Kiggavik Project
Final Environmental Impact Statement

Tier 1 Appendix 1E:
Cumulative and Transboundary Effects

September 2014

History of Revisions

Revision Number	Date	Details of Revisions
01	December 2011	Initial release Draft Environmental Impact Statement (DEIS)
02	September 2014	FINAL Environmental Impact Statement

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Abbreviations

AANDC ..... Aboriginal Affairs and Northern Development

BQCMB ..... Beverly Qamanirjuaq Caribou Management Board

CF ..... Commercial Fisheries

EN ..... Energy (e.g. dams and powerlines)

FEIS ..... Final Environemtnal Imapct Statement

GN ..... Government of Nunavut

LAA ..... Local Assessment Area

MI ..... Mining and Exploration

MU ..... Municipalities

NIRB ..... Nunavut Impact Review Board

PA ..... Protected and Designated Areas (e.g. parks, sanctuaries)

PIL ..... Project Inclusion List

RAA ..... Regional Assessment Area

TMF ..... Tailings Management Facility

TR ..... Transportation (e.g. road, rail, port)

TO ..... Tourism

TU ..... Traditional Harvest and Land Use

1 Part 1: Cumulative Effects

1.1 Project Inclusion List

The environmental assessment, including both project and cumulative effects, considers four possible cases (Base Case, Project Case, Future Case, and Far Future Case) as described in Volume 1, Section 4.4.2. The Project-related effects assessment is the *Project Case* – the current landscape in addition to the proposed project. To support the cumulative effects assessment for the Project, a Project Inclusion List (PIL) (Attachment A) was developed that includes all past, present and reasonably foreseeable projects, activities and actions that fall within the Regional Assessment Area (RAA) boundaries of each of the Valued Ecosystem Components (VECs). For the cumulative effects assessment, the projects or activities listed in the project inclusion list are categorized as *Base Case or Future Case.* The combination of the *Project Case* with the *Base Case* and *Future Case* allows determination of the Project's contribution to cumulative effects of all past, present and reasonably-foreseeable projects and activities. The *Far Future Scenario* is described below in section 1.1.2.

The PIL was partially informed by the Aboriginal Affairs and Northern Development Canada Geosciences website (Aboriginal Affairs and Northern Development Canada 2014) in 2011 prior to the submission of the DEIS. This resource has been unavailable since November 2013 and was not further updated prior to FEIS submission so the PIL may contain cancelled claims, prospecting permits, or leases. The PIL was updated for the Final Environmental Impact Statement (FEIS) based on information publically available in the 2013 Nunavut Mineral Exploration Overview (Aboriginal Affairs and Northern Development Canada 2013), data contained on the InfoMine online database (InfoMine Inc. 2014), Government of Manitoba Mineral Resources, Government of Saskatchewan Ministry of Environment, and information provided by the Beverly Qamanirjuaq Caribou Management Board (BQCMB). Additional online resources and publically available literature were used to provide addional information on projects and activities. Spatial data was provided by:

- Aboriginal Affairs and Northern Development Canada
- Government of Nunavut
- Government of Manitoba Mineral Resources
- Government of Saskatchewan Ministry of Environment.

The PIL includes the following categories listed according to the prefix:

- CF - Commercial Fisheries
- EN - Energy (e.g. dams and powerlines)
- MI - Mining and Exploration

- MU - Municipalities
- PA - Protected and Designated Areas (e.g. parks, sanctuaries)
- TR – Transportation (e.g. roads, rail lines, and ports)
- TO - Tourism (e.g. guide and outfitting)
- TU - Traditional Harvest and Land Use

Mineral and exploration projects included in the PIL are further categorized to indicate the level of activity that may be expected (Table 1.1-1).

Table 1.1-1 Description of Mineral and Exploration Projects Included in PIL

PIL Activity (Column B)	Project Stage	PIL project Status	Description
Mining- Lease/Prospecting	Lease or Claim Holding	Far Future	Lease or claim holding that may have some level of low impact activity (till sampling, prospecting, airborne surveys) that does not require regulatory approval[1].
Mining- Exploration	Active Exploration	Base Case	Currently or previously conducted exploration activities that required a Nunavut Impact Review Baord (NIRB) Screening for activity or similar provincial or territorialregulatory approval
Mining- Proposed Mine	Transition to Operation (Reasonably Foreseeable)	Future Case	Letter of intent submitted or proposed mine currently under review by regulatory agency
Mining- Operating Mine	Operating	Base Case	Currently operating mine
Mining- Past/Inactive	No current activity	Base Case	Previously active mine or exploration activity that is now identified as decommissioned, inactive, or in care and maintenance

The PIL includes all known projects and activities in Nunavut and projects and activities in Northwest Territories, Saskatchewan, Alberta and Manitoba that fall within the largest RAA boundary (i.e. terrestrial RAA) which is defined by i) the outer edges of the Lorillard, Wager Bay, and Ahiak caribou herds as described by Nagy et al. (2011) and the Qamanirjuaq and Beverly caribou herd annual ranges as described by the BQCMB (Beverly Qamanirjuaq Caribou Management Board 2005). For the remaining disciplines, the RAA, and the associated activities included in the cumulative effects assessment, vary according to the size of the discipline-specific RAA. Columns are included in the PIL to identify whether each individual activity is within or outside each discipline-specific RAA.

[1] these activities influence and are carried forward/considered in the *Far Future Scenario* for mine development. They are not addressed individually for likelihood to develop to operations.

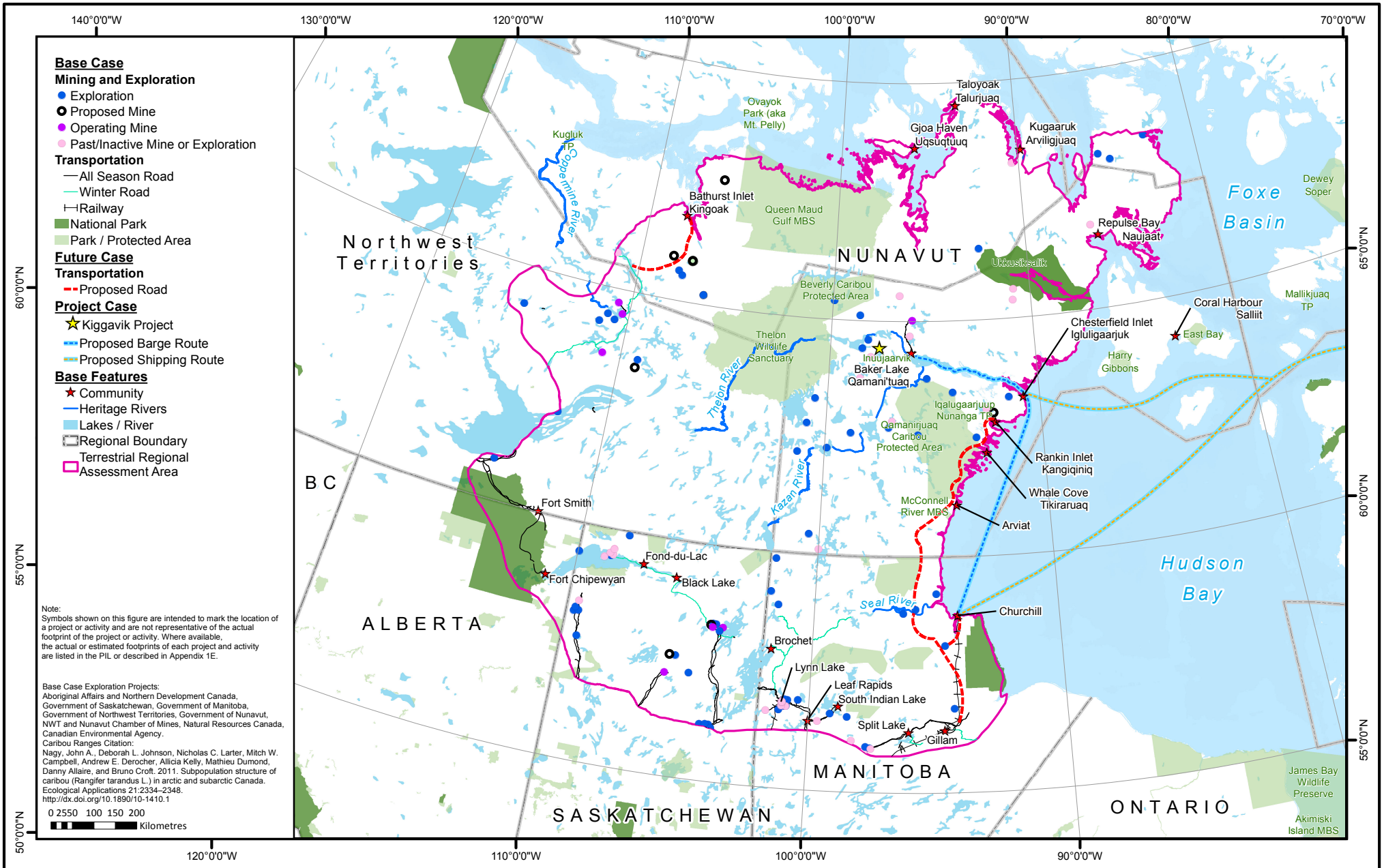
Marine transportation and port development activites are sometimes associated with the projects and activities listed in the PIL. The current shipping route through Hudson Strait and Hudson Bay provides access for resupply for a number of communities along the coast of Hudson Bay, industrial activities (e.g., Meadowbank Mine, Baffinland Mary River Project), and the import and export of goods and supplies from the Port of Churchill. The PIL includes identification of activities and projects that currently have, or have proposed to have associated marine transportation or port development. For example, marine transportation associated with community supply is considered under the listing of the municipalities included in the PIL. Table 1.1-2 summarizes all *base case* and *future case* projects and activities listed in the PIL.

Table 1.1-2 Summary of Past, Present and Reasonably foreseeable Projects Included in the PIL (indicated as number of projects or activities)

Activity		MB	NU	NWT	SK	AB	TOTAL
Mining and Exploration	Exploration	19	32	7	16	0	74
	Proposed Mine	0	6	1	2	0	9
	Operating Mine	0	1	3	3	0	7
	Past/inactive	12	21	0	5	0	38
Commercial Fisheries		0	1	0	0	0	1
Energy		1	2	0	2	0	5
Municipalities		7	25	2	2	1	37
Protected and Designated areas		6	10	1	7	8	32
Transportation[2]	All season road	809	217	455	766	5	2252
	Winter road	655	117	393	401	0	1566
	Railway	511	0	0	0	0	511
Tourism		0	7	0	0	0	7

Figure 1.1-1 shows all projects and activities identified within the terrestrial RAA. Figure 1.1-2 shows all projects and activities identified for within the marine and socio-economic RAAs. Figure 1.1-3 shows those projects and activities that fall within the aquatic and atmospheric RAAs.

[2] Roads and railways are indicated as total lengt (km) per province/territory



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Data Sources: *Natural Resources Canada, Geobase®, Nation Topographic Database, Areva Resources Canada Inc.*

FIGURE 1.1-1
Past, Present and Reasonably Foreseeable Projects Within theTerrestrial Regional Assessment Area

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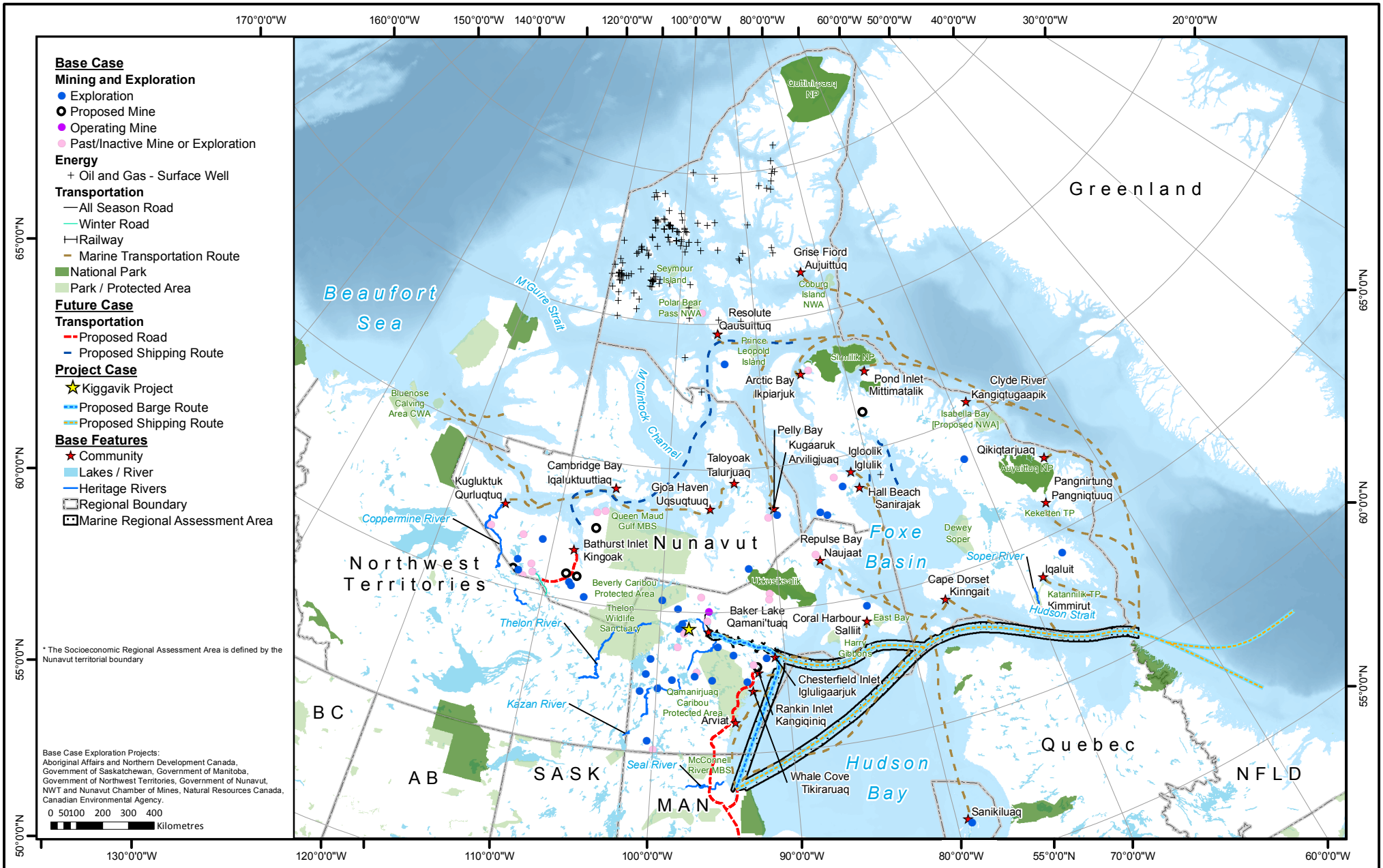

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FIGURE 1.1-2
Past, Present and Reasonably Foreseeable Projects Within the Marine Regional Assessment Area and Socioeconomic Regional Assessment Area

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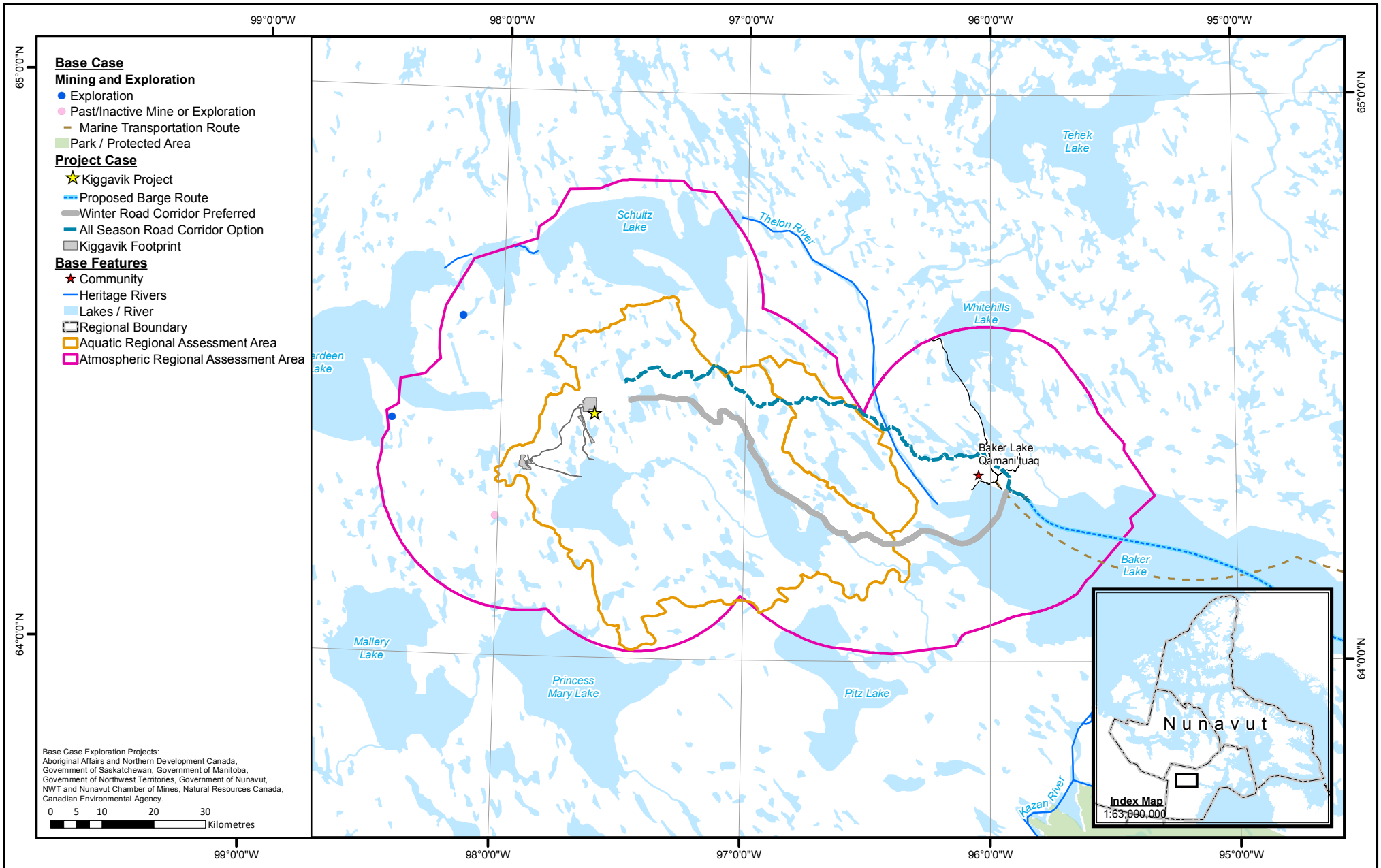

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FIGURE 1.1-3
Past, Present and Reasonably Foreseeable Projects Within the Atmospheric Regional Assessment Area and Aquatic Regional Assessment Area

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Traditional harvest is an activity on the landscape and AREVA has been advised that Inuit and other Nunavummiut use the land without bounds. Land use shape files are not included on on the figures. Volume 3 Engagement and IQ and Technical Appendix 1F contain more fulsome descriptions of traditional land use and it is included here to acknowledge its potential to act in combination with other activities.

Whereever possible, the footprint of disturbance for each of the projects and activities in the PIL is provided. Footprints for all proposed mining projects are provided based on information contained within project descritions, monitoring reports, or similar reports submitted by the proponents of each project. In some cases, conservative assumtions were made to estimate the footprint. Estimates of footprints for past or inactive mining projects were determined by using an average of the available known footprints (Lupin Mine and Jericho Diamond Mine). An explanation of the method for estimating the footprint for individual exploration footprints is provided below in section 1.1.1.

1.1.1 Exploration Footprints

Given the variability of individual exploration footprints by commodity, company, and year, there is little confidence that the collective exploration footprint in any given year will be comparable to the previous or following year, or over the duration of a mining project. The following text describes the approach to estimating a standard exploration footprint for inclusion in the PIL. This information is used in the terrestrial effects assessment and the cumulative effects assessment for caribou in particular (see Tier 2 Volume 6).

The mineral exploration activity for projects throughout Nunavut was used to quantitatively derive a project footprint for assessment of potential cumulative effects. Although exploration activities have occurred sporadically, information was publicly available on government ftp sites, which enabled the calculation of an average number of exploratory drill holes completed per year. With the absence of publicly available information for every active project in Nunavut, the calculated number of holes was limited to the information publicly available. The extent of activity differs by company, and fluctuates depending on market conditions. The conservative estimate of 60 drill holes was used in the exploration footprint calculation. With no differentiation between junior companies, or those undergoing review for development, the calculations are conservative when considering the majority of exploratory work is for preliminary project stages.

The number of land holdings is not an accurate indicator of exploration activity and the area of potential disturbance. Table 1.1-3 provides a summary of exploration activity in Nunavut and in the Kivalliq Region in particular to demonstrate the variability of exploration activities and intensity between years. Over the last 10 years from 2003 to 2013, active exploration projects in the Kivalliq Regions ranged from a low of nine projects in 2003 to a high of 38 projects in 2007. A number of land holdings have no activity or its potential disturbance and the intensity of exploration activities can vary from prospecting to geophysics to drilling. Airborne geophysics has ranged from a single project

in 2014 to a high of 12 in 2007. Drilling varies from three projects in 2004 to a high of 16 projects in 2011.

Table 1.1-3 Land Holdings and Exploration Intensity in the Kivalliq Region from 2003 to 2013[3]

Year	Nunavut					Kivalliq Region									
	Permits	Claims	Leases	Juniors ($M)	Seniors ($M)	Active Projects	Prospecting	Till sampling	Ground geophysics	Airborne geophysics	Drilling	Bulk Sampling	Mining	Uranium	Inactive
2003	464	7560	263	48.5	44.2	9	1	6	2	4	4	0	0	0	
2004	1875	10138	271	107.9	79.6	11	1	6	2	6	3	0	0	0	
2005	2267	9644	332	132.5	46.2	18	9	8	2	6	7	0	0	5	
2006	1395	6707	352	161.8	48.8	34	13	16	5	8	9	1	0	14	
2007	1057	7905	354	237.4	100.6	38	12	11	7	12	11	3	0	18	
2008	1041	8088	479	261.4	171.2	31	4	8	5	6	15	2	1 construction	14	
2009	394	7613	590	56.9	130.7	34	3	1	4	4	9	0	1 construction	12	
2010	477	7178	631	125.0	131.7	23	5	6	4	2	11		1	5	12
2011	314	6777	567	163.0	372.6	27	6	11	10	4	16	1	1	6	14
2012	259	6066	627	129.0	293.5	22	0	3	5	3	9	1	1	6	8
2013	196	5658	701	93.5	155.4	10	0	2	3	1	7	0	1	3	17

Source: AANDC 2013, AANDC 2012, AANDC 2011, INAC 2010a, INAC 2009, INAC 2008, INAC 2007, INAC 2006, INAC 2005, INAC 2004, INAC 2003

To address the variability in the number and types of exploratory activities each year, the assessment of cumulative effects conservatively assumes that the highest levels of exploration activity (as reported over the past 10 years) could occur in any given year. Based on this assumption and the information presented in Table 1.1-3, up to 16 drilling projects may be active in any given year.

[3] Values indicated in bold red print indicate the highest level of activity within the 10 year period from 2003 - 2013

Due to lack of information regarding project specific footprints, the conservative drill pad footprint of 20 meters by 20 meters, or 0.04 hectares (ha), from the *Mineral Exploration Guidelines for Saskatchewan* was used to calculate potential spatial disturbance from drilling. When considering the drilling equipment in Saskatchewan is larger than the heli-portable drills typical throughout Nunavut, this spatial disturbance isconsidered conservative. In addition to the drilling aspects of exploration programs, the spatial footprint of the camps, fuel caches, and core storage locations were included. The infrastructure footprint for the Kiggavik camp is approximately five hectares, thus it was assumed the typical infrastructure of each exploration company would be well represented by size of the Kiggavik camp, which is considered an advanced exploration site.

The spatial exploration footprint includes the following concepts/assumptions:

- It is believed that the conservative spatial estimate from the Saskatchewan guideline would sufficiently reflect the potential drilling disturbance for a Nunavut drill site
- As all levels of projects were considered, it is assumed that the average number of drill holes reflects a conservative estimate of potential drilling disturbance for exploration programs. With the information available, the averages for Nunavut wide projects was 53 drill holes per year (ranging from two to >200). The conservative estimate of 60 drill holes was used for the calculation.
- It is assumed that the typical infrastructure for an exploration program would be encompassed within a five hectare footprint similar to the current Kiggavik exploration site.

As such, the following calculation was used to derive an estimate of the annual exploration footprint for each of the mineral exploration projects included in the PIL:

(Average Number of holes (60) * Drilling Footprint (0.04 ha)) + Project Infrastructure (5 ha) = 7.4 ha

In other words, this work assumes 60 drill holes/camp/year as a standard program. As noted in Table 1.1-3 above, the highest number of drill programs in the Kivalliq Region over the last 10 years is 16.

1.2 Far Future Scenario

Consideration of a *Far Future Case* is not a widely accepted environmental assessment standard. The *Far Future Case* is heavily influenced by land use planning, policies, regional priorities, short and long term commodity prices, global competitiveness for investment, and many other factors. There are estimates of <1% of exploration projects advancing to become an operating, profitable mine (Eggert 2010, GNWT 2013, INAC 2010b). Of the 2,350 projects monitored by Indian and Northern Affairs (INAC; now AANDC) from 1971 to 2009, 20 advanced to production (INAC 2010b).

Given the uncertainty of claims with minimal prospecting or exploration activity developing into an active exploration site, and even less certainty for advanced exploration site or development of an operating mine, AREVA has developed a far future scenario based on regional assumptions rather than hypothetical success of individual properties.

It is recognized that exploration activities will continue in the vicinity of the Kiggavik Project, and that there is the potential for additional resources to be discovered during the life of the Project. To address such a possibility, a potential far future development scenario was developed. This scenario assumes additional deposits within a 200 km radius of the Kiggavik site, and the development of a non-uranium operation located within this area The Meadowbank gold operation is used as the model for this. It assumes additional resources are found in the Meadowbank area, and that operation of Meadowbank continues. The following projects and activities are included in the development scenario.

Due to the lack of information regarding the specific details of potential future developments (e.g., footprint of projects and activities), the assessment of cumulative environmental effects under the Far Future Case is by definition qualitative and is limited to a description of how these projects, activities and actions may affect the magnitude, duration and extent of cumulative environmental effects.

A potential future development scenario presented in Table 1.2-1 includes the following concepts/assumptions:

- Additional uranium deposits would be identified within a 200 km radius of the Kiggavik site;
- All deposits within a certain economic radius would be milled at a single mill. For the purposes of this assessment, it is assumed that all deposits within 200 km of Kiggavik would be milled at the Kiggavik mill and therefore extend the life of the Project;
- Additional deposits found would be milled at the proposed maximum production rate of 4,000 tonnes U/yr. An expansion of the mill to increase production rate is not considered likely due to logistical constraints;
- An increase in tailings capacity would be required if sufficient resources were found to continue milling beyond the capacity of the three Tailings Management Facilities (TMFs). An additional TMF could consist of a purpose-built pit or an elevated in-pit facility;
- It is currently believed that the winter road and the north all-season road with cable ferry cannot fully support two operations west of the Thelon. As a result, if a second mining/milling facility was constructed a bridge over the Thelon River, to provide year-round access would likely be required;
- Logistical restrictions through the Narrows could also limit the amount of development accessed through Baker Lake given a limited number of high tides and the number of vessels that can pass the Narrows during high tide. The proposed Nunavut to Manitoba road would increase accessibility; however, costs of road transport tend to be higher than

marine and economics would be affected. Should a second uranium mill be proposed, approved and constructed, it is assumed to be located outside of the identified 200 km radius, and is not considered under the Far Future Scenario.

- A non-uranium operation is assumed located within a 200 km radius of Kiggavik. The Meadowbank gold operation is used as the model for this.
- It is assumed that additional resources are found in the Meadowbank area and that Meadowbank continues operation.

Table 1.2-1 Summary of Potential Far Future Scenario

Component	Locations
Uranium mines	3 mines within 200 km of Kiggavik
Uranium mills	Kiggavik mill
Gold mines	1 mine within a 200 km radius of KiggavikMeadowbank region
Gold mills	Meadowbank region Additional mill within Kiggavik RSA
Access Roads	Meadowbank region Additional mill within Kiggavik RSA
Exploration	Induced exploration near the access road(s) and in the Kiggavik area

1.3 Activities Considered in Assessments

All projects and activities that overlap with the Projects residual environmental effects both spatially and temporally are considered in the assessment of potential cumulative environmental effects (see Attachment A). Discipline specific regional assessment areas are used as the spatial boundary to identify projects for the cumulative effects screening and assessment. The regional assessment area is defined and selected to represent the geographic extent in which cumulative effects may potentially occur. The specific projects, activities and actions considered for each environmental effect are described in the assessment for the valued component or key indicator. Cumulative effects assessments are presented in Tier 2 Volumes 4 to 9 and summaried Tier 1 Volume 1 Section 8.7.

2 Transboundary Effects

2.1 Assessment of Transboundary Effects

Consistent with the primary objective of the Nunavut Impact Review Board in the *Nunavut Land Claims Agreement* Section 12.2.5 to "protect and promote the existing and future well-being of the residents and communities of the Nuvnut Settlement Area, and to protect the ecosystemic integrity of the Nunavut Settlement Area [and] … take into account the well-being of residents of Canada outside the Nunavut Settlement Area." and the direction provided in the Final Guidelines for the Preparation of the Kiggavik Environmetnal Impact Statement, the assessment includes tranboundary effects.

Transboundary effects are where residual environmental effects are likely to extend beyond the Nunavut. As this is based largely on the cumulative effects assessment, the transboundary effects are characterized qualitatively or semi-quantitatively.

2.2 Definition

The Nunavut Impact Review Board (2007; Guide 2) defines transboundary effects as "Environmental effects / impacts which occur across provincial, territorial, or international boundaries".

2.3 Mechanism

Transboundary effects can potentially occur through two different mechanisms:

- Project activities or project effects extend across a territorial, provincial or international boundary. With respect to project activities, under the *Nunavut Land Claims Agreement* and the *Nunavut Planning and Project Assessment Act* the transportation of persons or goods does not trigger the definition of a transboundary project for an Article 12 Part 6 federal environmental assessment panel review unless that transportation is a substantial element of the project (NLCA 12.4.7(a)(ii) and NUPPAA 94(3)). With respect to project effects this might include effects such as air emissions, noise emissions; or changes in surface water quality; or
- Where terrestrial or marine biota migrate across a jurisdictional boundary, residual environmental effects from a project on that species or group of species may interact with environmental effects from projects or activities in another jurisdiction or vice versa.

2.4 Summary of Potential Transboundary Effects

2.4.1 Atmospheric, Aquatic, and Terrestrial Environments

The potential for transboundary effects was considered in the assessment of environmental effects on each of the Valued Environmental Components (VECs) and Valued Socio-Economic Components (VSECs) considered in the effects assessment for the terrestrial environment.

For the large majority of the VECs, the geographic scope of potential project effects is within the immediate area of the Project (i.e., the mine area and the access road) as evidenced by the Local Assessment Area (LAA) and the Regional Assessment Area (RAA) (See definition of LAA and RAA in Section 3.2.4 in Volumes 4, 5, 6, 7 and 8 and Section 4.4 of Volume 9, under Assessment Boundaries). No transboundary effects would occur as a result of project effects associated with the atmospheric environment, above-ground noise, groundwater, surface water, terrain, soils, vegetation and most terrestrial wildlife species.

The exception was barren ground caribou. The assessment of cumulative effects on caribou for mortality risk and habitat availability explicitly included a RAA that extended well beyond the boundaries of Nunavut into northern Manitoba and Saskatchewan, as well as the Northwest Territories. Predicted project effects on caribou include direct mortality (collisions), direct and indirect habitat loss (Project footprint, dust and sensory disturbance), and possible avoidance of Project area but no alteration to migration patterns and no change to health. Predicted cumulative effects to caribou include a possible shift in proportional caribou herd take or an overall increase in harvest to the Qamanirjuaq herd given the development of the alternative all-season access road option and potential associated changes in harvest patterns.

The latter effect, in combination with harvesting of the same caribou populations outside of Nunavut, would be a transboundary effect. However, considering that none of the Project effects or the cumulative effects to caribou are significant, no significant adverse transboundary effects are predicted for caribou. As noted in the Tier 2, Volume 6, Section 13.3, AREVA will implement a number of measures to manage mortality risk associated with the Project (i.e., vehicle-wildlife collisions). In addition, AREVA will work with other industry proponents, government agencies and Inuit organizations to enhance monitoring of caribou herds and documentation of mortality; promote initiatives by Inuit organizations and caribou management boards to ensure the long term viability of the traditional, resident and sport harvest; and monitor and document caribou kills by communities.

2.4.2 Air and Marine Transport

All resource development projects require the transport of goods to the project site and the transport of product to market. Proposed Project logistics and transportation infrastructure for the Kiggavik

Project is presented in Tier 2 Volume 2 Section 10. There are existing, charted shipping lanes and flight routes throughout Canada and internationally. Projects with intense shipping programs may have increased the level of information for transportation in the project description and have assessed this in greater detail at the environmental assessment stage (e.g. Mary River), but more typically, the precedent is to focus the environmental assessment on the port or terminal area and, in some cases, immediately adjacent shipping activity (e.g. Irving Refinery, Newfoundland Transhipment, Kitimat LNG or Deltaport 3). Applying the precedent to the proposed Kiggavik Project, this would bound the assessment to include potential effects from barging in Chesterfield Narrows prior to reaching existing shipping routes in Hudson Bay and inclusion of potential accidents and malfunctions including take off and landing at the site airstrip prior to reaching altitude, but not product transport to its final destination.

The Kiggavik Environmental Impact Statement has included additional information on both marine and air transport that would be required to obtain licensing approvals with Transport Canada and the Canadian Nuclear Safety Commission.

Marine Transport

The Kiggavik marine assessment (Tier 2 Volume 7) has focused on the Chesterfield Inlet barging activities to Baker Lake as the main component of the environmental assessment, but has additionally provided information on potential effects to marine VECs in Hudson Bay and Hudson Strait.

Transiting through Hudson Bay and Strait, AREVA will follow established shipping routes recommended by Transport Canada and comply with federal legislation (e.g., *Shipping Act*) and regulations including those pertaining to safe operations, ballast water management, bilge water management, transportation of dangerous goods, and emergency response preparedness.

It is recognized that shipping traffic is increasing in the Eastern Arctic, particularly in areas such as Hudson Strait. Existing vessel traffic associated with the Port of Churchill, community resupply in Nunavut, Manitoba and Quebec and mining projects such as the Meadowbank Mine already use Hudson Strait as the main shipping route into and out of Hudson Bay. Proposed projects such this Project, the Baffinland Mine and the Meliadine Mine will further increase vessel traffic in Hudson Strait. To address potential conflicts between shipping traffic and environmentally sensitive areas, particularly for marine birds and marine mammals, AREVA is prepared to work with federal agencies, Nunavut, shipping companies and other marine transportation users to identify preferred shipping routes and seasonal timing constraints to minimize shipping effects on these environmentally sensitive areas. Operational changes such as vessel speed reductions may also be useful in reducing the potential for vessel – marine mammal strikes, as well as underwater noise.

Air Transport

As a fundamental component of the environmental assessment, the Kiggavik accident and malfunction assessment (Tier 2 Volume 10) includes emergency response for necessities of life, personnel emergencies, natural environment-related emergencies and operational emergencies, as well as response strategies for a variety of spill scenarios. The assessment then considers the potential interactions of accidents and malfunctions with the environment and human safety taking into account the proposed mitigation measures including preventative measures and emergency response capabilities.

In addition, AREVA has provided a risk assessment for uranium ore concentrate (UOC) that would be transported by aircraft from the Kiggavik site airstrip southward to connect with established ground transportation routes currently used for shipments of UOC from existing mines in northern Saskatchewan. The likelihood and consequence of incidents involving the air transport of UOC has been assessed considering the flight path from the Kiggavik site to the airstrip at Points North, Saskatchewan. An assessment of the likelihood and consequence of several incident scenarios occurring during subsequent ground transportation of uranium ore concentrates throughout Canada has further been included.

Transportation of UOC will be in accordance with regulations governing the safe transport of radioactive materials including the *Transportation of Dangerous Goods Regulations* and the *Packaging and Transport of Nuclear Substances Regulations*. Development of an Emergency Response Assistance Plan (ERAP) is a post-environmental assessment requirement that must be accepted by Transport Canada prior to shipment. AREVA currently maintains an ERAP for UOC transport in Canada.

2.4.3 Socio-economic Environment

For effects on the human environment, the EA identified that effects on traditional use and cultural aspects will be experienced within the immediate area of the Project and Baker Lake. No transboundary effects are expected given that the Project is not predicted to result in significant adverse effects on terrestrial habitats and species of importance to traditional use and cultural values, including barren ground caribou (Tier 2, Volume 9, Section 12.2). Social and economic effects are also expected to be greatest in the vicinity of the Project (i.e., Baker Lake and the Kivalliq region of Nunavut), followed by the remainder of Nunavut and other areas in Canada. As workers and a range of goods and services will be required from within Nunavut, as well as other parts of Canada and elsewhere, economic benefits and some social effects (e.g., worker migration or travel) will be transboundary (Tier 2, Volume 9, Section 13.3).

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Attachment A Project Inclusion List

ID	Activity	Region	Commodity	Project Name/Activity	Company	Distance from Kiggavik (km)	Footprint (km^2)	Case	Thelon River Watershed	Terrestrial Environment Largest Cumulative Effects Area Boundary	Marine Environment Largest Cumulative Effects Area Boundary	Atmospheric Environment Largest Cumulative Effects Area Boundary	Aquatic Environment Largest Cumulative Effects Area Boundary	Socio-Economics and Community Largest Cumulative Effects Area Boundary
CF001	Fish Plant	Nunavut	NA	Fish Processing Facility	Papiruq Fisheries Ltd.	349	NA	Base Case		●	●			●
EN001	Power Line	Manitoba	NA	Power Line: Gillam-Churchill	Manitoba Hydro	NA	NA	Base Case		●				
EN002	Surface Wells	Nunavut	NA	NA	various	>1000	NA	Base Case						●
EN003	Hydroelectric Power Plant	Nunavut	NA	Grise Fiord Power Plant	Qulliq Energy Corporation	1449	NA	Future Case						●
EN004	Power Line	Saskatchewan	NA	Power Line: Southend Reindeer to Camsell Portage	SaskPower	NA	NA	Base Case		●				
EN005	Hydroelectric	Saskatchewan	NA	Tazi Twé Hydroelectric Project	SaskPower and Black Lake First Nation	NA	NA	Future Case		●				
MI001	Mining- exploration	Manitoba	Uranium	Boulder Lake Uranium	Crescent Resources Corp.	555	See Appendix 1B	Base case		●				
MI002	Mining- exploration	Manitoba	Gold	Burnt Timber	Carlisle Goldfields Ltd	875	See Appendix 1B	Base case		●				
MI003	Mining- exploration	Manitoba	Diamonds	Crosswell River	Peregrine Diamonds Limited	723	See Appendix 1B	Base case		●				
MI004	Mining- exploration	Manitoba	Copper-Zinc	Eppler Lake	Whetsone Minerals Inc.	627	See Appendix 1B	Base case		●				
MI005	Mining- exploration	Manitoba	Gold	Farley Lake Mine (Lynn Lake)	Carlisle Goldfields Ltd	854	See Appendix 1B	Base case		●				
MI006	Mining- exploration	Manitoba	Uranium	Hearne Uranium	Manitor Minerals Inc.	632	See Appendix 1B	Base case		●				
MI007	Mining- exploration	Manitoba	Gold	Last Hope	Carlisle Goldfields Ltd	887	See Appendix 1B	Base case		●				
MI008	Mining- exploration	Manitoba	Gold	Linkwood	Carlisle Goldfields Ltd	876	See Appendix 1B	Base case		●				
MI009	Mining- exploration	Manitoba	Copper, Cobalt, Nickel	Lynn Lake (Corazon)	Corazon Mining Limited	868	See Appendix 1B	Base Case		●				
MI010	Mining- exploration	Manitoba	Copper, Nickel	Lynn Lake Gabbro Project	VMS Ventures Inc.	860	See Appendix 1B	Base Case		●				
MI011	Mining- exploration	Manitoba	Gold, Silver	MacLellan Mine (Lynn Lake)	Carlisle Goldfields Ltd.	860	See Appendix 1B	Base case		●				
MI012	Mining- exploration	Manitoba	Nickel	MEL	Victory Nickel Inc./Vale Inco	943	See Appendix 1B	Base case		●				
MI013	Mining- exploration	Manitoba	Uranium	Misty	CanAlaska Ventures Ltd.	653	See Appendix 1B	Base case		●				
MI014	Mining- exploration	Manitoba	Nickel-Copper PGE's	Moak - Norris Lake Claims	Callinex Ltd.	946	See Appendix 1B	Base Case		●				
MI015	Mining- exploration	Manitoba	Uranium	North East Wollaston	CanAlaska Ventures Ltd.	631	See Appendix 1B	Base case		●				
MI016	Mining- exploration	Manitoba	Gold, Copper	Rasp	Interntional Samuel Exploration Corp.	875	See Appendix 1B	Base Case		●				
MI017	Mining- exploration	Manitoba	Diamonds	Seal River	De Beers Canada	599	See Appendix 1B	Base case		●				
MI018	Mining- exploration	Manitoba	Nickel-Copper PGE's	South Bay Project	North American Nickel (Acquired from VMS Ventures Inc in June 2010)	873	See Appendix 1B	Base Case		●				
MI019	Mining- exploration	Manitoba	Diamonds	Weir River	Peregrine Diamonds Limited	873	See Appendix 1B	Base case		●				
MI020	Mining- exploration	Nunavut- Kitikmeot	Diamonds	Barrow	Diamonds North Resources Ltd.	565	See Appendix 1B	Base Case						●
MI021	Mining- exploration	Nunavut- Kitikmeot	Base Metals	Blue Caribou	Skybridge Development Corp.	428	See Appendix 1B	Base Case		●				●
MI022	Mining- exploration	Nunavut- Kitikmeot	Gold	Committee Bay gold project (Anuri-Raven, Four Hills-Cop, Inuk, Three Bluffs, West Plains)	North Country Gold Corp.	281 -505	See Appendix 1B	Base Case		●				●
MI023	Mining- exploration	Nunavut- Kitikmeot	Base Metals	Hood project	MMG Resources Inc.	730	See Appendix 1B	Base Case						●

ID	Activity	Region	Commodity	Project Name/Activity	Company	Distance from Kiggavik (km)	Footprint (km^2)	Case	Thelon River Watershed	Terrestrial Environment Largest Cumulative Effects Area Boundary	Marine Environment Largest Cumulative Effects Area Boundary	Atmospheric Environment Largest Cumulative Effects Area Boundary	Aquatic Environment Largest Cumulative Effects Area Boundary	Socio-Economics and Community Largest Cumulative Effects Area Boundary
MI024	Mining- exploration	Nunavut- Kitikmeot	Gold	Itchen Lake	Transition Metals Corp.	713	See Appendix 1B	Base Case						●
MI025	Mining- exploration	Nunavut- Kitikmeot	gold	Ulu gold project	Elgin Mining Inc.	675	See Appendix 1B	Base Case						●
MI026	Mining- exploration	Nunavut- Kitikmeot	gold	Wishbone gold project	Sabina Gold and Silver Corporation	490	See Appendix 1B	Base Case		●				●
MI027	Mining- exploration	Nunavut- Kitikmeot	Base Metals	Yava	Savant Explorations Ltd.	501	See Appendix 1B	Base Case		●				●
MI028	Mining- exploration	Nunavut- Kivalliq	Uranium	Aberdeen	Cameco Corporation	40	See Appendix 1B	Base Case	●	●		●	●	●
MI029	Mining- exploration	Nunavut- Kivalliq	Uranium	Angilak	Kivalliq Energy Corporation, Nunavut Tunngavik Incorporated	212	See Appendix 1B	Base Case		●				●
MI030	Mining- exploration	Nunavut- Kivalliq	Silver, Gold, Copper, Zinc	ATLAS (Marce claims)	Anconia Resources Corp.	225	See Appendix 1B	Base Case		●				●
MI031	Mining- exploration	Nunavut- Kivalliq	Gold, Silver, Copper	Aura Consolidated Gold Project	Uranium North Resources Corporation	266	See Appendix 1B	Base Case		●				●
MI032	Mining- exploration	Nunavut- Kivalliq	Uranium	Baker Lake Basin	Aurora Energy Resources Incorporated	65	See Appendix 1B	Base Case		●				●
MI033	Mining- exploration	Nunavut- Kivalliq	Uranium	Bugs	Ur-Energy Incorporated	310	See Appendix 1B	Base Case		●				●
MI034	Mining- exploration	Nunavut- Kivalliq	gold	Churchill Gold	Shear Minerals Limited	338	See Appendix 1B	Base Case		●				●
MI035	Mining- exploration	Nunavut- Kivalliq	Diamonds	Ferguson Lake (Di)	Starfield Resources Incorporated	160	See Appendix 1B	Base Case		●				●
MI036	Mining- exploration	Nunavut- Kivalliq	Uranium	Garry Lake	Uravan Minerals Inc.	170	See Appendix 1B	Base Case		●				●
MI037	Mining- exploration	Nunavut- Kivalliq	Uranium	JG	Uranium North Resources Corporation	192	See Appendix 1B	Base Case	●	●				●
MI038	Mining- exploration	Nunavut- Kivalliq	gold	Kiyuk gold project	Prosperity Goldfields Corp.	466	See Appendix 1B	Base Case		●				●
MI039	Mining- exploration	Nunavut- Kivalliq	gold	Parker Lake	Agnico-Eagle Mines Ltd.	200	See Appendix 1B	Base Case		●				●
MI040	Mining- exploration	Nunavut- Kivalliq	gold	Pistol Bay	Northquest Ltd.	312	See Appendix 1B	Base Case		●				●
MI041	Mining- exploration	Nunavut- Kivalliq	Uranium	South Baker Project (SW Hawk, Kam, and L1)	Uranium North Resources Corporation	265	See Appendix 1B	Base Case	●	●				●
MI042	Mining- exploration	Nunavut- Kivalliq	Nickel-Copper PGE's	Southampton	Vale Inco Limited	694	See Appendix 1B	Base Case						●
MI043	Mining- exploration	Nunavut- Kivalliq	Uranium	Thelon Basin	Mega Uranium Ltd.	89	See Appendix 1B	Base Case		●				●
MI044	Mining- exploration	Nunavut- Kivalliq	Uranium	Turqavik	Cameco Corporation	32	See Appendix 1B	Base Case	●	●		●	●	●
MI045	Mining- exploration	Nunavut- Qikiqtani	Gold, Copper, Dian	Baffin Island Gold (Qimmiq, Bravo Lake)	Commander Resources	1267	See Appendix 1B	Base Case						●
MI046	Mining- exploration	Nunavut- Qikiqtani	Diamonds	Chidliak	Peregrine Diamonds Ltd.	1503	See Appendix 1B	Base Case						●
MI047	Mining- exploration	Nunavut- Qikiqtani	Iron Ore	Fraser Bay	West Melville Metals Inc., Roche Bay plc	687	See Appendix 1B	Base Case		●				●
MI048	Mining- exploration	Nunavut- Qikiqtani	Iron Ore	Haig Inlet	Canadian Ore Bodies Inc.	1354	See Appendix 1B	Base Case						●
MI049	Mining- exploration	Nunavut- Qikiqtani	Iron Ore	Roche Bay and Tuktu	Advanced Explorations Inc.	786	See Appendix 1B	Base Case		●				●
MI050	Mining- exploration	Nunavut- Qikiqtani	Base Metals	Storm	Aston Bay Holdings, Commander Resources Ltd.	1038	See Appendix 1B	Base Case						●
MI051	Mining- exploration	Nunavut- Qikiqtani	Base Metals	West Melville	Vale Canada Limited	701	See Appendix 1B	Base Case		●				●
MI052	Mining- exploration	Northwest Territories	Diamonds	CH	GGL Resources	647	See Appendix 1B	Base Case		●				

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MI053	Mining- exploration	Northwest Territories	gold	Courageous Lake	Seabridge Gold Inc.	666	See Appendix 1B	Base Case		●				
MI054	Mining- exploration	Northwest Territories	gold	Damoti Lake	Merc International Minerals Inc.	848	See Appendix 1B	Base Case		●				
MI055	Mining- exploration	Northwest Territories	Diamonds	Kennady North	Kennady Diamonds Inc.	573	See Appendix 1B	Base Case		●				
MI056	Mining- exploration	Northwest Territories	Diamonds	Lac de Gras	Peregrine Diamonds Ltd. / Thelon Capital Venture / WO Joint Venture	630	See Appendix 1B	Base Case		●				
MI057	Mining- exploration	Northwest Territories	Copper-Zinc	Moose Property	TNR Gold Corp.	777	See Appendix 1B	Base Case		●				
MI058	Mining- exploration	Northwest Territories	Base Metals	Pine Point	Tamerlane Ventures	951	See Appendix 1B	Base Case		●				
MI059	Mining- exploration	Saskatchewan	Rare Earth Elements	Beatty River	Areva Resources Canada Inc., JCU, and UEX Corporation	956	See Appendix 1B	Base Case		●				
MI060	Mining- exploration	Saskatchewan	Nickel-Copper PGE's	Brabant Lake deposit	Murchison Minerals Ltd.	850	See Appendix 1B	Base Case		●				
MI061	Mining- exploration	Saskatchewan	Rare Earth Elements	Douglas River	Great Western Minerals Group Ltd.	950	See Appendix 1B	Base Case		●				
MI062	Mining- exploration	Saskatchewan	Uranium	Down Lake deposit (includes La Rocque Lake)	Cameco Corporation, Areva Group, PNC Exploration (Canada) Co Ltd	850	See Appendix 1B	Base Case		●				
MI063	Mining- exploration	Saskatchewan	Gold	Golden Heart & B Zone (Greater Waddy Lake)	Golden Band Resources Inc. and Gov. of Sask.	975	See Appendix 1B	Base Case		●				
MI064	Mining- exploration	Saskatchewan	Gold	Goldfields (Box & Athona)	Brigus Gold Corp. and Franco-Nevada Corporation	790	See Appendix 1B	Base Case		●				
MI065	Mining- exploration	Saskatchewan	Uranium	Hidden Bay (Raven and Horseshoe)	UEX Corporation	800	See Appendix 1B	Base Case		●				
MI066	Mining- exploration	Saskatchewan	Rare Earth Elements	Hoidas Lake	Star minerals Group	750	See Appendix 1B	Base Case		●				
MI067	Mining- exploration	Saskatchewan	gold	Komis/EP mines	Golden Band Resources Inc.	980	See Appendix 1B	Base Case		●				
MI068	Mining- exploration	Saskatchewan	Uranium	Opie Zone (Maurice Bay Deposit)	Cameco Corporation, Areva Resources canada	859	See Appendix 1B	Base Case		●				
MI069	Mining- exploration	Saskatchewan	Uranium	Patterson Lake South (Fission)	Fission Uranium Corp	1000	See Appendix 1B	Base Case		●				
MI070	Mining- exploration	Saskatchewan	Uranium	Phoenix deposit	Denison Mines Corp, Cameco Corporation, and Japan-Canada Uranium Co. Ltd. (JCU)	890	See Appendix 1B	Base Case		●				
MI071	Mining- exploration	Saskatchewan	Uranium	Roughrider deposit and J Zone	Rio Tinto	775	See Appendix 1B	Base Case		●				
MI072	Mining- exploration	Saskatchewan	Uranium	Shea Creek	Areva Resources Canada Inc. and UEX Corporation	950	See Appendix 1B	Base Case		●				
MI073	Mining- exploration	Saskatchewan	Gold	Tower East, Memorial	Golden Band Resources Inc.	986	See Appendix 1B	Base Case		●				
MI074	Mining- exploration	Saskatchewan	Uranium and Rare Earth Elements	Way Lake	Denison Mines Corp.	890	See Appendix 1B	Base Case		●				
MI075	Mining- operating mine	Nunavut- Kivalliq	gold	Meadowbank Mine	Agnico-Eagle Mines Ltd.	75	7	Base Case		●	●			●
MI076	Mining- operating mine	Northwest Territories	Diamonds	Diavik Diamond Mine	Rio Tinto / Harry Winston Diamond Mines Ltd.	613	9	Base Case		●				
MI077	Mining- operating mine	Northwest Territories	Diamonds	Ekati Diamond Mine	BHP Billiton / Stewart Blusson / Chuck Fipke	625	30	Base Case		●				
MI078	Mining- operating mine	Northwest Territories	Diamonds	Snap Lake Diamond Mine	De Beers	656	5	Base Case		●				
MI079	Mining- operating mine	Saskatchewan	Uranium	Eagle Point Mine (Rabbit Lake) (processes Cigar Lake ore)	Cameco Corporation	770	5	Base Case		●				
MI080	Mining- operating mine	Saskatchewan	Uranium	Key Lake Mill (processes McArthur River ore)	Cameco Corporation	919	8	Base Case		●				
MI081	Mining- operating mine	Saskatchewan	Uranium	McClean Lake Mill (processes ore from Cigar Lake)	AREVA Resources Canada Inc.	765	8	Base Case		●				

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MI082	Mining- past/inactive	Manitoba	gold	Ace Shaft	Crown	877	See Appendix 1B	Base Case		●				
MI083	Mining- past/inactive	Manitoba	gold	Bruichladdich	Carlisle Goldfields Ltd	860	See Appendix 1B	Base Case		●				
MI084	Mining- past/inactive	Manitoba	gold	BT (Keystone) Gold Mine	Black Hawk Mining Inc.	876	See Appendix 1B	Base Case		●				
MI085	Mining- past/inactive	Manitoba	Nickel-Copper PGE's	Cal Claim Gp.	Callinex Ltd.	931	See Appendix 1B	Base Case		●				
MI086	Mining- past/inactive	Manitoba	gold	EL Mine (Lynn Lake)	Crown	870	See Appendix 1B	Base Case		●				
MI087	Mining- past/inactive	Manitoba	Nickel	Farley Shaft	Black Hawk Mining Inc.	867	See Appendix 1B	Base Case		●				
MI088	Mining- past/inactive	Manitoba	Copper, Zinc, Gold, Silver	Fox Mine	Black Hawk Mining Inc.	898	See Appendix 1B	Base Case		●				
MI089	Mining- past/inactive	Manitoba	Nickel, Copper	Lynn Lake Mine	Crown	867	See Appendix 1B	Base Case		●				
MI090	Mining- past/inactive	Manitoba	Nickel-Copper PGE's	Lynn Lake Nickel Mine	Pacific Coast Nickel Corp.	867	See Appendix 1B	Base Case		●				
MI091	Mining- past/inactive	Manitoba	nickel	Moak Mine	VALEINCO	947	See Appendix 1B	Base Case		●				
MI092	Mining- past/inactive	Manitoba	Copper-Zinc	Ruttan Mine	HBM&S	894	See Appendix 1B	Base Case		●				
MI093	Mining- past/inactive	Manitoba	Nickel-Copper PGE's	TNB Thompson North	CaNickel Mining Limited	952	See Appendix 1B	Base Case		●				
MI094	Mining- past/inactive	Nunavut- Kitikmeot	Diamonds	Amaruk project	Adamera Minerals Corp.	527	See Appendix 1B	Base Case		●				●
MI095	Mining- past/inactive	Nunavut- Kitikmeot	Uranium	Coppermine uranium project	Hornby Bay Mineral Exploration Ltd.	882	See Appendix 1B	Base Case						●
MI096	Mining- past/inactive	Nunavut- Kitikmeot	gold	Elu Belt gold project	TMAC Resources	566	See Appendix 1B	Base Case						●
MI097	Mining- past/inactive	Nunavut- Kitikmeot	Base Metals	Gondor	MMG Resources Inc.	689	See Appendix 1B	Base Case						●
MI098	Mining- past/inactive	Nunavut- Kitikmeot	Diamonds	Hammer project	Stornoway Diamond Corporation	750	See Appendix 1B	Base Case						●
MI099	Mining- past/inactive	Nunavut- Kitikmeot	Diamonds	Jericho Diamond Mine	Shear Diamonds Limited	~1000	2	Base Case						●
MI100	Mining- past/inactive	Nunavut- Kitikmeot	gold	Oro (Hope Bay) gold project	North Arrow Minerals Inc.	582	See Appendix 1B	Base Case						●
MI101	Mining- past/inactive	Nunavut- Kivalliq	Uranium	North Thelon Project(Kiggavik North, Kiggavik South, Agnico-Eagle option, Inuit owned lands)	Forum Uranium Corporation	28	See Appendix 1B	Base Case		●		●	●	●
MI102	Mining- past/inactive	Nunavut- Kivalliq	Uranium	Amer Lake	Adamera Minerals Corp.	135	See Appendix 1B	Base Case		●				●
MI103	Mining- past/inactive	Nunavut- Kivalliq	Nickel-Copper PGE's	Ferguson Lake	2367985 Ontario Inc.	160	See Appendix 1B	Base Case		●				●
MI104	Mining- past/inactive	Nunavut- Kivalliq	Base Metals	Greyhound Lake	Aura Silver Resources Incorporated	40	See Appendix 1B	Base Case		●				●
MI105	Mining- past/inactive	Nunavut- Kivalliq	gold	Lupin Mine (in care and maintenance)	Elgin Mining Inc.	658	8	Base Case		●				●
MI106	Mining- past/inactive	Nunavut- Kivalliq	gold	Mallery Lake Project	Adamera Minerals Corp.	84	See Appendix 1B	Base Case		●				●
MI107	Mining- past/inactive	Nunavut- Kivalliq	Diamonds	Nanuq	Peregrine Diamonds Ltd.	328	See Appendix 1B	Base Case		●				●
MI108	Mining- past/inactive	Nunavut- Kivalliq	Diamonds	Nanuq North	Peregrine Diamonds Limited/Bluestone Resources Inc.	338	See Appendix 1B	Base Case		●				●
MI109	Mining- past/inactive	Nunavut- Kivalliq	Uranium	Nueltin Lake	Cameco Corporation/URU Metals Ltd.	492	See Appendix 1B	Base Case		●				●
MI110	Mining- past/inactive	Nunavut- Kivalliq	gold	Peter Lake	Canada Nickel Corp.	291	See Appendix 1B	Base Case		●				●

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MI111	Mining- past/inactive	Nunavut- Kivalliq	Diamonds	Qilalugaq	North Arrow Minerals Inc./Stornoway Diamond Corporation	572	See Appendix 1B	Base Case		●				●
MI112	Mining- past/inactive	Nunavut- Qikiqtani	Diamonds	Aviat	Stornoway Diamond Corporation	818	See Appendix 1B	Base Case						●
MI113	Mining- past/inactive	Nunavut- Qikiqtani	Base Metals	Nanisivik Mine	Canzinco Ltd. (Breakwater Resources Ltd.)	1107	See Appendix 1B	Base Case						●
MI114	Mining- past/inactive	Nunavut- Qikiqtani	Base Metals	Polaris Mine	Teck Resources Limited	1223	See Appendix 1B	Base Case						●
MI115	Mining- past/inactive	Saskatchewan	gold	Box Au Mine	NA	798	See Appendix 1B	Base Case		●				
MI116	Mining- past/inactive	Saskatchewan	Uranium	Cluff Lake	AREVA Resources Canada Inc.	929	10	Base Case		●				
MI117	Mining- past/inactive	Saskatchewan	Uranium	Gunnar Uranium Mine	NA	818	See Appendix 1B	Base Case		●				
MI118	Mining- past/inactive	Saskatchewan	Uranium	Lorado Uranium Mine, Pyrite Zone	NA	801	See Appendix 1B	Base Case		●				
MI119	Mining- past/inactive	Saskatchewan	Uranium	Gunnar and Lorado Satellite Sites	various owners	788	See Appendix 1B	Base Case		●				
MI120	Mining- proposed mine	Nunavut- Kitikmeot	gold	Back River Gold Project (George Lake, Goose Lake)	Sabina Gold & Silver Corporation	431	31	Base Case (Exploration)/Future Case (Mine Development)		●	●			●
MI121	Mining- proposed mine	Nunavut- Kitikmeot	Base Metals	Hackett River	Glencore Xstrata plc	531	15	Base Case (Exploration)/Future Case (Mine Development)		●	●			●
MI122	Mining- proposed mine	Nunavut- Kitikmeot	gold	Hope Bay gold project (Boston, Chicago, Doris, Madrid)	TMAC Resources	575	14.88 based on average of other proposed mines	Base Case (Exploration)/Future Case (Mine Development)		●				●
MI123	Mining- proposed mine	Nunavut- Kitikmeot	Base Metals	Izok Corridor Project (High Lake, Izok Lake)	MMG Resources Inc.	721	12	Base Case (Exploration)/Future Case (Mine Development)			●			●
MI124	Mining- proposed mine	Nunavut- Kivalliq	gold	Meliadine project (Meliadine west and Meliadine East)	Agnico-Eagle Mines Ltd.	295	17	Base Case (Exploration)/Future Case (Mine Development)		●	●			●
MI125	Mining- proposed mine	Nunavut- Qikiqtani	Iron Ore	Mary River iron project	Baffinland Iron Mines Corporation	1075	76	Base Case (Exploration)/Future Case (Mine Development)			●			●
MI126	Mining- proposed mine	Northwest Territories	Diamonds	Gahcho Kué	De Beers Canada Inc / Mountain Province Diamonds Inc.	580	12	Base Case (Exploration)/Future Case (Mine Development)		●				
MI127	Mining- proposed mine	Saskatchewan	Uranium	Midwest Mine	Areva Resources Canada Inc.	768	9	Base Case (Exploration)/Future Case (Mine Development)		●				
MI128	Mining- proposed mine	Saskatchewan	Uranium	Millennium deposit	Cameco Corporation, (JCU)	890	6	Base Case (Exploration)/Future Case (Mine Development)		●				
MU001	Municipality/Hamlet/Settlement	Nunavut	NA	Arctic Bay	NA	1080	248	Base Case						●
MU002	Municipality/Hamlet/Settlement	Nunavut	NA	Arviat	NA	408	132	Base Case		●	●			●
MU003	Municipality/Hamlet/Settlement	Nunavut	NA	Baker Lake	NA	75	182	Base Case	●	●	●	●	●	●
MU004	Municipality/Hamlet/Settlement	Nunavut	NA	Bathurst Inlet	NA	551	19	Base Case			●			●
MU005	Municipality/Hamlet/Settlement	Nunavut	NA	Cambridge Bay	NA	620	202	Base Case						●
MU006	Municipality/Hamlet/Settlement	Nunavut	NA	Cape Dorset	NA	1016	10	Base Case			●			●
MU007	Municipality/Hamlet/Settlement	Nunavut	NA	Chesterfield Inlet	NA	353	141	Base Case		●	●			●
MU008	Municipality/Hamlet/Settlement	Nunavut	NA	Clyde River	NA	1401	107	Base Case						●
MU009	Municipality/Hamlet/Settlement	Nunavut	NA	Coral Harbour	NA	699	138	Base Case			●			●

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MU010	Municipality/Hamlet/Settlement	Nunavut	NA	Gjoa Haven	NA	472	28	Base Case		●	●			●
MU011	Municipality/Hamlet/Settlement	Nunavut	NA	Grise Fiord	NA	1442	333	Base Case						●
MU012	Municipality/Hamlet/Settlement	Nunavut	NA	Hall Beach	NA	868	17	Base Case			●			●
MU013	Municipality/Hamlet/Settlement	Nunavut	NA	Igloolik	NA	881	103	Base Case						●
MU014	Municipality/Hamlet/Settlement	Nunavut	NA	Kimmirut	NA	1380	2	Base Case			●			●
MU015	Municipality/Hamlet/Settlement	Nunavut	NA	Kugaaruk	NA	875	5	Base Case		●				●
MU016	Municipality/Hamlet/Settlement	Nunavut	NA	Pangnirtung	NA	1491	8	Base Case						●
MU017	Municipality/Hamlet/Settlement	Nunavut	NA	Pond Inlet	NA	1214	173	Base Case						●
MU018	Municipality/Hamlet/Settlement	Nunavut	NA	Qikiqtarjuaq	NA	2380	130	Base Case						●
MU019	Municipality/Hamlet/Settlement	Nunavut	NA	Rankin Inlet	NA	320	120	Base Case		●	●			●
MU020	Municipality/Hamlet/Settlement	Nunavut	NA	Repulse Bay	NA	575	424	Base Case			●			●
MU021	Municipality/Hamlet/Settlement	Nunavut	NA	Resolute	NA	1149	117	Base Case						●
MU022	Municipality/Hamlet/Settlement	Nunavut	NA	Sanikiluaq	NA	1334	115	Base Case			●			●
MU023	Municipality/Hamlet/Settlement	Nunavut	NA	Taloyoak	NA	592	38	Base Case		●	●			●
MU024	Municipality/Hamlet/Settlement	Nunavut	NA	Whale Cove	NA	349	284	Base Case		●	●			●
MU025	Municipality/Hamlet/Settlement	Alberta	NA	Fort Chipewyan	NA	957	10	Base Case		●				
MU026	Municipality/Hamlet/Settlement	Manitoba	NA	Churchill	NA	649	54	Base Case		●	●			
MU027	Municipality/Hamlet/Settlement	Manitoba	NA	Gillam	NA	917	1996	Base Case		●				
MU028	Municipality/Hamlet/Settlement	Manitoba	NA	Lac Brochet	NA	743	5	Base Case		●				
MU029	Municipality/Hamlet/Settlement	Manitoba	NA	Leaf Rapids	NA	897	1273	Base Case		●				
MU030	Municipality/Hamlet/Settlement	Manitoba	NA	Lynn Lake	NA	868	910	Base Case		●				
MU031	Municipality/Hamlet/Settlement	Manitoba	NA	South Indian Lake	NA	852	11	Base Case		●				
MU032	Municipality/Hamlet/Settlement	Manitoba	NA	Split Lake	NA	911	28	Base Case		●				
MU033	Municipality/Hamlet/Settlement	Northwest Territories	NA	Fort Resolution	NA	895	455	Base Case		●				
MU034	Municipality/Hamlet/Settlement	Northwest Territories	NA	Fort Smith	NA	897	93	Base Case		●				
MU035	Municipality/Hamlet/Settlement	Saskatchewan	NA	Black Lake	NA	712	234	Base Case		●				
MU036	Municipality/Hamlet/Settlement	Saskatchewan	NA	Fond-duLac	NA	756	138	Base Case		●				
PA001	Designated or Protected Area	Alberta	NA	Athabasca Dunes Ecological Reserve	Government of Alberta	1000	3769	Base Case		●				
PA002	Designated or Protected Area	Alberta	NA	Colin-Cornwall Lakes Wildland Provincial Park	Government of Alberta	870	704	Base Case		●				

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PA003	Designated or Protected Area	Alberta	NA	Fidler-Greywillow Wildland Provincial Park	Government of Alberta	880	65	Base Case		●				
PA004	Designated or Protected Area	Alberta	NA	LaButte Creek WildlandProvincial Park	Government of Alberta	910	181	Base Case		●				
PA005	Designated or Protected Area	Alberta	NA	Marguerite River Wildland Provincial Park	Government of Alberta	1020	1963	Base Case		●				
PA006	Designated or Protected Area	Alberta	NA	Maybelle River Wildland Provincial Park	Government of Alberta	990	153	Base Case		●				
PA007	Designated or Protected Area	Alberta	NA	Richardson Lake Migratory Bird Sanctuary	Environment Canada - Canadian Wildlife Service	990	13	Base Case		●				
PA008	Designated or Protected Area	Alberta	NA	Wood Buffalo National Park	Parks Canada	980	44807	Base Case		●				
PA009	Designated or Protected Area	Manitoba	NA	Amisk Park Reserve	Government of Manitoba	817	1945	Base Case		●				
PA010	Designated or Protected Area	Manitoba	NA	Baralzon Lake Ecological Reserve	Government of Manitoba	487	364	Base Case		●				
PA011	Designated or Protected Area	Manitoba	NA	Caribou River Provincial Park	Government of Manitoba	1823	7404	Base Case		●				
PA012	Designated or Protected Area	Manitoba	NA	Numaykoos Lake Provincial Park	Government of Manitoba	702	3491	Base Case		●				
PA013	Designated or Protected Area	Manitoba	NA	Sand Lakes Provincial Park	Government of Manitoba	693	8124	Base Case		●				
PA014	Designated or Protected Area	Manitoba	NA	Wapusk National Park of Canada	Parks Canada	780	11475	Base Case						
PA015	Designated or Protected Area	Nunavut	NA	Auyuittuq National Park	Parks Canada	1470	19089	Base Case						
PA016	Designated or Protected Area	Nunavut	NA	Beverly Caribou Protected Area	Government Of Nunavut	~150	13311	Base Case	●	●				●
PA017	Designated or Protected Area	Nunavut	NA	Coppermine River (nominated Canadian heritage river)	Parks Canada/Nunavut Department of Environment	800	845 (length)	Base Case						●
PA018	Designated or Protected Area	Nunavut	NA	Inuujaarvik Territorial Park	Government Of Nunavut	76	0	Base Case		●				●
PA019	Designated or Protected Area	Nunavut	NA	Iqalugaarjuup Nunanga Territorial Park	Government Of Nunavut	309	20	Base Case		●				●
PA020	Designated or Protected Area	Nunavut	NA	Kazon River (designated Canadian heritage river)	Parks Canada/Nunavut Department of Environment	470	1000 (length)	Base Case		●				●
PA021	Designated or Protected Area	Nunavut	NA	McConnell River Migratory Bird Sanctuary	Environment Canada - Canadian Wildlife Service	540	303	Base Case		●				●
PA022	Designated or Protected Area	Nunavut	NA	Qamanirjuaq Caribou Protected Area	Government Of Nunavut	~160	32997	Base Case		●				●
PA023	Designated or Protected Area	Nunavut	NA	Queen Maud Gulf Migratory Bird Sanctuary	Environment Canada - Canadian Wildlife Service	210	61765	Base Case		●				●
PA024	Designated or Protected Area	Nunavut	NA	Quttinirpaaq National Park	Parks Canada	230	37775	Base Case						
PA025	Designated or Protected Area	Nunavut	NA	Seal River (designated Canadian heritage river)	Parks Canada/Government of Manitoba	620	260 (length)	Base Case						
PA026	Designated or Protected Area	Nunavut	NA	Sirmilak National Park	Parks Canada	1200	22252	Base Case						
PA027	Designated or Protected Area	Nunavut	NA	Ukkusiksalik National Park	Parks Canada	294	20500	Base Case		●				●
PA028	Designated or Protected Area	Nunavut/ Northwest Territories	NA	Thelon River (designated Canadian heritage river)	Parks Canada/Nunavut Department of Environment	260	900 (length)	Base Case	●	●				●
PA029	Designated or Protected Area	Nunavut/ Northwest Territories	NA	Thelon Wildlife Sanctuary	Environment Canada - Canadian Wildlife Service	98	52000	Base Case	●	●				●
PA030	Designated or Protected Area	Saskatchewan	NA	Athabasca Sand Dunes Provincial Park	Government of Saskatchewan	830	1925	Base Case		●				
PA031	Designated or Protected Area	Saskatchewan	NA	Chappuis-Fontaine Lakes Special Management Area	Government of Saskatchewan	665	2346	Base Case		●				

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PA032	Designated or Protected Area	Saskatchewan	NA	Clearwater River Provincial Park	Government of Saskatchewan	1050	2240	Base Case		●				
PA033	Designated or Protected Area	Saskatchewan	NA	Halldorson Bay Representative Area Ecological Reserve	Government of Saskatchewan	870	67	Base Case		●				
PA034	Designated or Protected Area	Saskatchewan	NA	Misaw Lake Special Management Area	Government of Saskatchewan	536	2310	Base Case		●				
PA035	Designated or Protected Area	Saskatchewan	NA	Perry Lake Representative Area Ecological reserve	Government of Saskatchewan	890	398	Base Case		●				
PA036	Designated or Protected Area	Saskatchewan	NA	Tazin Lake Special Management Area	Government of Saskatchewan	780	1118	Base Case		●				
TO001	Canoeing	Nunavut	NA	Outdoor tourism and adventure packages from various locations	Canoe Arctic Inc.	NA	NA	Base Case	●	●				●
TO002	Dog sled excursions	Nunavut	NA	Dog sled excursions	Tumi Tours	NA	NA	Base Case		●				●
TO003	Nature tours	Nunavut	NA	Nature, boat tours and dog sled excursions	Come Along Tours and Outfitting	NA	NA	Base Case		●				●
TO004	Guide and Outfitting	nunavut	NA	Sport hunting	Qataq Sports Hunts	NA	NA	Base Case	●	●		●	●	●
TO005	Guide and Outfitting	Nunavut	NA	Sport hunting and fishing	Qimukyuk Outfitting	NA	NA	Base Case	●	●		●	●	●
TO006	Nature tours and outfitters	Nunavut	NA	NA	Edwin Evo Outfitting and Naturalist Tours	80	NA	Base Case	●	●		●	●	●
TO007	Nature Tours	Nunavut	NA	Run various wildlife expeditions for photographers to Thelon Wildlife Sanctuary from Baker Lake.	Great Canadian Wilderness Adventures	80	NA	Base Case	●	●		●	●	●
TR001	Transportation	Manitoba	NA	All-season Roads: to Split Lake and Gillam; to Leaf Rapids and South Indian Lake; to Lynn Lake and Kinoosao; Churchill area roads	NA	~852	See Appendix 1B	Base Case		●				
TR002	Transportation	Manitoba	NA	Winter Roads: to Brochet; to Lac Brochet; to Tadoule Lake; to York Landing; Gillam to Shamattawa	NA	~640	See Appendix 1B	Base Case		●				
TR003	Transportation	Manitoba	NA	Rail Lines: to Gillam and Churchill; to Lynn Lake	NA	~658	See Appendix 1B	Base Case		●				
TR004	Transportation	Manitoba	NA	All-season Roads - proposed: Manitoba-Nunavut road (Gillam to Churchill, Churchill to Arviat sections)	NA	~414	See Appendix 1B	Future case		●				
TR005	Transportation	Manitoba	NA	Winter Roads - proposed: Churchill to MB-NU road	NA	NA	See Appendix 1B	Future Case		●				
TR006	Transportation	Nunavut	NA	108 km all-weather Access Road. Construction completed in 2008.	Agnico-Eagle Mines Ltd.	120	See Appendix 1B	Base Case	●	●				●
TR007	Transportation	Nunavut	NA	All-weather Access Road. Currently under NIRB review for proposed mine (Meliadine)	Agnico-Eagle Mines Ltd.	295	See Appendix 1B	Future case		●				●
TR008	Transportation	Nunavut	NA	Winter Road: Tibbitt-Contwoyto road (Ekati to Lupin section)	NA	~580	See Appendix 1B	Base Case		●				●
TR010	Transportation	Nunavut	NA	Winter Roads - proposed: Baker Lake-Kiggavik roads; road from Whale Cove to Rankin Inlet; Back River Project road	NA	NA	See Appendix 1B	Future Case		●				●
TR011	Transportation	Nunavut	NA	Proposed Winter Road. One section of proposed Manitoba to Nunavut road running from Gillam, MB, via Chruchill to Arviat, NU. Associated with Feguson Lake property	Starfield Resources Incorporated	150	See Appendix 1B	Future Case		●				●
TR012	Transportation	Saskatchewan	NA	All-season Roads: to Southend Reindeer; to Points North; to Black Lake, Stony Rapids and Lake Athabasca; to Key Lake Mill and McArthur River Mine; to Cluff Lake Mine	NA	NA	See Appendix 1B	Base Case		●				
TR013	Transportation	Saskatchewan	NA	Winter Roads: Southend Reindeer to Kinoosao and Brochet; Stony Rapids to Uranium City; to Millennium-Cree Lake Project; Cluff Lake to Lake Athabasca	NA	~740	See Appendix 1B	Base Case		●				
TR014	Transportation	Saskatchewan	NA	All-season Roads - proposed: McArthur River Mine to Cigar Lake Mine; to Wollaston Lake	NA	~880	See Appendix 1B	Future Case		●				
TR015	Transportation	Saskatchewan	NA	Winter Roads - proposed: Virgin River road	NA	~825	See Appendix 1B	Future Case		●				

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TR016	Transportation	Nunavut	NA	Bathurst Inlet Port and Road	GlencoreXstrata and Sabina Gold and Silver Corporation	700	5	Future Case		●	●			●
TU001	Traditional Marine Use	Nunavut	NA	Hunts by communities along the Hudson Bay coast from south of Arviat to the Foxe Basin, in the Hudson Strait and around Baffin Island. Narwhal; Based on monthly harvest estimates (1996-2001) the mean annual number harvested is 74. Harvesting occurs mainly in July.	NA	NA	NA	Base Case			●			●
TU003	Traditional Land Use	Nunavut	NA	Traditional Use Area	NA	NA	NA	Base Case	●	●		●	●	●

Attachment B Projects and Activities Considered in the Far Future Scenario

Table B1 Projects and Activities Considered in the *Far Future Scenario*

Activity	Region	Project name/activity	Company name
Hydroelectric Dams	Manitoba	Keeyask Generation Project - Proposed 696 MW dam on the lower Nelson River, upstream of Stephens Lake. Creation of a 93 km square reservoir.	Keeyask Hydropower Limited
Oil and Gas Lease	Nunavut	-	various
Hydroelectric Dams	Nunavut	Proposed hyrdo dam locations include Anna Maria Port, Armshow River (long), Armshow River (Right Lake), Cantley Bay, Janyes Inlet, McKeand River (N)	Qulliq Energy Corporation
Port Terminals	Nunavut	The far future scenario assumes that additional port terminal may be developed in Nunavut	-
Mining - lease/prospect	Manitoba	Mineral Exploration License 308B	Indicator Explorations Ltd.
Mining - lease/prospect	Manitoba	Mineral Exploration License 309B	Indicator Explorations Ltd.
Mining - lease/prospect	Manitoba	Mineral Exploration License 72B	Whetstone Minerals Inc.
Mining - lease/prospect	Manitoba	Mineral Exploration License 148B	Whetstone Minerals Inc.
Mining - lease/prospect	Manitoba	Mineral Exploration License 363B	Nuinsco Resources
Mining - lease/prospect	Manitoba	Mineral Exploration License 408B	John D. Charlton
Mining - lease/prospect	Manitoba	Churchill Uranium	RJK Explorations Ltd.
Mining - lease/prospect	Manitoba	Kasmere Lake	Virginia Energy Resources Inc. (formerly Santoy resources)
Mining - lease/prospect	Nunavut- Kitikmeot	Wishbone project (including Musk VMS deposit)	Glencore Xstrata plc
Mining - lease/prospect	Nunavut- Kivalliq	Amer East	Bayswater Uranium Corporation
Mining - lease/prospect	Nunavut- Kivalliq	Amer Lake West	Bayswater Uranium Corporation
Mining - lease/prospect	Nunavut- Kivalliq	Diamond North Project	Diamonds North Resources Limited
Mining - lease/prospect	Nunavut- Kivalliq	Esker	Adamera Minerals Corp.
Mining - lease/prospect	Nunavut- Kivalliq	Indigo	Indicator Minerals Incorporated
Mining - lease/prospect	Nunavut- Kivalliq	Itza Lake (Canada Uranium Joint Venture)	Bayswater Uranium Corporation
Mining - lease/prospect	Nunavut- Kivalliq	Muskox	Agnico-Eagle Mines Ltd.

Table B1 Projects and Activities Considered in the *Far Future Scenario*

Activity	Region	Project name/activity	Company name
Mining - lease/prospect	Nunavut- Kivalliq	Permit 1 (Canada Uranium Joint Venture)	Bayswater Uranium Corporation
Mining - lease/prospect	Nunavut- Kivalliq	Permit 2 (Canada Uranium Joint Venture)	Bayswater Uranium Corporation
Mining - lease/prospect	Nunavut- Kivalliq	RB Project	Anconia Resources Corp.
Mining - lease/prospect	Nunavut- Kivalliq	Ruby Hill	Western Energy Corporation
Mining - lease/prospect	Nunavut- Kivalliq	Windy Gold	Bitterroot Resources Ltd.
Mining - lease/prospect	Nunavut- Qikiqtani	Mel	North Arrow Minerals Inc
Mining - lease/prospect	Saskatchewan	Archie Lake	Niocorp Developments Ltd.
Mining - lease/prospect	Saskatchewan	Centennial deposit	BCKP LTD.
Mining - lease/prospect	Saskatchewan	Henry Lake	Killdeer Minerals Inc.
Mining- exploration	Nunavut	Contwoyto IOL Concessions	Golden River Resoures Corporation
Mining- exploration	Nunavut	Melville Gold	AngloGold Ashanti Holdings Plc
Mining- exploration	Nunavut- Kivalliq	Cache	Alix Resources Corp.
Mining- exploration	Nunavut- Kivalliq	Chesterfield Inlet	Shear Minerals Limited
Mining- exploration	Nunavut- Kivalliq	Churchill (S)	Shear Diamonds Limited
Mining- exploration	Nunavut- Kivalliq	Churchill West	Shear Diamonds Limited
Mining- exploration	Nunavut- Kivalliq	LUXX	North Arrow Minerals Inc.
Mining- exploration	Nunavut- Kivalliq	Maguse River	IronOne Inc.
Mining- exploration	Nunavut- Kivalliq	Napajut	Shear Minerals Limited
Mining- exploration	Nunavut- Kivalliq	Schultz Lake (North Thelon Project)	Forum Uranium Corporation
Mining- exploration	Nunavut- Kivalliq	Southampton Island 1	Anglo American Exploration (Canada) Limited
Mining- exploration	Nunavut- Kivalliq	Southampton Island 2	Anglo American Exploration (Canada) Limited
Mining- exploration	Nunavut- Kivalliq	St. Tropez Claims	AREVA Resources Canada Inc.
Mining- exploration	Nunavut- Kivalliq	SY Project	Corsa Capital Ltd.
Mining- exploration	Nunavut- Kivalliq	Zac	Anconia Resources Corp.
Mining- exploration	Nunavut- Qikiqtani	Nunavut Coal	Canada Coal Inc.

Table B1 Projects and Activities Considered in the *Far Future Scenario*

Activity	Region	Project name/activity	Company name
Mining- past/inactive	Nunavut	Bling Property	Panarc Resources
Mining- past/inactive	Nunavut- Kitikmeot	Halkett Inlet Gold Project	Adamera Minerals Corp.
Mining- past/inactive	Nunavut- Kivalliq	Angikuni Lake (AN, F13, Robin)	Adamera Minerals Corp.
Mining- past/inactive	Nunavut- Kivalliq	ARNI	Anconia Resources Corp.
Mining- past/inactive	Nunavut- Kivalliq	Fox (South Nunavut)	Diamonds North Resources Ltd.
Mining- past/inactive	Nunavut- Kivalliq	Nunavut Rare Earth project	Cache Exploration Inc.
Mining- past/inactive	Nunavut- Kivalliq	Nutaaq	Forum Uranium Corporation
Mining- past/inactive	Nunavut- Kivalliq	River (South Nunavut)	Diamonds North Resources Ltd.
Mining- past/inactive	Nunavut- Kivalliq	Yandle (South Nunavut)	Diamonds North Resources Ltd.
Mining- past/inactive	Nunavut- Qikiqtani	Anik	Advanced Explorations Inc.
Mining- past/inactive	Nunavut- Qikiqtani	Qilaq	Peregrine Diamonds Ltd.
Mining- past/inactive	Saskatchewan	Christie Lake	
Mining- past/inactive	Saskatchewan	Deep Bay deposit	
Mining- past/inactive	Saskatchewan	Deep Bay East	Strike Graphite (Formerly)
Mining- past/inactive	Saskatchewan	Peter Lake	
Mining- past/inactive	Saskatchewan	Simon Lake	
Transportation	Nunavut	**All-season Roads - proposed:** Manitoba-Nunavut road (Churchill-Arviat-Whale Cove-Rankin Inlet sections); Baker Lake-Kiggavik and Kiggavik site roads; BIPR Project road; Back River Project road	