

OCEANIC IRON ORE CORP.'S
HOPES ADVANCE PROJECT

DESCRIPTION OF A DESIGNATED
PROJECT UNDER THE
CANADIAN ENVIRONMENTAL
ASSESSMENT ACT, 2012



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Executive Summary

(English Version)

General Information

Oceanic Iron Ore Corp. intends to develop the Hopes Advance Project, an iron ore mine located in the region of Nunavik in Québec and close to the northern village of Aupaluk.

Proponent Contact Information

Name of the designated Project:	Hopes Advance Project
Name of the proponent:	Oceanic Iron Ore Corp.
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In addition to federal regulatory requirements, the Project is also subject to the Québec provincial environmental and social impact assessment and review procedure as per Chapter 23 of the James Bay and Northern Québec Agreement (JBNQA) and Chapter II of the Québec Environment Quality Act (EQA). A project description (preliminary information) was filed with the provincial Administrator of the JBNQA on January 23, 2012. The Environmental Assessment process under the Nunavik Inuit Land Claims Agreement (NILCA) could also apply to parts of the project that impact the marine region.



Project Information

The provisions in the schedule to the Regulations Designating Physical Activities describing the Project in whole or in part are the following:

- Section 15. The construction, operation, decommissioning and abandonment of:
 - (a) a metal mine, other than a gold mine, with an ore production capacity of 3,000 t/d or more;
 - (b) a metal mill with an ore input capacity of 4,000 t/d or more.
- Section 20(k). The construction, operation, decommissioning and abandonment, or an expansion that would result in an increase in its production capacity of more than 35% of a factory for the manufacture of chemical explosives employing chemical processes.
- Section 27(c). The construction, operation, decommissioning and abandonment of a marine terminal designed to handle vessels larger than 25,000 DWT unless the terminal is located on lands that are routinely and have been historically used as a marine terminal or that are designated for such use in a land-use plan that has been the subject of public consultation.

Other provisions that could potentially be applicable are:

- Section 2(a). The construction, operation, decommissioning and abandonment of a fossil fuel-fired electrical generating station with a production capacity of 200 MW or more¹.
- Section 29. The construction, operation, decommissioning and abandonment of:
 - (b) an airport;
 - (c) an all-season runway with a length of 1,500 m or more.

The project description is subject to modifications in light of the results of an ongoing prefeasibility study, which should be completed in September 2012.

The high demand for metals, including iron, on the world market encourages mineral exploration and investment in subsequent developments. Extensive activities have already been completed for the Hopes Advance Project and a global resource of 1.268 billion tonnes of measured and indicated in-pit resource at 32.3% using a 25% cut-off grade has been estimated.

The Hopes Advance Project involves the development of several open pit mines. The mine is expected to generate from 10 to 20 million tonnes per year of iron concentrate product over a planned period of up to 48 years. Open pit mining in the Hopes Advance Area is envisioned as a conventional drill/blast/load/haul mining operation. Mining operations will be carried out on a 24-hour per day and 365-day per year basis. The ore from the mine will be treated at the concentrator to be located near the mine. The concentrate will then be pumped to the port area via a 26 km long concentrate pipeline for shipping.

¹ Note that the anticipated production capacity of the generation station is 190 MW.



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The shipment will require new deep water marine facilities consisting of an iron ore wharf and a causeway. The wharf is a caisson gravity base structure. Apart from the preparation for flat base, no dredging is anticipated for the port and the vessel approach channel.

The shipment of iron ore requires navigation through Ungava Bay and the entrance to Hudson Strait and Labrador Sea. Ice class vessels with capacity of 180,000 deadweight tons (DWT) will be used for shipping, while 240,000 DWT vessels may be used during ice-free season. Smaller vessels will be used for other shipping requirements (such as consumables, spare parts, etc.).

During construction and the first years of operation, a self-generated power plant fuelled by petroleum products will be used. The Project would connect to the provincial power grid once Hydro-Québec has advanced its transmission line to Ungava Bay.

Additional infrastructure will be required to support the operation including an upgraded existing airstrip, a 26 km long pipeline, a permanent road, a worker camp, service buildings and storage, management equipment of petroleum products and explosives and mine waste management infrastructures.

The Environmental and Social Impact Assessment (ESIA) completion and the beginning of the construction are anticipated for 2014. Operation would start in 2016.

Project Location

The Project is located in the region of Nunavik in Québec, on the western side of Ungava Bay, and close to the northern village of Aupaluk (figure 1 and appendix A). Besides Aupaluk, the nearby communities are Kangirsuk and Tasiujaq. The centre of the Project area is approximately 69° 58' 40.265" W / 59° 17' 9.631" N.

The Project falls within Inuit territory governed by the James Bay and Northern Québec Agreement. The planned mining activities are all located on Category III lands.

A few fishing cabins are located near the Project area (figure 1). The most valued areas and natural resources in the Project area are fish and fish habitats within Hopes Advance Bay, the lakes and the rivers (especially Red Dog River, Ford Lake and Saint-Fond River). Areas of caribou, ducks, geese, seals, polar bears and beluga hunting and berries picking are other valued land interests in the Project area. Hopes Advance Bay is also important for seafood collecting such as mussels and clams. It should be noted that a regional environmental study has not been conducted in the Project area.

Federal Involvement

To date, the federal authorities have not proposed financial support for the Project and no federal lands are part of the Project area.

We anticipate that the following federal acts or regulations may apply for the design and operation of the project (non exhaustive list):

- *Migratory Birds Convention Act, 1994;*
- *Fisheries Act;*
- *Navigable Waters Protection Act;*



- *Explosives Act;*
- *Arctic Waters Pollution Prevention Act;*
- *Species at Risk Act;*
- *Canadian Environmental Assessment Act, 2012;*
- *Ammonium Nitrate Storage Facilities Regulations; and*
- *Migratory Birds Regulations*

Environmental Components and Main Constraints to the Project

Physical Environment

Physical components include hydrology and coastal processes; surface water and sediment quality; hydrogeology and groundwater quality; soil and terrain; climate and air quality; and noise and vibrations. The next section describes the components from which relevant data are already available.

Hydrology and Coastal Processes

The watercourses within the Project area belong to the Hudson Bay Seaboard drainage basin, and more specifically, the Leaf River watershed. The main lakes within the region (i.e., Ford, Red Dog, Ippialuup and Ungallijuap Qamaninga lakes) all drain into the Red Dog River, which in turn flows into Hopes Advance Bay, a part of Ungava Bay. From another watershed, the Saint-Fond River also flows into the Ungava Bay north of the Project area.

Apart from the Red Dog River and Saint-Fond River, only small to medium streams are found in the Project area. From preliminary surveys, many rapids, cascades or braided sections with very low depth were observed in these streams. However, some channels of up to 1 metre in depth are present in some sections of these streams.

With a mean tidal range of 8.2 metres, Hopes Advance Bay is amongst the top 30 locations around the world where the largest range of tides has been observed. Normally, Ungava Bay begins to freeze up around mid-November and ice begins to break up around mid-June, creating a seven month ice cover.

Surface Water and Sediment Quality

Water and sediments (substrate of fine particles) were collected in September 2011 in lakes and watercourses of the Project area for analysis.

Water quality analysis showed low nutrient concentrations typical of oligotrophic and uncontaminated lakes. Typically the metal concentrations were below detection limits, and below federal or provincial guidelines.

In general, sediment quality analysis showed low metal concentrations into lake and river sediments.

Soil and Terrain

Surficial deposits within the Project area consist mainly of sediments deposited from melt water and floating ice in marine waters, during deglaciation and subsequent regression that have been classified as lag glaciomarine



deposits. Also found in the Project area are till blanket (thick and continuous) and till veneer (thin and discontinuous, areas of rock outcrop) glacial deposits.

The land within the Project area is inclined towards Ungava Bay, which is surrounded by land that is at sea level. Furthermore, aside from a series of low hills reaching a maximum height of around 110 metres north of Ford Lake, the rest of the Project area is relatively flat (mean elevation of around 40 m), and has been grouped within a slope gradient class of 10-15%.

The Project area is located within the zone of continuous permafrost, within which the layer of permafrost can reach thicknesses of about 25 m.

Biological Environment

Biological components include vegetation and wetlands, mammals, birds, reptiles, amphibians and fish/fish habitat. Particular attention has been paid to protected areas and to species of special concern.

Protected Areas

The closest protected area, located 15 km south of the Project area is called the *Réserve de parc national du Québec de la Baie-aux-Feuilles*. This area is entirely located outside of the Project area.

No Important Bird Area (IBA) has been identified within the Project area.

Vegetation and Wetlands

The Project area is located within the low subarctic, shrub arctic tundra bioclimatic domain. In this domain, willows (*Salix* spp.) and birch (*Betula* spp.) grow alongside herbaceous species (mostly graminoids), mosses and lichens. The vegetation canopy rarely grows beyond two metres.

The Project area is found within the natural province of the Ungava Bay basin (called natural province K), an area of 103,000 km² of which 3,136 km² consist of wetlands. These wetlands, which are for the most part unclassified, likely include:

- Peatlands, as well as swamps and marshes, bordering lakes and streams;
- Important wetlands in some estuaries and sheltered bays along Ungava Bay; and
- Fens and palsa bogs (influenced by the permafrost) along the Ungava Bay coast.

Mammals and Birds

The following large mammal species are present in the Project area: caribou (*Rangifer tarandus*, Leaf River caribou herd), muskox (*Ovibos moschatus*), red foxes (*Vulpes vulpes*), marten (*Martes americana*), wolves (*Canis lupus*), polar bears (*Ursus maritimus*), Canada lynx (*Lynx canadensis*), and arctic foxes (*Alopex lagopus*). The habitat is suitable for Wolverine (*Gulo gulo*), but no verified reports of this species in Québec exist since 1978.

The following marine mammals (amongst others), based on their general distribution, may frequent Hopes Advance Bay: harbour seal (*Phoca vitulina*), bearded seal (*Erignathus barbatus*), ringed seal (*Pusa hispida*), beluga whale (*Delphinapterus leucas*, Ungava Bay population), Sei whale, (*Balaenoptera borealis*), and Blue whale (*Balaenoptera musculus*).



Some 37 bird species were reportedly observed in the Red Dog Lake area. Most of them only migrate through the region, but the peregrine falcon (*Falco peregrines*) uses the area for reproduction and 5 more species may potentially use the area for this same purpose: snow goose (*Chen caerulescens*), Canada goose (*Branta canadensis*), greater scaup (*Aythya marila*), herring gull (*Larus argentatus*), and king eider (*Somateria spectabilis*). Among the species observed at or near the project area are peregrine falcon, golden eagle (*Aquila chrysaetos*), common eider (*Somateria mollissima*), black guillemot (*Cepphus grylle*), surf scoter (*Melanitta perspicillata*), and several species of seagulls.

Reptiles and Amphibians

No reptile or amphibian species distributions go as far north as the Project area.

Fish and Fish Habitat

The following fish species have been captured during gillnet and electric fishing surveys performed in September 2011:

- Lake trout (*Salvelinus namaycush*)
- Arctic char (*Salvelinus alpinus*)
- Brook trout (*Salvelinus fontinalis*)
- Round whitefish (*Prosopium cylindraceum*)
- Mottled sculpin (*Cottus bairdi*)
- Ninespine stickleback (*Pungitius pungitius*)
- Threespines stickleback (*Gasterosteus aculeatus*)
- Burbot (*Lota lota*)

Although not captured during the September 2011 survey, the following fish species, amongst others, are also likely to frequent the Project surrounding area according to their general distribution: northern pike (*Esox lucius*), suckers (*Catostomus* spp.), lake whitefish (*Coregonus clupeaformis*) and some Cyprinid species. Amongst marine and anadromous species, Greenland halibut (*Reinhardtius hippoglossoides*), Atlantic cod (*Gadus morhua*) and Atlantic salmon (*Salmo salar*) inhabit Ungava Bay.

The marine benthic community of the region includes such species as: Iceland scallop (*Chlamys islandica*), blue mussels (*Mytilus edulis*) and clams (*Mya arenaria*) which can be found off the shores of Hopes Advance Bay.

Species of Special Concern

Some species or populations in the Project area are protected at the federal level by the Species at Risk Act (SARA) and/or at the provincial level by the Act respecting threatened or vulnerable species (LEMV). In addition, migratory bird species are protected by the Migratory Birds Convention Act, 1994, administered by the Canadian Wildlife Service of Environment Canada in collaboration with the Canadian provincial and territorial governments.

According to the *Centre de données sur le patrimoine naturel du Québec* (CDPNQ), no floristic species at risk or any important terrestrial habitats have been recorded within the Project area. It should be noted, however, that



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the lack of special status species in the Project area may simply be a result of a lack of field investigations in this remote area of Québec.

The following special concern wildlife species are present in the Project area:

- Peregrine falcon *tundrius* (*Falco peregrinus tundrius*): susceptible of being designated threatened or vulnerable according to the LEMV and listed as a special concern species according to the SARA.
- Golden eagle (*Aquila chrysaetos*): listed as vulnerable according to the LEMV and not at risk according to Committee on the Status of Endangered Wildlife in Canada (COSEWIC).
- Polar bear (*Ursus maritimus*): listed as vulnerable under the LEMV and of special concern by COSEWIC.
- Ungava Bay beluga whale (*Delphinapterus leucas*) population: susceptible of being designated endangered or vulnerable under the LEMV, has been designated endangered by COSEWIC and is under consideration for listing under the SARA.
- Eastern Arctic population of Bowhead whale (*Balaena mysticetus*): listed in Schedule 2 of SARA as endangered.

Based on their general distribution, the following species listed as a special status species might possibly be found in the Project area:

- Wolverine (*Gulo gulo*): designated threatened in Québec according to the LEMV and endangered according to SARA.
- Harlequin duck (*Histrionicus histrionicus*): designated as special concern species by the SARA.
- Red knot (*Calidris canutus*): susceptible of being designated threatened or vulnerable under the LEMV and endangered by COSEWIC.
- Rusty blackbird (*Euphagus carolinus*): susceptible of being designated threatened or vulnerable under the LEMV.
- Short-eared Owl (*Asio flammeus*): susceptible of being designated threatened or vulnerable under the LEMV.
- Atlantic cod (*Gadus morhua*): designated as special concern species by SARA.
- Fourhorn sculpin (*Trigloporus (Myoxocephalus) quadricornis*): susceptible of being designated threatened or vulnerable under the LEMV.

It should be noted that although the caribou, muskox, salmonids, Canada goose, snow goose, seals, and ptarmigan (*Lagopus* spp) are not officially listed as a special status species at the provincial or federal levels, they warrant a special mention as they are important to the local Inuit population.

Human Environment

Human components include socio-economic, land and resource use, archaeology, and landscape. The next section describes the components from which relevant data are already available.



Socio-economics

The Inuit community of Aupaluk is one of the fourteen Inuit communities in the Nunavik territory. In 2006, the total population in Aupaluk was 174. The median age within the village of Aupaluk was 19.5 years, which is slightly younger than that of the Inuit population (22 years), and other indigenous groups (25 years), but is more than twice as young compared to the province of Québec (41 years).

Within the village of Aupaluk, 94.1% of the population can express themselves in Inuktitut (i.e., non-official language according to Statistics Canada), 60% of the population can converse in English, while 14.3% of the population can communicate in English and French.

The region is developing slowly and its economic situation is still precarious due to its dependence on government assistance. This limited development is attributed to the climatic constraints, the scattered resources, the distance from major cities, and the lack of a skilled work force.

Land and Resource Use

Inuit subsistence and game harvesting (hunting, fishing and trapping) occurs along the coast as well as inland. The region surrounding Aupaluk is entirely within UGAF 96 (Unité de gestion des animaux à fourrure) and hunting area 23.

Large game hunting starts around mid-November and continues into mid-May. During the summer period, the Inuit spend more time fishing and hunting marine mammals. Of particular interest is that, since 1998, licensed community hunts of the Bowhead whale (*Balaena mysticetus*) were permitted in Nunavik by the Federal Department of Fisheries and Oceans, when it was proven that the Bowhead, once almost at the point of extinction due to the activities of international whalers in the past two centuries, is now rebounding.

During meetings with Inuit representatives, the species of importance to the Inuit of Aupaluk that were mentioned are salmonids (arctic char, brook trout, lake trout), muskox, polar bear, seal, geese, ptarmigan, and caribou.

Makivik is currently performing an extensive study on land and resource use on Nunavik territory; the results will complete Makivik's database and GIS on that subject. Oceanic Iron Ore Corp. plans on acquiring the data from Aupaluk, Kangirsuk and Tasiujaq communities.

Archaeology

According to the ISAQ (*Inventaire des sites archéologiques du Québec*) database, 50 archaeological sites have been discovered near Aupaluk. The vast majority of those sites are located outside of the Project area. Only two archaeological sites are located close to some of the Project activities.

Main Apprehended Impacts

For the construction, operation and decommissioning phases of the Project, the identification of incidences addresses the physical, biological and human environments.

Physical Environment

The main environmental impacts and risks apprehended for the physical environment are:

- potential contamination of soil and water: concerning accidental spillage of petroleum products and other contaminants;



- effects on surface water quality and availability: concerning water runoff modification, higher suspended matter associated with potential subsidence and erosion risks and potential contamination from effluents;
- effects on hydrodynamic conditions in Hopes Advance Bay that could be created by frequent visits of large sea vessels throughout the year;
- effects associated with air quality: concerning dust and contaminants originating from the operations; and
- effects associated with noise and vibrations from the operations.

Biological Environment

The main environmental impacts apprehended for the biological environment are:

- effects on vegetation and wetlands: considering loss and modifications caused by new infrastructures, especially open mine pits, waste dumps and tailings management facilities (TMF sites);
- effects on fish habitat and fish populations: considering loss and modifications to fish habitat by new infrastructures, especially open mine pits, waste dumps and TMF sites, port infrastructure and water crossings; the effluents, and effects associated with drainage and erosion;
- effects on terrestrial and avian fauna (including migratory birds); considering loss and change of habitat created by new infrastructures, especially open mine pits, waste dumps and TMF sites; perturbation caused by the workers' presence as well as noise and vibrations;
- effects on marine mammals: considering the port construction (dredging and potential blasting) and perturbation caused by vessel traffic.

For the biological environment, special attention will be given to species of concern and of interest to the Inuit.

Human Environment

As for the incidences on the social environment, the main impacts and benefits apprehended are the following:

- the current and anticipated future land and resource uses;
- the potential changes in traditional hunting, fishing, trapping, and gathering activities of the Inuit in the area;
- the number of jobs created by the Project in the local and regional native population;
- the introduction of a new economy within the Aupaluk and surrounding communities, which has little work experience with the mining industry, and what it can involve for the community in the short and long term;
- the expected short and long-term socio-economic benefits;
- the historical and archaeological sites;
- the visual integration of the Project in its environment;



- the demographic imbalance due to population influx of non-Inuit in a small Inuit community including possible intercultural and/or linguistic tensions;
- the effects on Inuit social organization and cohesion;
- the effects on community and worker's health and safety;
- the effects on humans associated with air quality;
- effects associated with noise from the mine site and port activities;
- the social acceptability of the Project for Inuit population and other stakeholders, particularly in the context of Plan Nord.

Modalities of Public Consultation with Aboriginal Groups

Oceanic Iron Ore Corp. initiated consultations before the beginning of the exploration program of the Hopes Advance Project and has prepared a consultation plan for the duration of the Project's Environmental and Social Impact Assessment (ESIA). The objective of this plan is to gain traditional knowledge from the Inuit and to keep the Inuit engaged in dialogue, and involved, to maximize their participation in the Project. The consultations with the stakeholders will ensure that the ESIA report maximizes the measures required for the social acceptability of the Project.

At this stage, the jurisdictions and parties consulted include mostly Inuit organizations such as the Northern Village of Aupaluk, Kativik Regional Government, Kativik Municipal Housing Bureau or Nunavik Mineral Exploration Fund and Makivik Corporation. Additional stakeholders will be consulted within the coming months.

The consultation program includes three key activities: 1) Consultation on the current and anticipated land and resource uses; 2) Identification of stakeholders' issues and concerns on potential impacts and benefits of the Project and identification of the appropriate mitigation measures; 3) Disclosure of the draft ESIA through public consultation sessions.

Main concerns expressed during the first consultation activities with the Inuit are related to the employment situation, the potential social iniquity in the community and the possible rise of drug and alcohol consumption. Concern has also been raised about loss and deterioration of wildlife habitat caused by the Project.



OCEANIC IRON ORE CORP.'S HOPES ADVANCE PROJECT PROPONENT'S DESCRIPTION OF A DESIGNATED PROJECT

(Version française)

Renseignements généraux

Oceanic Iron Ore Corp. souhaite développer le projet de Hopes Advance, une mine de minerai de fer située dans la région du Nunavik au Québec et à proximité du village nordique d'Aupaluk.

Information sur le promoteur

Nom du projet désigné:	Hopes Advance Project
Nom du promoteur:	Oceanic Iron Ore Corp.
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Contact secondaire:	Eddy Canova, Gérant de projet ec@oceanicironore.com 514-289-1186

En plus des exigences fédérales, le projet minier est assujéti à la procédure québécoise d'évaluation et d'examen des impacts sur l'environnement et le milieu social en vertu du chapitre 23 de la Convention de la Baie-James et du Nord québécois (CBJNQ) et en vertu du chapitre II de la Loi sur la qualité de l'environnement (LQE). La description de projet (informations préliminaires) a été soumise à l'Administrateur provincial de la CBJNQ le 23 janvier 2012. Le régime d'évaluation environnementale prévu à l'Accord sur les revendications territoriales des Inuit du Nunavik (ARTIN) pourrait également s'appliquer pour les parties du projet qui affectent la région marine.



Renseignements sur le projet

Les dispositions du Règlement désignant les activités concrètes qui décrivent le projet en tout ou en partie sont les suivantes :

- Section 15. La construction, l'exploitation, la désaffectation et la fermeture :
 - a) d'une mine métallifère, autre qu'une mine d'or, d'une capacité de production de minerai de 3 000 t/jour ou plus;
 - b) d'une usine métallurgique d'une capacité d'admission de minerai de 4 000 t/jour ou plus.
- Section 20(k). La construction, l'exploitation, la désaffectation et la fermeture ou l'agrandissement entraînant une augmentation de la capacité de production de plus de 35 % d'une usine de fabrication d'explosifs chimiques faisant appel à des procédés chimiques.
- Section 27(c). La construction, l'exploitation, la désaffectation et la fermeture d'un terminal maritime conçu pour recevoir des navires de plus de 25 000 TPL, sauf s'il est situé sur des terres qui sont utilisées de façon courante comme terminal maritime et qui l'ont été par le passé ou que destine à une telle utilisation un plan d'utilisation des terres ayant fait l'objet de consultations publiques.

De plus, les dispositions suivantes pourraient potentiellement s'appliquer:

- Section 2(a). La construction, l'exploitation, la désaffectation et la fermeture d'une centrale électrique alimentée par un combustible fossile d'une capacité de production de 200 MW ou plus.
- Section 29. La construction, l'exploitation, la désaffectation et la fermeture :
 - b) d'un aéroport;
 - c) d'une piste utilisable en toute saison d'une longueur de 1 500 m ou plus.

La description de projet pourrait être modifiée en fonction des résultats d'une étude de pré faisabilité qui devrait être complétée en septembre 2012.

La forte demande des métaux, dont le fer, sur le marché mondial, encourage l'exploration minière et les investissements pour l'exploitation ultérieure. Des activités intensives ont déjà été réalisées et les ressources globales indiquées et présumées sont de 1,268 milliard de tonnes de fer à 32,3 % en utilisant une teneur de coupure de 25 %.

Le projet Hopes Advance implique le développement de plusieurs mines à ciel ouvert. La mine devrait générer entre 10 et 20 millions de tonnes de concentré par année sur une période s'étendant jusqu'à 48 ans. Les opérations minières à ciel ouvert sont envisagées sous la forme conventionnelle d'activités de forage, de dynamitage, de chargement et de transport. Les opérations minières se dérouleront 24 heures par jour, 365 jours par année. Le minerai de la mine sera traité au concentrateur, lequel sera situé près de la mine. Le concentré sera acheminé vers la zone du port pour l'expédition par un pipeline de concentré long de 26 km.

De nouvelles installations portuaires constituées d'un quai de chargement du minerai de fer et d'une jetée seront nécessaires pour l'expédition. Le quai sera formé de plusieurs caissons ancrés par gravité. En excluant la



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préparation d'une assise plate afin de recevoir les caissons, aucun dragage n'est anticipé pour le port et le chenal d'approche des navires.

Les navires qui transporteront le minerai de fer devront passer par la baie d'Ungava, l'entrée du détroit d'Hudson et la mer du Labrador. Des navires de type brise-glace d'une capacité de 180 000 tonnes port en lourd (tpl) seront utilisés pour l'expédition, alors que des navires de 240 000 tpl pourraient être utilisés durant la saison libre de glace. Des navires de plus petites dimensions seront utilisés pour les autres besoins en transport maritime (ex. consommables, pièces de remplacement, etc.).

Pendant la construction et les premières années d'opération, une centrale électrique alimentée aux hydrocarbures pétroliers sera utilisée. Le site du projet pourrait se raccorder au réseau d'Hydro-Québec lorsque sa ligne de transmission atteindra la baie d'Ungava.

Des infrastructures additionnelles seront requises pour assurer le soutien à l'exploitation incluant une piste d'aéroport existante qui devra être améliorée, un pipeline de 26 km de long, une route permanente, un camp de travailleurs, des bâtiments de services, des entrepôts, des équipements pour gérer les produits explosifs et pétroliers et des infrastructures de gestion des déchets miniers.

L'achèvement de l'étude d'impact sur l'environnement et le milieu social (ÉIES) et le début des travaux sont prévus pour 2014. Les opérations débuteraient en 2016.

Emplacement du projet

Le projet est situé dans la région du Nunavik au Québec, sur la côte ouest de la baie d'Ungava et à proximité du village nordique d'Aupaluk (figure 1 et annexe A). En plus d'Aupaluk, les communautés environnantes sont Kangirsuk et Tasiujaq. Les coordonnées géographiques approximatives au centre du projet sont : 69° 58' 40.265" W 1 59°17' 9.631" N.

Le projet se trouve à l'intérieur du territoire inuit régi par la Convention de la Baie-James et du Nord québécois. Toutes les activités minières prévues se dérouleront sur des terres de catégorie III.

Quelques chalets de pêche sont situés près du projet (figure 1). Les zones et les ressources naturelles les plus valorisées dans la zone du projet sont le poisson et son habitat dans la baie de Hopes Advance, les lacs et les rivières (notamment la rivière au Chien Rouge, le lac Ford et la rivière Saint-Fond). Les zones de chasse aux caribous, aux canards, aux oies, aux phoques, aux ours blancs et aux bélugas et les aires de cueillette de petits fruits sont d'autres secteurs valorisés dans la zone du projet. La baie de Hopes Advance est aussi importante pour la cueillette de mollusques tels que les moules et les myes. Il convient de noter qu'aucune évaluation environnementale régionale n'a été produite pour le secteur du projet.

Participation du gouvernement fédéral

À ce jour, les autorités fédérales n'ont proposé aucun support financier pour ce projet et aucun territoire domaniale ne se trouve dans la zone du projet.

Nous anticipons que les lois et règlements fédéraux suivants pourraient s'appliquer pour la conception et les opérations du projet (liste non exhaustive):

- *Loi de 1994 sur la convention concernant les oiseaux migrateurs;*



- *Loi sur les pêches;*
- *Loi sur la protection des eaux navigables;*
- *Loi sur les explosifs;*
- *Loi sur la prévention de la pollution des eaux arctiques;*
- *Loi sur les espèces en péril;*
- *Loi canadienne sur l'évaluation environnementale, 2012;*
- *Règlement sur le stockage de l'ammoniac anhydre;*
- *Règlement sur les oiseaux migrateurs.*

Composantes du milieu et principales contraintes à la réalisation du projet

Milieu physique

Les composantes physiques incluent les phénomènes hydrologiques et côtiers; la qualité des eaux de surface et des sédiments; l'hydrogéologie et la qualité des eaux souterraines; les sols et le terrain; le climat et la qualité de l'air; ainsi que le bruit et les vibrations. La section qui suit décrit les composantes pour lesquelles des données pertinentes sont déjà disponibles.

Phénomènes hydrologiques et côtiers

Les cours d'eau dans la région du projet appartiennent au bassin hydrologique du littoral de la baie d'Hudson, et plus précisément, le bassin versant de la rivière aux Feuilles. Les principaux lacs de la région (c.-à.-d., les lacs Ford, au Chien Rouge, Ippialuup et Ungallijuap Qamaninga) se jettent tous dans la rivière au Chien Rouge, laquelle se jette à son tour dans la baie de Hopes Advance, dans la baie d'Ungava. D'un autre bassin versant, la rivière Saint-Fond s'écoule également dans la baie d'Ungava au nord du projet.

En excluant la rivière au Chien Rouge et la rivière Saint-Fond, seuls des petits et moyens cours d'eau se trouvent dans la zone du projet. Les premiers inventaires ont permis d'observer de nombreux rapides, cascades ou sections anastomosées avec de très faibles profondeurs dans ces cours d'eau. Cependant, certains canaux allant jusqu'à 1 mètre de profondeur sont présents dans certaines sections de ces cours d'eau.

Avec une amplitude moyenne de marée de 8,2 mètres, la baie de Hopes Advance compte parmi les 30 sites où l'on peut observer les plus grands marnages à travers le monde. Habituellement, la baie d'Ungava commence à geler autour de la mi-novembre et la glace commence à se briser autour de la mi-juin, ce qui donne une couverture de glace d'une durée de sept mois.

Qualité des eaux de surface et des sédiments

Des échantillons d'eau et du substrat fin ont été recueillis pour analyse en septembre 2011 dans les lacs et cours d'eau de la région du projet.

L'analyse de la qualité de l'eau a démontré des concentrations faibles en nutriments, ce qui est typique des lacs oligotrophes et non pollués. Généralement, les concentrations de métaux se situaient sous les limites de détection ou en deçà des critères fédéraux ou provinciaux.



De manière générale, l'analyse préliminaire de la qualité des sédiments a démontré de faibles concentrations de métaux dans les sédiments des lacs et des rivières.

Sols et terrain

Les dépôts superficiels dans la région du projet se composent principalement de sédiments déposés par les eaux de fonte et les glaciers flottant dans les eaux marines pendant la déglaciation et leur retrait subséquent. Ces dépôts sont classés comme étant de type glacio-marin. On trouve également des dépôts glaciaires de nappes de till (épaisses et continues) et de placages de till (des zones d'affleurements rocheux minces et discontinus).

Les terres situées dans la région du projet sont inclinées vers la baie d'Ungava, qui est entourée par des terres au niveau de la mer. Par ailleurs, outre une série de collines peu élevées atteignant une hauteur maximale d'environ 110 mètres au nord du lac Ford, le reste de la région est relativement plat (altitude moyenne d'environ 40 m), et se caractérise par des pentes de 10 à 15 %.

La région du projet est située dans la zone de pergélisol continu, ou celui-ci peut atteindre une épaisseur d'environ 25 m.

Milieu biologique

Les composantes biologiques incluent la végétation et les milieux humides, les mammifères, les oiseaux, les reptiles, les amphibiens ainsi que les poissons et leur habitat. Une attention particulière a été apportée aux zones protégées et aux espèces préoccupantes.

Zones protégées

La zone protégée la plus proche est située à 15 km au sud du site minier et porte le nom de « Réserve de parc national du Québec de la Baie-aux-Feuilles ». Cette zone est entièrement située à l'extérieur des zones de travaux et d'activités liées au projet.

Aucune zone importante pour la conservation des oiseaux (ZICO) n'a été identifiée dans la région du projet.

Végétation et milieux humides

La région du projet est située dans le domaine bioclimatique de la toundra arctique arbustive. Dans ce domaine, les saules (*Salix* spp.) et les bouleaux (*Betula* spp.) côtoient des plantes herbacées (principalement des graminoides), des mousses et des lichens. La végétation dépasse rarement 2 m.

La région du projet se trouve dans la province naturelle du bassin de la baie d'Ungava (appelée province naturelle K), un territoire de 103 000 km² dont 3 136 km² sont constitués de milieux humides. Ces zones humides, qui sont pour la plupart non classifiées, comprennent notamment :

- les tourbières ainsi que les marais et les marécages bordant les lacs et les ruisseaux;
- les zones humides importantes dans certains estuaires et certaines baies abritées le long de la baie d'Ungava; et
- des tourbières minérotrophes et des tourbières à paises (influencées par le pergélisol) le long de la côte de la baie d'Ungava.



Mammifères et oiseaux

Les espèces suivantes de mammifères sont présentes dans la région du projet : le caribou (*Rangifer tarandus*, troupeau de la rivière aux Feuilles), le bœuf musqué (*Ovibos moschatus*), le renard roux (*Vulpes vulpes*), la martre (*Martes americana*), le loup (*Canis lupus*), l'ours blanc (*Ursus maritimus*), le lynx du Canada (*Lynx canadensis*) et le renard arctique (*Alopex lagopus*). L'habitat convient au carcajou (*Gulo gulo*), mais il n'y pas eu d'observation confirmée de carcajou signalée au Québec depuis 1978.

Certains mammifères marins peuvent, d'après leur répartition générale, fréquenter la baie de Hopes Advance, notamment : le phoque commun (*Phoca vitulina*), le phoque barbu (*Erignathus barbatus*), le phoque annelé (*Pusa hispida*), le béluga (*Delphinapterus leucas*, population de la baie d'Ungava), le rorqual boréal (*Balaenoptera borealis*) et le rorqual bleu (*Balaenoptera musculus*).

L'observation de quelque 37 espèces d'oiseaux a été rapportée dans la région du lac au Chien Rouge. La plupart d'entre elles ne font que migrer dans la région, mais le faucon pèlerin (*Falco peregrines*) utilise ce secteur pour se reproduire. Cinq autres espèces sont aussi susceptibles d'utiliser la zone pour les mêmes raisons : oie des neiges (*Chen caerulescens*), bernache du Canada (*Branta canadensis*), fuligule milouinan (*Aythya marila*), goéland argenté (*Larus argentatus*) et eider à tête grise (*Somateria spectabilis*). Parmi les espèces observées, on trouve le faucon pèlerin, l'aigle royal (*Aquila chrysaetos*), l'eider à duvet (*Somateria mollissima*), le guillemot à miroir (*Cephus grylle*), la macreuse à front blanc (*Melanitta perspicillata*), et plusieurs espèces de goélands.

Reptiles et amphibiens

Aucune espèce de reptile ou d'amphibien ne montre une distribution aussi nordique que la région du projet.

Poissons et habitat du poisson

Les espèces de poissons suivantes ont été capturées durant des pêches scientifiques aux filets maillants et à l'électricité effectuées en septembre 2011 :

- Touladi (*Salvelinus namaycush*);
- Omble chevalier (*Salvelinus alpinus*);
- Omble de fontaine (*Salvelinus fontinalis*);
- Ménomini rond (*Prosopium cylindraceum*);
- Chabot tacheté (*Cottus Bairdi*);
- Épinoche à neuf épines (*Pungitius pungitius*);
- Épinoche à trois épines (*Gasterosteus aculeatus*);
- Lotte (*Lota lota*).

Bien qu'aucune capture n'ait été rapportée durant l'étude de septembre 2011, en raison de leur répartition générale, les espèces suivantes, entre autres, sont aussi susceptibles de fréquenter la zone du projet : le grand brochet (*Esox lucius*), les meuniers (*Catostomus* spp.), le grand corégone (*Coregonus clupeaformis*) et certaines espèces de cyprinidés. Parmi les espèces marines et anadromes, le flétan du Groenland (*Reinhardtius*



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hippoglossoides), la morue Atlantique (*Gadus morhua*) et le saumon Atlantique (*Salmo salar*) fréquentent la baie d'Ungava.

La communauté benthique marine de la région comprend des espèces telles que le pétoncle d'Islande (*Chlamys islandica*), la moule bleue (*Mytilus edulis*) et la mye (*Mya arenaria*) que l'on trouve au large dans la baie de Hopes Advance.

Espèces préoccupantes

Dans la région du projet, certaines populations ou espèces sont protégées au niveau fédéral par la Loi sur les espèces en péril (LEP) ou au niveau provincial par la Loi sur les espèces menacées ou vulnérables (LEMV). En outre, les espèces d'oiseaux migrateurs sont protégées par la Loi de 1994 sur la convention concernant les oiseaux migrateurs (LCOM), administrée par le Service canadien de la faune d'Environnement Canada en collaboration avec les gouvernements provinciaux et territoriaux canadiens.

Selon le Centre de données sur le patrimoine naturel du Québec (CDPNQ), aucune espèce floristique à statut précaire ni aucun habitat terrestre important n'ont été enregistrés dans la région du projet. Il convient toutefois de noter que l'absence d'espèces à statut précaire dans la région du projet peut simplement être le résultat de l'absence de relevé sur le terrain dans cette région éloignée du Québec.

Ces espèces fauniques préoccupantes sont présentes dans la région du projet :

- Le faucon pèlerin tundrius (*Falco peregrinus tundrius*) : susceptible d'être désigné espèce menacée ou vulnérable selon la LEMV et considéré comme une espèce préoccupante selon la LEP.
- L'aigle royal (*Aquila chrysaetos*) : classé comme étant une espèce vulnérable selon la LEMV, mais non en péril selon le Comité sur la situation des espèces en péril au Canada (COSEPAC).
- L'ours blanc (*Ursus maritimus*) : classé comme espèce vulnérable selon la LEMV et espèce préoccupante selon le COSEPAC.
- La population du béluga de la baie d'Ungava (*Delphinapterus leucas*) : susceptible d'être désignée espèce en voie de disparition ou vulnérable en vertu de la LEMV, est désignée en voie de disparition par le COSEPAC et son statut est présentement à l'étude en vertu de la LEP.
- La population de baleines boréales de l'est de l'Arctique (*Balaena mysticetus*) : figure à l'annexe 2 de la LEP comme étant une espèce en voie de disparition.

Selon leur répartition générale, les espèces suivantes classées comme préoccupantes pourraient aussi se trouver dans la région du projet :

- Le carcajou (*Gulo gulo*) : désigné comme espèce menacée au Québec selon la LEMV et en voie de disparition selon la LEP.
- L'arlequin plongeur (*Histrionicus histrionicus*) : désigné comme espèce préoccupante selon la LEP.
- Le bécasseau maubèche (*Calidris canutus*) : susceptible d'être désigné comme espèce menacée ou vulnérable selon la LEMV et en voie de disparition par le COSEPAC.



- Le quiscale rouilleux (*Euphagus carolinus*) : susceptible d'être désigné comme espèce menacée ou vulnérable en vertu de la LEMV.
- Le hibou des marais (*Asio flammeus*) : susceptible d'être désigné comme espèce menacée ou vulnérable en vertu de la LEMV.
- La morue (*Gadus morhua*) : désignée comme une espèce préoccupante par la LEP.
- Le chaboisseau à quatre cornes (*Trigloporus (myoxocephalus) quadricornis*) : susceptible d'être désigné menacé ou vulnérable en vertu de la LEMV.

Bien que le caribou des bois, le bœuf musqué, les salmonidés, la bernache du Canada, l'oie des neiges, les phoques et le lagopède (*Lagopus spp*) ne soient pas officiellement répertoriés comme étant des espèces préoccupantes au niveau provincial ou fédéral, ils méritent tout de même une mention spéciale, car ils sont importants pour la population inuit locale.

Milieu humain

Les composantes humaines incluent les aspects socio-économiques, l'utilisation du territoire et des ressources, l'archéologie et le paysage. La section qui suit décrit les composantes pour lesquelles des données pertinentes sont déjà disponibles.

Aspects socio-économiques

La communauté d'Aupaluk est l'une des 14 communautés inuit sur le territoire du Nunavik. En 2006, la population totale était de 174 habitants à Aupaluk. L'âge médian dans le village d'Aupaluk était de 19,5 ans, ce qui est légèrement plus jeune que celui de la population inuit (22 ans) et des autres groupes autochtones (25 ans), mais deux fois plus jeune par rapport à la province du Québec (41 ans).

Dans le village d'Aupaluk, 94,1 % de la population peut s'exprimer en inuktitut (c.-à-d., une langue non officielle, selon Statistique Canada), 60 % de la population peut s'exprimer en anglais, tandis que 14,3 % de la population peut communiquer en anglais et en français.

La région du Nunavik se développe lentement et sa situation économique demeure difficile en raison de sa dépendance à l'aide gouvernementale. Ce développement limité est attribuable aux contraintes climatiques, aux ressources dispersées, à l'éloignement par rapport aux grandes villes et au manque de main-d'œuvre qualifiée.

Utilisation du territoire et des ressources

Les activités de subsistance des Inuit (chasse, pêche et piégeage) ont lieu aussi bien le long de la côte qu'à l'intérieur des terres. La région entourant Aupaluk est entièrement à l'intérieur de l'unité de gestion des animaux à fourrure (UGAF) 96 et de la zone de chasse 23.

La chasse au gros gibier commence vers la mi-novembre et se poursuit jusqu'à la mi-mai. Pendant la période estivale, les Inuit consacrent plus de temps à la pêche et à la chasse des mammifères marins. Notons que depuis 1998, le ministère fédéral des Pêches et des Océans autorise des chasses communautaires aux baleines boréales (*Balaena mysticetus*) au Nunavik. Il a été démontré que la population, autrefois en voie de disparaître en raison de l'activité des baleiniers internationaux survenue au cours des deux derniers siècles, connaît une hausse de croissance.



Lors de réunions avec les représentants des Inuit, les salmonidés (l'omble chevalier, l'omble de fontaine, le touladi), le bœuf musqué, l'ours blanc, le phoque, les oies, le lagopède et le caribou ont été mentionnés comme étant des espèces importantes pour les Inuit d'Aupaluk.

La Société Makivik fait présentement une étude exhaustive sur l'utilisation des terres et des ressources sur le territoire du Nunavik. Les résultats vont compléter la base de données géoréférencées de Makivik sur le sujet. Oceanic Iron Ore Corp. prévoit acquérir les données pour les communautés d'Aupaluk, Kangirsuk et Tasiujaq.

Archéologie

Selon la base de données ISAQ (Inventaire des sites archéologiques du Québec), 50 sites archéologiques ont été découverts près d'Aupaluk. La grande majorité de ces sites est située à l'extérieur de la région du projet. Seuls deux sites archéologiques sont situés près de certaines des activités du projet.

PRINCIPAUX IMPACTS APPRÉHENDÉS

En ce qui concerne les phases de construction, d'exploitation et de fermeture du projet, l'identification des impacts concerne les milieux physique, biologique et humain.

Milieu physique

Concernant le milieu physique, les principaux impacts environnementaux appréhendés sont :

- la contamination potentielle du sol et de l'eau en raison de déversements accidentels de produits pétroliers et d'autres contaminants;
- les effets sur la qualité et la disponibilité des eaux de surface en raison de modifications du ruissellement, du taux plus élevé de matières en suspension associés aux risques potentiels d'érosion et d'affaissement et de la contamination potentielle par les effluents;
- les effets sur les conditions hydrodynamiques dans la baie de Hopes Advance qui pourraient être engendrés par des passages fréquents de grands navires océaniques tout au long de l'année;
- les effets associés à la qualité de l'air en raison de l'émission de poussières et contaminants provenant des activités d'exploitation;
- les effets associés au bruit et aux vibrations provoqués par les activités d'exploitation.

Milieu biologique

Concernant le milieu biologique, les principaux impacts environnementaux appréhendés sont :

- les effets sur la végétation et les milieux humides : perte et modification causées par l'implantation de nouvelles infrastructures, particulièrement les fosses à ciel ouvert, les haldes à stériles et le parc à résidus;
- les effets sur les populations de poissons et leurs habitats : perte et modification de l'habitat du poisson par l'implantation de nouvelles infrastructures, particulièrement les fosses à ciel ouvert, les haldes à stériles et le parc à résidus, les infrastructures portuaires et les traverses de cours d'eau; les effluents et les effets associés au drainage et à l'érosion;



- les effets sur la faune terrestre et aviaire : perte et modification de l'habitat engendrées par l'implantation de nouvelles infrastructures, particulièrement les fosses à ciel ouvert, les haldes à stériles et le parc à résidus; perturbation causée par la présence humaine ainsi que le bruit et les vibrations;
- les effets sur les mammifères marins : construction du port (dragage et dynamitage potentiel) et perturbation causée par la circulation maritime.

En ce qui concerne le milieu biologique, une attention particulière sera accordée aux espèces préoccupantes et d'intérêt pour les Inuit.

Milieu humain

En ce qui a trait aux impacts sur le milieu humain, les principaux aspects appréhendés sont :

- l'utilisation actuelle et prévue du territoire et des ressources;
- les changements potentiels des activités traditionnelles de chasse, de pêche, de trappage et de cueillette des Inuit;
- le nombre d'emplois créés par le projet pour la population Inuit locale régionale;
- l'introduction d'une nouvelle économie à Aupaluk et au sein des communautés voisines, lesquelles détiennent peu d'expérience dans le domaine de l'industrie minière, et les implications pour ces communautés à court et à long terme;
- les bénéfices socioéconomiques prévus à court et à long terme;
- les sites historiques et archéologiques;
- l'intégration visuelle du projet dans le paysage et dans l'environnement;
- le déséquilibre démographique en raison du flux de population non inuit dans une petite communauté inuit, incluant de possibles tensions interculturelles et/ou linguistiques;
- les effets sur l'organisation et la cohésion sociales des Inuit;
- les effets sur la santé et la sécurité de la communauté et des travailleurs;
- les effets de la qualité de l'air sur les humains;
- les effets associés au bruit provenant des activités portuaires et minières;
- l'acceptabilité sociale du projet pour la population inuit et pour les autres parties prenantes, particulièrement dans le contexte du Plan Nord.

Activités de participation et de consultation auprès des groupes autochtones

Oceanic Iron Ore Corp. a entamé des consultations avant d'entreprendre les activités d'exploration à Hopes Advance et a préparé un plan de consultation pour toute la durée de l'évaluation des impacts sur l'environnement et le milieu social (ÉIES) du projet. L'objectif de ce plan est de permettre aux Inuit de partager leurs connaissances traditionnelles et également d'encourager le dialogue et leur implication afin de maximiser



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leur participation au projet. Les consultations avec les parties prenantes assureront que le rapport de l'ÉIES optimise les mesures nécessaires à l'acceptabilité sociale du projet.

À cette étape, les groupes consultés incluent principalement des organisations Inuit telles que le village nordique d'Aupaluk, l'administration régionale Kativik, l'office municipal d'habitation Kativik, le fonds d'exploration minière du Nunavik et la société Makivik. D'autres parties prenantes seront consultées au cours des prochains mois.

Le programme de consultation inclut trois activités clés : 1) consultation sur l'utilisation actuelle et anticipée du territoire et des ressources dans la région du projet; 2) Identification des questions et enjeux des parties prenantes concernant les impacts et les avantages potentiels du projet et identification des mesures d'atténuation appropriées; 3) Divulcation de la version préliminaire de l'ÉIES au moyen de consultations publiques.

Les principales préoccupations exprimées au cours des premières activités de consultation auprès des Inuit sont reliées à la situation de l'emploi, les inégalités sociales potentielles dans la communauté d'Aupaluk et la possible augmentation des problèmes liés à la consommation de drogue et d'alcool. Des préoccupations ont également été soulevées à propos des pertes et de la détérioration des habitats fauniques que pourraient provoquer le projet.



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APPENDIX A

Photographs



1.0 GENERAL INFORMATION AND CONTACTS

1.1 Nature of the Designated Project

The Hopes Advance Project (Project) concerns the development of several deposits containing economic grades of iron ore. The Project is located in the region of Nunavik in Québec, on the western side of Ungava Bay, and close to the northern village of Aupaluk (Figure 1).

The Project is in the early stages of development (prefeasibility). It is anticipated that the Project would include the following components:

- Open pit mines;
- Tailings management facilities;
- Waste rock and overburden deposits;
- Concentrator;
- Concentrate pipeline;
- Deep water port;
- Power plant;
- Fuel storage depot;
- Explosives plant;
- Truck maintenance shop;
- Airstrip upgrade;
- Access roads and electric lines; and
- Accommodations for the workers.

1.2 Proponent Contact Information

Name of the designated Project:	Hopes Advance Project
Name of the proponent:	Oceanic Iron Ore Corp.
Address:	1000 Sherbrooke Street West, Suite 700 ----- Montréal QC H3A 3G4



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1.3 List of Jurisdiction and Other Parties Consulted

At this stage, the jurisdictions and parties consulted are the following:

- Northern Village (NV) of Aupaluk:
 - Mayor;
 - Elder representative and City councillor;
 - Land Holding representatives; and
 - Hunters, Fishermen and Trappers representative.
- Kativik Regional Government (KRG):
 - Associate Director of renewable resources and President of the Kativik, Environmental Advisory Committee;
 - Land Use Department representative;
 - Cleaning of abandoned mining exploration sites project representative; and
 - Sustainable Employment Department representative.
- Kativik Municipal Housing Bureau (KMHB);
- Makivik Corporation:
 - Legal Department representative;
 - Resource Development Department representative
 - Economic Development representative; and



- Marine Division representative.
- Nunavik Mineral Exploration Fund; and
- Wildlife Protection Office of Kuujjuaq.

1.4 Other Relevant Information

The Project is subject to the Québec provincial environmental and social impact assessment and review procedure as per Chapter 23 of the James Bay and Northern Québec Agreement (JBNQA) and Chapter II of the Québec Environment Quality Act (EQA). A project description (preliminary information) has been filed with the provincial Administrator of the JBNQA on January 23, 2012. The Environmental Assessment process under the Nunavik Inuit Land Claims Agreement (NILCA) could apply to parts of the project that impact the marine region.

No regional environmental study has been conducted in the Project area.

N.B. Please note that the requirements above are provided as an indication only and are based on technical knowledge and experience. It does not constitute or intend to replace a legal opinion on the same.

2.0 PROJECT INFORMATION

2.1 Context and Objectives of the Project

The high demand for metals, including iron, on the world market encourages mineral exploration and investment in subsequent developments. Demand for iron ore is high and is expected to continue to rise, as China and other developing countries continue their growth and other emerging economies develop.

Extensive exploration drilling, metallurgical test work, process development, and an economic assessment have already been completed for the Hopes Advance Project. An NI 43-101 global resource of 1.268 billion tonnes of measured and indicated in-pit resource at 32.3% using a 25% cut-off grade has been published by Oceanic Iron Ore Corp. (April 2, 2012).

2.2 Provisions in the Regulations Designating Physical Activities Applicable to the Project

The provisions in the schedule to the Regulations Designating Physical Activities describing the Project in whole or in part are the following:

- Section 15. The construction, operation, decommissioning and abandonment of:
 - (a) a metal mine, other than a gold mine, with an ore production capacity of 3,000 t/d or more;
 - (b) a metal mill with an ore input capacity of 4,000 t/d or more.



- Section 20(k). The construction, operation, decommissioning and abandonment, or an expansion that would result in an increase in its production capacity of more than 35% of a factory for the manufacture of chemical explosives employing chemical processes.
- Section 27(c). The construction, operation, decommissioning and abandonment of a marine terminal designed to handle vessels larger than 25,000 DWT unless the terminal is located on lands that are routinely and have been historically used as a marine terminal or that are designated for such use in a land-use plan that has been the subject of public consultation.

Other provisions that could potentially be applicable are:

- Section 2(a). The construction, operation, decommissioning and abandonment of a fossil fuel-fired electrical generating station with a production capacity of 200 MW or more².
- Section 29. The construction, operation, decommissioning and abandonment of:
 - (b) an airport;
 - (c) an all-season runway with a length of 1,500 m or more.

The project description is based on currently available data and is preliminary at this stage. It is subject to modifications in light of the results of an ongoing prefeasibility study, which should be completed in September 2012.

2.2.1 Overview of the Project

The Hopes Advance Project involves the development of open pit mines. Based on the current scenarios published by Oceanic Iron Ore Corp., the mine is expected to generate from 10 to 20 million tonnes per year of 66.5% iron concentrate product over a planned period of up to 48 years, corresponding to an average iron ore extraction rate of 72,000 to 144,000 tonnes daily.

The ore from the mine will be treated at the concentrator to be located near the mine (see Figure 1). The preliminary process flow sheet for the ore is based upon gravity separation of coarsely liberated, predominately specular hematite, with magnetic separation to recover the finer grained magnetite. Intermediate products will be reground in secondary milling steps and reprocessed to recover the liberated fine iron.

The concentrate will be pumped to the port area via a 26 km long concentrate pipeline for shipping of the concentrate.

2.2.2 Ore Deposit Mining

There will be several pit areas in the Hopes Advance Area (see Figure 1). The conceptual design requires maintaining a minimum setback of 100 m from Ford Lake, Red Dog Lake, and the Red Dog River. Open pit mining in the Hopes Advance Area is envisioned as a conventional drill/blast/load/haul mining operation. The sequence would involve drilling 15-m benches followed by blasting, loading, and haulage to the concentrator or waste dump. Large front shovels would load blasted material into haul trucks which would then haul ore to the

² Note that the anticipated production capacity of the generation station is 190 MW.



concentrator and waste to the waste dumps. Mining operation will be carried out on a 24 hour per day and 365 day per year basis.

The following sections give an overview of the geology and mineralization of the Project area as well as main mineral processing techniques.

2.2.2.1 Geology and Mineralization

Located at the north end of the Labrador Trough, the mineralized ores within the Ungava Iron properties are composed basically of magnetite and hematite (hematite >magnetite).

The Labrador Trough or New Québec Orogen is a Paleoproterozoic (1,840 billion years ago (Ba)) fold and thrust belt that is situated between the Archean aged Superior and Rae Provinces. The iron formation in the Labrador Trough has been dated at 1,880 Ga \pm 2 million years (Ma), and the area presents the iron mineralization deposit type, with sparse iron formation outcrop. Chert-magnetite-hematite iron formation is overlain by spotted chert-carbonate rock. The iron formation in the Hopes Advance Area can be traced over a length of approximately 30 km.

The iron formation has been extensively metamorphosed, faulted, and folded. The Hopes Advance Area contains fold-thickened portions of the iron formation. The Sokoman Iron Formation is the stratigraphic/geological control of the iron mineralization in the region. Strong folding has resulted in a structural influence on the iron formation.

Low-grade iron formations such as those present in the Ungava Bay region of Northern Québec occur predominately as oxides with silica as the principal impurity. The iron oxides occur in two forms, magnetite, in which the iron mineral is magnetic, and hematite, a non-magnetic form of iron oxide.

In reference to the mineralogy, photomicrographs show the relatively simple mineralogy of the iron formation of the Ungava Iron Ore properties, with potential variation in grain size affecting the potential liberation and recovery of iron oxides.

Using the estimated cut-off grade of 25.0% iron, the Hopes Advance Area iron deposits have a global mineral resource as shown in Table 1.

Table 1: Hopes Advance Area In-pit Mineral Resources Estimate at a Cut-off Grade of 25.0% Fe

Classification	Tonnes	Fe (%)	Concentrate (Tonnes)
Measured (M)	720,765,000	32.4	279,806,000
Indicated (I)	547,518,000	32.3	211,516,000
M+I	1,268,283,000	32.3	491,322,000
Inferred	193,403,000	32.9	75,112,000

2.2.2.2 Mineral Processing

The type of iron formation of the Hopes Advance Area contains a variety of ore types that can all be grouped into the concentrating ores category. Concentrating ores are typically composed of magnetite and/or hematite and silicate minerals at relatively low grades (20-40% Fe) that require grinding to liberate magnetite and/or hematite



from the silicate minerals. Magnetite is concentrated by magnetic methods and hematite is concentrated by gravity and/or flotation methods.

The process flow sheet for the Hopes Advance Area ore will be based upon gravity separation of coarsely liberated, predominately specular hematite, with magnetic separation to recover the finer grained magnetite. Intermediate products will be reground in secondary milling steps and reprocessed to recover the liberated fine iron.

Mineral processing facilities for the Project will comprise a concentrator that will be located near the mine (north of Red Dog Lake), with a combination of spirals and magnetic separation (see Figure 1). In the concentrator, the mineral processing operations will involve the crushing and grinding of the ores to a size fine enough to free the iron mineral from the silica waste. If the hematite particles are coarse enough, the difference in specific gravity between heavier iron minerals and the silica can be exploited, and gravity separation utilized. Magnetic separation may be used for finer magnetite particles.

Typical equipment such as spirals and thickening tanks are employed to segregate the heavier, iron rich stream from the waste. For finer iron mineralization, magnetic separators will be employed and froth flotation may be used on the iron oxide-silica slurry. Flotation processes utilize reagents that have a specific affinity for iron or silica. The reagents, along with flotation machines, are used to mechanically separate the two minerals. In a flotation machine, utilizing the proper chemicals, air is introduced to the iron oxide-silica slurry. The air, along with the process chemicals, causes one of the two mineral species to attach itself to an air bubble and float to the surface.

Concentrate will be pumped to the port area via a 26 km long concentrate pipeline (see Figure 1). Concentrate from this pipeline will then be filtered to achieve an acceptable moisture level for shipping. Products would be stored or directly loaded onto a ship for final delivery to a steel plant.

2.2.3 Deep-Water Port, Shipment and Related Equipment

2.2.3.1 Deep-Water Port

A preliminary design of the port facility required for the Hopes Advance Project has been done. The assumptions were for the shipment of 10 to 20 million tonnes per year of iron ore products to steel mills in Europe and Asia, with marine structures designed for a 365 day per year operation.

Three potential locations were evaluated for the construction of the proposed port facility and its onshore infrastructure. The preliminary criteria for the site selection were the distance from the concentrator, the distance from onshore facilities to deep water port and shelter water (required for ship loading operation). Further analysis will be performed to include environmental and social criteria for the port site selection.

The proposed marine facilities consist of an iron ore wharf (330 m) and a causeway (328 m). The wharf is a caisson gravity base structure containing hollow concrete precast boxes for the iron ore wharf, commercial and tug wharf in a series configuration. Each caisson is 30 m X 30 m X 42.5 m. The gravity structure compartments are filled with sand/rock, when connected together. The caisson will be submerged without hammering and anticipated dredging is limited to the preparation of a flat base to place the caissons. The method of dredging will depend on soil type and other conditions. No data is available on the soil at this time. The dredged material will



be used as much as possible as backfill. Again, the disposal scenario will have to be evaluated with regards to the soil type and quality.

The wharf will be equipped with ship loading equipment and conveyor systems. No dredging is anticipated for the vessel approach channel. Total surface areas occupied by wharfs will be around 1 ha.

2.2.3.2 Shipment

The shipment of iron ore from the Hopes Advance Project to European and Asian markets requires navigation through Ungava Bay and the entrance to Hudson Strait and Labrador Sea. Ice class vessel with a capacity of 180,000 DWT³ will be used for shipping, while 240,000 DWT vessels may be used during the ice-free season. For other shipping requirements (such as consumables, spare parts, etc.), it is assumed that general cargo will be transported in 10,000 DWT vessels. Delivery of fuel oil will be in 25,000 DWT ice-class tankers.

The Arctic Shipping Pollution Prevention Regulations regulate navigation north of 60° through the Zone/Date System. The proposed Hopes Advance Bay port location is outside the Zone/Date System, but vessels have to navigate through Zone 15. Currently, all year commercial shipping in Zone 15 is to Deception Bay to service the Raglan mine in northern Nunavik.

The number of required shipments by 180,000 DWT vessels is 56 for 10Mt/y production, and 111 for 20Mt/y. Consequently, vessels must depart on average, every week for the 10Mt/y scenario, and every 3.3 days for the 20Mt/y production scenario. It should be noted that variations may be considered in order to raise ice-free season shipping volumes and reduce winter shipping volumes.

2.2.3.3 Onshore Related Equipment

Iron Ore Conveyor

Iron ore products will be reclaimed by a slewing type bucket stacker/reclaimer with reclaiming capacity of 16,000 tonnes per hour. Belt conveyors will convey reclaimed iron ore products from the stockyard, adjacent to the port, to the ship loader at the berth for ship loading operations.

Ship loading Equipment

The iron ore berth at Hopes Advance Bay will have the capability to load ocean-going vessels up to 240,000 DWT. The ship loader will be a standard long-travel ship loader with slewing and luffing capability. The ship loader loading capacity will be 16,000 tonnes per hour.

2.2.4 Power Plant

Oceanic Iron Ore Corp. will construct the Project and commence operations utilizing a self-generated power plant, fuelled by oil, with the intention of connecting to the grid when Hydro-Québec has advanced its transmission line to Ungava Bay. Our understanding is that Hydro-Québec needs to rationalize construction of an intermediary power generation facility in order for the capital costs associated with the transmission line to be viable for both Hydro-Québec and Oceanic Iron Ore Corp. Hydro-Québec has advised that they intend to

³ Deadweight tonnage



proceed with a feasibility study for the intermediary power generating station and, based on the outcome, would proceed with the ESIA.

The self-generation power plant would be fuelled with Bunker C oil. It would have a base load of 126 MW and an installed capacity of 190 MW based on the initial concentrate production of 10 million tonnes of concentrate per year. During the subsequent feasibility study, Oceanic Iron Ore Corp. will evaluate an alternative of liquefied natural gas (LNG) fuel for generators.

2.2.5 Ancillary Infrastructures

Besides the mine, the concentrator and the port facilities, additional infrastructure will be required to support the operation. The main additional infrastructures are described below.

2.2.5.1 Airstrip Upgrade

The Aupaluk airport will provide an initial means of transportation for employees travelling to and from the site. However, Oceanic Iron Ore Corp. anticipates upgrading the existing historic airstrip located on the north side of Hopes Advance Bay (Figure 1) by lengthening it from around 1,470 m (4,820 feet) to approximately 1,980 m (6,500 feet) and paving the runway to facilitate landing of jet aircraft. In addition, a modest terminal/ air traffic control facility adjacent to the airstrip will be established.

2.2.5.2 Concentrate Pipeline

It is planned that a 26 km long buried pipeline will transport slurried concentrate to the port site (Figure 1). The pipeline will be 20 inches in diameter. A water pipeline from the dewatering facilities in the port area returning to the concentrator has also been included. The pipeline route is preliminary, but it is anticipated that water crossings will be needed.

2.2.5.3 Site Roads

A 26 km long permanent road connecting the concentrator and mine area to the port and worker camp site areas will be part of the Project. Road access to other Project infrastructure such as the waste dumps and tailings management facilities (TMF) will also have to be constructed. The road route has not been determined yet, but it is anticipated that water crossings will be needed.

2.2.5.4 Worker Camp

A permanent camp will be included to provide accommodation for the workers during construction and operation. The camp will house approximately 500 people, including an allowance for transitional occupancy during turnarounds and for inoperable occupancy. The permanent camp will be located adjacent to the concentrator. A 25-50 person permanent camp will also be located at the port site to facilitate port operation and ship loading.

A temporary camp is anticipated for the construction phase at the Ungava Bay port site and the concentrator site. An alternative that will be evaluated during feasibility study is a self-contained barge camp that would be located at Ungava Bay. Workers will be housed using a combination of the permanent camp and temporary camps. The total camp loading during peak construction will range from 1,250 to 1,750 people.

Sewage systems, waste disposal facility and fresh water supply will service the camps. The source for drinking potable water is anticipated to be Ford Lake. At this time, the location of the outfall for treated water has not yet been determined.



2.2.5.5 Service Buildings

A building complex will be required in the concentrator area to house the offices, maintenance shops, warehouse, analytical and metallurgical testing laboratory, and changing rooms.

Similarly, the port area operations will require office spaces for various disciplines, warehouses, maintenance garage, etc.

The number and dimension of service buildings have not yet been determined.

2.2.6 Petroleum Products Management

Use of diesel, fuel oil, gasoline, bunker C, and potentially LNG is anticipated for the Project. Storage and management of these products will be required in the mine, concentrator and the port areas. Special storage equipment would be needed for LNG if that alternative is viable.

Petroleum products will be used to operate machinery, to fuel ships, in the mineral processing and for emergency generators. In addition, petroleum products will be used as the sole power source during the construction phase and until Hydro-Québec's power line is in operation.

2.2.7 Explosive Management

Explosive manufacturing and storage facilities will be located close to the mine pits. Exact locations have not been determined at this stage of the Project. The explosives will be manufactured on site.

2.2.8 Reclamation and Closure

At this stage in Project development, a reclamation and closure plan has not been developed. A site restoration plan will be submitted to the Québec's *Ministère des Ressources Naturelles* (MRNF) before the beginning of the construction phase. Discussions will be held with the Inuit with regards to potential reuse of some facilities/infrastructures by them.

2.3 Infrastructures External to the Project – Power Line

One important infrastructure related to the Hopes Advance Project to support the mine operations is a grid power line. However, Oceanic Iron Ore Corp. is not the proponent of this project and it is not intended for the exclusive use of the Hopes Advance Project.

Oceanic Iron Ore Corp. will review the option of tying into the Hydro-Québec power grid with the installation of a new power line from the most suitable northern Québec generating station (possibly Brisay or Laforge 2) to the mine site in the event that Hydro-Québec advances the transmission line. The ultimate requirement of the Hopes Advance Project will approximate 220 MW considering the 20 million tonnes per year of concentrate production. Oceanic Iron Ore anticipates increasing its output capacity from 10 to 20 million tonnes per year concentrate to coincide with the availability of grid power in the future, once Hydro-Québec has advanced the transmission line.



2.4 Emission, Discharges and Waste

2.4.1 Mine Waste Management

2.4.1.1 Waste Rock

Five potential waste rock stockpile footprints could provide sufficient waste rock storage (1,000 M-m³) with all drainage directed to the Red Dog River watershed (Figure 1). The proximity of waste rock stockpiles to open pit mines to reduce haul distance is an important consideration. Potential waste rock stockpile locations are currently being evaluated with regard to geotechnical, geochemistry, environmental and social criteria.

2.4.1.2 Tailings

Preliminary data indicates a life-of-mine production of about 918 million tonnes of tailings requiring a storage volume of approximately 600 million cubic metres. An assessment of alternative tailings sites, including supporting geotechnical, geochemistry, environmental and social investigations, is currently being carried out. Four potential Tailings Management Areas (TMAs) were identified for further evaluation (Figure 1) and a preferred TMA will be recommended. Placement of tailings in a mined out open pit may be considered, depending on the order of pit mining and availability of an open pit for this purpose. Use of an open pit for tailings disposal would reduce the volume of tailings placed on surface in a TMA.

2.4.2 Industrial Water Management

Industrial water management includes the following components: mine water, waste dump run-off, TMF run-off, industrial site run-off (e.g., concentrator area), and excess process water.

According to the topography, the mine sites will be partly surrounded by a network of ditches that will divert clean surface runoff water toward the receiving bodies of water. Water will be recycled as much as possible and some proportion of fresh water (make up water) will be required for mineral processing. The fresh water is anticipated to come from Ford Lake, but alternatives will be evaluated. All industrial wastewater will be managed according to its quality and the environmental discharge objectives, that is to say:

- storage for settling and polishing; and
- treatment, if required, followed by discharge in the receptor body of water.

At this time, the location of the outfall is not yet determined.

2.4.3 Atmospheric Contaminant

Mining and metallurgy requires significant amounts of energy and fuel. The Project area including the northern village of Aupaluk is not currently serviced by Hydro-Québec's electricity and thus the Project requires building a fossil fuel power plant and will incidentally contribute to greenhouse gas emissions (amount not calculated yet). Alternate sources of energy such as hydroelectricity, when it becomes available, instead of fossil fuels are, therefore, being considered.



2.5 Activities Phases and Schedule

The preliminary timeline of the Project is articulated around the following dates:

Table 2: Preliminary Timeline of the Project

Phase	Beginning	End
Feasibility study	2012	2013
Environmental and Social Impact Assessment (ESIA)	2011	2014
Construction <ul style="list-style-type: none"> ■ Land clearing ■ Excavating and infilling ■ Blasting and drilling ■ Installing structures ■ Dredging and disposal of dredged sediment (port) 	2014	2016
Start-up & commissioning	2016	2017
Production <ul style="list-style-type: none"> ■ Mining activities (blasting and hauling, waste and petroleum product management, maintenance of structures) ■ Shipping (transshipment, vessel traffic including icebreaker) 	2016	2065
Closure and site restoration	2065	2068

3.0 PROJECT LOCATION

The Project is located in the region of Nunavik in Québec, on the western side of Ungava Bay, and close to the northern village of Aupaluk (Figure 1). The centroide of the Project area is approximately 69° 58' 40.265" W / 59° 17' 9.631" N.

Besides Aupaluk, the communities nearby are Kangirsuk (around 80 km north of Aupaluk) and Tasiujaq (around 70 km south of Aupaluk). Kuujuaq, the largest community of Nunavik, is located approximately 150 km south of Aupaluk.

The Project falls within Inuit territory governed by the James Bay and Northern Québec Agreement (JBNQA). The majority of the claims are located on Category III lands. However, a portion of the claims is located south of Red Dog River that is on Category II lands, but at this time, no mining activity is planned on these lands.



OCEANIC IRON ORE CORP.'S HOPES ADVANCE PROJECT PROPONENT'S DESCRIPTION OF A DESIGNATED PROJECT

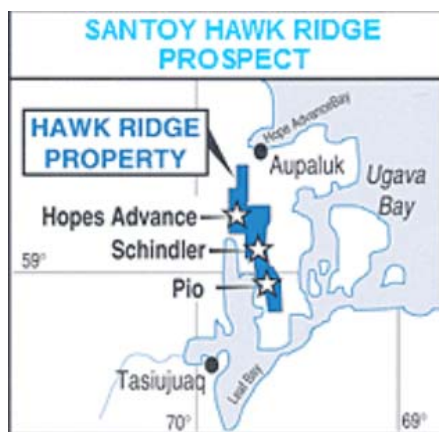
There are no roads in Nunavik outside the villages. As such, air transportation keeps the communities connected year-round, and the summer sealift ensures the delivery of necessary non-perishable food and supplies. It should be noted that a local airport is located in the village of Aupaluk and a historical airstrip is located at the project site. Locally, the Inuit depend on snowmobiles, all terrain vehicles and motor boats for transportation and traditional activities.

The rights on the deposit of the Hopes Advance Area are owned by Oceanic Iron Ore Corp., which holds 1,132 claims covering 491 km². All the lands concerned by the Project are public domain. Figure 1 shows the delimitation of the Oceanic Iron Ore Corp. properties of the Hopes Advance Area.

Only a few residences are located near the Project area. Four fishing cabins are sited at the mouth of Red Dog River on the south shore and two others close to Red Dog Lake (Figure 1). These cabins belong to Aupaluk residents. Another cabin is found near the proposed port facilities and an old village with a few inhabited cabins are upstream (west) of the port location.

For Aupaluk community and other stakeholders, the most valued areas and natural resources in the Project area are fish and fish habitats within Hopes Advance Bay, the lakes and the rivers (especially Red Dog River, Ford Lake and Saint-Fond River). Caribou, duck, geese, seal and beluga hunting and berry-picking areas represent other valued land in the Project area. Hopes Advance Bay is also important for seafood collection such as mussels and clams.

Another mining project is located in vicinity of the Project area. The Hawk Ridge mine project (Nickel North Exploration Corp.) is located south of Aupaluk (Figure 2) and is at the stage of advanced exploration. The commodities are copper, nickel, platinum, palladium and gold.



Source: Virginia Energy Resource website (<http://www.virginiaenergyresources.com/s/HawkRidge.asp>)

Figure 2: Hawk Ridge Project Location

Photographs of Project area can be found in Appendix A.



4.0 FEDERAL INVOLVEMENT

To date, the federal authorities have not proposed financial support for the Project. However, Oceanic Iron Ore Corp. is pursuing ongoing talks with Transports Canada representatives to determine whether there may be funding available at the federal level with respect to a deep water port at Ungava Bay. Oceanic Iron Ore Corp. does not anticipate financial support from the federal government concerning the airstrip.

No federal lands are part of the Project area.

We anticipate that the following federal acts or regulations may apply for the design and operation of the project:

- Migratory Birds Convention Act, 1994;
- Fisheries Act;
- Navigable Waters Protection Act;
- Explosives Act;
- Arctic Waters Pollution Prevention Act;
- Species at Risk Act;
- Canadian Environmental Assessment Act, 2012;
- Ammonium Nitrate Storage Facilities Regulations; and
- Migratory Birds Regulations.

N.B. Please note that the list of requirements above is provided as an indication only and is based on technical knowledge and experience. It does not constitute or intend to replace a legal opinion on the same.

5.0 ENVIRONMENTAL COMPONENTS AND MAIN CONSTRAINTS TO THE PROJECT

5.1 Physical Environment

Physical components include hydrology and coastal processes; surface water and sediment quality; hydrogeology and groundwater quality; soil and terrain; climate and air quality; and noise and vibrations. The next section describes the components from which relevant data are already available.

5.1.1 Hydrology and Coastal Processes

The watercourses within the Project area belong to the Hudson Bay Seaboard drainage basin, and more specifically, the Leaf River watershed. The main lakes within the region (i.e., Ford, Red Dog, Ippialuup and



Ungallijuap Qamaninga lakes) all drain into the Red Dog River, which in turn flows into Hopes Advance Bay, a part of Ungava Bay. From another watershed, the Saint-Fond River also flows into the Ungava Bay north of the Project area.

Apart from the Red Dog River and Saint-Fond River, only small to medium streams are found in the Project area. From preliminary surveys, many rapids, cascades or braided sections with very low depth were observed in these streams. However, some channels of up to 1 metre in depth are present in some sections of these streams.

With a mean tidal range of 8.2 metres, Hopes Advance Bay is amongst the top 30 locations around the world where the largest range of tides has been observed. Normally, Ungava Bay begins to freeze up around mid-November and ice begins to break up around mid-June, creating a seven month ice cover.

5.1.2 Surface Water and Sediment Quality

Water and sediments (substrate of fine particles) were collected in September 2011 in lakes and watercourses of the Project area for analysis.

Water quality analysis showed low nutrient concentrations typical of oligotrophic and uncontaminated lakes. Typically the metal concentrations were below detection limits, and below federal or provincial guidelines.

In general, sediment quality analysis showed low metal concentrations into lake and river sediments.

5.1.3 Soil and Terrain

Surficial deposits within the Project area consist mainly of sediments deposited from melt water and floating ice in marine waters, during deglaciation and subsequent regression that have been classified as lag glaciomarine deposits. Also found in the Project area are till blanket (thick and continuous) and till veneer (thin and discontinuous, areas of rock outcrop) glacial deposits.

The land within the Project area is inclined towards Ungava Bay, which is surrounded by land that is at sea level. Furthermore, aside from a series of low hills reaching a maximum height of around 110 metres north of Ford Lake, the rest of the Project area is relatively flat (mean elevation of around 40 m), and has been grouped within a slope gradient class of 10-15%.

The Project area is located within the zone of continuous permafrost, within which the layer of permafrost can reach thicknesses of about 25 m.

5.2 Biological Environment

Biological components include vegetation and wetlands, mammals, birds, reptiles, amphibians and fish/fish habitat. Particular attention has been paid to protected areas and to species of special concern.

5.2.1 Protected Areas

The closest protected area, located 15 km south of the Project area is called the *Réserve de parc national du Québec de la Baie-aux-Feuilles*. This area is entirely located outside of the Project area.



No Important Bird Area (IBA) has been identified within the Project area.

5.2.2 Vegetation and Wetlands

The Project area is located within the low subarctic, shrub arctic tundra bioclimatic domain. In this domain, willows (*Salix* spp.) and birch (*Betula* spp.) grow alongside herbaceous species (mostly graminoids), mosses and lichens. The vegetation canopy rarely grows beyond two metres.

The Project area is found within the natural province of the Ungava Bay basin (called natural province K), an area of 103,000 km² of which 3,136 km² consist of wetlands. These wetlands, which are for the most part unclassified, likely include:

- Peatlands, as well as swamps and marshes, bordering lakes and streams;
- Important wetlands in some estuaries and sheltered bays along Ungava Bay; and
- Fens and palsa bogs (influenced by the permafrost) along the Ungava Bay coast.

5.2.3 Mammals and Birds

The following large mammal species are present in the Project area: caribou (*Rangifer tarandus*, Leaf River caribou herd), muskox (*Ovibos moschatus*), red foxes (*Vulpes vulpes*), marten (*Martes americana*), wolves (*Canis lupus*), polar bears (*Ursus maritimus*), Canada lynx (*Lynx canadensis*), and arctic foxes (*Alopex lagopus*). The habitat is suitable for Wolverine (*Gulo gulo*), but no verified reports of this species in Québec exist since 1978.

The following marine mammals (amongst others), based on their general distribution, may frequent Hopes Advance Bay: harbour seal (*Phoca vitulina*), bearded seal (*Erignathus barbatus*), ringed seal (*Pusa hispida*), beluga whale (*Delphinapterus leucas*, Ungava Bay population), Sei whale, (*Balaenoptera borealis*), and Blue whale (*Balaenoptera musculus*).

Some 37 bird species were reportedly observed in the Red Dog Lake area. Most of them only migrate through the region, but the peregrine falcon (*Falco peregrines*) uses the area for reproduction and 5 more species may potentially use the area for this same purpose: snow goose (*Chen caerulescens*), Canada goose (*Branta canadensis*), greater scaup (*Aythya marila*), herring gull (*Larus argentatus*), and king eider (*Somateria spectabilis*). Among the species observed at or near the project area are peregrine falcon, golden eagle (*Aquila chrysaetos*), common eider (*Somateria mollissima*), black guillemot (*Cepphus grylle*), surf scoter (*Melanitta perspicillata*), and several species of seagulls.

5.2.4 Reptiles and Amphibians

No reptile or amphibian species distributions go as far north as the Project area.

5.2.5 Fish and Fish Habitat

The following fish species have been captured during gillnet and electric fishing surveys performed in September 2011:



- Lake trout (*Salvelinus namaycush*)
- Arctic char (*Salvelinus alpinus*)
- Brook trout (*Salvelinus fontinalis*)
- Round whitefish (*Prosopium cylindraceum*)
- Mottled sculpin (*Cottus bairdi*)
- Ninespine stickleback (*Pungitius pungitius*)
- Threespines stickleback (*Gasterosteus aculeatus*)
- Burbot (*Lota lota*)

Although not captured during the September 2011 survey, the following fish species, amongst others, are also likely to frequent the Project surrounding area according to their general distribution: northern pike (*Esox lucius*), suckers (*Catostomus* spp.), lake whitefish (*Coregonus clupeaformis*) and some Cyprinid species. Amongst marine and anadromous species, Greenland halibut (*Reinhardtius hippoglossoides*), Atlantic cod (*Gadus morhua*) and Atlantic salmon (*Salmo salar*) inhabit Ungava Bay.

The marine benthic community of the region includes such species as: Iceland scallop (*Chlamys islandica*), blue mussels (*Mytilus edulis*) and clams (*Mya arenaria*) which can be found off the shores of Hopes Advance Bay.

5.2.6 Species of Special Concern

Some species or populations in the Project area are protected at the federal level by the Species at Risk Act (SARA) and/or at the provincial level by the Act respecting threatened or vulnerable species (LEMV). In addition, migratory bird species are protected by the Migratory Birds Convention Act, 1994, administered by the Canadian Wildlife Service of Environment Canada in collaboration with the Canadian provincial and territorial governments.

According to the *Centre de données sur le patrimoine naturel du Québec* (CDPNQ), no floristic species at risk or any important terrestrial habitats have been recorded within the Project area (Benoît Larouche, August 2011, pers. comm.). It should be noted, however, that the lack of special status species in the Project area may simply be a result of a lack of field investigations in this remote area of Québec.

The following special concern wildlife species are present in the Project area:

- Peregrine falcon *tundrius* (*Falco peregrinus tundrius*): susceptible of being designated threatened or vulnerable according to the LEMV and listed as a special concern species according to the SARA.
- Golden eagle (*Aquila chrysaetos*): listed as vulnerable according to the LEMV and not at risk according to Committee on the Status of Endangered Wildlife in Canada (COSEWIC).
- Polar bear (*Ursus maritimus*): listed as vulnerable under the LEMV and of special concern by COSEWIC.
- Ungava Bay beluga whale (*Delphinapterus leucas*) population: susceptible of being designated endangered or vulnerable under the LEMV, has been designated endangered by COSEWIC and is under consideration for listing under the SARA.



- Eastern Arctic population of Bowhead whale (*Balaena mysticetus*): listed in Schedule 2 of SARA as endangered.

Based on their general distribution, the following species listed as a special status species might possibly be found in the Project area:

- Wolverine (*Gulo gulo*): designated threatened in Québec according to the LEMV and endangered according to SARA.
- Harlequin duck (*Histrionicus histrionicus*): designated as special concern species by the SARA.
- Red knot (*Calidris canutus*): susceptible of being designated threatened or vulnerable under the LEMV and endangered by COSEWIC.
- Rusty blackbird (*Euphagus carolinus*): susceptible of being designated threatened or vulnerable under the LEMV.
- Short-eared Owl (*Asio flammeus*): susceptible of being designated threatened or vulnerable under the LEMV.
- Atlantic cod (*Gadus morhua*): designated as special concern species by SARA.
- Fourhorn sculpin (*Trigloporus (Myoxocephalus) quadricornis*): susceptible of being designated threatened or vulnerable under the LEMV.

It should be noted that although the caribou, muskox, salmonids, Canada goose, snow goose, seals, and ptarmigan (*Lagopus* spp) are not officially listed as a special status species at the provincial or federal levels, they warrant a special mention as they are important to the local Inuit population.

5.3 Human Environment

Human components include socio-economic, land and resource use, archaeology, and landscape. The next section describes the components from which relevant data are already available.

5.3.1 Socio-economics

The Inuit community of Aupaluk is one of the fourteen Inuit communities in the Nunavik territory. In 2006, the total population in Aupaluk was 174, having increased by 9.4% since 2001. In 2006, the median age within the village of Aupaluk was 19.5 years, which is slightly younger than that of the Inuit population (22 years), and other indigenous groups (25 years), but is more than twice as young compared to the province of Québec (41 years).

Within the village of Aupaluk, 94.1% of the population can express themselves in Inuktitut (i.e., non-official language according to Statistics Canada), 60% of the population can converse in English, while 14.3% of the population can communicate in English and French.

The region is developing slowly and its economic situation is still precarious due to its dependence on government assistance. This limited development is attributed to the climatic constraints, the scattered resources, the distance from major cities, and the lack of a skilled work force.



5.3.2 Land and Resource Use

Inuit subsistence and game harvesting (hunting, fishing and trapping) occurs along the coast as well as inland. The region surrounding Aupaluk is entirely within UGAF 96 and hunting area 23.

Large game hunting starts around mid-November and continues into mid-May. During the summer period, the Inuit spend more time fishing and hunting marine mammals. Of particular interest is that, since 1998, licensed community hunts of the Bowhead whale (*Balaena mysticetus*) were permitted in Nunavik by the Federal Department of Fisheries and Oceans, when it was proven that the Bowhead, once almost at the point of extinction due to the activities of international whalers in the past two centuries, is now rebounding.

During meetings with Inuit representatives, the species of importance to the Inuit of Aupaluk that were mentioned are salmonids (arctic char, brook trout, lake trout), muskox, polar bear, seal, geese, ptarmigan, and caribou.

Makivik is currently performing an extensive study on land and resource use on Nunavik territory; the results will complete Makivik's database and GIS on that subject. Oceanic Iron Ore Corp. plans on acquiring the data from Aupaluk, Kangirsuk and Tasiujaq communities.

5.3.3 Archaeology

According to the ISAQ (*Inventaire des sites archéologiques du Québec*) database, 50 archaeological sites have been discovered near Aupaluk. The vast majority of those sites are located outside of the Project area. Only two archaeological sites are located close to some of the Project activities (Figure 3).

5.4 Main Apprehended Impacts

For the construction, operation and decommissioning phases of the Project, the identification of incidences addresses the physical, biological and human environments.

5.4.1 Physical Environment

The main environmental impacts and risks that will be assessed for the physical environment are:

- potential contamination of soil and water: concerning accidental spillage of petroleum products and other contaminants;
- effects on surface water quality and availability: concerning water runoff modification, higher suspended matter associated with potential subsidence and erosion risks and potential contamination from effluents;
- effects on hydrodynamic conditions in Hopes Advance Bay that could be created by frequent visits of large sea vessels throughout the year;
- effects associated with air quality: concerning dust and contaminants originating from the operations; and
- effects associated with noise and vibrations from the operations.



5.4.2 Biological Environment

The main environmental impacts that will be assessed for the biological environment are:

- effects on vegetation and wetlands: considering loss and modifications caused by new infrastructures, especially open mine pits, waste dumps and TMF sites;
- effects on fish habitat and fish populations: considering loss and modifications to fish habitat by new infrastructures, especially open mine pits, waste dumps and TMF sites, port infrastructure and water crossings; the effluents, and effects associated with drainage and erosion;
- effects on terrestrial and avian fauna (including migratory birds); considering loss and change of habitat created by new infrastructures, especially open mine pits, waste dumps and TMF sites; perturbation caused by the workers' presence as well as noise and vibrations;
- effects on marine mammals: considering the port construction (dredging and potential blasting) and perturbation caused by vessel traffic.

For the biological environment, special attention will be given to species of concern and of interest to the Inuit.

5.4.3 Human Environment

As for the incidences on the social environment, the main impacts and benefits that will be assessed are the following:

- the current and anticipated future land and resource uses;
- the potential changes in traditional hunting, fishing, trapping, and gathering activities of the Inuit in the area;
- the number of jobs created by the Project in the local and regional native population;
- the introduction of a new economy within the Aupaluk and surrounding communities, which has little work experience with the mining industry, and what it can involve for the community in the short and long term;
- the expected short and long-term socio-economic benefits;
- the historical and archaeological sites;
- the visual integration of the Project in its environment;
- the demographic imbalance due to population influx of non-Inuit in a small Inuit community including possible intercultural and/or linguistic tensions;
- the effects on Inuit social organization and cohesion;
- the effects on community and worker's health and safety;
- the effects on humans associated with air quality;
- effects associated with noise from the mine site and port activities;



- the social acceptability of the Project for Inuit population and other stakeholders, particularly in the context of Plan Nord.

6.0 MODALITIES OF PUBLIC CONSULTATION WITH ABORIGINAL GROUPS

Oceanic Iron Ore Corp. initiated consultations with aboriginal groups in February 2011 before the beginning of the exploration program of the Hopes Advance Project. Consultations have continued during 2012.

Oceanic Iron Ore Corp. has prepared a consultation plan for the duration of the Project's ESIA. The objective of this plan is to gain traditional knowledge from the Inuit, so that the Project may be best adapted to their needs, and to keep the Inuit involved so that their participation into the Project is maximized. The consultations with the stakeholders will ensure that the ESIA report will include all measures required for the social acceptability of the Project.

At this stage, the consultation plan identifies the following potential stakeholders:

- Nunavik Landholding Corporation
- Kativik Regional Government (KRG)
- Makivik Corporation
- Makivik Research Centre
- Nunavik Mining Exploration Fund (NMEF)
- Nunavik Regional Board of Health and Social Services (NRBHSS)
- Avataq Cultural Institute
- Nunavik Hunting Fishing and Trapping Association (ANGUVIGAQ)
- Nunavik Tourism Association (NTA)
- Saputiit Youth Association
- Local community of Aupaluk
- Other local communities which use the land and resources within the Project area, notably Kangirsuk (North of Aupaluk) and Tasiujaq (South of Aupaluk)
- Groups or organizations from Nunavik with special interests.

For confidentiality purposes, we have not included the contact information. This information could be provided separately, on request.

Identification of stakeholders is an ongoing process; some new stakeholders may be identified during the consultation process and the baseline study.



The consultation program includes three key activities:

- 1) **Consultation on the current and anticipated land and resource uses** within the Project area. This activity will be conducted through interviews with key informants. These interviews will also be an opportunity for Inuit to propose suggestions for the subsequent consultation activities in accordance with their interests and preferences. Taking into account these suggestions will ensure an adequate consultation process. This activity has already begun. Meetings were held in Aupaluk and Kuujuaq in September 2011, December 2011, March 2012 and July 2012, and will continue until the ESIA is filed with the authorities.
- 2) **Identification of stakeholders' issues and concerns on potential impacts of the Project and identification of the appropriate mitigation measures.** This activity will be conducted once the prefeasibility study is completed so that details on the project preliminary design can be provided. This activity will likely be based on public consultation sessions and be completed with focus groups on specific matters;
- 3) **Disclosure of the draft ESIA** through public consultation sessions.

The Inuit have expressed some concerns and some optimism during the initial consultation activities. People believe the project will trigger opportunities for jobs; training and partnership, but to them, this also means that the development of the project should maximize training, employment and business opportunities that would benefit most of the local people. Concern has also been raised about potential social consequences due to salary imbalance between Inuit workers and the rest of the community. Also, the potential effect on Inuit organization caused by the loss of qualified employees for the mine has been mentioned. The possible rise in drug and alcohol consumption is also a concern.

Concern has been raised about loss and deterioration of wildlife habitat due to the project. Also, game fishing and hunting from non-Inuit workers could potentially be a problem on wildlife stocks. Other preoccupations are archaeology sites that may be important in the project area. Land reclamation has also been identified as an important issue.

It should be noted that issues, concerns and expectations are those recorded during the consultation without any judgement on their legitimacy. At this stage of the project, all the concerns and comments are taken into consideration and will be addressed during the next steps of the ESIA as well as the project design.

For the Aupaluk community stakeholders, the most valued areas and natural resources in the project area are fish and fish habitats within Hopes Advance Bay, the lakes and the rivers (especially Red Dog River, Ford Lake and Saint-Fond River). Caribou, muskox, ducks, geese, ptarmigan, seals, polar bears, beluga and berries are other valued resources in the region, including the project area. Also, seafood such as mussels and clams are collected in the Hopes Advance Bay.

The proceedings of the consultation activities will be appended to the ESIA report. Table 3 summarizes the consultation activities carried out to date.



Table 3: Consultation Carried Out to Date

Name	Date of Consultation	Means of Communication
Kativik Municipal Housing Bureau (KMHB)	December 2011 and March 2012	Interviews with representatives
Kativik Regional Government	December 2011 and March 2012	Interviews with representatives
	July 2012	Project update review with senior representatives
Northern Village (NV) of Aupaluk	September 2011, December 2011 and March 2012	Interviews with representatives
Makivik Corporation	September 2011, December 2011 and March 2012	Interviews with representatives
	July 2012	Project update review with senior representatives
Makivik Research Centre	September 2011	Interviews with representatives
Nunavik Mineral Exploration Fund	September 2011 and December 2011	Interviews with representatives
Wildlife Protection Office of Kuujjuaq	December 2011	Interviews with representatives

7.0 CONSULTATION WITH THE PUBLIC AND OTHER PARTIES

Besides stakeholders directly related to Inuit communities, other stakeholders have been identified:

- Organizations and Government Ministries; and
- Non governmental organizations (NGOs) from the South with special interests who have the ability to influence the Project's outcome (to be identified).

Identification of stakeholders is an ongoing process; some new stakeholders may be identified during the consultation process and the baseline study. No consultation activity has yet been initiated on groups unrelated to the Inuit Communities.

8.0 COMMENTS

I hereby certify that all the information mentioned in the present Proponent Preliminary Information is true and exact to the best of my knowledge and belief.



9.0 SIGNATURES

GOLDER ASSOCIÉS LTÉE

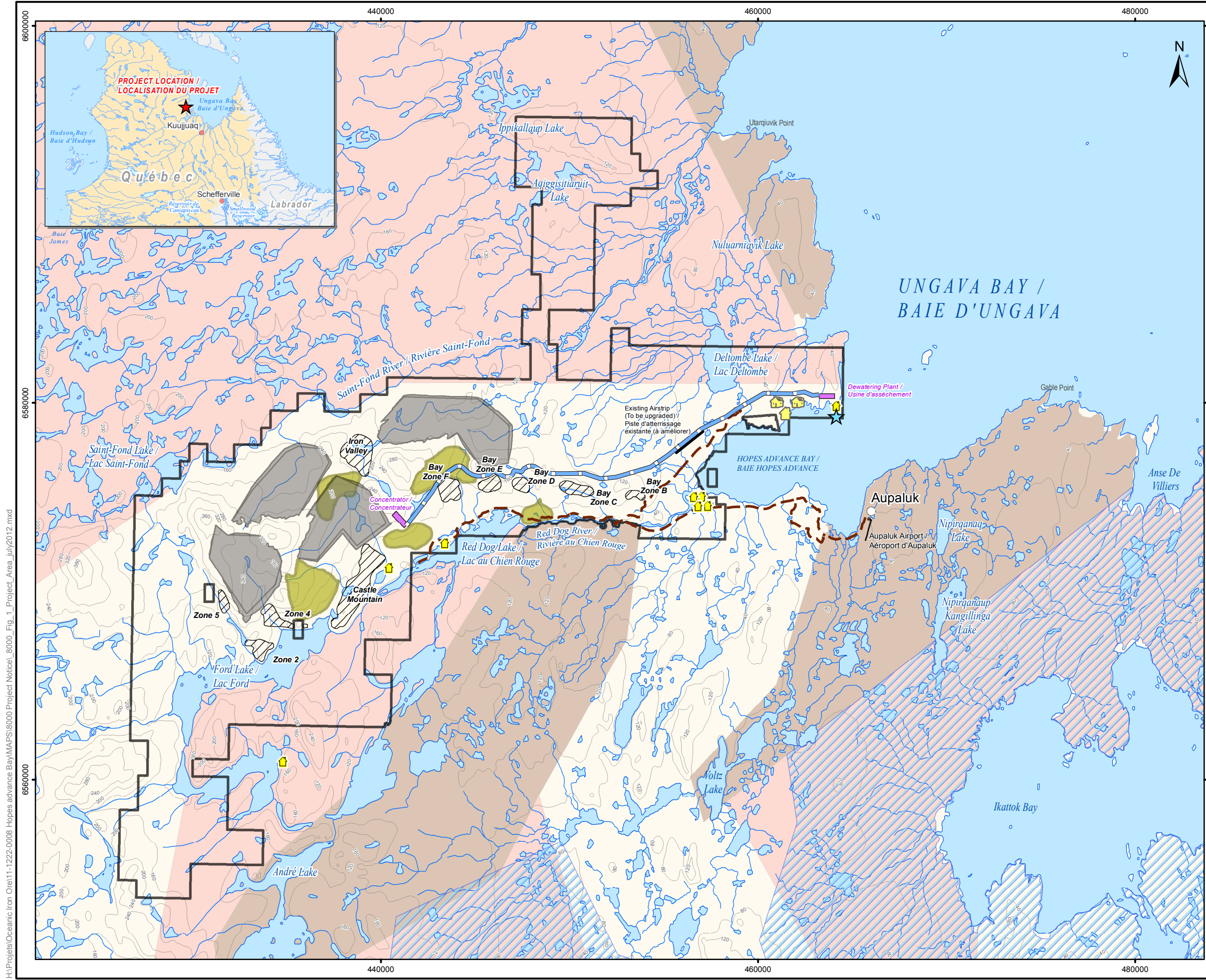
Red Méthot, M.Sc.
Project Manager

Christine Guay, M.Sc.
Project Director, Associate

OCEANIC IRON ORE CORP.

Eddy Canova
Project Manager
Alan Gorman
Chief Operational Officer

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LEGEND / LÉGENDE

- ★ Proposed Port / Port projeté
- Proposed Concentrate Pipeline / Pipeline de concentré projeté
- ▨ Proposed Pit Area / Aire des fosses projetées
- Tailing Management Area (TMA) Option / Option de parc à résidus (PAR)
- ▭ Land Claim (491 km²) / Propriété minière (491 km²)
- Proposed Waste Dump / Halde à stérile projeté
- ▨ Baie-aux-Feuilles Québec National Park Reserve / Réserve de parc national du Québec de la Baie-aux-Feuilles
- 🏠 Fishing Cabin / Cabane de pêche
- 🏠 Old Village / Ancien village
- Existing Road / Route existante

Land Category (JBNQA) / Catégorie de terre (CBJNQ)

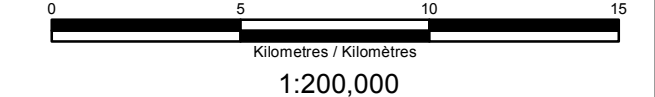
- I - Lands surrounding villages that are set aside for the exclusive use and benefit of the Inuit / Terres attribuées aux Inuit pour leur usage exclusif.
- II - Public lands with hunting, fishing and trapping rights exclusive to the Inuit / Terres publiques sur lesquelles les Inuit ont des droits exclusifs de chasse, de pêche et de piégeage.
- III - Public lands with rights to the Inuit for hunting, fishing and trapping without a permit, without limit and at all times, subject to the conservation principle / Terres publiques sur lesquelles les Inuit possèdent un droit de chasse, de pêche et de piégeage, et ce, sans permis, sans limite de prise et en tout temps, sous réserve du principe de conservation.

Topography / Topographie

- Contour line (m) / Courbe de niveau (m)
- Watercourse / Cours d'eau
- Waterbody / Plan d'eau

REFERENCES / RÉFÉRENCES

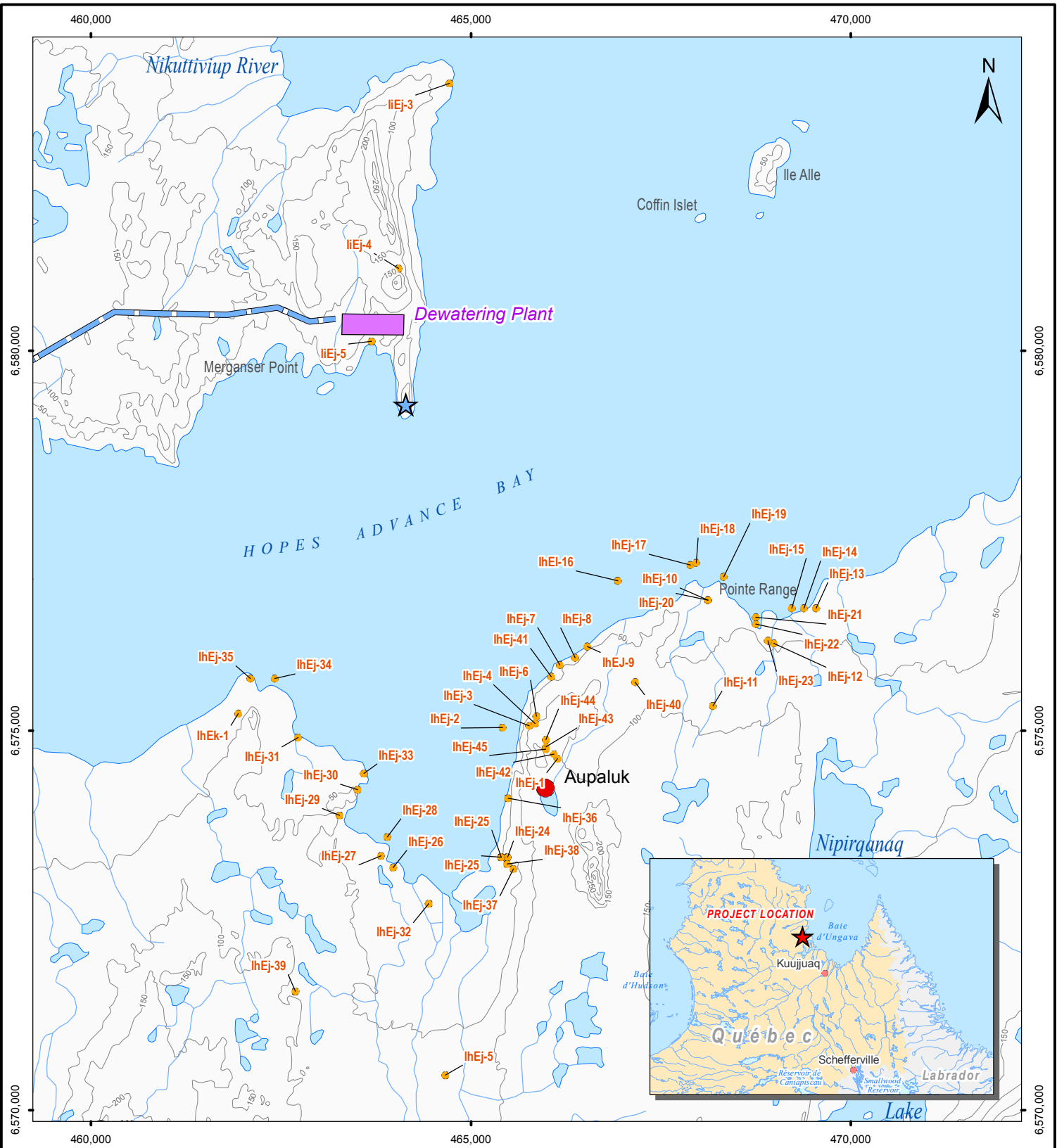
Data / Données: Topo Canvec 250K ©MNR / Canvec Topo 250K ©NRC.
 Oceanic Iron Ore Corp. 2011. Hopes Advance Bay Property -
 OSD Pipelines DWG no. 04201-DGL-003 (21-05-2012)
 Projection / Projection: NAD 83, UTM zone 18N.



PROJECT / PROJET				
OCEANIC IRON ORE CORP. - HOPES ADVANCE PROJECT				
DESCRIPTION OF A DESIGNATED PROJECT /				
DESCRIPTION D'UN PROJET DÉSIGNÉ				
TITLE / TITRE		Project Area and Proposed Components / Aire du projet et composantes projetées		
	Project # / # Projet:	11-1222-0008-8000	Figure 1	
	Designed by / Projetée par:	R. Méthot		2012-07-27
	GIS / SIG	E. Duong		2012-07-27
	Checked by / Vérifiée par:	R. Méthot		2012-07-27
	Approved by / Approuvée par:	M. Kelly	2012-07-27	

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H:\Projets\Oceanic Iron Ore\11-1222-0008 Hopes advance Bay\MAPS\8000 Project Notice_8000_Fig_3_Archaeological_Sites_july_2012.mxd



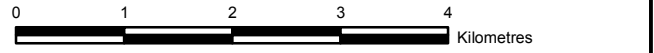
LEGEND

- | | |
|---------------------------------|---------------------|
| Archaeological Features | Topography |
| ● Known Archaeological Site | — Contour Line (ft) |
| Proposed Infrastructures | ~ Watercourse |
| ★ Port | Waterbody |
| — Proposed Concentrate Pipeline | |
| ■ Mine Infrastructures | |

REFERENCES

Data: Natural Resources Canada - Canvec 1:250 000 ; Oceanic Iron Ore Corp. 2011-Hopes Advance Bay Property, Project Conceptual Layout, Slide 31 of a Powerpoint Presentation presented in August 2011 ; Jean-Jacques Adjizian, MCCCFC, 19 July 2011, pers. comm

Projection: NAD 83, UTM zone 19N.



PROJECT
OCEANIC IRON ORE CORP. – HOPES ADVANCE PROJECT
DESCRIPTION OF A DESIGNATED PROJECT

TITLE
Known Archaeological Sites

<p>Montréal, Québec</p>	# Project: 11-1222-0008-8000		
	Planned by: R. Méthot	2012-07-27	Rev. 0
	GIS: E. Duong	2012-07-27	
	Checked by: R. Méthot	2012-07-27	
	Approved by: M. Kelly	2012-07-27	

Figure 3



APPENDIX A

Photographs



APPENDIX A

Photos of Project Area / Photographies de la zone du projet



Photo 1. Fishing cabins at Red Dog River / Cabanes de pêche à la rivière au Chien Rouge



Photo 2. Red Dog Lake / Lac au Chien Rouge



Photo 3. Red Dog River / Rivière au Chien Rouge



Photo 4. Waterfall on the Red Dog River / Chute sur la rivière au Chien Rouge



Photo 5. Stream in the project area / Ruisseau dans la zone du projet



Photo 6. Vegetation of the project area / Végétation dans la zone du projet

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