

JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT

Project Description
Summary
Document

Labec Century,
a subsidiary of
Century Iron
Mines Corp.



November 5, 2012





**Joyce Lake Direct Shipping Iron Ore Project:
Project Description – Summary Document**

Prepared for:

Labec Century Iron Ore
(a subsidiary of Century Iron Mines Corporation)
170 University Avenue, Suite 602
Toronto, ON M6H 3B3

Prepared by:

Stassinu Stantec Limited Partnership
607 Torbay Road
St. John's, NL A1A 4Y6

Project No. 121810649
November 5, 2012

This document is the Project Description Summary Document for the Joyce Lake Direct Shipping Iron Ore Project (the Project), pursuant to the *Canadian Environmental Assessment Act, 2012 – Prescribed Information for the Description of a Designated Project Regulations*. This document was translated from its original English version by BeTranslated on behalf of Stassinu Stantec Limited Partnership. The English version of this Project Description Summary Document constitutes the official version. In the event of conflict between the English and French versions of this document, the English version shall prevail.



TABLE OF CONTENTS

1.0	GENERAL INFORMATION AND CONTACTS	1
1.1	NATURE OF PROJECT	1
1.2	PROPONENT DETAILS.....	1
1.3	CONSULTATIONS.....	1
1.3.1	Consultation with Aboriginal Groups	2
1.3.2	Consultation with Governments	7
1.3.3	Consultation with the General Public and Other Stakeholders	8
1.4	OTHER RELEVANT INFORMATION	9
1.4.1	Environmental Assessment in Other Jurisdictions.....	9
2.0	PROJECT INFORMATION	10
2.1	GENERAL DESCRIPTION AND OBJECTIVES	10
2.1.1	General Description	10
2.1.2	Objectives.....	10
2.2	PROVISIONS OF THE REGULATIONS DESIGNATING PHYSICAL ACTIVITIES.....	10
2.3	PROJECT COMPONENTS AND ACTIVITIES	11
2.4	EMISSIONS, DISCHARGES AND WASTE.....	12
2.5	PROJECT STEPS AND ACTIVITIES	23
2.5.1	Schedule	23
2.5.2	Activities	23
3.0	PROJECT LOCATION.....	27
3.1	PROJECT COORDINATES	27
3.2	MAPPING	27
3.3	OFFICIAL DESCRIPTION OF LAND	28
3.4	LAND AND WATER USE	28
3.4.1	Zoning	28
3.4.2	Land Titles.....	28
3.4.3	Land Use Plans	28
4.0	FEDERAL GOVERNMENT PARTICIPATION	29
4.1	FINANCIAL SUPPORT	29
4.2	FEDERAL LAND	29
4.3	LEGISLATIVE OR REGULATORY REQUIREMENTS	29
5.0	ENVIRONMENTAL EFFECTS.....	31
5.1	DESCRIPTION OF PHYSICAL AND BIOLOGICAL ENVIRONMENT	31
5.1.1	Climate	31
5.1.2	Air Quality and Noise	31
5.1.3	Ecological Environment	31
5.1.4	Socio-Economic Environment.....	35
5.1.5	Land and Resource Use	36
5.1.6	Archaeology and Heritage Resources.....	36



5.2	POTENTIAL CHANGES TO THE ENVIRONMENT	36
5.2.1	Aboriginal Peoples.....	38
5.2.2	Potential for Changes to the Environment on Federal Lands, Other Provinces, and Outside of Canada.....	39
6.0	PROPONENT’S CONSULTATIONS WITH ABORIGINAL GROUPS	39
7.0	PROPONENT’S CONSULTATIONS WITH THE GENERAL PUBLIC AND OTHER PARTIES	39
8.0	REFERENCES	40

LIST OF TABLES

Table 2-1	Estimated Production (by year) of Iron Ore in Phase I and Phase II for the Joyce Lake Project.....	11
Table 2-2	Waste, Discharges and Emissions to be Potentially Generated	21
Table 2-3	Project Schedule (note, dates are tentative for the end of Phase I and for all stages of Phase II).....	24
Table 3-1	Project Coordinates	27
Table 3-2	Labec Century Licences: Joyce Lake Project Area	28
Table 4-1	Proximity of Project Area to Federal Lands	29
Table 4-2	Permits, Approvals and Authorizations Anticipated to be Required	29
Table 5-1	Bird species observed in the study area during the 2012 field campaigns	33
Table 5-2	Potential Valued Environmental Components (VECs) to be Assessed and Potential Impacts for the Environmental Assessment of the Joyce Lake Direct Shipping Iron Ore Project.....	37

LIST OF FIGURES

Figure 1-1	Project Location Plan.....	3
Figure 1-2	Aboriginal Communities	5
Figure 2-1	Mine Site and Associated Infrastructure.....	13
Figure 2-2	Beneficiation Plant and Tailings Management Facility	15
Figure 2-3	Accommodation Camp	17
Figure 2-4	Rail Associated Infrastructure	19

LIST OF APPENDICES

Appendix A	Contact Information for Aboriginal Groups with Asserted Land Claims Near the Project Area
------------	--



1.0 GENERAL INFORMATION AND CONTACTS

1.1 NATURE OF PROJECT

Labec Century Iron Ore (Labec Century; the Proponent), is proposing to develop an iron mine in western Labrador, approximately 20 kilometres (km) to the northeast of the Town of Schefferville, Québec. The mining prospect for the Joyce Lake Direct Shipping Iron Ore Project (the Project) lies on a peninsula of land in Attikamagen Lake and all the physical elements of the Project that will be subject to assessment lie within Labrador (Figure 1-1). The Project consists of mining a high grade deposit of hematite iron in two phases: Phase I will target DSO (“direct shipping ore”), which contains ~60% iron and requires minimal processing prior to shipping; Phase II will target lower grade iron ore, which will require further processing to enrich the iron ore content prior to shipping.

1.2 PROPONENT DETAILS

The Project Proponent is Labec Century Iron Ore (Labec Century; the Proponent), a subsidiary of Century Iron Mines Corporation. Century Iron Mines Corporation (TSX:FER) is Canada's largest holder of iron ore land claims by a public company, with interests in several properties in the Provinces of Quebec and Newfoundland and Labrador. Labec Century Iron Ore Inc. is a subsidiary of Century Iron Mines, with investment from WISCO International Resources Development & Investment Limited and Minmetals Exploration & Development (Luxembourg) Limited.

The Proponent information is:

CEO: Sandy Chim, C.A., Director, President and CEO
Proponent Contact: Hubert Vallée ing., Senior Vice President
Address: Century Iron Mines Corporation
1200 Avenue McGill Collège
Bureau 1900, Montréal, QC H3B 4G7
Phone: (514) 228-5030
Email: hubert.vallee@centuryiron.com

1.3 CONSULTATIONS

Since 2010, Century has been meeting with Aboriginal people, government agencies, and public stakeholders to discuss various projects it is pursuing in the Schefferville area.

Century has engaged in a preliminary consultation program related to the company's general operations in western Labrador. To date, identified comments or concerns have been related to general mining activities in the region.

A comprehensive Consultation and Engagement Plan specific to this Project is currently being implemented. This includes engagement with Aboriginal peoples, residents of communities potentially affected by the Project, government agencies with regulatory or permitting responsibilities related to the

November 5, 2012



Project, and other interested parties. An update on the engagement and consultation process, including results obtained, will be provided in the EIS.

Century will take into consideration all the concerns expressed by Aboriginal groups, government agencies, and public stakeholders regarding the planned Project. Century will continue to meet with these parties to provide information on the planned Project, to gather information on the biophysical and social environment, to obtain feedback, and to document interests and concerns. An update on the engagement and consultation process will be provided in the EIS.

A summary of consultations to date is provided in the sections below.

1.3.1 Consultation with Aboriginal Groups

As the proponent for the subject Project, Labec Century is committed to fair and honest dealings with all Aboriginal groups, to respecting the terms of any formal consultation process outlined by the Government of Newfoundland and Labrador and the federal government, and to entering into negotiations towards mutually beneficial relationships with those groups with established aboriginal rights.

Figure 1-2 shows the location of Aboriginal communities in relation to the Project. Preliminary research has identified five Aboriginal groups with asserted land claims or traditional territory near the Project of which only one, the Innu Nation of Labrador, has had its land claim accepted for negotiation by the federal and provincial governments. The remaining four groups have asserted land claims that have not, as yet, been accepted for negotiation: NunatuKavut Community Council, Naskapi Nation of Kawawachikamach, Innu First Nation of Matimekush-Lac John and the Innu First Nation of Uashat mak Mani-Utenam. Contact information for these Aboriginal groups is provided in Appendix A.

Century has hosted a number of meetings with the local Chiefs and Band Councils to discuss the planned projects. A list of recent meetings and discussion sessions with these groups is provided below.

- November 18, 2010 – Received support letter from the Naskapi Chief for the 2010 drill program in Lac Sans Chef.
- March 1, 2011 – Meeting with Chief Réal Mckenzie and council members from Conseil de la Nation Innu Matimekush-Lac John in Schefferville to provide an introduction to Century and its interests in the area.
- March 7, 2011 – Letter sent to Rosario Pinette and the Conseil de la Nation Innu, Takuaiakan Uashat Mak Mani-Utenam regarding March 4, 2011 meeting in Sept-Îles for corporate introduction copied to Chief Georges-Ernest Grégoire and Mr. Ken Rock.
- March 7, 2011 – Letter sent to Chief Réal Mckenzie to summarize the meeting on March 1, 2011;
- March 26, 2011 – Letter sent to Chief Réal Mckenzie and Band Council regarding the camp building in Rainy Lake.

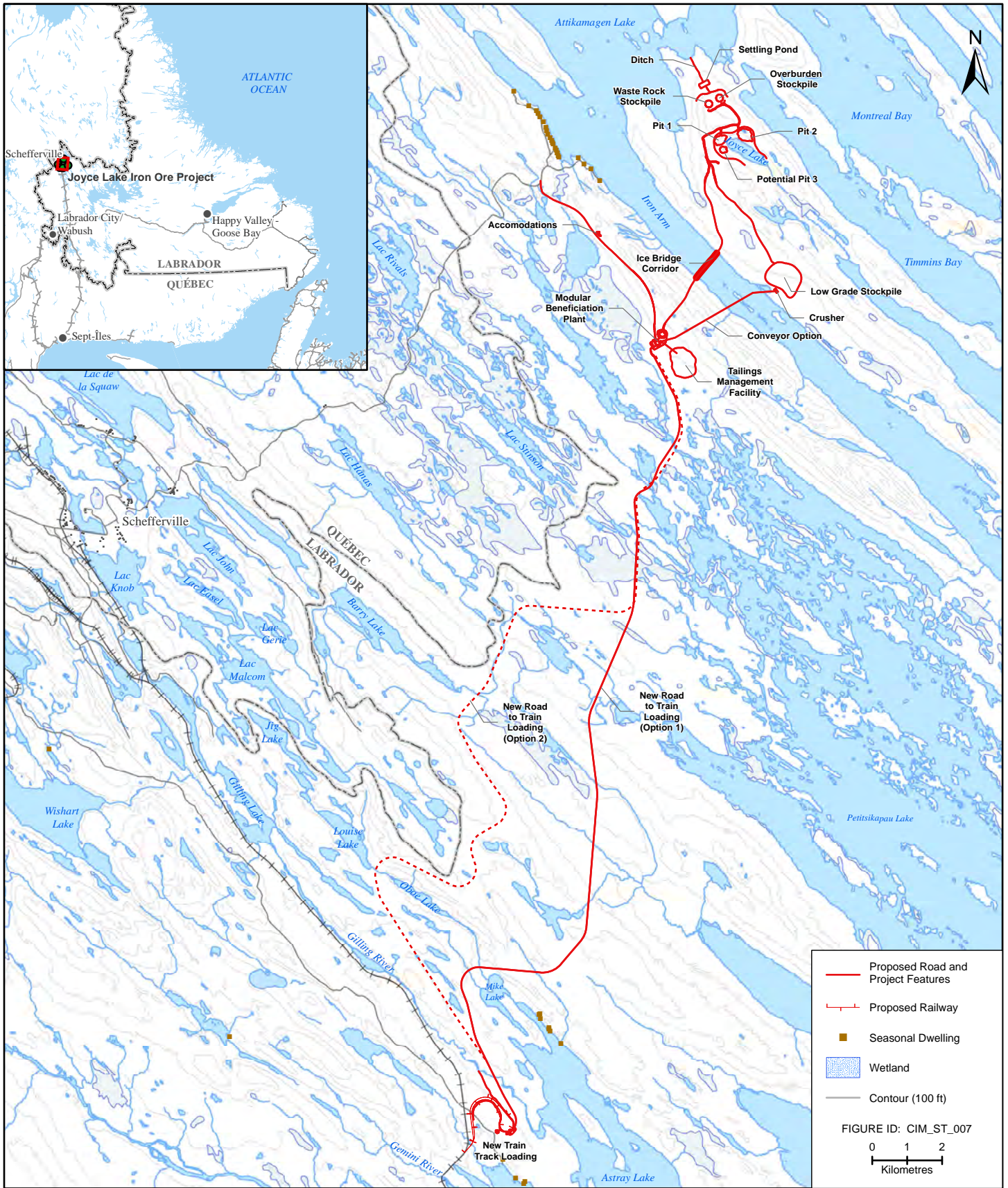
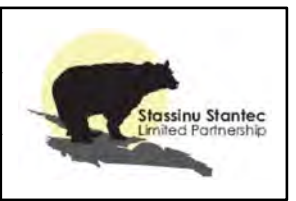


FIGURE TITLE:		Project Location Plan	
CLIENT:		LABEC CENTURY IRON ORE INC.	
FIGURE ID:	FIGURE 1-1	PROJECT NUMBER:	121810649
FIGURE SOURCES:		Project features provided by CIMA+. Basemap information from NRCan CanVec database and Newfoundland and Labrador Department of Natural Resources.	



**JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT:
PROJECT DESCRIPTION – SUMMARY DOCUMENT**



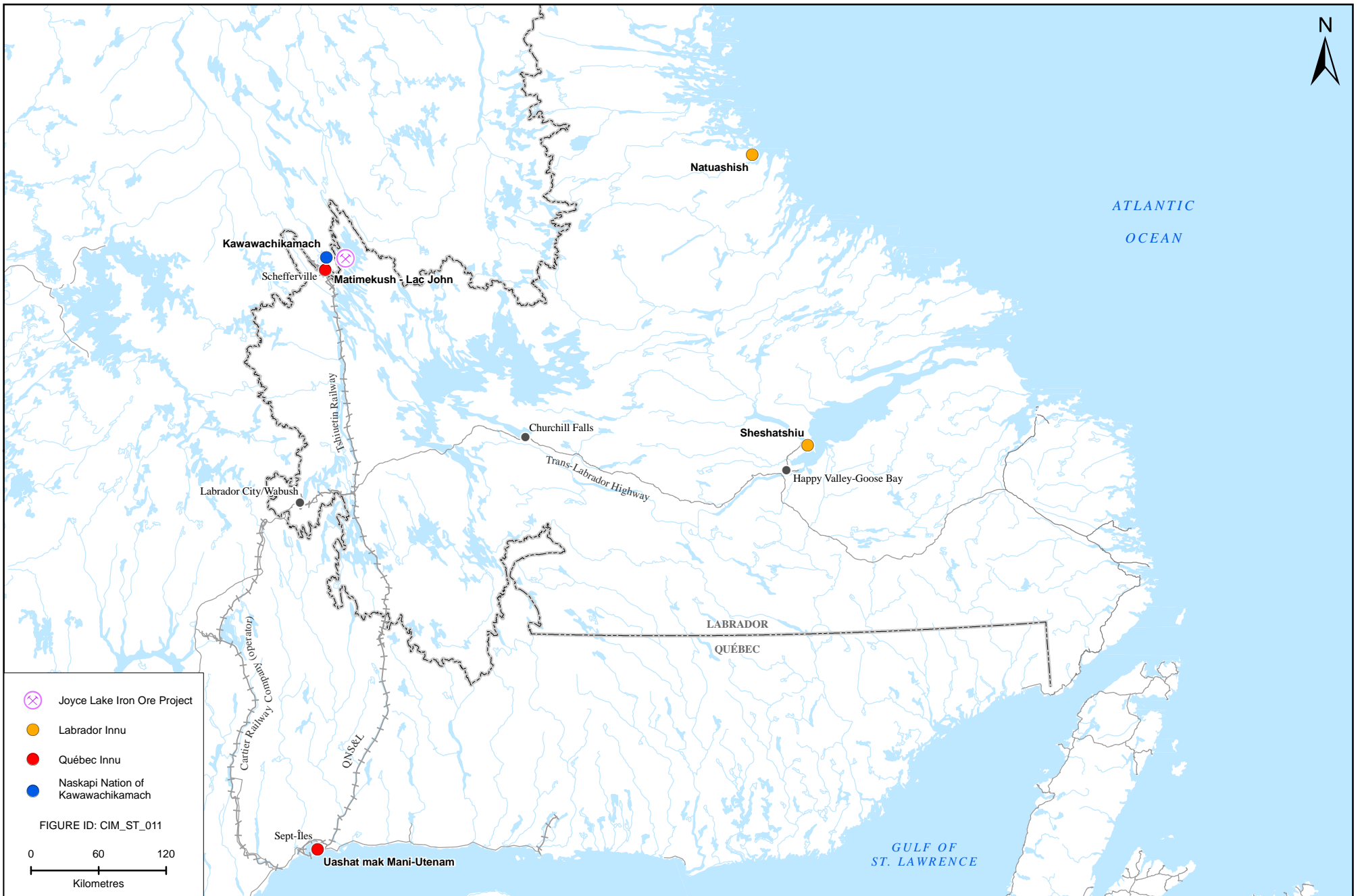


FIGURE TITLE:		Aboriginal Communities	
CLIENT:		LABEC CENTURY IRON ORE INC.	
FIGURE ID:	FIGURE 1-2	PROJECT NUMBER	121810649
		FIGURE SOURCES: Project features provided by CIMA+. Basemap information from NRCan CanVec database and Newfoundland and Labrador Department of Natural Resources.	



**JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT:
PROJECT DESCRIPTION – SUMMARY DOCUMENT**





- March 2011 – During Prospectors & Developers Association of Canada (PDAC) 2011 Meeting, meeting with Chief Gregoire and Band council member plus Armand Mckenzie from Conseil de la Nation Innu, Takuaikan Uashat Mak Mani-Utenam at Century office for introductory meeting with Mr. Sandy Chim, CEO of Century.
- May 11, 2011 – Introductory meeting with the Naskapi Chief and Naskapi Nation of Kawawachikamach Band Council in Kawawachikamach.
- May 22, 2011 – Meeting with Jean Pierre Family in the presence of Paco Vachon (Councillor) and Jean Gauthier (former Chief) from Conseil de la Nation Innu Matimekush-Lac John in Schefferville regarding past and future work in the Lac Le Fer area.
- March 2012 – During PDAC, meeting with Chief Réal McKenzie and Chief Ernest Gregoire, preliminary agreed to host joint IBA discussions in future.
- June 6, 2012 – Meeting with the lawyers from O'Reilly et Associés representing Conseil de la Nation Innu, Takuaikan Uashat Mak Mani-Utenam in Montreal to start the Pre-production agreement negotiation.
- June 20, 2012 – Century Team met in St John's with Grand Chief Joseph Riche of the Innu Nation of Labrador and council members to give a corporate update and begin the IBA discussion.
- June 13, 2012 – Meeting with Nadir Andre lawyer for the Conseil de la Nation Innu Matimekush-Lac John on Rail strategy in Montreal.
- July 11, 2012 – Exploration Program update with Chief Réal McKenzie and his Band council members in Schefferville.
- July 12, 2012 – Exploration Program update to Band Council members of Naskapi Nation of Kawawachikamach Band Council in Kawawachikamach; follow-up with site tour with the council members to Iron Arm Camp, Joyce Lake and Rainy Lake exploration site.
- July 7 and 19, 2012 – Meeting with the Dan Gabriel and Ben Mckenzie Family regarding the Rainy Lake 2012 drill program.
- Jul 18, 2012 – Meeting in Toronto with Chief Louis Einish and council members.

1.3.2 Consultation with Governments

The following government agencies have been engaged by Century and / or by its consultants regarding the Project, and additional meetings are being planned:

- **Federal Government:**
 - September 25, 2012: Canadian Environmental Assessment Agency (CEA Agency): meeting to introduce the planned Project prior to submission of the Project Description; and



- July 2012: Fisheries and Oceans Canada (DFO): engagement to obtain a Scientific Licence for fish surveys in 2012.
- **Newfoundland and Labrador Government:**
 - May to July, 2012: Department of Environment and Conservation (NL DOEC) - Environmental Assessment Division and Department of Natural Resources (NL DNR) – Mineral Lands Division; bulk sampling program;
 - September 2012: Department of Tourism, Culture, and Recreation – Provincial Archaeology Office: discussions, permit application, and permit issuance for baseline archaeology program;
 - September 20, 2012; NL DOEC – Environmental Assessment Division; pre-registration meeting;
 - Spring 2010, 2011, 2012: NL DNR – Mineral Lands Division - exploration program; and
 - June and September 2012: Intergovernmental and Aboriginal Affairs Secretariat (NL IAAS) - engagement plan with Aboriginal groups.
- **Québec Government:**
 - January 2012: Ministre de Ressources Naturelles, (MNRF) – met with Minister and staff to provide an update on general status of plans for Century projects and discussed the need for engagement of Aboriginal peoples;
 - April 18, 2012: MNRF- met with MNRF and other stakeholders in Sept-Îles regarding Century plans for several projects and use of the port facilities; and
 - February 8, 2012: department du Développement économique, de l'Innovation et de l'Exportation – met with Minister and staff to provide an update on general status of plans for Century projects.
- **Port in Sept Îles:**
 - April 18, 2012 – met with various stakeholder staff including MNRF (see above), Port of Sept-Îles, Ville de Sept-Îles, Economic Development Board of Sept-Îles regarding Century plans for several projects and use of the port facilities.

1.3.3 Consultation with the General Public and Other Stakeholders

Century has met with representatives of two railway companies: Tshiuetin Rail Transportation (starting in summer of 2011) and Québec North Shore and Labrador (QNS&L) Railway (starting in spring of 2012), and meetings are ongoing on at least a bimonthly basis. Century has also met with two business owners in Schefferville and a former administrator of Schefferville, starting in summer of 2011 and ongoing in 2012. These meetings have been to discuss Century's interests in the area, its



exploration activities, its operational needs, and has included specific discussions on the Joyce Lake Project.

The proposed Project is located in a remote area of western Labrador and, as a result, consultation to date with the general public has focused on the nearby community of Schefferville, approximately 20 km from the Project location. Going forward, Labec Century will consider consultation with the general public in Labrador City and Wabush, over 200 km to the south of the Project. As the current center of mining activities in Labrador, these two communities have the potential for interaction with the Project in terms of supplies and labour.

1.4 OTHER RELEVANT INFORMATION

1.4.1 Environmental Assessment in Other Jurisdictions

The physical elements of the Project that will be subject to assessment lie wholly within Labrador and the Project will require federal and provincial environmental assessment (EA) and other approvals required to proceed.

All mining projects in Newfoundland and Labrador are subject to environmental assessment under the NL *Environmental Protection Act* and *Environmental Assessment Regulation*. The Project will enter the environmental assessment process via Project Registration with the provincial Department of Environment and Conservation. An undertaking that is subject to the Act is required to be registered for examination by NL DOEC.

Where both federal and provincial EAs are required, both levels of government have several procedures, formal and informal, to coordinate their respective process in order to reduce duplication and have a single EA satisfy both processes. In Newfoundland and Labrador, the CEA Agency and the NL DOEC Environmental Assessment Division typically work together to coordinate government work plans, review schedules, consultation and ministerial decisions.

The proponent is not aware of any regional environmental study that has been or is currently being performed for the Project area.



2.0 PROJECT INFORMATION

2.1 GENERAL DESCRIPTION AND OBJECTIVES

2.1.1 General Description

The Project consists of mining a high grade deposit of hematite iron in western Labrador, approximately 20 km to the northeast of Schefferville. The Joyce Lake prospect lies in an undeveloped area adjacent to the small Joyce Lake waterbody on a peninsula within Attikamagen Lake, in an area with a number of interconnecting large lakes. The prospect can be reached from the mainland by crossing a relatively narrow stretch of water, called Iron Arm. Currently, the prospect is accessed from Schefferville either direct by helicopter or first by ground approximately 20 km to Iron Arm Camp (operated by Labec Century) and then by helicopter from there to the Joyce Lake prospect area.

The Project is located on the eastern end of the Labrador Trough, a rich belt of iron ore that stretches through Labrador and northern Québec. Mining operations in the area began in the 1950s when the Iron Ore Company of Canada (IOC) began iron mining operations and established the Town of Schefferville. Although iron ore mining by IOC ceased in the area in the early 1980s, there has been a resurgence of interest in the recent decade, with several companies actively exploring and evaluating the iron potential.

2.1.2 Objectives

The main objective of the Project is to produce high grade ore for use in the steel industry. The construction and operation of the Project will generate direct and indirect employment and business opportunities for the local residents, and provide the various levels of government with revenues through taxes and royalties.

2.2 PROVISIONS OF THE REGULATIONS DESIGNATING PHYSICAL ACTIVITIES

Federal assessment is regulated under the *Canadian Environmental Assessment Act, 2012 (CEAA, 2012)*. Under *CEAA, 2012*, projects that are included in the *Regulations Designating Physical Activities* may require federal EA. The Project is a Designated Project pursuant to Section 15(a) of the following provision from the *Regulations Designating Physical Activities*:

“15. The construction, operation, decommissioning and abandonment of

(a) metal mine, other than a gold mine, with an ore production capacity of 3 000 t/d or more”

The ore production target for the Project is up to 4 MT/yr, which is equivalent to up to 11,000 t/d on an annual basis, and up to 45,000 t/d, based on an anticipated 3 month period each year of active mining in Phase I.



The Project may also be considered a Designated Project pursuant to Section 8 of the Regulations if the process water is sourced from groundwater wells and is extracted at a rate that exceeds 200,000 m³/a. Water requirements are currently under study and will be described in the EIS.

2.3 PROJECT COMPONENTS AND ACTIVITIES

Physical elements of the Project are shown in overview on Figure 1-1 and include the Joyce Lake mining area, conveyance across Iron Arm, a beneficiation plant on the mainland, a new haul road (two options) to connect to a new rail spur near the existing railroad near Astray Lake, access roads, and an accommodation camp. More details of the Project components are shown in Figure 2-1 for the mine area, Figures 2-2 and 2-3 for the beneficiation plant and TMF and accommodations, and Figure 2-4 for the rail yard and track.

The estimated production of iron ore for the Project by year is provided in Table 2-1, and is based on current exploration information. The current target production estimate is 4 Mt of iron ore per year. The first three years of operation would focus on production of DSO (“direct shipping ore”) which has a high iron content (~60% iron), with stock-piling of lower grade ore (< 60% iron) that would be beneficiated in Phase II to bring it up to the desired commercial grade.

Table 2-1 Estimated Production (by year) of Iron Ore in Phase I and Phase II for the Joyce Lake Project

Product	Unit	Estimated Production by Year							
		2014	2015	2016	2017	2018	2019	2020	2021
Phase I Ore (DSO; 60% Fe)	tonne		1,500,000	3,000,000	500,000				
Phase II Ore (55% Fe)	tonne					3,000,000	4,000,000	TBD	TBD
Waste Rock	tonne	200,000	600,000	1,200,000	250,000	1,200,000	1,600,000		
Overburden	tonne	500,000	300,000	600,000	100,000	600,000	800,000		
Notes:									
TBD - To be determined.									

The mining operation will consist of removing ore from open pits adjacent to Joyce Lake using drilling and blasting, a hydraulic excavator and haul trucks. In Phase I, mining equipment will be brought to the mine site by barge over Attikamagen Lake in the ice free season and over an ice bridge in the winter. The pre-stripping of overburden at the open pit will start during the summer, with waste rock and low grade ore being stockpiled outside the pit limits.

For Phase I of the Project, DSO will be mined during the winter months, transported across Iron Arm on an ice bridge and otherwise stockpiled on the peninsula when the ice bridge is not in operation. The beneficiation plant on the mainland will include an ore stockpile, a crushing and washing plant, and a tailings management facility (TMF). For Phase I, DSO will need minimal processing prior to shipment, and processing will occur during the summer and shoulder seasons. Processing in Phase I will therefore include crushing and washing in the beneficiation plant to remove fines, which can otherwise be problematic for shipping and transfer. Rejected fines will be sent to the TMF. For Phase II, the ore will have lower iron content and will need to be beneficiated to raise the grade prior to shipping. Additional processing elements will be added to the beneficiation plant for Phase II and will be described in the environmental impact statement (EIS). These additional processing elements and options are being studied in parallel with ongoing exploration.



If feasible for Phase II, ore may also be transported via floating conveyor over Iron Arm (750 m) and an overland conveyor (2 km) to the beneficiation plant. For this option, ore would be crushed on the peninsula and then loaded onto the conveyor. The conveyor option would allow year-round transportation of ore from mine to plant and reduce the amount of haulage by truck. Phase II beneficiation will include additional elements beyond the crushing and washing facilities on the mainland.

For both phases, final product will be hauled by truck from the beneficiation plant to the rail yard, a distance of approximately 22 km along a new haul road (two optional routes). At the rail yard, the product will be loaded onto rail cars on a new 6 km rail loop that will connect to the existing Tshiuetin Rail. The product will be taken south to Sept-Îles, Québec, where it will be stockpiled on Port Authority land prior to shipping to market.

Power for the Project will be provided by diesel generators using fuel stored mainly at the beneficiation plant, with smaller tanks at other locations where power is required. Other physical elements of the Project include stock piles for overburden, waste rock, and ore (pre- and post-processing), water supply systems, settling ponds with water treatment, domestic waste water treatment, drainage ditches, explosives storage facility, hazardous materials storage and management area, access roads, accommodation camp, ancillary buildings (e.g., offices, workshops, warehouse/storage areas, worker facilities, mobile equipment storage).

All structures will be constructed so that they can be moved from the site and re-used elsewhere when no longer required for this Project.

2.4 EMISSIONS, DISCHARGES AND WASTE

A number of emissions discharges and water will be generated during the Project stages; these are summarized in Table 2-2.

To determine treatment requirements on liquid discharges, tests are being conducted in 2012 on overburden, waste rock, and ore to determine the potential for acid rock drainage and metal leaching. Tests are also being conducted to determine particle size of fines that will be settled out in the tailings area after ore processing, and on the potential for ammonia release from the use of explosives for mining. The test results will be used to determine the treatment that will be required on mine water, drainage from stockpiles, and tailings, such that all discharges will meet regulatory requirements.

A comprehensive Waste Management Plan (WMP) will be developed to include documentation of emissions, discharges and wastes and will include a description of procedures for management and monitoring of each waste stream, roles and responsibilities for waste management will be clearly identified. Appropriate and standard mitigation will be put into place to avoid release of untreated discharge into the natural environment.

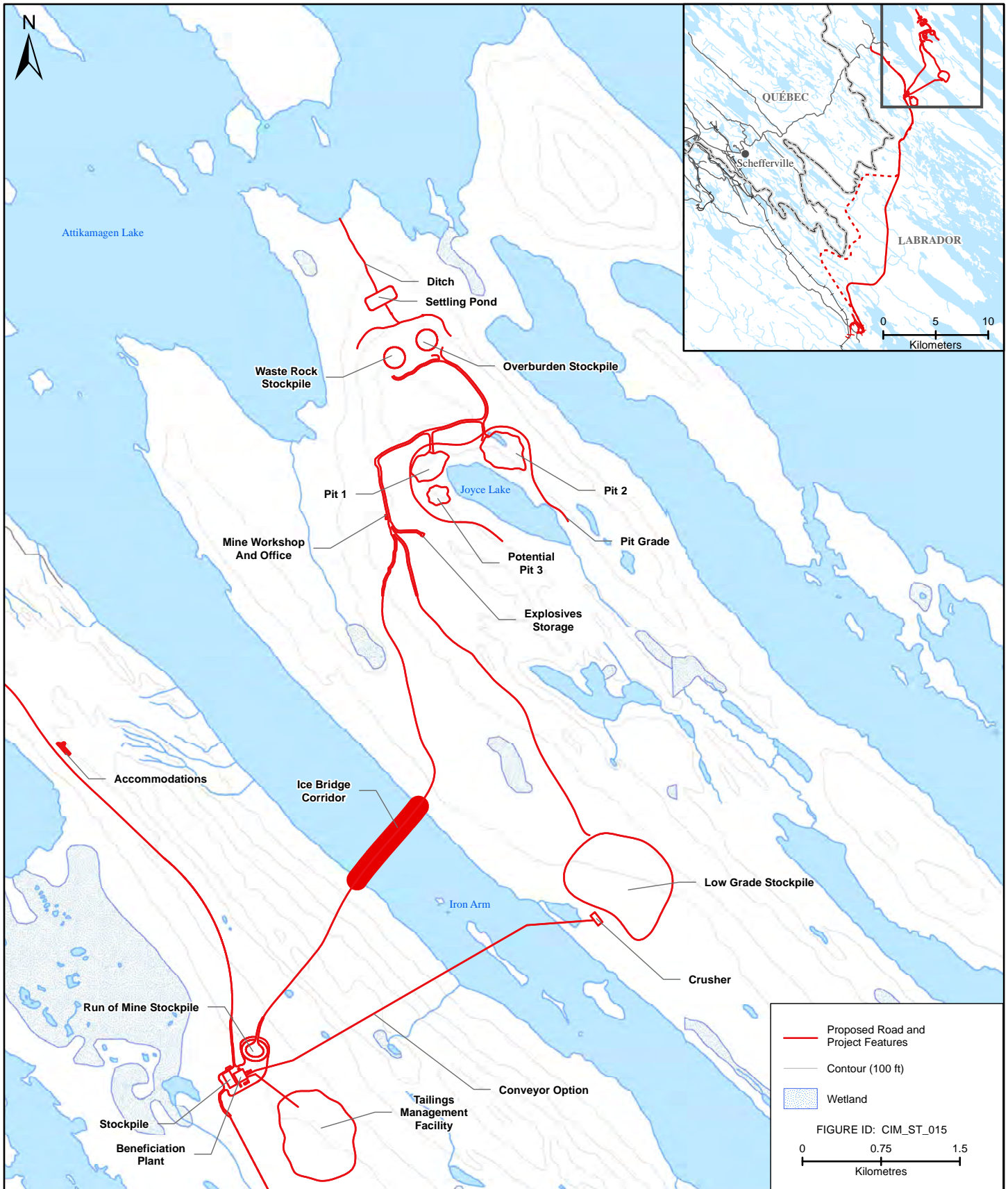
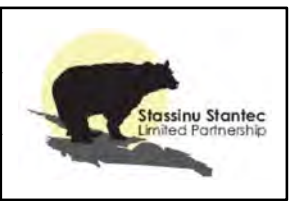


FIGURE TITLE: Mine Site and Associated Infrastructure	
CLIENT: LABEC CENTURY IRON ORE INC.	
FIGURE ID: FIGURE 2-1	PROJECT NUMBER: 121810649
FIGURE SOURCES: Project features provided by CIMA+. Basemap information from NRCan CanVec database and Newfoundland and Labrador Department of Natural Resources.	



**JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT:
PROJECT DESCRIPTION – SUMMARY DOCUMENT**



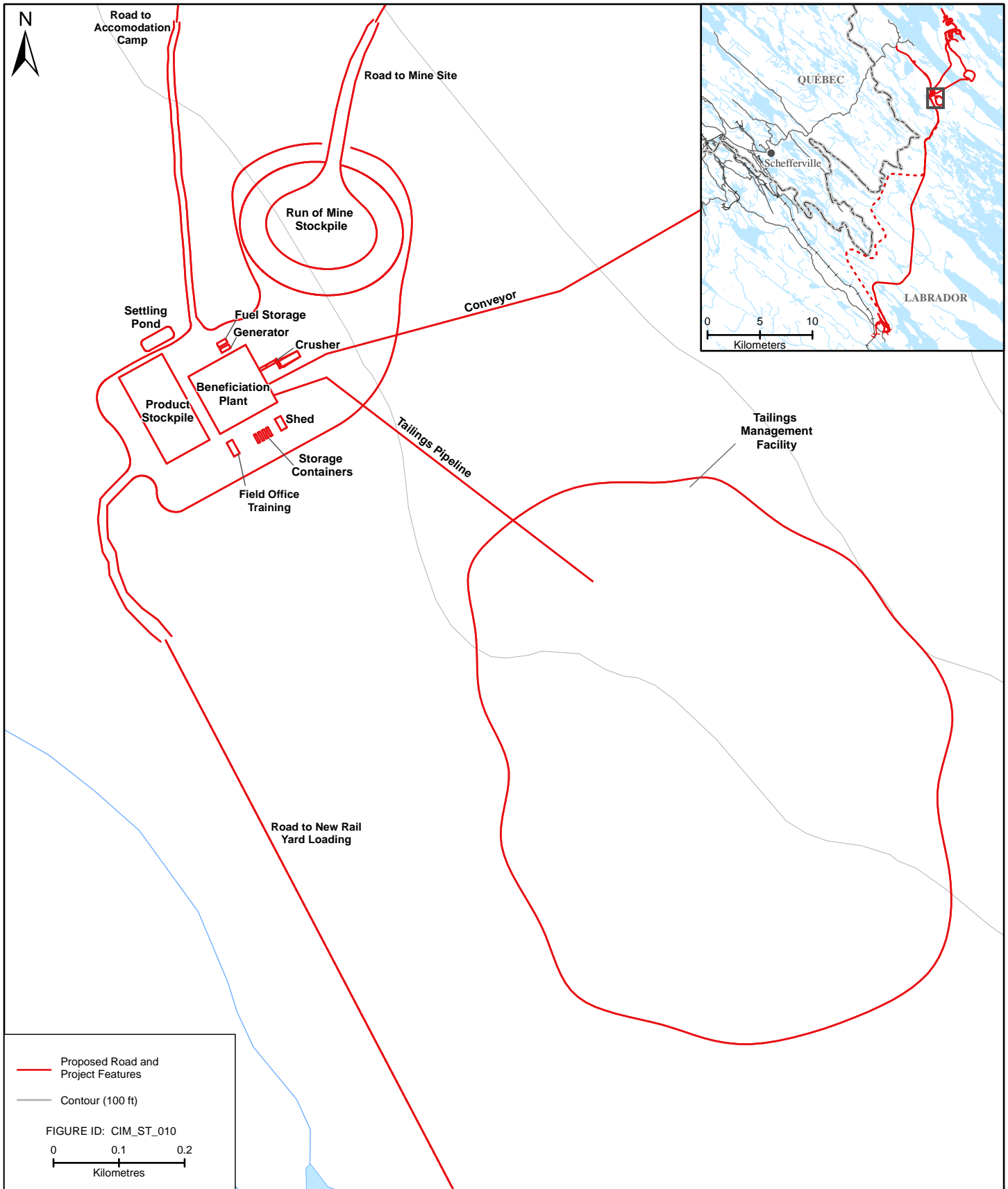
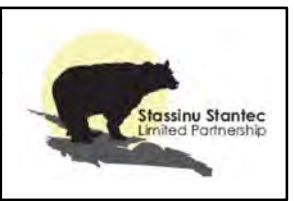


FIGURE TITLE: Beneficiation Plant and Tailings Management Facility		
CLIENT: LABEC CENTURY IRON ORE INC.		
FIGURE ID: FIGURE 2-2	PROJECT NUMBER: 121810649	FIGURE SOURCES: Project features provided by CIMA+, Basemap information from NRCan CanVec database and Newfoundland and Labrador Department of Natural Resources.



**JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT:
PROJECT DESCRIPTION – SUMMARY DOCUMENT**



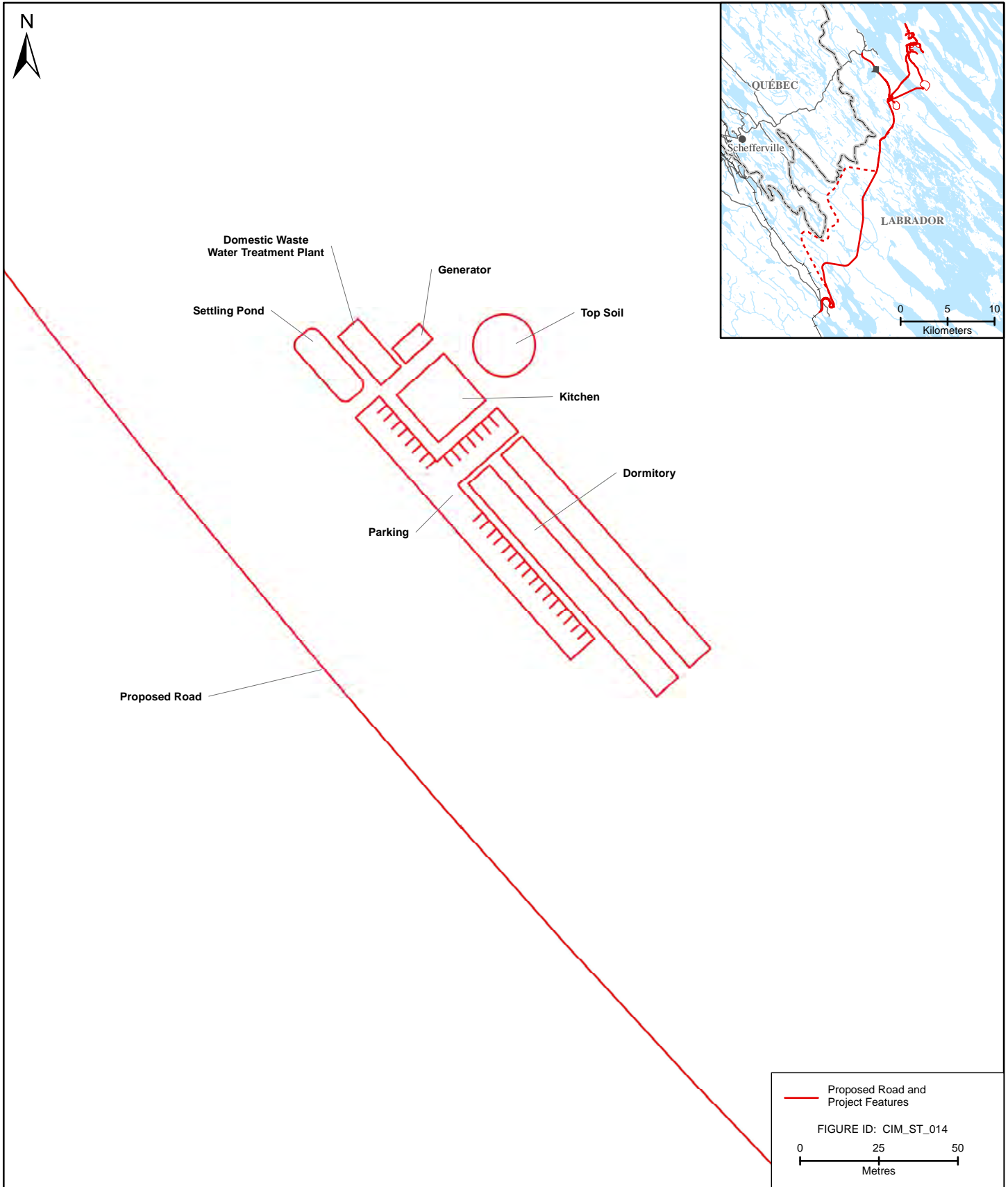


	FIGURE TITLE: Accommodation Camp		
	CLIENT: LABEC CENTURY IRON ORE INC.		
	FIGURE ID: FIGURE 2-3	PROJECT NUMBER: 121810649	

**JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT:
PROJECT DESCRIPTION – SUMMARY DOCUMENT**



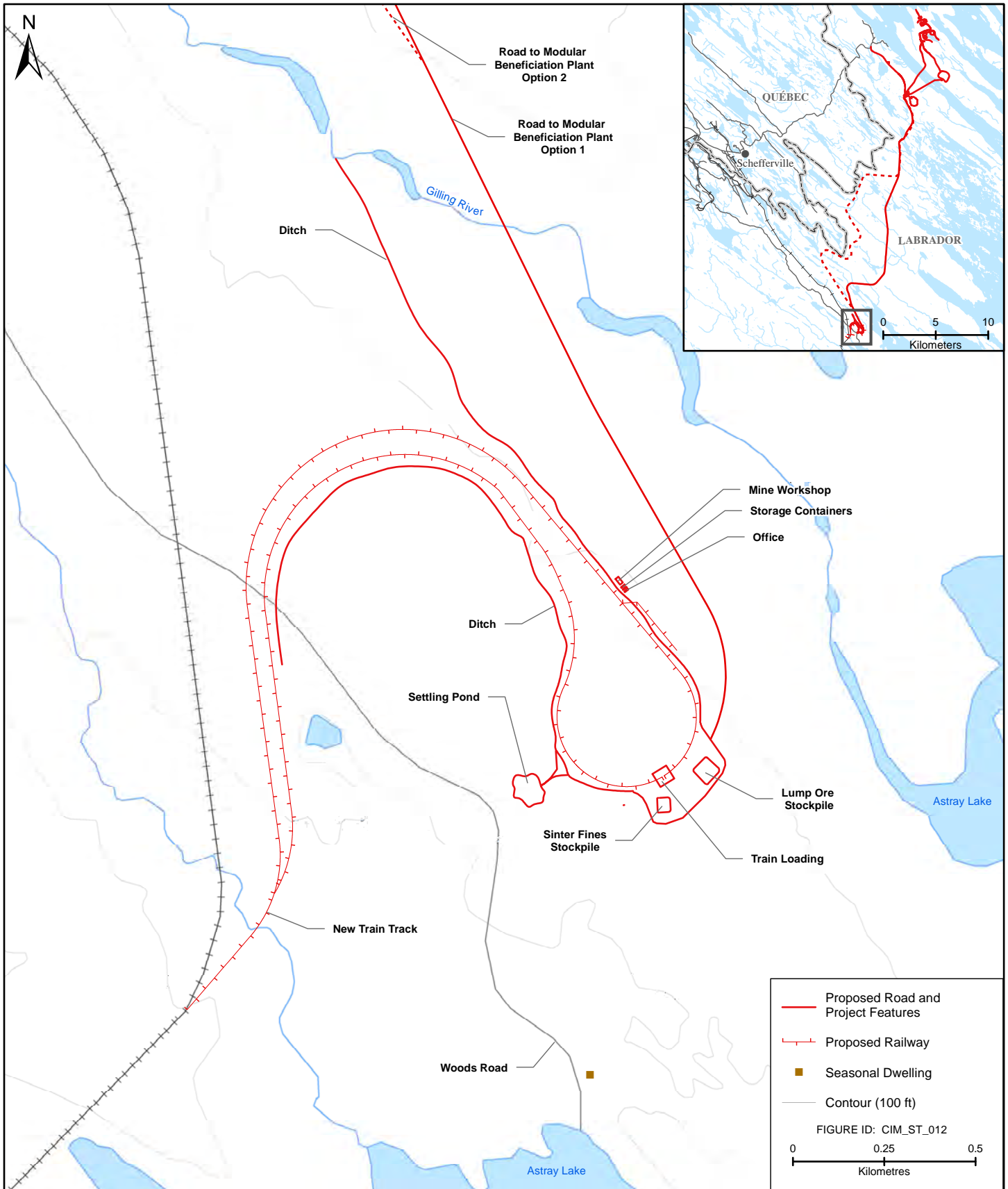


FIGURE TITLE:	Rail Associated Infrastructure		
CLIENT:	LABEC CENTURY IRON ORE INC.		
FIGURE ID:	FIGURE 2-4	PROJECT NUMBER:	121810649
		FIGURE SOURCES: Project features provided by CIMA+. Basemap information from NRCan CanVec database and Newfoundland and Labrador Department of Natural Resources.	



**JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT:
PROJECT DESCRIPTION – SUMMARY DOCUMENT**





Table 2-2 Waste, Discharges and Emissions to be Potentially Generated

Facility / Activity	Solid	Liquid	Air/Gas	Hazardous
Mine Site				
Construction	<ul style="list-style-type: none"> Residual construction materials (various). Domestic solid waste. 	<ul style="list-style-type: none"> Mine water from pit perimeter diversion ditches, in-pit pumps, perimeter dewatering wells, and associated settling pond(s). Overburden and waste rock stockpile drainage. Sewerage. 	<ul style="list-style-type: none"> Greenhouse gases from machinery exhaust and from explosives use. Dust from machinery use, blasting, loading and dumping of ore and waste rock and overburden. Noise from machinery, drilling, blasting, loading, dumping activities. 	<ul style="list-style-type: none"> Used oils and lubes. Used solvents and grease. Batteries.
Operation and Maintenance	<ul style="list-style-type: none"> Domestic solid waste. 	<ul style="list-style-type: none"> Mine water from pit perimeter diversion ditches, in-pit pumps, perimeter dewatering wells, and associated settling pond(s). Overburden and waste rock stockpile drainage. Sewerage. 	<ul style="list-style-type: none"> Greenhouse gases from machinery exhaust and from explosives use. Dust from machinery use, blasting, loading and dumping of ore and waste rock and overburden. Noise from machinery, drilling, blasting, loading, dumping activities. 	<ul style="list-style-type: none"> Used oils and lubes. Used solvents and grease. Batteries.
Beneficiation Plant and Tailings Management Facility				
Construction	<ul style="list-style-type: none"> Residual construction materials (various). Domestic solid waste. 	<ul style="list-style-type: none"> Drainage water from around the yard and TMF perimeter ditches and associated settling ponds. Drainage water from around the ROM and product stockpiles. Sewerage. 	<ul style="list-style-type: none"> Greenhouse gases from machinery exhaust. Dust from machinery use. Noise from machinery and assembly of plant. 	<ul style="list-style-type: none"> Used oils and lubes.
Operation and Maintenance	<ul style="list-style-type: none"> Domestic waste. 	<ul style="list-style-type: none"> Drainage water from around the plant yard and TMF perimeter ditches and associated settling ponds. Drainage water from around the ROM and product stockpiles. Hydrocarbons. Sewerage. 	<ul style="list-style-type: none"> Greenhouse gases from machinery and equipment exhaust. Dust from machinery use, loading and dumping of ROM and product ore, TMF. Noise from machinery use, loading and dumping activities. 	<ul style="list-style-type: none"> Used oils and lubes. Used solvents and grease. Batteries.



Table 2-2 Waste, Discharges and Emissions to be Potentially Generated

Facility / Activity	Solid	Liquid	Air/Gas	Hazardous
Accommodations Camp				
Construction	<ul style="list-style-type: none"> Residual construction materials (various). 	<ul style="list-style-type: none"> Drainage water during construction of perimeter ditches and associated settling pond. 	<ul style="list-style-type: none"> Greenhouse gases from machinery exhaust. Dust from local traffic. 	<ul style="list-style-type: none"> None anticipated.
Operation and Maintenance	<ul style="list-style-type: none"> Domestic solid waste, including food waste. 	<ul style="list-style-type: none"> Drainage water from perimeter ditches and associated settling pond. Sewerage. 	<ul style="list-style-type: none"> Greenhouse gases from equipment exhaust. Dust from local traffic. 	<ul style="list-style-type: none"> Used oils and lubes. Batteries.
Roadway to Rail Yard and Access Roads				
Construction	<ul style="list-style-type: none"> Residual construction materials (various). 	<ul style="list-style-type: none"> Drainage water from perimeter ditches and associated settling pond. 	<ul style="list-style-type: none"> Greenhouse gases from machinery exhaust. Dust from machinery. Noise from machinery. 	<ul style="list-style-type: none"> Used oils and lubes.
Operation and Maintenance	<ul style="list-style-type: none"> None anticipated. 	<ul style="list-style-type: none"> Drainage water from roadside ditches. 	<ul style="list-style-type: none"> Dust from machinery traffic. Noise from machinery traffic. 	<ul style="list-style-type: none"> None anticipated.
Rail Yard and Rail Spur				
Construction	<ul style="list-style-type: none"> Residual construction materials (various). 	<ul style="list-style-type: none"> Drainage water from construction of ditches around the rail yard and associated settling pond. 	<ul style="list-style-type: none"> Greenhouse gases from machinery and train exhaust. Dust from machinery. Noise from machinery. 	<ul style="list-style-type: none"> None anticipated.
Operation and Maintenance	<ul style="list-style-type: none"> Domestic solid waste. 	<ul style="list-style-type: none"> Drainage water from around the rail yard perimeter ditches and associated settling pond. Hydrocarbons. Sewerage. 	<ul style="list-style-type: none"> Greenhouse gases from machinery and train exhaust. Dust from machinery, and from loading of product. Noise from machinery and equipment. 	<ul style="list-style-type: none"> Used oils and lubes. Used solvents and grease. Batteries.



2.5 PROJECT STEPS AND ACTIVITIES

This section provides a description of the anticipated phases of and the schedule for the Project construction, operation, decommissioning and abandonment.

2.5.1 Schedule

Table 2-3 outlines the major steps and associated schedule for the Project, including the planning and approval steps. Phase I construction would begin upon release from environmental assessment and with receipt of the relevant permits. Throughout Phase 1, mining would be conducted during the winter period when the ice bridge is in operation, with beneficiation and ore shipment occurring during the non-mining months. At the present time, it is anticipated that Phase I would include three years of production (2015 to 2017), followed by three years of Phase II production. Construction of additional infrastructure for Phase II would begin during the last half of Phase I production. The total life-of-mine is anticipated to be up to seven years, and this timeframe may be adjusted as exploration proceeds.

2.5.2 Activities

The Project includes construction, operation, closure, decommissioning and rehabilitation of the following primary components:

- open pits (Pit 1, Pit 2, potential Pit 3);
- waste rock and overburden disposal areas;
- modular beneficiation plant including a crushing and a washing process for Phase I and additional processing elements for Phase II;
- tailings management facility (TMF);
- ancillary infrastructure to support the mine and beneficiation plant, including a workshop, explosives magazine storage, office buildings, warehouse area and employee facilities, conveyors, stockpiles, sewage and water treatment units, power generator, fuel storage, mobile equipment, and drainage infrastructure (*i.e.*, ditches, settling ponds);
- haulage road between the beneficiation plant and rail yard;
- ice bridge corridor;
- barge for the open water season;
- potential conveyor; and
- loading rail loop.



Table 2-3 Project Schedule (note, dates are tentative for the end of Phase I and for all stages of Phase II)

	2012				2013				2014				2015				2016				2017				2018				2019				2020				2021-2024							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Exploration (starting 2010)	█				█				█				█				█				█																							
Environmental Studies			█	█	█	█																																						
Preliminary Economic Assessment			█	█																																								
Initiate EA Process			█																																									
Projected Release from EA Process										█																																		
Permits										█	█	█					█	█	█	█																								
Phase I Constuction										█	█	█	█	█																														
Phase I Commissioning and Start-up													█	█																														
Phase I Operation													█	█	█	█	█	█	█	█																								
Phase II Construction																					█	█	█	█																				
Phase II Commissioning and Start-up																					█	█	█	█																				
Phase II Operation																					█	█	█	█	█	█	█	█	█	█	█	█												
Initiation of Decommissioning and Rehabilitation																																									█	█	█	█



General construction activities for the Project components will include:

- site preparation (*i.e.*, clearing of vegetation and excavation);
- construction of infrastructure;
- installation of utilities; and
- commissioning.

The areas requiring site surface preparation include waste rock disposal areas, mine infrastructure area, beneficiation plant site, rail loop, rail loading yard, all new roads, Run of Mine (ROM) ore stockpile, the TMF, and all ancillary infrastructure such as buildings, drainage infrastructure, fuel storage, sewage and water treatment units. Site grading is required to support the installation of the required site facilities, and this will include the installation of all necessary sedimentation and erosion control measures, including drainage infrastructure.

Operation and Maintenance activities for the Project will be conducted in two phases. Phase I consists of mining the high grade iron ore (DSO) that needs the minimum of beneficiation to produce iron ore for the market. In Phase II, the lower grade ore will be stockpiled in order to be beneficiated to raise the iron ore content to desired commercial grade. The following activities are anticipated during Operation and Maintenance (both Phases):

- extraction, handling and storage of ore (winter season in Phase I and possibly extended time frame in Phase II);
- ore processing at the beneficiation plant (June to October in Phase I and possibly extended time frame in Phase II);
- conveyance of equipment, supplies, workers and other materials across Iron Arm using the ice bridge in the winter and the barge in the open water season;
- conveyance of ore from the mine to the beneficiation plant (via haulage trucks and ice bridge in Phase I; possible use of conveyor option for Phase II);
- truck haulage over a new road to the new rail yard, and rail shipment of ore product;
- maintenance activities for facilities and machinery;
- accommodation of workers;
- water management (including supply, drainage, waste water, and treatment prior to discharge);
- stockpiling and management of overburden, waste rock, and ore (pre- and post-processing); and
- hazardous materials and fuel storage and management.



A Rehabilitation and Closure Plan will be prepared and submitted, as required under the Newfoundland and Labrador *Mining Act*, Chapter M-15.1, Sections (8), (9) and (10). In accordance with this Act, this Plan will describe the process of rehabilitation of a project at any stage of the project up to and including closure. Progressive reclamation will be used throughout the life-of-mine to achieve the final land use objectives for the site. A monitoring program will be put into place for a period of time after closure activities are completed.



3.0 PROJECT LOCATION

3.1 PROJECT COORDINATES

The coordinates for elements of the Project are provided in Table 3-1 below.

Table 3-1 Project Coordinates

Feature	Longitude (X)	Latitude (Y)
Beneficiation Plant	66° 34' 06.906"E	54° 50' 46.96"N
Rail Yard	66° 38' 35.29"E	54° 38' 46.78"N
Project Centre	66° 32' 44.79"E	54° 52' 33.16"N
Mine Site – Pit 2	66° 31' 26.783 W	54° 54' 0.768"N

3.2 MAPPING

This report contains maps that illustrate the location of infrastructure components for the Joyce Lake DSO Iron Ore Project, as follows:

- Figure 1-1: Project Location Plan
- Figure 1-2: Aboriginal Communities
- Figure 2-1: Mine Site and Associated Infrastructure
- Figure 2-2: Beneficiation Plant and Tailings Management Facility
- Figure 2-3: Accommodation Camp
- Figure 2-4: Rail Associated Infrastructure

These maps also show other site features including the following:

- **Watercourses and Waterbodies:** each of the maps show named and un-named watercourses and lakes in proximity to the Project;
- **Linear and Other Transportation Components:** existing roads and railways are shown on the maps;
- **Permanent, Seasonal and Temporary Housing:** known dwellings are shown on the maps as either dark squares within / Schefferville, or as brown square for cabins;
- **Location of Aboriginal Communities:** these are shown on Figure 1-2;
- **Federal Lands:** see Figure 1-2 and Section 4.2; and
- **Provincial and International Boundaries:** the provincial boundary is shown on the relevant figures.



For other areas including land and resource use, fisheries and fishing areas, heritage and archaeological sites/features, and environmentally sensitive areas (other than wetlands), these are currently under study for inclusion in the environmental impact statement.

3.3 OFFICIAL DESCRIPTION OF LAND

The infrastructure for the Project, as shown in Figure 1-1, is located wholly on Crown Land for which the surface property rights belong to the Government of Newfoundland and Labrador, with the exception of where the new rail spur will link up with the Tshiuetin Rail. Labec Century will submit an application for a mining lease on Crown Land from the Province in due course, and will enter into an agreement with Tshiuetin Rail Transportation for use of their land to connect to the new rail spur.

The Property in Newfoundland and Labrador is registered to Labec Century Iron Ore Inc. (56%) and Champion Minerals Inc. (44%) with Labec Century as the operator. The Project comprises two map-staked licences totaling 12,665 ha. A description of the Labec Century exploration licence holdings for the Project is provided in Table 3-2.

Table 3-2 Labec Century Licences: Joyce Lake Project Area

Licence	Claims	Area (ha)	NTS Areas	Issuance Date	Renewal Date	Report Date
020238M	253	6325	23J16 23J15	2005/11/07	2015/11/07	2013/01/07
020231M	256	6340	23J16 23J15	2005/11/07	2015/11/07	2013/01/07

3.4 LAND AND WATER USE

3.4.1 Zoning

There is no zoning that applies to the Project area.

3.4.2 Land Titles

See section 3.3, above.

3.4.3 Land Use Plans

The Project area lies outside of areas for which there is a land use plan.



4.0 FEDERAL GOVERNMENT PARTICIPATION

4.1 FINANCIAL SUPPORT

Century Iron Mines, with its joint venture partner WISCO, will wholly fund the Project. No federal authority will be providing financial support for the Project.

4.2 FEDERAL LAND

Mining infrastructure, as shown in Figure 1-1, is located wholly on provincial Crown land. Ore is shipped on an existing rail to Sept-Îles and no changes to Port Authority or adjacent lands in Quebec are required for this Project to proceed.

The proximity of the Project area to federal lands such National Parks, Indian Reserves and Canadian Force Bases is shown in Table 4-1 below.

Table 4-1 Proximity of Project Area to Federal Lands

Nearest Federal Lands	Approximate Distance from Joyce Lake (via straight line)
Newfoundland and Labrador	
Torngat Mountains National Park Reserve	430 km
5 Wing Goose Bay (Canadian Forces Base)	435 km
Sheshatshiu (Aboriginal community)	442 km
Québec	
Kawawachikamach (Aboriginal community)	13 km
Lac John (Aboriginal community)	19 km
Matimekush (Aboriginal community)	21 km
Mingan Archipelago National Park Reserve	563 km
3 Wing Bagotville (Canadian Forces Base)	792 km

4.3 LEGISLATIVE OR REGULATORY REQUIREMENTS

In addition to federal environmental assessment (see Section 2.2) and provincial environmental assessment (see Section 1.4.1), the following federal and provincial legislative and regulatory requirements listed in Table 4-2 may be required for the Project.

Table 4-2 Permits, Approvals and Authorizations Anticipated to be Required

Permit, Approval or Authorization	Issuing Agency
Provincial	
<ul style="list-style-type: none"> • Release from Environmental Assessment Process 	NL DOEC – Environmental Assessment Division
<ul style="list-style-type: none"> • Permit to Occupy Crown Land 	NL DOEC – Crown Lands Division
<ul style="list-style-type: none"> • Permit to Construct a Non-Domestic Well • Water Resources Real-Time Monitoring • Certificate of Environmental Approval to Alter a: <ul style="list-style-type: none"> • body of water; • culvert installation; 	NL DOEC – Water Resources Management Division



Table 4-2 Permits, Approvals and Authorizations Anticipated to be Required

Permit, Approval or Authorization	Issuing Agency
<ul style="list-style-type: none"> • fording; • stream modification or diversion; and • other works within 15 m of a body of water (site drainage, dewater pit, settling ponds) 	
<ul style="list-style-type: none"> • Certificate of Approval for Construction. • Certificate of Approval for Operation • Certificate of Approval for Generators • Certificate of Approval for Industrial Processing Works • Approval of Emergency Response Plan. • Approval of Waste Management Plan • Approval of Environmental Contingency Plan • Emergency Spill Response • Approval of Environmental Protection Plan 	NL DOEC – Pollution Prevention Division
<ul style="list-style-type: none"> • Permit to Control Nuisance Animals 	NL DOEC – Wildlife Division
<ul style="list-style-type: none"> • Pesticide Operators Licence 	NL DOEC – Pesticides Control Section
<ul style="list-style-type: none"> • Blasters Safety Certificate • Magazine Licence • Approval for Storage and Handling Gasoline and Associated Products • Approval for Temporary Fuel Cache • Fuel Tank Registration • Approval for Used Oil Storage Tank System (Oil / Water Separator) • Approval for Fire, Life and Safety Program • Certificate of Approval for Waste Management System 	Newfoundland and Labrador Government Service Center (GSC)
<ul style="list-style-type: none"> • Approval of Development Plan, Closure Plan, and Financial Assurance • Mining Lease • Surface Rights Lease • Quarry Development Permit 	Newfoundland and Labrador Department of Natural Resources – Mineral Lands Division
<ul style="list-style-type: none"> • Operating Permit to Carry Out an Industrial Operation During Forest Fire Season on Crown Land • Permit to Cut Crown Timber • Permit to Burn 	NL DNR– Forest Resources
<ul style="list-style-type: none"> • Approval to Construct and Operate a Railway in Newfoundland and Labrador 	Newfoundland and Labrador Department of Transportation and Works
Federal	
<ul style="list-style-type: none"> • Authorization for Harmful Alteration, Disruption or Destruction (HADD) of Fish Habitat, under the <i>Fisheries Act</i> 	Fisheries and Oceans Canada
<ul style="list-style-type: none"> • Designation of a Tailings Impoundment Area 	Environment Canada
<ul style="list-style-type: none"> • Approval to Interfere with Navigation 	Transport Canada
<ul style="list-style-type: none"> • Aquatic Environmental Effects Monitoring 	Environment Canada
<ul style="list-style-type: none"> • Licence to Store, Manufacture or Handle Explosives 	Natural Resources Canada
<ul style="list-style-type: none"> • Approval to Construct a Railway 	Canadian Transportation Agency



5.0 ENVIRONMENTAL EFFECTS

5.1 DESCRIPTION OF PHYSICAL AND BIOLOGICAL ENVIRONMENT

5.1.1 Climate

The Schefferville area has a subarctic climate, with long severe winters, and cool to mild summers. The daily mean temperatures during the coldest months of January and February average from -24°C and -22°C and the average snowfall is 57 cm and 43 cm. During the warmest months, July and August, the daily mean temperatures are 12°C and 11°C , respectively. July is the wettest month and averages 107.2 mm of rainfall. The annual average temperature is -5.3°C and the annual average total precipitation for the area is about 823 mm. The annual average wind speed is about 17 km/h and the most frequent wind direction, on an annual basis, is from the northwest.

5.1.2 Air Quality and Noise

There is no industry within 25 km of the Project area, and background concentrations of air contaminants are expected to be minimal. Regionally, air quality is likely to approach that of a pristine environment. An atmospheric environment study has been initiated in 2012 to collect the data required to assess potential environmental effects.

In terms of noise, exploration activity in the area requires the use of heavy equipment and helicopters. It is not expected that residential and commercial areas will be significantly affected based on the remote location of the Project area. However there are seasonal camps along Iron Arm that will need to be considered. A baseline acoustic environment assessment is underway in 2012 to determine the background noise in the Project Area. Noise modeling will be conducted to determine if there is the potential for a noise impact on sensitive receptors

5.1.3 Ecological Environment

Terrestrial and aquatic surveys were undertaken in 2012 in the Project area to describe the existing vegetation, wildlife, bird, and aquatic communities and identify any species of conservation concern, in accordance with federal *Species at Risk Act* and the provincial *Endangered Species Act*. The outcome of these surveys will be described in the environmental impact statement. Existing published literature for the general area was reviewed in advance of the field work.

Please note that although only one species of conservation concern was identified in the 2012 field surveys (Rusty Blackbird, see below), further research is being done to determine the potential for other species of conservation concern in the Project area.

Vegetation

The Project lies in the Mid-subarctic Forest and the High Subarctic Tundra Ecoregions where the climate is harsh, the precipitation levels are low, and the growing season for plants is short. Characteristics of these two ecoregions are found in the Project area, with some species assemblages more typically boreal and other assemblages principally associated with arctic environments.



Wildlife

Wildlife likely to be observed in the Project area or nearby is typical of the northern portion of the boreal forest which includes (NML 2009):

- migratory caribou (*Rangifer tarandus caribou*);
- moose (*Alces alces*);
- black bear (*Ursus americanus*);
- grey wolf (*Canis lupus*);
- beaver (*Castor Canadensis*);
- river otter (*Mustela americana*);
- American mink (*Mustela vison*);
- ermine (*Mustela ermina*);
- red fox (*Vulpes vulpes*);
- red squirrel (*Tamiasciurus hudsonicus*);
- muskrat (*Ondatra zibethicus*);
- snowshoe hare (*Lepus americanus*);
- American marten (*Martes americana*);
- porcupine (*Erethizon dorsatum*);
- northern flying squirrel (*Glaucomys sabrinus*);
- woodchuck (*Marmota monax*); and
- Canada lynx (*Lynx canadensis*).

In addition to these mammal species, the Elross Lake Iron Ore Mine project also listed two bat and five amphibian species as possible to occur in the area (NML 2009), and this would also apply for the Joyce Lake Project area. During the 2012 field studies for the Project, four mammal species were noted based on sight or sign: caribou, moose, beaver and wolf. In addition, the wood frog was observed.

Birds

Surveys conducted in spring and summer 2012 identified 63 bird species in the Project area, as listed in Table 5-1, and many of these species are considered to be migratory in accordance with the *Migratory Birds Convention Act*. By comparison, 43 bird species were identified during surveys for the Elross Lake Iron Ore Mine project (NML 2009). The Rusty Blackbird (*Euphagus carolinus*), was the only species listed under SARA noted during the 2012 surveys for the Joyce Lake Project. An active



bald eagle nest was found near Hollinger Lake and Iron Arm during the 2012 raptor and waterfowl survey for the Project.

The following bird groups were observed:

- 4 raptor species;
- 12 waterfowl species;
- 7 shorebird species;
- 3 other aquatic bird species; and
- 37 terrestrial bird species.

Table 5-1 Bird species observed in the study area during the 2012 field campaigns

Group	Common Name	Migratory Bird ¹
Waterfowl	Canada Goose	x
	American Black Duck	x
	Mallard	x
	Ring-necked Duck	x
	Lesser Scaup	x
	Surf Scoter	x
	White-winged Scoter	x
	Bufflehead	x
	Common Goldeneye	x
	Hooded Merganser	x
	Common Merganser	x
	Red-breasted Merganser	x
Diurnal Raptors	Osprey	
	Bald Eagle	
	Red-tailed Hawk	
Shorebirds	Spotted Sandpiper	x
	Solitary Sandpiper	x
	Greater Yellowlegs	x
	Least Sandpiper	x
	Short-billed Dowitcher	x
	Wilson's Snipe	x
	Red-necked Phalarope	x
Other Aquatic Birds	Common Loon	x
	Herring Gull	x
	Tern sp. ²	x
Nocturnal Raptors	Great Horned Owl	
Terrestrial Birds	American Three-toed Woodpecker	x
	Spruce Grouse	
	Northern Flicker	x
	Yellow-bellied Flycatcher	x
	Alder Flycatcher	x
	Northern Shrike	x
	Red-eyed Vireo	x



Table 5-1 Bird species observed in the study area during the 2012 field campaigns

Group	Common Name	Migratory Bird ¹
	Gray Jay	
	Common Raven	
	Tree Swallow	X
	Boreal Chickadee	X
	Red-breasted Nuthatch	X
	Ruby-crowned Kinglet	X
	Gray-cheeked Thrush	X
	Swainson's Thrush	X
	Hermit Thrush	X
	American Robin	X
	Cedar Waxwing	X
	Snow Bunting	X
	Northern Waterthrush	X
	Tennessee Warbler	X
	Orange-crowned Warbler	X
	Yellow Warbler	X
	Blackpoll Warbler	X
	Yellow-rumped Warbler	X
	Wilson's Warbler	X
	Savannah Sparrow	X
	Fox Sparrow	X
	Lincoln's Sparrow	X
	Swamp Sparrow	X
	White-throated Sparrow	X
	White-crowned Sparrow	X
	Dark-eyed Junco	X
	Rusty Blackbird	X
	Pine Grosbeak	X
	White-winged Crossbill	X
	Pine Siskin	X

Notes:
¹ Migratory bird in accordance with the *Migratory Birds Convention Act*.
² Arctic or Common Tern.

Fish and Aquatic Environment

The lakes, ponds, and streams in this part of western Labrador form part of the Churchill River watershed. The Attikamagen Lake drains south to Petitsikapau Lake via Iron Arm, then into Dyke Lake, Ashuanipi River, and finally into the Smallwood Reservoir. The Smallwood Reservoir is the main source of water to the Churchill River. In the southern part of the aquatic environment study area, streams drain into Astray Lake which then drains to Dyke Lake.

Fish surveys were conducted within the Project area in 2012 under Scientific Licence in accordance with the federal *Fisheries Act*. Based on the 2012 survey of the Project area in 2012 and on similar work conducted for the nearby Elross Lake Area Iron Ore Mine Project (NML 2009), there are at least 14 fish species that are confirmed or likely to be present in the study area include:



- brook trout (*Salvelinus fontinalis*);
- lake trout (*Salvelinus namaycush*);
- burbot (*Lota lota*);
- lake chub (*Couesius plumbeus*);
- lake whitefish (*Coregonus clupeaformis*);
- rounded whitefish (*Prosopium cylindraceum*);
- longnose sucker (*Catostomus catostomus*);
- white sucker (*Catostomus commersoni*);
- northern pike (*Esox lucius*);
- pearl dace (*Margariscus margarita*);
- slimy sculpin (*Cottus cognatus*);
- mottled sculpin (*Cottus bairdii*);
- threespine stickleback (*Gasterosteus aculeata*); and
- ouananiche (Landlocked Atlantic salmon; *Salmo salar*).

None of these species are listed under SARA or the NL ESA.

Sensitive Areas

There are no designated sensitive areas or special areas in the Project Area, including designated wildlife areas, stewardship zones, parks and natural areas. Sensitive areas can include those areas that are important to species of conservation concern, and these can include wetlands. There are a number of wetland areas in the Project area, and these and other potentially sensitive areas will be documented and evaluated in the EIS.

Water Resources

Hydrology and hydrogeology studies are underway in 2012 to describe the existing environment for water resources as well as to contribute to engineering requirements for the Project planning and feasibility studies.

5.1.4 Socio-Economic Environment

The area most likely to interact with the Project includes the primary places of residence of the Project labour force: western Labrador (*i.e.*, Economic Zone 2, which includes Labrador City, Wabush and Churchill Falls), as well as Schefferville, Matimekush-Lac John, and Kawawachikamach in Québec. The population of western Labrador (9,862) represented 36.8% of Labrador's population in 2011, with



the majority living in Labrador City (Statistics Canada 2012). Many of the residents in closest proximity to the Project area are Aboriginal.

Exploration and production mining are the main economic activities in western Labrador and in 2006 the labour force consisted of 5,745 individuals (Community Accounts, no date). In 2011, there were 1,360 people residing in the four communities near the Project that are located in eastern Québec (Statistics Canada 2012). This represents an increase of 9.7% since 2006, when the combined population of these four communities was 1,315 (Statistics Canada 2007).

A baseline study is underway and a more detailed description of the socio-economic environment and potential effects of the Project will be documented in the environmental impact statement. This includes consideration of communities, economy, employment and business for Aboriginal Peoples.

5.1.5 Land and Resource Use

Land and resource use in the Project area is being documented in consultation with local residents and Aboriginal groups, and will be described in the environmental impact statement. It is known that residents of western Labrador pursue angling in the summer and ice fishing in the winter. Brook trout is widely distributed in streams while lake trout is commonly found in regional lakes. According to NML (2009), ouaniche migrate every year up Howell River to spawn; Howell River discharges into Astray Lake in the southern part of the Project area.

During IOC operations in the area in the 1950s to early 1980s, a number of cabins were constructed near the southern bank of Iron Arm (Figure 1-1). Cabins are also found along Astray Lake (Figures 1-1, 2-4). Ownership of these cabins has not been established at this time, but they are known to be occupied by members of Aboriginal groups in the area. The potential effects of the Project on use of the dwellings will be documented in the environmental impact statement.

A baseline study of land and resource use by Aboriginal Peoples and the general public will be undertaken to gather information to establish existing and historic land use, including economic and other activities such as hunting, fishing, trap lines, berry picking, seasonal movements, and species of particular importance. The information collected will be presented in the environmental impact statement.

5.1.6 Archaeology and Heritage Resources

The Project may interact with archaeological or heritage resources, based on the presence of a well-developed hydrology network in the Project area, as well as past and current human occupation in the region. A study of archaeological and heritage potential, including a field survey, has been undertaken to define the potential for these resources, and the results will be assessed in the environmental impact statement.

5.2 POTENTIAL CHANGES TO THE ENVIRONMENT

Table 5-2 outlines the potential interaction between the Project and the environment. This information is presented by Valued Environmental Component and, where applicable, the relationship to specific provincial and federal legislation is included. The VECs will be further refined during the course of the



environmental assessment based on federal and provincial results of additional data gathering, analysis and consultation. The results will be detailed in the environmental impact statement.

Table 5-2 Potential Valued Environmental Components (VECs) to be Assessed and Potential Impacts for the Environmental Assessment of the Joyce Lake Direct Shipping Iron Ore Project

VEC	Basis for Selection	Potential Impacts
Atmospheric Environment	<ul style="list-style-type: none"> • Protection of human health and safety, as well as ecological health and aesthetics. • Potentially sensitive human and wildlife receptors. • Provisions of federal Canadian <i>Environmental Protection Act</i> and <i>Air Quality Regulations</i> under the NL <i>Environmental Protection Act</i>. • Concerns with greenhouse gas emissions. 	<ul style="list-style-type: none"> • Effects on ambient air quality from dust and construction vehicle emissions. • Effects of noise from construction. • Effect on ambient sound and air quality levels due to mining and concentrating operations and transportation of concentrate from the site. • Fugitive emissions (<i>i.e.</i>, dust, smoke).
Water Resources	<ul style="list-style-type: none"> • Concerns regarding potential for release of hazardous materials on-site and potential contamination associated with mine and process water management. • Possible lowering of water table and effects on surface water / groundwater interactions (<i>e.g.</i>, wetlands). 	<ul style="list-style-type: none"> • Potential effects related to erosion and sedimentation associated with on-site construction and modification of the hydrologic regime. • Potential effects related to mine water management as well as effects on water quality from discharges. • Potential effects related to water use (demand).
Wetlands	<ul style="list-style-type: none"> • Wetlands represent a sensitive habitat type that often supports a diversity of species. 	<ul style="list-style-type: none"> • Site grading and filling and/or alteration of hydrology can affect wetland habitat directly or indirectly. • Indirect habitat degradation or alteration with alteration of local hydrology.
Rare Plants	<ul style="list-style-type: none"> • Protection of species biodiversity and critical habitat. • <i>Species at Risk Act</i>. • Newfoundland and Labrador <i>Endangered Species Act</i>. 	<ul style="list-style-type: none"> • Site grading and filling and/or alteration of hydrology can cause the loss of rare plants and/or uncommon species assemblages.
Freshwater Fish and Fish Habitat	<ul style="list-style-type: none"> • Protection of aquatic species diversity. • <i>Fisheries Act</i>. • <i>Species at Risk Act</i>. • Newfoundland and Labrador <i>Endangered Species Act</i>. 	<ul style="list-style-type: none"> • Habitat degradation or alteration and direct mortality associated with construction (<i>e.g.</i>, siltation of watercourses). • Indirect habitat degradation or alteration of local hydrology. • Potential for turbidity, siltation and contamination from surface runoff. • Indirect habitat degradation or alteration of local hydrology.
Birds and Wildlife	<ul style="list-style-type: none"> • Concern with protection of species biodiversity and critical habitat. • <i>Migratory Birds Convention Act</i>. • <i>Species at Risk Act</i>. • Newfoundland and Labrador <i>Endangered Species Act</i>. 	<ul style="list-style-type: none"> • Habitat loss, degradation or alteration and direct mortality associated with facility construction (<i>e.g.</i>, clearing construction). • Disruption of feeding, breeding, movement and/or migratory patterns due to noise and presence of construction activity and fencing. • Disruption of feeding, breeding, movement and/or migratory patterns due to presence of facility (<i>e.g.</i> lights, noise).



Table 5-2 Potential Valued Environmental Components (VECs) to be Assessed and Potential Impacts for the Environmental Assessment of the Joyce Lake Direct Shipping Iron Ore Project

VEC	Basis for Selection	Potential Impacts
Species at Risk	<ul style="list-style-type: none"> Concern with protection of species biodiversity and critical habitat. <i>Species at Risk Act.</i> Newfoundland and Labrador <i>Endangered Species Act.</i> 	<ul style="list-style-type: none"> Habitat loss, degradation or alteration and direct mortality associated with facility construction (e.g., clearing construction). Disruption of feeding, breeding, movement and/or migratory patterns due to noise and presence of construction activity and fencing. Disruption of feeding, breeding, movement and/or migratory patterns due to presence of facility (e.g. lights, noise).
Historic and Heritage Resources	<ul style="list-style-type: none"> Concern with effective management and preservation of archaeological and heritage resources, particularly those of importance to Aboriginal Peoples. Newfoundland and Labrador <i>Historic Resources Act.</i> 	<ul style="list-style-type: none"> Disturbance to or loss of archaeological, heritage, paleontological sites or sites of architectural significance from site clearing, grubbing and grading.
Land and Resource Use by Aboriginal Persons for Traditional Purposes	<ul style="list-style-type: none"> Concerns for Aboriginal interests in terms of use of lands for traditional purposes. <i>Canadian Environmental Assessment Act, 2012.</i> 	<ul style="list-style-type: none"> Effects on land and resource use from construction activities. Effects on land and resource use from presence of facility. Interaction between land use and presence/availability of wildlife resources. Effects on land and resource use resulting from participation in the Project (wage employment).
Current Land and Resource Use by Other Users	<ul style="list-style-type: none"> Important socio- economic component. Concerns of local cabin owners. <i>Navigable Waters Protection Act.</i> 	<ul style="list-style-type: none"> Exclusion / promotion of development (industrial, commercial, residential). Exclusion of recreation sites (e.g., recreational fishing areas) or elimination of areas of special community or social value. Interaction between land use and presence/availability of wildlife resources.
Communities	<ul style="list-style-type: none"> Important socio-economic component for Aboriginal Peoples and others. 	<ul style="list-style-type: none"> Work force in-migration could result in increased pressure on physical and social infrastructure. Potential changes to community health, including Aboriginal Peoples
Economy, Employment and Business	<ul style="list-style-type: none"> Important socio- economic component for Aboriginal Peoples and others. 	<ul style="list-style-type: none"> Exclusion / promotion of development (industrial, commercial, residential). Increased opportunities for employment and contracting.

5.2.1 Aboriginal Peoples

As shown in Table 5-2 above, the environmental assessment will specifically consider the potential effects to Aboriginal Peoples in terms of historic resources, land and resource use, physical and social effects (including health) on their communities, and economy, employment, and business. As indicated in Section 1.1, Century will continue to meet with Aboriginal groups to provide information on the planned Project, to gather information on the biophysical and social environment, to obtain feedback, and to document their interests and concerns. As indicated in Sections 5.1.4, 5.1.5 and 5.1.6, baseline studies will be undertaken to collect information regarding Aboriginal Peoples in terms of socio-



economic conditions, land use, and heritage and historic resources. Baseline information will be collected through meetings with Aboriginal groups and governments (see Sections 1.3.1 and 1.3.2), information available from published sources (e.g., StatsCanada, Provincial Archaeology Office), and field studies.

5.2.2 Potential for Changes to the Environment on Federal Lands, Other Provinces, and Outside of Canada

Given that the Project lies more than 10 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 carrying out the Project. Given the close proximity (within 1 km) of some of the Project infrastructure to the provincial border with Québec, such as the haulage road option, it is considered possible that changes to the environment (e.g., effects to air quality, acoustic environment, wildlife) could occur in Québec as a result of carrying out the Project. The potential for such changes to occur in Québec will be assessed in the EIS. Given the distance from the Project to other provinces and the international border, it is not anticipated that changes to the environment could occur in provinces other than Québec and Newfoundland and Labrador, or in other countries as a result of carrying out the Project.

6.0 PROPONENT'S CONSULTATIONS WITH ABORIGINAL GROUPS

Please see Section 1.3.1.

7.0 PROPONENT'S CONSULTATIONS WITH THE GENERAL PUBLIC AND OTHER PARTIES

Please see Sections 1.3.2 and 1.3.3.



8.0 REFERENCES

New Millenium Capital Corp. 2009. Elross Lake Iron Ore Mine Environmental Impact Assessment. Available at: http://www.env.gov.nl.ca/env/env_assessment/projects/Y2010/1380/eis_apps1_to_10.p. Accessed August 2012. NNK (Naskapi Nation of Kawawachikamach). 2011. Naskapi Nation of Kawawachikamach. Available at: <http://www.naskapi.ca>.

Statistics Canada. 2007. 2006 Census of Canada (Community Profiles). Statistics Canada, Ottawa, ON. Available at: <http://www12.statcan.gc.ca/census-recensement/2006/dp-pd/prof/92-591/index.cfm?Lang=E>. Accessed: August 28, 2012.

Statistics Canada. 2012. 2011 Census of Canada (Community Profiles). Statistics Canada, Ottawa, ON. Available at: <http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E>. Accessed: August 28, 2012.



Appendix A

Contact Information for Aboriginal Groups with
Asserted Land Claims Near the Project Area

**JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT:
PROJECT DESCRIPTION – SUMMARY DOCUMENT**



**JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT:
PROJECT DESCRIPTION – SUMMARY DOCUMENT**



Innu Nation

P.O. Box 119
Sheshatshit, NL A0P 1M0

Conseil de bande ITUM

C.P. 8000
265 Boul. Des Montagnais
Uashat, QC G4R 4L9

Conseil de bande Matimekush-Lac John

CP 1390
Schefferville, QC G0G 2T0

Naskapi Nation of Kawawachikamach

P.O. Box 5111
Kawawachikamach, QC G0G 2Z0

Nunatukavut Community Council

370 Hamilton River Road
P.O. Box 460, Stn. C
Happy Valley-Goose Bay, NL A0P 1C0

**JOYCE LAKE DIRECT SHIPPING IRON ORE PROJECT:
PROJECT DESCRIPTION – SUMMARY DOCUMENT**

