processus respectifs d'évaluation environnementale. Les soumissions sont prévues au début de 2013. Ces

documents vont fournir de l'information sur la planification de la mine effectuée jusqu'à présent ainsi qu'un résumé des informations existantes sur l'environnement biophysique et social dans la région de la mine. Cette information comportera des résumés des études de base qui ont été menées en 2012 sur plusieurs composants environnementaux, incluant :

- Qualité de l'air
- Bruit
- Hydrologie
- Hydrogéologie
- Sols
- Végétation
- Zones humides
- Avifaune
- Animaux à fourrure et petits mammifères
- Caribous
- Poissons – habitats aquatiques
- Environnement visuel
- Héritage physique et culturel
- Socio-économie

Les soumissions de projet seront mises à la disposition du public par les deux gouvernements et leurs révisions et délibérations sur le projet vont prendre en considération les commentaires du public.

IOC a mis en place un système de gestion de l'environnement (SGE) certifié du standard environnemental ISO 14001, système qui inclut plusieurs plans et procédures destinés à éviter ou réduire les effets environnementaux de ses activités. Le Projet proposé sera construit et exploité en respectant les lois, les règlements, les permis applicables ainsi qu'en suivant les mesures de protection et de planification de l'environnement contenues dans le SGE et en conformité avec les politiques, procédures et standards d'IOC.

Rio Tinto

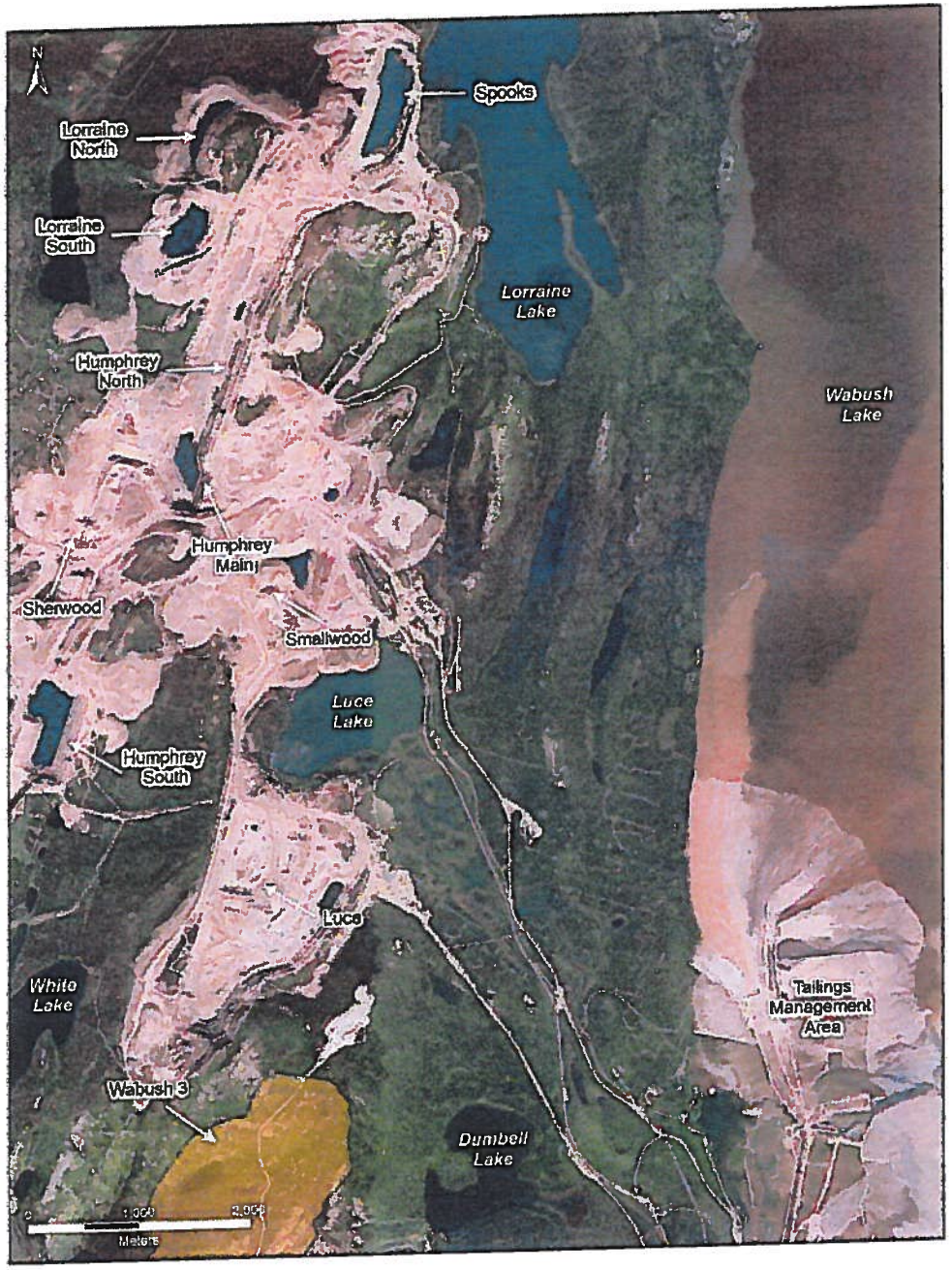
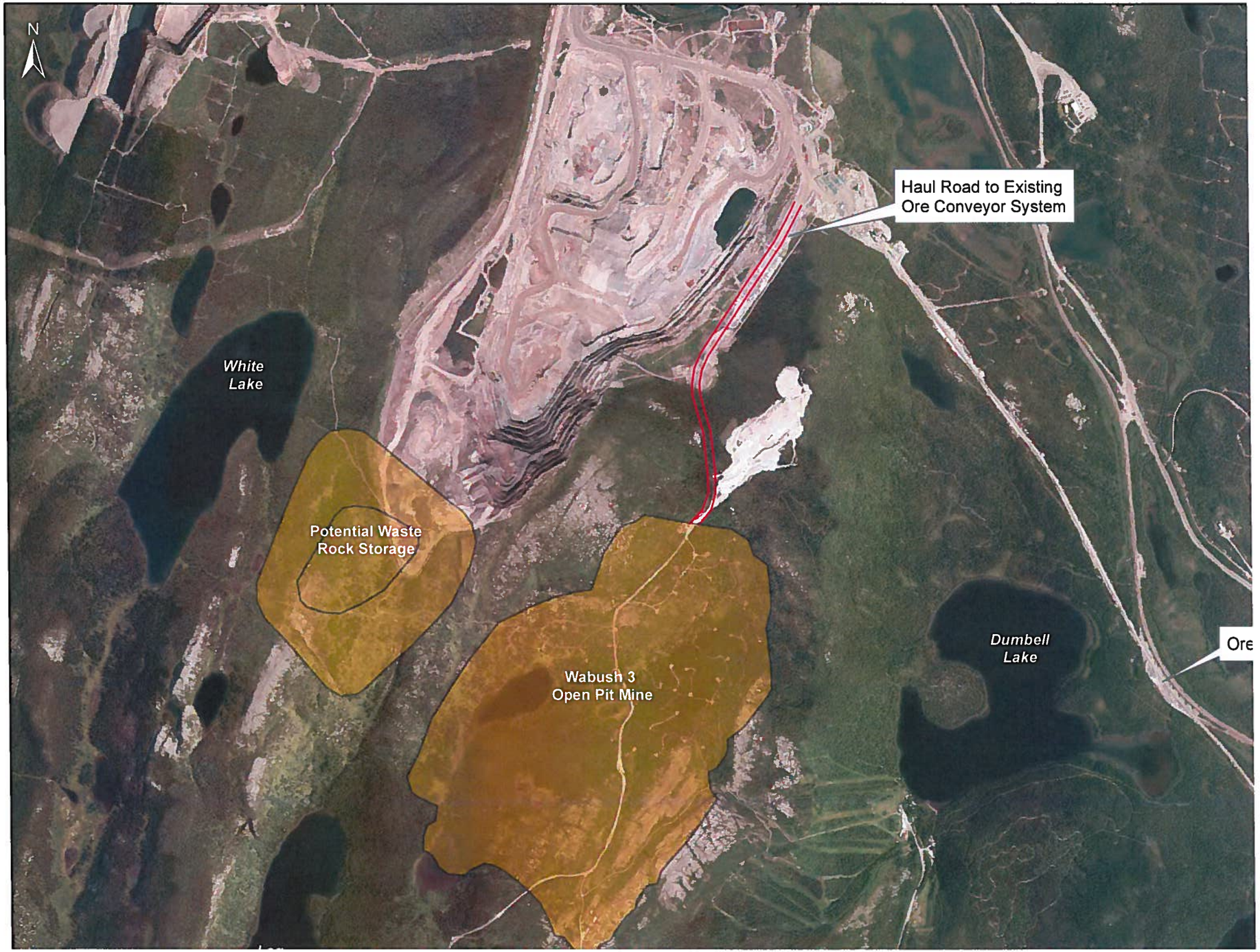


Figure 1: Overview of the IOC Operation


N
Haul Road to Existing
Ore Conveyor System
White
Lake
Potential Waste
Rock Storage
Wabush 3
Open Pit Mine
Dumbell
Lake
Ore