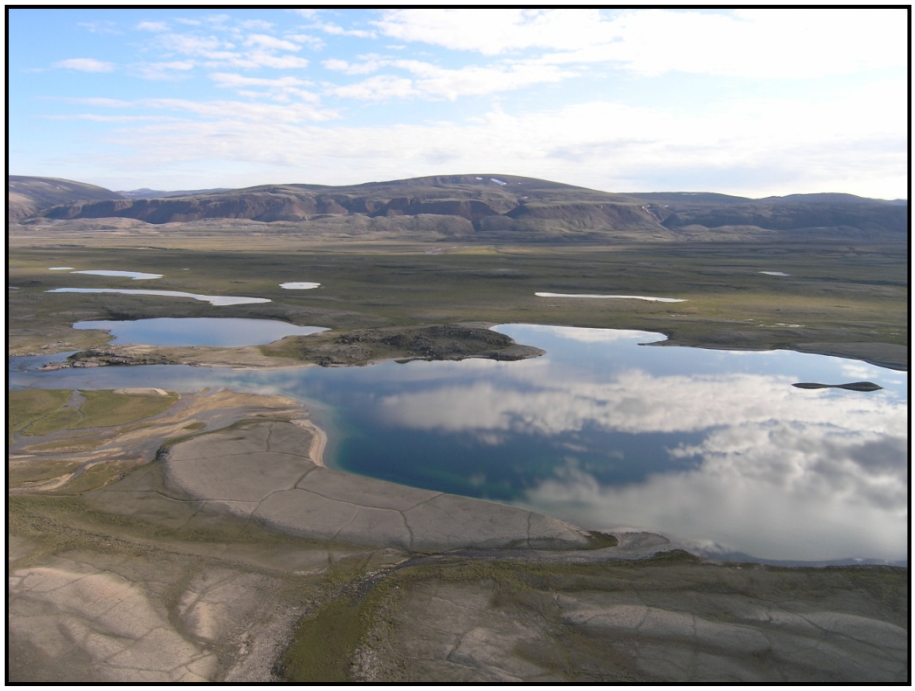
APPENDIX 6C

VEGETATION BASELINE REPORT

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT



Submitted by:
Page Burt
Outcrop Ltd., Rankin Inlet, NU.
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BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT

EXECUTIVE SUMMARY

Vegetation baseline studies were conducted in proximity to the Baffinland Iron Mines Corporation's (Baffinland) Mary River Project (Project) during the summers of 2005, 2006, 2007, and 2008. The 2005 studies were scoping studies, and the 2006 - 2008 studies built on the information learned in 2005, taking into account changes to the Project in subsequent years. A total of 760 plots were surveyed, covering the deposit and proposed mine infrastructure area, the tote road and proposed rail route to Milne Inlet, and the proposed south rail routes to Steensby Inlet. Locations within the proposed Steensby and Milne Port area were also surveyed.

Based on the information compiled from the vegetation plots, a vegetation classification system was developed and a species list was compiled. No plant species considered to be "rare" in Canada were found to occur in the survey locations. Plant species abundance data derived from the vegetation plots was utilized in the Ecological Land Classification (ELC) work that is presented under a separate cover. To help develop an understanding of Inuit Qaujimajatuqangit regarding the traditional use of plants by Inuit, studies were carried out with elders in Pond Inlet. Metals analysis of surface soil and plant foliage from 56 baseline stations in the Local Study Area was conducted to establish a baseline of metal concentrations in plants and soil.

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT

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SECTION 1.0 - INTRODUCTION

The Mary River Project (Project) is an iron ore exploration project in the North Baffin Region of Nunavut. The Project is located about 160 km south of Pond Inlet and 270 km southeast of Arctic Bay at approximately Latitude 71º20' north and Longitude 79º14' west. The Mary River Project site is located in the centre of Baffin Island, as shown on Figure 1.

Baffinland Iron Mines Corporation (Baffinland) has been conducting mineral exploration on a seasonal basis since 2004, on known high-grade iron ore deposits that were originally staked and explored in the 1960s.

1.1 LOCATION OF STUDIES

The study area for this vegetation survey encompasses a portion of North Baffin Island extending approximately 250 km from Milne Inlet south to Steensby Inlet, with a width of approximately 10 to 50 km, dependant on the proposed Mary River Project components.

The vegetation baseline studies were divided into Local Study Areas (LSA) described below.

- The proposed Mary River Project mine area.
- The existing Milne Inlet Tote Road.
- An alternative rail corridor leading north from Mary River to Milne Inlet.
- Milne Port site.
- An alternative rail corridor (and associated road) which extends south from Mary River to Steensby Port.
- An alternative rail corridor extending from the Mary River site down the west side of Angajurjualuk Lake.
- Steensby Port site.

The Regional Study Area extends from Milne Inlet southeast to Steensby Inlet and is approximately 75 to 150 km in width.

1.2 BACKGROUND

Vegetation refers to the plants growing in an area, and the communities and associations that are typical of the region. Plants are of great importance in the natural world. They provide food and shelter for animals, stabilize the soil, produce oxygen, and modify the local environment. They form the base of the food chain, and are consumed by herbivores, which are in turn eaten by carnivores. Humans enter this food chain at several levels, using plants directly, and, in their consumption of "country foods" by utilizing the animals that feed on the plants.

Vegetation baseline studies are detailed studies of the plant species in an area, and the relationships of these plants with the terrain. Vegetation baseline studies provide a snap shot of the study area prior to project activities, so that future conditions can be assessed against the baseline information. In relation to this Project, these changes will include removal of vegetation as a result of preparation activities for infrastructure (i.e. railway lines, roads and buildings) and mine

development. Impacts may also include deposits of metals or other materials in the environment, commonly by the deposition of wind-blown dust or potentially by metals or materials carried in water that can then get absorbed into soil (Greger, 2004). For this reason, is important to collect baseline data for vegetation and soils prior to the construction and operating phases of a mining project so that future comparisons of vegetation and soil in locations surrounding mining activities can be monitored for the proper development of mitigation and reclamation plans.

1.3 OBJECTIVES OF BASELINE STUDY

The objectives for this baseline study were as follows:

- To determine what plant species occur in the area of the Project
- To develop a fine scale vegetation classification system
- To identify the possibility of plants considered “rare in Canada” or plants on the COSEWIC list occurring in the area
- To use field data from this baseline study and Inuit Qaujimajatuqangit to determine the species that occur in the LSA and that are important to Inuit people
- To establish baseline information regarding the concentration of metals in plant foliage and soil.

1.4 ACKNOWLEDGEMENTS

Page Burt conducted the field data collection and interpretation, and prepared this report. Several people have assisted with the collection of field data for this project. In 2005, Page Burt was assisted by Debra Stokes of Knight Piésold Vancouver. In 2006, Maret Tae of Elagu Ecosurveys ran parallel plots, and Katie Fry of Knight Piésold Vancouver assisted. In 2007, Peter Quinby and Maret Tae of Knight Piésold North Bay assisted. Peter Quinby has analyzed the data for the Ecological Land Classification system. In 2007 and 2008, Page was joined by soil scientist Hugo Veldhuis, who conducted soil studies which have paralleled the vegetation field work and contribute to the Ecological Land Classification system.

Traditional knowledge studies (Inuit Qaujimajatuqangit) were initiated in 2007 with field work with elders in Pond Inlet. Shelly Elverum and Sarahme Akumilik assisted with this work, and the elders consulted included Theresa Ootoova, Elisapee Maktar, and Ham Kadloo. A report on the Inuit Qaujimajatuqangit work is attached as Appendix G.

Various Inuit field assistants have helped, particularly in 2008. Thanks are due to Steven Tagak, Charley Uttak, Joshua Akavak, and Scott Kadlutsiak for their patience and assistance in the studies at Steensby Inlet.

SECTION 2.0 - STATE OF KNOWLEDGE

2.1 ECOLOGICAL LAND CLASSIFICATION OF THE AREA

Existing knowledge of the North Baffin region with respect to vegetation can be described in ecozones and ecoregions.

2.1.1 Ecozones and Ecoregions

The Baffinland Iron Mines Mary River Project area is located in the "Northern Arctic Ecozone", defined in the Ecological Land Classification of Canada system. It is part of two main ecoregions, and extends slightly into a third. These ecozones and ecoregions are fully described on the Environment Canada website as "An Ecological Land Framework for Canada" (Environment Canada, 2010). Portions pertinent to this study area have been extracted below:

"The Northern Arctic ecozone extends over most of the non-mountainous areas of the Arctic Islands, and portions of northeastern District of Keewatin and northern Quebec. It incorporates the coldest and driest landscapes in Canada."

"Climate. The climate is very dry and cold. The mean annual temperature ranges from - 17°C in the northern islands to -11°C in northern Quebec. The mean summer temperature ranges from -1.5°C in the north to 4°C in the south, and mean winter temperatures range from -31°C in the north to -20°C in northern Quebec. Winters pass in darkness. The mean annual precipitation ranges from 100-200 mm, the lowest in Canada. This ecozone is often referred to as a polar desert. Snow may fall any month of the year and usually persists on the ground for at least 10 months (September to June)."

"Vegetation. A harsh climate, high winds and shallow soils result in sparse and dwarfed plant life. Herb- and lichen-dominated communities constitute the main vegetative cover. The latter is closely associated with the rock fields and hilly upland areas. Common herbs are purple saxifrage, mountain avens, and arctic poppy, often mixed with shrubs such as arctic willow. The size of shrubs decreases rapidly as one moves north. Vegetative cover tends to be greater on wetter sites confined to coastal lowlands, sheltered valleys and moist nutrient-rich corridors along streams and rivers."

"Landforms and Soils. East of Prince of Wales and Somerset islands, the terrain is composed mainly of Precambrian granitoid bedrock, and tends to consist of plateaus and rocky hills. The permafrost is continuous and may extend to depths of several hundred meters. Cryosolic soils (i.e., those affected by permafrost-related processes) predominate."
"Within the Northern Arctic Ecozone, the transect of Baffin Island in which the Mary River Project and both proposed road and rail routes occurs is part of three ecoregions. The northwestern area around Milne Inlet and including the western edge of the graben through which Philip's Creek flows is in the Borden Peninsula Plateau Ecoregion."

"The Borden Peninsula Plateau Ecoregion covers the Borden Peninsula of north-central Baffin Island and the southwestern coast of Bylot Island along Navy Board Inlet. The mean

annual temperature is approximately -13°C with a summer mean of 1°C and a winter mean of -25°C. The mean annual precipitation ranges from 100 mm to over 200 mm with the higher values falling in the centre of the peninsula."

"This ecoregion is classified as having a high arctic ecoclimate. It supports a very sparse vegetative cover of moss and mixed low-growing herbs and shrubs such as purple saxifrage, *Dryas*, arctic willow, *Kobresia*, sedge, and arctic poppy. The inland plateau, formed on flat-lying Palaeozoic and late Proterozoic carbonate rocks, slopes gently southward, ranging from about 765 to 300 m asl. Regosolic Turbic Cryosols with Regosolic Static Cryosols are dominant soils that have developed on a variety of undulating glacial deposits. Permafrost is deep and continuous with medium ice content."

The second ecozone which just touches the eastern edge of the Mary River Project study area is the Baffin Island Uplands Ecoregion. According to the description on the Environment Canada website:

"The Baffin Island Uplands Ecoregion in the central uplands of Baffin Island has a very sparse (up to about 15%) vegetative cover of moss, and mixed low-growing herbs and shrubs such as purple saxifrage, *Dryas sp.*, arctic willow, kobresia, sedge, and arctic poppy. Wet sites can develop up to about 60% cover of wood rush, wire rush, and saxifrage, along with a nearly continuous cover of mosses."

"The mean annual temperature is approximately -11.5°C, although higher elevations are considerably colder than this. Lower elevations within the ecoregion have a mean summer temperature of 1°C and a mean winter temperature of -23°C. This ecoregion gets more precipitation than do surrounding adjacent ecoregions to the southwest, with mean annual precipitation ranging from 200 mm in the north to 400 mm in the south, and 300-400 mm at the southern tip. This ecoregion is classified as having a high arctic ecoclimate."

"The general aspect of Baffin Upland is one of a broad, gently warped, old erosion surface, shallowly etched by erosion along joint systems and zones of weakness. Its surface slopes gently to the southwest to an elevation of about 915 m asl near Barnes Ice Cap. Bare bedrock is common, and Turbic Cryosols developed on sparse, thin, colluvial and morainal deposits are the dominant soils. The ecoregion is underlain by continuous permafrost with low ice content. Wildlife includes arctic hare, arctic wolf, arctic fox, and caribou."

The third, and main ecoregion represented on this project is the Melville Peninsula Plateau Ecoregion. The project iron ore deposits are in this ecoregion, as are most of both road and rail routes, and the general area surrounding Steensby Inlet. From the Environment Canada website:

"The large Melville Peninsula Plateau Ecoregion includes the western half of Melville Peninsula and much of northwestern coastal Baffin Island as far south as Nettilling Lake."

"The mean annual temperature is approximately -13°C with a summer mean of 0.5°C and a winter mean of -25°C. The mean annual precipitation ranges 100-200 mm. This ecoregion is classified as having a mid-arctic ecoclimate. Vegetation is discontinuous, and dominated by purple saxifrage, *Dryas sp.*, and arctic willow, along with alpine foxtail, wood rush, and saxifrage. Dry sites are very sparsely vegetated, whereas wet areas have a continuous cover of sedge, cottongrass, saxifrage, and moss."

"The ecoregion takes in the mainland part of Melville Plateau physiographic region, a broad, gently warped, old erosion surface composed of crystalline Precambrian rocks that rise to about 460-610 m asl. It also takes in the very similar western portion of the uplands of Baffin Island where drainage begins to flow southwestward towards Foxe Basin."

"Bedrock outcroppings are common, and Turbic Cryosols developed on hummocky, thin, discontinuous sandy moraine are the dominant soils. Organic and Static Cryosolic soils also occur in this ecoregion. Most of the ecoregion is underlain by continuous permafrost with low ice content, although, in the area between Foxe Basin and Borden Peninsula, permafrost with medium ice content bisects the ecoregion north to south. Characteristic wildlife includes caribou, muskox, arctic hare, arctic fox, snowy owl, polar bear, seal, whale, and seabirds."

2.1.2 Development of Subgroups for each Ecoregion.

Under the Ecological Land Classification System for Canada, ecoregions are further divided into ecodistricts (Environment Canada, 2010). Ecodistricts have been named but not yet fully described for Nunavut; this baseline work may contribute to the development of such a system.

In addition, ongoing remote sensing work by Ian Olthof has been used to contribute to the understanding of the vegetation changes and classification. This work is ongoing, and correspondence with Dr. Olthorp and access to work in progress has been very helpful (Olthof, 2008, and Olthof, Latifovic, and Pouliot, 2000). The Toolik-Arctic Geobotanical Atlas (Alaska Geobotany Centre, 2007) was also of great assistance.

In designing the vegetation classification system described in this report, categories were developed that are as meaningful as possible to the people of the north in terms of wildlife utilization of the land, as well as being recognizable without resorting to statistical analysis. The categories are based on the principle that the various plant communities and associations should be recognizable by direct observation.

SECTION 3.0 - METHODS

Inuit elders often express the concern that those who do the environmental studies should actually spend time on the land. It is their tradition to walk the land, to understand the relationship of the animals to their environment by direct observation. This tradition was honoured in all plant studies conducted for the Mary River Project. Consultation with elders in Pond Inlet regarding traditional Inuit use of plants was well received, with enthusiastic appreciation expressed at being updated on vegetation field studies on the Project and at being consulted out on the land where they could show many of the plants used in the past.

The general goal of the vegetation baseline study was to survey as much of the proposed Project area as possible, sampling the vegetation (and, in some cases, the soil) by setting up plots and recording the information from each, then using the data to describe the plant communities as completely as possible. Inuit Qaujimajatuqangit studies were initiated in 2007 to obtain information from elders as to traditional use of plants. These have been enhanced by land use studies conducted by the traditional knowledge teams in the communities, and by the publication of *Walking with Aalasi* (Ziegler, Joamie, and Hainnu, 2009), a useful introduction to plant use on Baffin Island.

3.1 AERIAL SURVEYS

Aerial surveys by helicopter were done in conjunction with transport to each day's work site, and in cooperation with the wildlife and water sampling work. At all times when in the air, observers were alert to the possibility of finding a "new" plant community or association, something that looked "different" from the air, and might be unusual.

Only one unexpected example of a plant association was found in the Local Study Area for the development of the Baffinland Iron Mines Mary River Project. This is an unusual willow shoreline shrub association with Richardson's willows growing to a height of 2.5 m, and is located in a lateral moraine at the south end of Cockburn Lake. A more detailed treatment of this association is included under the "Riparian Shoreline Shrub" description in Appendix E1.

3.2 FIELD STUDIES

Prior to each day's work, areas of focus for the day were selected. Using maps that included the proposed project infrastructure, as well as candidate transportation routes, vegetation plots were located in areas that could potentially be impacted by development.

Plots were selected visually, from the ground, with attempts made to ensure that each occurred within a single plant association, as opposed to straddling the edges of two adjacent associations. Each 5 m x 5 m plot was paced off and the corners marked with yellow plastic stakes with orange flagging tape attached, to ensure that the plot showed up in the photos.

Using a GPS unit, coordinates (eastings and northings) were obtained for each plot, and each plot was photographed from the ground beside the plot. Two photos were taken of each plot, one photo including all the corner stakes, and one which provided a more close-up view, and did not include the entire plot. Physical and biotic data were recorded for each plot, using the data form included in Appendix A. All plot locations completed from 2005 - 2008 are shown on the maps in Figures 2

through 10. Spreadsheets of the 2005 - 2008 plot locations are included in Appendix B. Also included in Appendix B are the locations and descriptions of baseline stations that were used for the metal analysis of vegetation and soil samples.

The plant species occurring in each plot were recorded on the form, and the percent cover by species was recorded. Many species were identified in the field, and any for which identification was uncertain were collected for later determination.

Specimens of willows, grasses, sedges, cotton grasses, and rushes were collected for identification by specialists. These were bagged by plot, and later preserved in plant presses.

Incidental sightings of wildlife or signs of wildlife use of the area were recorded, including visual sightings, bird calls, scats, feeding damage to vegetation, trails, fur or feathers, nests or burrows, or bird calls/songs. Any archaeological information (structures or artefacts) noticed was noted on the data forms, and later passed on to the archaeology team.

Each plot was tentatively identified in the field as to community or association, comments were recorded, and a sketch was made if needed. Figure 2 shows the approximate location of vegetation studies over the entire LSA.

Approximately every third day the coordinates of the plots completed were entered in an Excel file and a map with all plots completed was produced, in order to avoid focusing heavily on a given area to the exclusion of other areas.

3.3 IDENTIFICATIONS AND TAXONOMY

Plant specimens collected and brought back to camp were identified using the following aids:

- *Vascular Plants of the Continental Northwest Territories* (Porsild and Cody, 1980)
- *Eastern North America as Seen by a Botanist: Pictorial. 1. The Arctic Region.* (Chung, 1989)
- *Barrenland Beauties* (Burt, 2000)
- *A Photographic Field Guide to Mosses, Lichens, and Ferns of Northwest North America* (Vitt, Marsh, and Bovey, 1988)
- *Lichens of North America* (Brodo, Sharnoff, and Sharnoff, 2001)
- *Flora of the Canadian Arctic Archipelago* as downloaded and printed from the website
- And, in 2008, *Flora of the Canadian Arctic Archipelago* as published on CD-ROM (Aiken, Dallwitz, Consaul, et.al. 2007)
- In 2008, a representative collection of specimens of sedges, grasses, and willows as identified and provided by specialists were used to aid in identification in the field

While many plants were identified in the field or while they were fresh, several groups (sedges, cottongrasses, rushes, grasses, and willows) are so complex and hybridize so readily that it is advisable to rely on specialists for their identification. These specimens were labelled, pressed, and sent to the following three specialists for identification:

- Dr. George Argus (recently retired from the National Museums of Canada, and a member of the COSEWIC team): Genus *Salix* (willows)
- Dr. Laurie Consaul (Canadian Museum of Nature), a grass taxonomist who has been deeply involved in the development of the "*Flora of the Canadian Arctic Archipelago*" website: Poaceae (formerly Graminae) (grass family) and miscellaneous
- Dr. Jeff Saarela (Canadian Museum of Nature): Cyperaceae (sedges and cottongrasses) and Juncaceae (rushes)

Taxonomy has become an issue in doing vegetation baseline studies in the North. In the past, botanists were able to utilize the superb *Vascular Plants of Canada's Northwest Territories* (Porsild and Cody, 1980) as the "authority" for all nomenclature of vascular plants, keeping identification and names used very simple. However, there have been so many taxonomic changes that this 1980 publication is outdated. Therefore, the taxonomy for all plants collected from 2005 - 2008 has been checked online, using several major authorities: the *PLANTS Database* (USDA, NRCS, 2010), the *Flora of North America* database (2010) (for a few families), and the *Integrated Taxonomic Information System* (ITIS, 2010) database. These databases are updated on an ongoing and sporadic basis, so their information may not be completely up-to-date. Also, as time passes, the information in this paper may also be superseded by further changes due to ongoing taxonomic research.

Another important source of current taxonomy for the study is the *Flora of the Canadian Arctic Archipelago* website (Aiken, et al., 1999 onwards) and CD-ROM (Aiken, et al., 2007).

3.4 SPECIALIST IDENTIFICATIONS

Information from specialists is returned in the form of lists of species keyed to plot numbers, and the identifications are entered on the hard copy of the plot forms as well as in the database. Because they are experts in their fields, the taxonomy used by the specialists has been accepted for the purpose of this report.

3.5 VEGETATION CLASSIFICATION SYSTEM

The vegetation classification developed for this project was based on field observations and on baseline classifications developed for other arctic projects such as the Bathurst Port and Road Project (O'Leary, Bentz, and Burt, 2002) and the Meadowbank Gold Project. This classification system was tailored to suit local conditions, species, and surficial geology.

3.6 DATABASE

Abbreviated data files for 2005-2008 are attached in Appendix B. These have the coordinates, locations of the plots, plus a condensed description of the vegetation and an assignment as to vegetation association.

The plot data for 2005 and 2006 was entered in Outcrop's "Nunavut Plants Database" for digital storage of data for this project. This database has been developed by a team at Outcrop in Yellowknife and is based on elements of the VENUS system, used in BC and elsewhere, but is customized to be much simpler and more practical for vegetation baseline use in the Arctic.

The "Nunavut Plants Database" can be accessed online as "read-only" files. Using an Internet browser, go to http://npd.outcrop.com/project_bimmr.asp. No password is required to view this database, but authorization and a password are required to change it. A printed sample of the plant species database is included as Appendix C.

The data, including data from 2007 and 2008, has also been entered in an Excel spreadsheet maintained by Knight Piésold, designed to facilitate statistical analysis of the data to assist with the mapping of the elements of an Ecological Land Classification system.

3.7 BASELINE SAMPLING OF SOILS AND PLANT TISSUE FOR METALS

Baseline sampling of surface soils and plant tissues for the purpose of metal analysis is a relatively recent addition to environmental baseline studies being carried out in the North. Baseline sampling of soils and plant tissue for metals for this study was in part modelled after the studies done for Wolfden Resources' High Lake and Ulu Project in the western central arctic (Wolfden Resources/Zinifex Draft EIS, 2007).

Baseline sampling of plant tissue and soils for analysis began with the establishment of a series of marked plots located in the project development area for the mine, Steensby Port, and proposed rail route. Data was collected from these plots as for the plots used to establish the vegetation classification system, but, in addition, surface soil samples and samples of foliage from 2-3 plant species in each plot were taken. The samples from each plot were analysed by species for a suite of metals, which becomes the baseline for metals concentration in soils and foliage from the plants.

These permanent plots have been marked by a metal spike holding an aluminium tag, and a small inukshuk painted orange. The monitoring plots differ from the classification plots in that they are permanently marked, and in that plant tissue and surface soil samples were collected from the vicinity of each plot.

Soil and vegetation samples were taken from 56 plots during the field season of 2008. These plots are located around the mine site itself, and around the planned mine infrastructure area, including the ore crushing and storage areas, car loading facilities, and in a number of places where dust could be generated by construction. Plots were established along the rail corridor from Mary River south to Steensby Inlet, and around the infrastructure area at Steensby, including around the rail yard, the car dumping site, airstrip, camp/accommodations area, and on the island where the ore will be loaded onto the ships.

Foliage samples were not collected from inside the 5 m x 5 m boundary of the plot, but from the general area around the plot, so that the removal of plant material would not have an effect on the vegetation in the plot itself. Two to three species were selected per plot, mostly plant species that are important to wildlife or humans. Vegetative material from these species was collected, a single species per sample, bagged and frozen, and later analyzed at ALS Environmental Laboratories in Edmonton. Soil samples from close to the surface in about three places in each plot were collected, mixed to provide a representative sample, and chemically analyzed. Samples were sent to ALS Environmental Laboratories in Edmonton for analysis.

Vegetation and soil samples were chemically analyzed for a suite of metals, including:

Aluminum (Al)
Arsenic (As)
Barium (Ba)
Beryllium (Be)
Bismuth (Bi)
Boron (B)
Cadmium (Cd)
Calcium (Ca)
Chromium (Cr)
Cobalt (Co)
Copper (Cu)
Iron (Fe)
Lead (Pb)
Magnesium (Mg)
Manganese (Mn)
Mercury (Hg)
Molybdenum (Mo)
Nickel (Ni)
Potassium (K)
Selenium (Se)
Silver (Ag)
Sodium (Na)
Strontium (Sr)
Sulfur (S)
Thallium (Tl)
Tin (Sn)
Titanium (Ti)
Uranium (U)*
Vanadium (V)
Zinc (Zn)

* Plant samples did not yield results for Uranium

Tests for leachable anions and nutrients, Total Kjeldahl Nitrogen (TKN), were also performed on selected soil samples.

3.8 LIFE OF PROJECT VEGETATION MONITORING

The permanently labelled vegetation plots established in 2008 can provide a baseline for vegetation monitoring into the future. A vegetation monitoring plan is included in the EIS.

3.9 SOIL STUDIES

Soil studies, including soil pits and soils analysis were carried out in 2007 and 2008 in conjunction with the vegetation baseline studies. Soil studies are described in a separate report and the Executive Summary to the Soils Report is included in this report as Appendix D.

SECTION 4.0 - RESULTS

Based on field studies, a vegetation classification system has been developed, a species list of plant species occurring in the area has been completed, occurrence of rare plants has been checked, and baseline levels of metals in plant foliage and soils has been established.

4.1 VEGETATION CLASSIFICATION

The vegetation classification units developed and described on the Mary River Project include the following categories. The codes describe the vegetation association and are subsequently used to identify photos.

Vegetation associations were generally named by the type of vegetation (Sedge community, non-tussock sedge association, or, Moss community, mossy shoreline). However, when dealing with some associations such as the “Disturbed Sites” it is more logical to consider the causes of the disturbance when naming these (example: Disturbed Sites, Animal-caused, Den sites).

Class	Community	Association	Codes
Wetlands			
	Sedge Community		S
		Emergent association	Se
		Non-tussock sedge association	Snt
		Tussock association	St
		Sedge-moss wet meadow	S-Mwm
	Moss communities		M
		Mossy shorelines	Ms
		Mossy cliff bases	Mcb
	Willow communities		R
		Willow shrublands	Wsh
		Riparian willow association	Rw
		Riparian shoreline shrub association	Rss
Uplands			
	Heath tundra community		HT
		Blueberry heath association	HTb
		Cassiope heath association	HTc
		Cassiope – dry moss association	HTr
		Mixed heath association	HTm
	Snowbank association		SB
		Heath snowbank association	SBh
		Forb snowbank association	SBf

Class	Community	Association	Codes
	Miscellaneous		
		Shrub-sedge tundra association	Tss
		Grassy slope	Gsl
		Dry slope with forbs	Fsl
		Cliff ledges	Lcl
	Barrens		B
		Purple mountain saxifrage barrens	Bps
		Avens and xeric sedge associations	Bax
		Luzula association	Bl
	Lichen-rock community		LR
		Lichen-rock bedrock	LRr
		Lichen-rock scree slopes	LRs
		Lichen rock boulder fields	LRb
		Lichen-rock felsenmeer	LRf
		Lichen-rock iron deposits	LRi
Coastal			C
		Rocky shorelines	Cr
		Gravel shorelines	Cg
		Sandy shorelines	Cs
		Sandy marine backshore	Csb
		Sand/silt flats	Csf
DISTURBED SITES			DS

Some sites are affected by processes that disrupt the “normal” progression of succession of plant communities over time. Some of these processes are natural, including geological and animal-caused, and some are caused by humans. Disturbance causes temporary changes in vegetation, mostly the occupation of the area by an association with grasses, which changes over time to the type of vegetation typical for that area. Attention to the vegetation that comes in on disturbed sites is important in that these species are pioneer plants, and potentially could be used in reclamation.

Geologic processes		
	Solifluction	DSsol
	Landslides and thaw slumps	DSls
Animal-caused		
	Den sites	DSd
	Raptor perches or “bird stones”	DSbs
	Bird nesting sites	DSn
	Caribou trails	DSt

Human-caused	
Old road systems, airstrips	DSr
Sampling sites	DSs
Old Inuit camps	DSi
Inuit caches and carcasses	DSc

Complexes

Certain vegetation units were more easily described as “complexes” when several associations were present in recognizable features on the land. The complexes and their component parts are outlined below.

Valley Complex		VC
	Bedrock slopes/cliffs	
	Talus or scree slopes	
	Sedge associations in valley floor	
	Avens associations	
	Willow riparian	
	Snowbank associations	
Limestone “Slot” Canyon Complex		SC
	Caprock (usually LR bedrock)	
	Cliff ledges	
	Heath tundra slopes	
	Sedge associations in valley floor	
	Avens associations	
	Riparian willow associations	
	Snowbank associations	
Esker (or ridge) complex		EC
	Crest – sand or cobble	
	Windward slope (heath tundra)	
	Lee slope (snowbank)	
	Esker pond banks	

Glaciofluvial plain complex		GF
	(surficial units):	Associations in GF:
	Glaciofluvial terraces	Heath tundra
	Deep water proglacial	Sedge associations
	Alluvial	Snowbanks
	Lacustrine	Riparian associations
	Marine terraces	Lichen rock
	Modern river floodplain	

Mega-Polygons (on non-calcareous till deposits)		MP
	Heath tundra associations	
	Sedge associations	
	Riparian associations	
	Avens associations	
Calcareous till uplands (till veneer)		TV
	Forb barrens	
	Purple saxifrage barrens	
	Avens associations	
Cockburn Lake cliff complex		CLC
	Heath tundra associations	
	Sedge associations	
	Cliff ledges	
	Lichen-rock associations	
	Snowbank associations	
	Moss communities	
	Riparian associations	
	Grassy slope	
	Avens association	
Open plain felsenmeer/sedge		F/S
	Sedge associations	
	Moss associations	
	Lichen-rock associations	
	Heath tundra associations	
	Avens associations	
	Willow shrublands	

A descriptive summary of all vegetation units mentioned above is included in Appendix E1 with representative photos of all units included in Appendix E2.

Each plot was photographed digitally at approximately 1 MB during 2005 and 2006, and at 2.5 MB in 2007 and 2008. At least two photos were taken of each plot. All photos are coded and all have been archived on the Knight Piésold by Outcrop Ltd.

4.2 PLANT SPECIES ENCOUNTERED

During these baseline studies, 155 vascular plant species were found. There are an additional 8 species for which the classification is uncertain due to either a lack of flower structures or other diagnostic characters or due to the specialists having doubts about them (e.g. possible hybrids, revision of the taxonomy of the genus, etc.). This compares with 147 species on the online list for Bylot Island in Sirmilik National Park (Parks Canada, 2004).

As plant species are described, each is given a Latin name that can be recognized worldwide. These names comply with the complex International Rules of Binomial Nomenclature. As taxonomic work is done on plant families or genera, the names of species can change. For example, the star chickweed, *Stellaria monantha*, was recently combined with *Stellaria longipes*. *Stellaria longipes* was the older of the two names, so *S. monantha* became *S. longipes*, thus being removed as a distinct species for our list.

A list of species encountered and species expected is attached in Appendix F. Based on a review of literature on collection records from the North Baffin area, a list of potential species has been developed, and is the "working list" for field work. As the presence of species is confirmed, their presence is indicated on the list.

The species marked with an "X" in the first column have been found on this project, and have been identified in the field or by experts. Those without an "X" likely are present (per the literature), but have not yet been encountered. Several species that have a high potential to be accidentally introduced into the area are also included in the list, with notes indicating the possibility of introduction.

The Project area is important to the collective knowledge of the flora of the Canadian Arctic in that no field work has been done in this part of the interior of Baffin Island in the past. The field studies done during the baseline vegetation work for this project contribute significantly to the knowledge of the flora of the Arctic, and is appreciated by the scientists at the National Museum of Nature (Consaul, 2009).

4.3 RARE PLANTS

Rare plants are always of concern in any project that affects vegetation. It is important to identify whether there are rare plants in an area, and then important to identify where these are, in order to protect or mitigate impacts to their microhabitats.

There are several references that are of considerable value in determining just what constitutes a "rare" plant. These include McJannet, Argus, and Cody (1995), McJannet, Argus, Edlund, and Cayouette (1993), and Cody (1979). The list of potential plants has been checked against an unpublished list entitled *Draft General Status Ranks of Vascular Plants in Nunavut* (Govt. of Nunavut, 2005). None of the plants on the list (potential and encountered) for the area appears in anything other than the "Secure" category on the draft list.

Lists of species of special concern, threatened, or endangered have also been developed as a part of the COSEWIC (Committee on the Status of Endangered Wildlife In Canada), and are posted on the COSEWIC website (COSEWIC, 2010) or on the "Species at Risk" website (SARA, Species at Risk Public Registry, 2010).

According to the *Atlas of Canada* (Natural Resources Canada, 2010), "some plants are rare because they naturally occur in very specialized habitats or in very low numbers; others may be rare because they have suffered setbacks because of natural processes or pressures from human

activities". This has been interpreted as reserving for "rare" status those plants that occur in small numbers in Canada, not those that occur in small numbers in a specific area of Canada, or are at the limits of their range in the study area.

No "rare plants" as described in any of the above references were found within the LSA's during field surveys for this baseline study. In addition, while working on the land, or while in transit from one site to another, the team was constantly on the lookout for species not already seen and for unusual groupings of plants. No "rare plants" were identified during these incidental activities.

One species that had not previously been reported from North Baffin was found. This is the yellow mountain saxifrage (*Saxifraga azoides*). It occurs on frost-scarred terrain where there is some solifluction, and is common along the northern road and rail routes. *Saxifraga aizoides* is not rare in the rest of the arctic and is not rare here; it is just the first time it has been found, due to the fact that the vegetation of this study area was not well known previous to this work. It simply represents a significant range extension for that species.

Another significant range extension has been found for the sedge *Carex chordorrhiza*, which was found in 2007 near Steensby Inlet. Dr. Jeff Saarela and Dr. Julian Starr of the Canadian Museum of Nature have both looked at the specimen and concur that it is *Carex chordorrhiza* (Saarela and Starr, 2008).

The small arctic fireweed (*Epilobium arcticum*) was found in a moss association on the north road route at approximately kilometer 56, on a gentle calcareous slope downstream from the "tote" road where it passes by the face of a limestone cliff. It has been recorded from plots 07_VN080 and 07_VN252, both of which are located in the same area. According to Porsild and Cody (1980), the arctic fireweed is rare. However, range maps in Porsild and Cody reveal that it has been found in Greenland and in many places in the Canadian Arctic Archipelago, as well as around Hudson Bay. According to McJannet, Argus, and Cody (1995), *Epilobium arcticum* was considered for rare status and rejected due to the fact that it is of widespread distribution across the Arctic. This species does not appear in any of the other publications on rare plants, nor is it on the COSEWIC or SARA lists. It is listed as "Secure" in the Draft Status of Nunavut Plants database.

During a return visit to the RSA to attempt to ascertain plant numbers for *Epilobium arcticum*, more than 80 plants were found in moss associations in the immediate area. In 2008, it was found again, in Plot 08-VS008 in the proposed Steensby port site area, indicating a larger range than originally expected. *Epilobium arcticum* should not be considered a "rare" species, but can be considered "uncommon" within the Regional Study Area.

4.4 OBSERVATIONS APPLICABLE TO RECLAMATION

Approximately 20 plots were established on the old road surface or adjacent to it in sites disturbed in the past. These plots contribute to the knowledge of natural succession and the plant species that can become re-established without intervention. These species may be considered good candidates for use in re-vegetation.

Observations applicable to reclamation are summarized below:

- Natural re vegetation in this general environment is slow, but not as slow as expected. Based on observations on an old silver mine near the Doris North Project in the Kitikmeot Region, we expected little re vegetation in the Mary River study area thirty years after use, but were surprised to find that considerable re vegetation had occurred along the old tote road, particularly in damp areas. The difference is that much of the area traversed by the tote road is on sandy soils, whereas the Roberts Bay Silver Mine is located mostly on fractured gravels (Burt, 2003).
- Colonization of dry areas along the old roads, paths, and campsite areas is occurring slowly, so slowly as to be almost immeasurable in the time since the disturbance.
- Plant communities around the old mining camp near Sheardown Lake have been slightly affected by the addition of nutrients, and are, as expected, richer than normal, with more lush growth and more species of grasses and forbs.
- This colonization (around the old camp) may be on the wane, due to depletion of nutrients and lack of enrichment in the ensuing years.
- There are plenty of local species that can be utilized for reclamation; it is neither necessary nor advisable to obtain plant stocks for reclamation from elsewhere. Use local/regional plant stocks and seed sources for any re vegetation being done on this Project.

4.5 TRADITIONAL INUIT USE OF PLANTS

A traditional knowledge component of the vegetation study was initiated in the summer of 2007 with consultation with elders in Pond Inlet. An illustrated report on the results of this 2007 consultation is attached as Appendix G. The local Inuit have a rich tradition in the use of plants, for many purposes.

Although it is indirect, the most important plant use in this area, as far as Inuit are concerned, is undoubtedly the use of grazing land by caribou. During certain times of the year, the people depended almost entirely on caribou, and arranged their lives around interception of the herds so they could hunt these animals for food, clothing and tools. The direct use of plants such as berries and roots was incidental to caribou hunting, fishing and hunting of marine mammals in the area; the people moved to take advantage of the availability of caribou, geese, seals, or fish, and used the local plants according to their season.

In winter, caribou feed mainly on lichens, especially *Cladonia* and *Cetraria or Flaviocetraria*. In summer, their diet is much more varied, including herbs, especially legumes, grasses, sedges, and cottongrasses, plus the leaves of willows and dwarf shrubs (Chernov, 1985). Based on field observations, important areas for caribou foraging in the Project area include the following (see wildlife reports for more detailed information):

- Megapolygons, which consist of domed centres and lower margins. According to the wildlife team, caribou use these heavily in spring, when the centres are appearing from under the snow.

- Barrens, including purple saxifrage barrens and the avens/xeric sedge association, which often blow clear early in the spring and provide accessible forage.
- Sedge wetlands, which provide essential fresh forage for caribou when the sedges are greening up, and seem to be most important during peak lactation time.

The entire transportation route across the island from Milne Inlet to Steensby Inlet has for centuries been a traditional travel route for Inuit. Historically, people travelled by dog team or by walking and spent extended periods of time in small camps on the land. In addition to hunting, they utilized what plants were available, seasonally. In many cases these were berries, especially blueberry or kigutangirnait (*Vaccinium uliginosum*) and crowberry or paungait (*Empetrum nigrum*), almost always called “black berry”, locally.

The lowlands around Steensby Inlet, Cockburn cliffs, and many of the glaciofluvial terraces along both the north and south routes support a rich crop of blueberries, and, in the south, crowberries. The traditional use of plants has occurred on an opportunistic basis. In the past, people likely did not move long distances simply to access rich crops of berries, but travelled into an area to hunt caribou or geese, or to fish, and readily picked berries while they were there. They still do this today, camping along the coasts and hunting and berry picking in the area.

Consultation with elders during the traditional knowledge studies in Pond Inlet, and conversations with Inuit field assistants throughout the project have revealed that Inuit traditionally used much more than berries. They consumed the leaves of the willows (uqaujat, *Salix arctica*, and, to a lesser extent, avaalaqiat, *Salix richardsonii*), and the roots of the yellow crazyweed or airaq (*Oxytropis maydelliana)*, bistort or tuqlak (*Persicaria vivipara)*, and various louseworts, especially the woolly lousewort (*Pedicularis lanata*). The fleshy leaves of mountain sorrel or qunguliq (*Oxyria digyna*) were (and are) eaten wherever found, and the stems and leaves crushed to make a refreshing juice. Several plants, including blueberry or kigutangirnait, purple mountain saxifrage (aupilattunnguat or *Saxifraga oppositifolia*) and prickly saxifrage (kakillaqnait or *Saxifraga tricuspidata*) and large-flowered wintergreen (Pyrola grandiflora) were used to make “tea”, especially after the introduction of commercial tea, and particularly when the group had run out of tea purchased from the trading posts. In many cases, it was the men who ate significant quantities of plant material while out hunting and away from the cooking skills of their wives.

The activity that uses the largest quantity of plants is the gathering of “firewood”, which is not necessarily large pieces of wood, but a mixture of arctic heather (qijuktaat, *Cassiope tetragona*), Labrador tea (qittiqsuut or *Ledum palustre*), and small willows, scraped up and piled, then used twig by twig in small fires. Dry lichens were often used to make fires as well and driftwood was used whenever found.

The silky white flowers and seed heads of the arctic cotton (kangujait or pualunnguat or *Eriophorum* sp.) and the seed-bearing fluff (siputiksaq) of the willows (sometimes mixed with dry moss) were used as the wick in the qullit or soapstone lamp. Willow fluff was mixed with dry cushion moss and used to stop bleeding in wounds.

4.6 BASELINE METALS IN SOILS AND PLANT TISSUE

For this project, the main emphasis was to establish baseline levels of different metals and elements before any work was done that disturbed the surface of the land or created dust or runoff that might carry metals or other elements.

The results for selected metals in plant species foliage are summarized in Table 1 and for soils in Table 2 below. The complete results for both plant tissue and surface soils analysis are presented in Appendix H (Table H1 and H2).

Table 1 - Baseline Metal Concentrations in Vegetation Foliage

Common Name	No. of Samples	Cadmium (Cd)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Nickel (Ni)	Zinc (Zn)
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
White Arctic Heather	12	<0.05 – 0.06	0.6 – 14.2	0.2 – 0.8	3.2 – 6.6	101 - 1650	0.17 – 2.75	0.9 – 7.8	14.8 – 25.3
Blueberry	34	<0.05 – 1.40	0.4 – 13.1	<0.1 – 0.6	3.8 – 11.8	16 - 539	<0.2 – 0.92	0.8 – 6.4	15.9 – 78.6
Alpine Holygrass	1	<0.05	4.9	0.2	2.4	243	0.33	2.7	23.7
Bluegrass	1	<0.05	3	0.1	2	58	0.07	1.8	17.3
Unknown Small Grass	1	0.17	0.6	0.5	5.6	33	0.02	0.8	102
Crowberry	7	<0.05 – 0.41	0.3 – 7.9	<0.1 – 1.2	4.6 – 5.7	12 – 2010	<0.02 – 1.01	0.7 – 12.9	7.9 – 64.8
Alpine Holygrass	1	<0.05	2.2	<0.1	2.3	53	0.08	1.7	17.2
Alpine Foxtail	1	<0.05	157	2.9	6.2	4810	3.03	84.2	15.5
Northern Pike Sedge	2	<0.05 – 0.05	28.7 – 36.0	0.5 – 0.7	4.2	506 - 1490	0.67 – 0.85	16.0 – 18.0	17.8 – 23.7
Shortleaved Sedge	2	0.10 – 0.51	27.9 – 32.6	1.8 – 2.2	11.2 – 52.2	1570 - 3220	2.07 – 3.09	16.2 – 19.1	15.5 – 22.7
Fragile Sedge	2	<0.05	1.5 – 18.9	<0.1 – 0.5	3.4 – 4.6	264 - 819	0.03 – 0.53	1.9 – 9.9	33.6 – 44.8
Spike Sedge	1	<0.05	6.7	0.2	3.8	387	0.37	3.2	20
Curly Sedge	1	0.06	1.5	0.1	6.6	86	0.28	1.2	20.7
Mutiple-Flowered Cottongrass	2	0.05 – 0.15	3.7 – 11.3	0.3 – 1.2	3.3 – 16.2	690 - 794	0.51 – 0.65	5.0 – 6.1	25.3 – 39.6
Sheathed Cottongrass	2	<0.05	1.1 – 3.6	0.1 – 0.2	2.5 – 3.4	285 - 341	0.05 – 0.27	0.7 – 2.1	28.5 – 44.7
Arctic willow	40	<0.05 – 16.6	0.5 – 19.6	<0.1 – 5.5	1.9 – 8.0	33 - 448	0.02 – 1.11	0.5 – 23.9	48.5 - 393
Richardson's Willow	2	0.46 – 6.28	0.6 – 2.1	1.1 – 2.0	5.4 – 7.1	45 - 203	0.04 - 0.33	3.4 – 14.3	188 - 371
Purple mtn. Saxifrage	1	0.1	28.7	2.3	9.3	1970	3.78	18.4	28.3

Common Name	No. of Samples	Cadmium (Cd)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Nickel (Ni)	Zinc (Zn)
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Yellow crazyweed	6	<0.05 – 0.15	1.0 – 26.8	0.3 – 1.2	2.6 – 4.9	85 – 3310	0.08 – 3.30	1.5 – 15.5	15.5 – 22.7
Alpine Milkvetch	1	<0.05	30.6	0.9	6.8	721	0.78	15.7	16.8
Mountain Avens	8	<0.05 – 0.10	1.4 – 51.2	0.3 – 2.1	2.5 – 6.5	189 - 3360	0.43 – 2.50	1.2 – 24.0	15.5 – 37.0
Mountain Sorrel	2	<0.05 – 0.09	2.1 – 2.5	1.4 – 2.2	4.0 – 4.4	126 - 181	0.37 – 1.62	4.5 – 9.8	18.1 – 31.4
Grey Cushion Moss	7	<0.05 – 1.99	15.2 - 183	0.5 – 4.1	2.4 – 26.9	859 - 7060	1.38 – 10.6	8.6 – 99.9	10.2 – 37.4
Crinkles Snow Lichen	3	<0.05 – 0.10	1.9 – 23.4	0.2 – 0.7	1.7 – 2.6	165 - 1170	0.74 – 1.74	1.2 – 11.4	17.1 – 21.7

Table 2- Baseline Metal Concentrations in Soil

Plot Location	Steensby Inlet	Steensby Port Island	Mine Infrastructure Area	Deposit #1	Cockburn Lake	Steensby Airstrip	Steensby Ikpikitujua
No. of Samples	20	6	3	7	5	4	4
Arsenic (As; mg/kg)	0.1 - 1.5	0.1 - 12.6	0.2 - 0.8	0.5 - 1.1	0.1 - 1.5	0.2 - 1.5	0.4 - 0.8
Cadmium (Cd; mg/kg)	<0.1	<0.1 - 0.4	<0.1	<0.1 - 1	<0.1 - 0.8	<0.1 - 0.2	<0.1 - 0.2
Chromium (Cr; mg/kg)	1.5 - 50	2.1 - 10.7	4.7 - 6.1	11.5 - 65.6	4.3 - 29.4	4.3 - 55.1	0.9 - 9.1
Cobalt (Co; mg/kg)	1.0 - 7.7	1.4 - 3.5	1.0 - 2.2	3.1 - 18.5	1.2 - 10.4	2.3 - 11.2	0.8 - 3.9
Copper (Cu; mg/kg)	1.2 - 41.3	1.6 - 62.0	2.5 - 6.6	5.8 - 283	4.1 - 50.1	3.8 - 25.8	4.6 - 26.8
Iron (Fe; mg/kg)	26000 - 1900	23700 - 2600	4100 - 2300	35400 - 6300	24600 - 4500	40900 - 6200	6800 - 1100
Lead (Pb)	1.5 - 15.9	1.6 - 6.8	2.5 - 4.3	5.3 - 66.5	4.3 - 13.6	2.9 - 21.9	2.0 - 8.7
Mercury (Hg; mg/kg)	<0.05 - 0.13	< 0.05 - 0.71	<0.05	<0.05	<0.05 - 0.11	<0.05 - 0.20	<0.05 - 0.13
Nickel (Ni; mg/kg)	1.4 - 27	1.7 - 6.5	3.9 - 8.3	8.3 - 45.2	2.1 - 21.9	2.8 - 20.2	2.4 - 6.1
Zinc (Zn; mg/kg)	9 - 49	11 - 32	9 - 17	14 - 188	32 - 84	13 - 61	18 - 122

SECTION 5.0 - REFERENCES

1. Aiken, S.G., M.J. Dallwitz, L.L. Consaul, C.L. McJannet, L.J. Gillespie, R.L. Boles, G.W. Argus, J.M. Gillett, P.J. Scott, R. Elven, M.C. LeBlanc, A.K. Brysting and H. Solstad (1999 onwards). *Flora of the Canadian Arctic Archipelago*: Descriptions, Illustrations, Identification, and Information Retrieval. Version: 29th April 2003. Accessed online, 20 Sept. 2010, at: http://www.mun.ca/biology/delta/arcticf/.

2. Aiken, S.G., M.J. Dallwitz, L.L. Consaul, C.L. McJannet, R.L. Boles, G.W. Argus, J.M. Gillett, P.J. Scott, R. Elven, M.C. LeBlanc, L.J. Gillespie, A.K. Brysting, H. Solstad, and J.G. Harris. 2007. *Flora of the Canadian Arctic Archipelago*: *Descriptions, Illustrations, Identification, and Information Retrieval.* CD-ROM published by National Research Council Canada, Ottawa, ON.

3. Alaska Geobotany Centre. 2007. *Toolik-Arctic Geobotanical Atlas.* Website: www.arcticatlas.org (accessed 12 Sept., 2010). Institute of Arctic Biology, University of Alaska Fairbanks, Alaska.

4. Allen, H.E. 2002. *Bioavailability of Metals in Terrestrial Ecosystems: Importance of Partitioning for Bioavailability to Invertebrates, Microbes, and Plants.* SETAC Press. USA.

5. Baker, A.J.M. 1987. Metal Tolerance. *New Phytologist*. 106:93-111.

6. Banci, V., Hanak, J., Ovilok, J., and Engoaloak, H. 2006. *Caribou and Roads: Implementing Traditional Knowledge in Wildlife Monitoring at the Ekati Diamond Mine. 2005 Annual Report.* Rescan Environmental Services Ltd., Yellowknife, NT. and Vancouver, BC. (Prepared for BHP Diamonds Inc.)

7. Brodo, I.M., Sharnoff, S.D., and S. Sharnoff. 2001. *Lichens of North America*. Yale University Press, New Haven, CT and London. 795 pp.

8. Burt, P. 2003. *Miramar Hope Bay Ltd., Doris North Gold Project, Vegetation Baseline Studies, Report, 2003*. Outcrop Ltd., Yellowknife, NT.

9. Burt, P. 2000. *Barrenland Beauties*. Outcrop, Yellowknife, NT.

10. CCME (Canadian Council of Ministers of the Environment). 2007. *CCME Soil Quality Index 1.0: Technical Report. In: Canadian environmental quality guidelines*, 1999, Canadian Council of Ministers of the Environment, Winnipeg. Accessed online, 3 Aug. 2010, at http://www.ccme.ca/assets/pdf/rev_soil_summary_tbl_7.0_e.pdf

11. Chernov, Y.I., translation by D. Love, 1985. *The living tundra*. Studies in Polar Research, Cambridge University Press, Cambridge, UK

12. Chung, In-Cho. 1989. *Eastern North America as Seen by a Botanist: Pictorial. 1. The Arctic Region.* Published by author, 1308 Laurel Dr., Daytona Beach, FL. 32017 USA.

13. Cody, W. 1979. *Vascular Plants of Restricted Range in the Continental Northwest Territories, Canada*. Syllogeus No. 23. National Museums of Canada, Ottawa, ON.

14. Consaul, L. 2009. Personal communication regarding rarity of studies in Project area.

15. COSEWIC. 2007. Canadian Species at Risk (Excel files). Accessed 16 Dec. 2008 at: http://www.cosewic.gc.ca/htmlDocuments/Plant_Prioritized_Candlist.xls

16. EBA Engineering Consultants. 2002. Tibbitt to Contwoyto Winter Road Ecological Land Classification. Tibbitt to Contwoyto Winter Road Joint Venture, Yellowknife, NT.

17. Environment Canada. 2010. *Ecozones of Canada*. On Environment Canada's website, accessed 20 Nov. 2010, at: http://ecozones.ca/english/zone/index.html

18. Flora of North America Web Site. 2010. Flora of North America Association, published by Oxford University Press. Many volumes in press. Accessed online, 24 November 2010, at: http://hua.huh.harvard.edu/FNA/index.html

19. Government of Nunavut, 2005. *Draft Status of Vascular Plants in Nunavut*. Unpublished database provided by Nunavut Parks.

20. Greger, M. 2004, "Metal availablity, uptake, transport, and accumulation in plants." Chapter 1, in: Prasad, M.N.V. (Ed.), 2004. *Heavy Metal Stress in Plants*. 2nd Ed., Springer, Secaucus, N.J.

21. ITIS (Integrated Taxonomic Information System) database, 2008. United States Dept. of Agriculture. Retrieved 12 Dec. 2008, from the Integrated Taxonomic Information System on-line database: http://www.itis.usda.gov.

22. Kabata-Pendias, A. 2001. Trace elements in soils and plants. CRC Press LLC, Boca Raton, Fla. 365 pp.

23. Marschner, H. 1995. Mineral Nutrition of Higher Plants. Second edition. Academic Press, London. 889 pp.

24. McJannet, C., Argus, G., and W. Cody. 1995. *Rare Vascular Plants in the Northwest Territories*. Canadian Museum of Civilization, Ottawa, ON.

25. McJannet, C., Argus, G., Edlund, S., and J. Cayouette. 1993. *Rare Vascular Plants in the Canadian Arctic*, Syllogeus No. 72. Canadian Museum of Civilization, Ottawa, ON.

26. Natural Resources Canada, 2010. *Atlas of Canada*, accessed online 20 November 2010 at: http://atlas.nrcan.gc.ca/site/english/index.html

27. O'Leary, D., J. Bentz, and P. Burt. 2002. *Surficial Geology, Soils, and Ecosystem Mapping – Bathurst Inlet Port and Road Project.* Prepared by Geowest Environmental Consultants Ltd. for the Bathurst Inlet Port and Road Project Steering Committee.

28. Olthof, I. 2008. Personal communication, emails regarding classification system

29. Olthof, I., Latifovic, R., and D. Pouliot. 2000. A New Circa-2000 Land Cover Map of Northern Canada at 30-m Landsat Resolution. Canada Centre for Remote Sensing, 588 Booth St., Ottawa, ON. K1A 0Y7. Contact: Ian Olthof: iolthof@ccrs.nrcan.gc.ca

30. Pais, I. and J.B. Jones, Jr. 1997. *The Handbook of Trace Elements*. St. Lucie Press, Boca Raton. 240 pp.

31. Parks Canada. 2004. *Vascular Plants of Bylot Island.* Ecological Studies and Environmental Monitoring at Bylot Island, Sirmilik National Park, Nunavut, Laval University. Accessed online, 20 November 2010 at http://www.cen.ulaval.ca/bylot/specieslists-plants.htm

32. Porsild, A.E. and Cody, W. 1980. *Vascular Plants of the Continental Northwest Territories*. National Museum of Canada, Ottawa, ON.

33. Raskin, I., and B.D. Ensley. 2000. *Phytoremediation of Toxic Metals. Using Plants to Clean Up the Environment.* John Wiley & Sons, Inc. New York.

34. SARA, 2010. Species at Risk Public Registry. Government of Canada, Accessed online, 26 November 2010, at: http://www.sararegistry.gc.ca/default_e.cfm

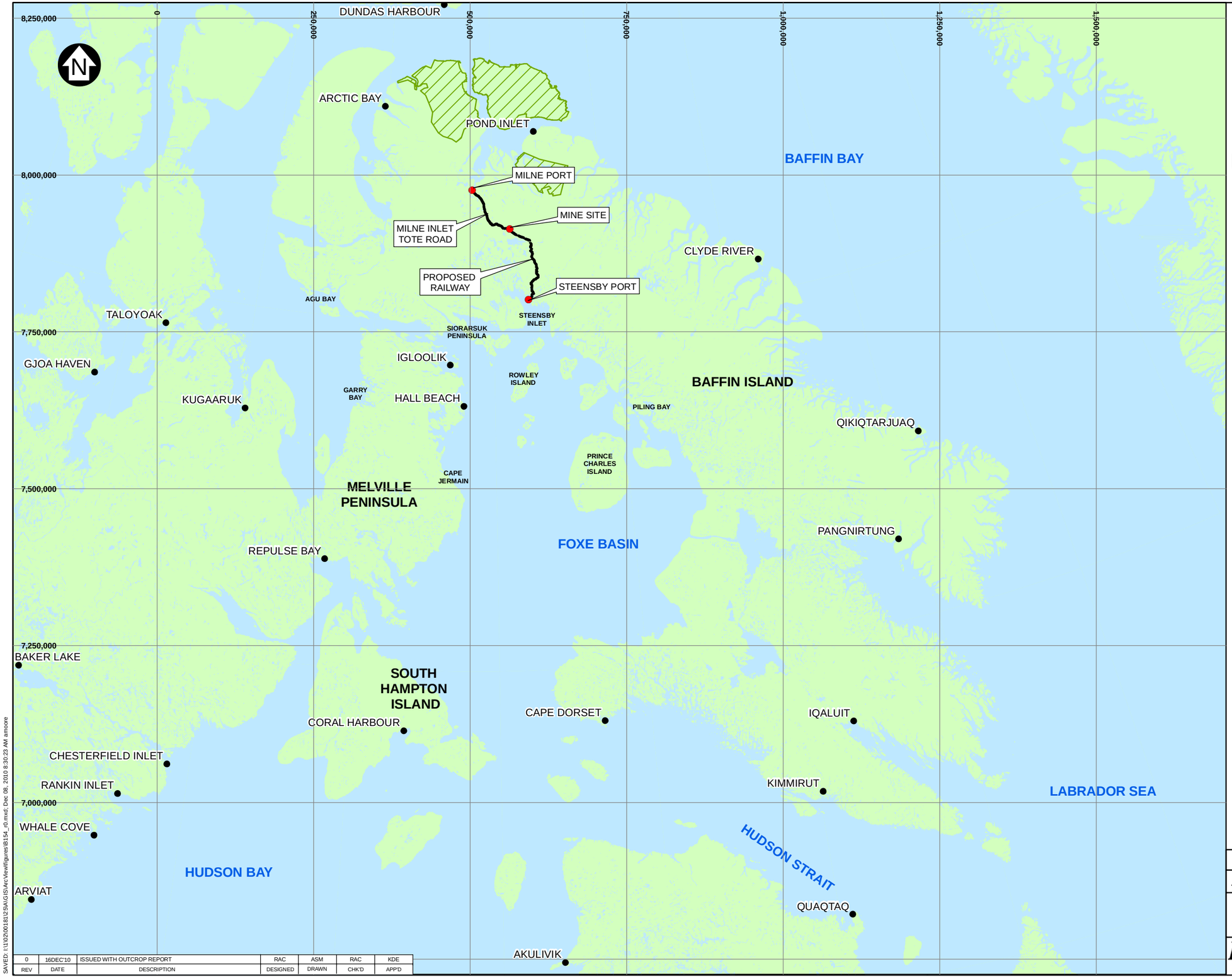
35. USDA (U.S. Dept. of Agriculture), NRCS. 2006. The PLANTS Database, Version 3.5: accessed 20 Sept. 2010, at: http://plants.usda.gov. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

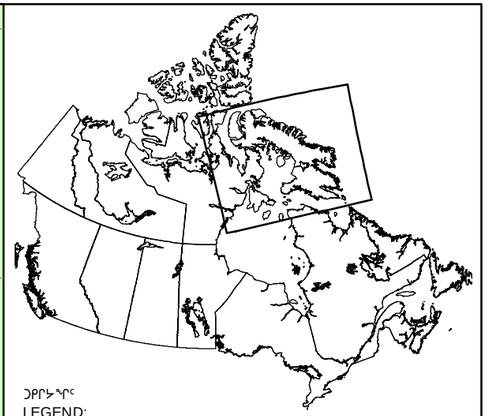
36. Vitt, D., Marsh, J. and R. Bovey. 1988. *Mosses, Lichens, and Ferns of Northwest North America*. U. of Washington Press, 288 pp.

37. Weng, L.P., Wolthoorn, A., Lexmond, T.M., Temminghoff, E.J.M. and W.H. Van Riemsdijk. 2004. Understanding the Effects of Soil Characteristics on Phytotoxicity and Bioavailability on Nickel Using Speciation Models. *Environmental Science Technology* 38: 156-162.

38. Wolfden Resources/Zinifex. 2007. High Lake Project, Draft Environmental Impact Statement. Accessed online, 20 October 2010, at NIRB ftp site: FTP.NIRB.CA-/02-reviews/active reviews/06MN082-MMG High Lake/2-review/06-draft EIS/

39. Ziegler, A., Joamie, Aalasi, and R. Hainnu. 2009. *Walking with Aalasi: An Introduction to Edible and Medicinal Arctic Plants*. Inhabit Media Inc., Iqaluit and Toronto.





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LEGEND:

- COMMUNITY
- MILNE INLET TOTE ROAD
- PROPOSED RAIL ALIGNMENT
- WATER
- SIRMILIK NATIONAL PARK

ᖃᐅᔨᓴᓂᖅ
NOTES:

1. ᓄᓇᒋᑎᓪᓗᐊᑕᐃᓐ: ᐃᐃᓕ ᖃᓄᐃᓗᒃ
   BASE MAP: © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004). ALL RIGHTS RESERVED.
2. ᓄᓇᒋᑐᖅ ᑎᑎᕋᓚᒃ ᒪᓕᒐᓐᓇᖅ UTM (NAD83) ZONE 17 AND IS IN METRES.
   COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.

SCALE 50 25 0 50 100 150 200 250 km

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
0	16DEC'10	ISSUED WITH OUTCROP REPORT	RAC	ASM	RAC	KDE

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BAFFINLAND IRON MINES CORPORATION

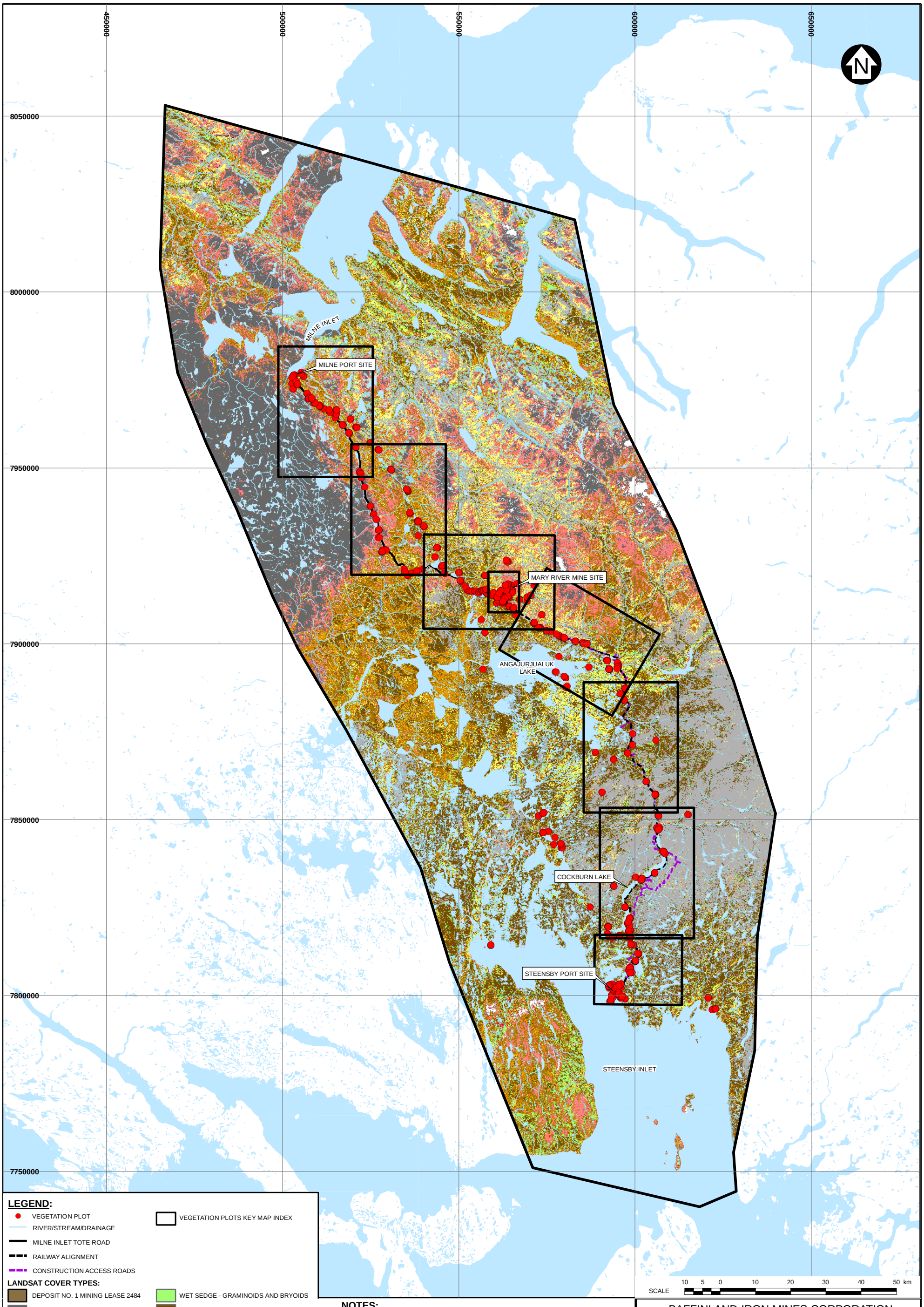
ᓄᓇᕗᑦ ᐅᕙᖃᖅᓯᐅᑎᑦ MARY RIVER PROJECT

ᐱᓕᕆᔨᐅᔪᖅ ᓄᓇᖓᓕ ᓄᓇᒋᐊᖏᖓ
PROJECT LOCATION MAP

Knight Piésold CONSULTING

P/A NO.	REF NO.
NB102-181/25	NB10-00657

ᑎᑎᕋᐅᓯᖓᓄᑦ **FIGURE** 1 REV 0



LEGEND:

- VEGETATION PLOT
- RIVER/STREAM/DRAINAGE
- MILNE INLET TOTE ROAD
- RAILWAY ALIGNMENT
- CONSTRUCTION ACCESS ROADS
- VEGETATION PLOTS KEY MAP INDEX

LANDSAT COVER TYPES:

- DEPOSIT NO. 1 MINING LEASE 2484
- BARREN
- ICE/SNOW
- WATER
- DRY GRAMINOID PROSTRATE DWARF SHRUB TUNDRA
- BARE SOIL WITH CRYPTOGRAM CRUST
- TUSSOCK GRAMINOID TUNDRA
- WET SEDGE - GRAMINOIDS AND BRYOIDS
- PROSTRATE DWARF SHRUB - DRYAS/HEATH
- WETLANDS
- SPARSELY VEGETATED BEDROCK
- SPARSELY VEGETATED TILL-COLLUVIUM
- MOIST TO DRY NON-TUSSOCK GRAMINOID/DWARF SHRUB TUNDRA

NOTES:

1. BASE MAP 1:250,000 © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004). ALL RIGHTS RESERVED.
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
3. LANDSAT MAPPING FROM CANADA CENTRE FOR REMOTE SENSING, DEPARTMENT OF NATURAL RESOURCES (2008).
4. RAILWAY ALIGNMENT PROVIDED BY CANARAIL CONSULTANTS INC. (AUGUST, 2010)

REV	DATE	DESCRIPTION	DESIGN	DRAWN	CHK'D	APP'D
0	16DEC'10	ISSUED WITH OUTCROP REPORT	RAC	ASM	RAC	PB

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

TERRESTRIAL REGIONAL STUDY AREA SHOWING VEGETATION PLOT LOCATIONS

Knight Piésold CONSULTING

P/A NO. NB102-181/25

REF NO. NB10-00657

FIGURE 2

REV 0

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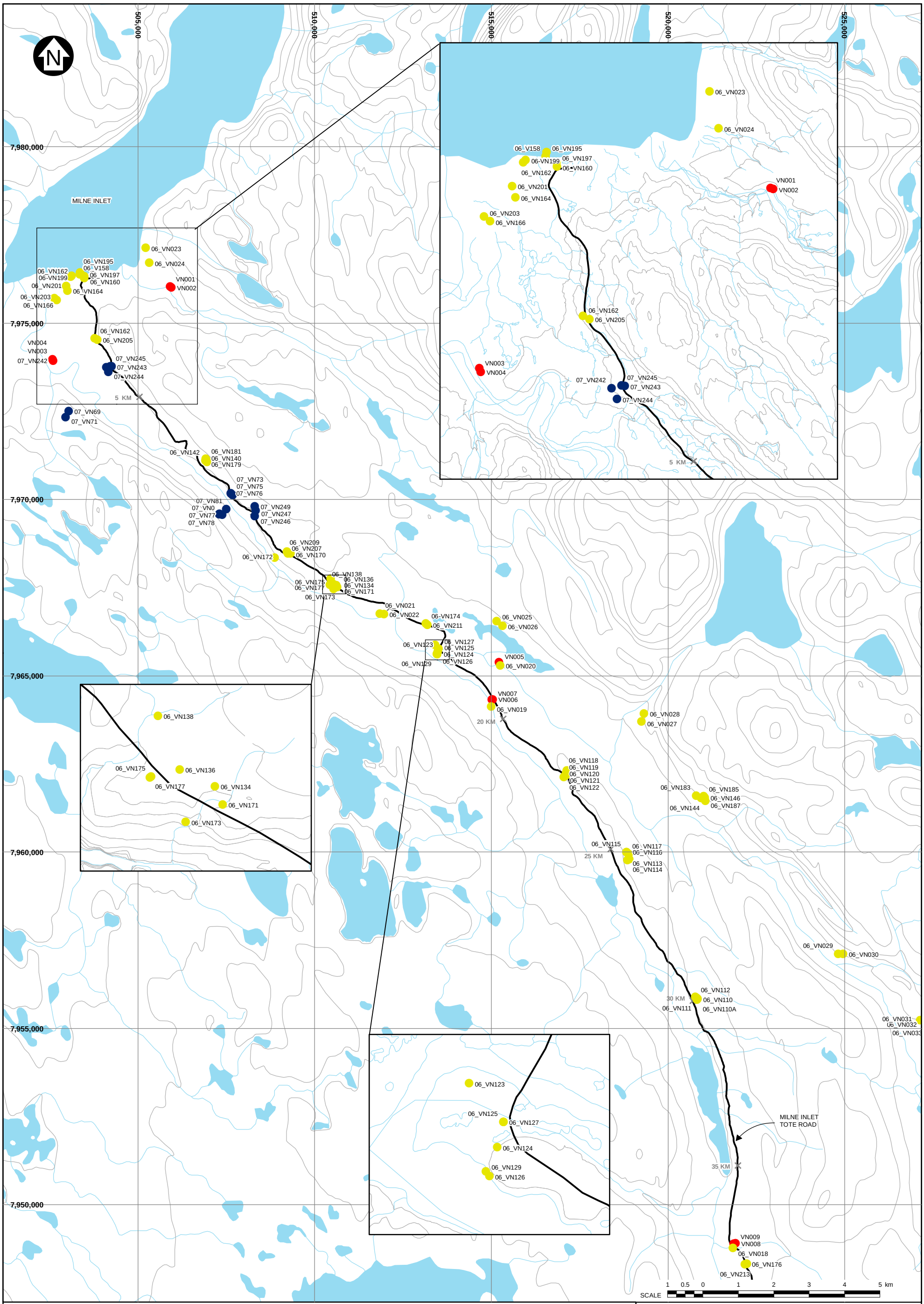

LEGEND:

- WATER
- RIVER/STREAM/DRAINAGE
- MILNE INLET TOTE ROAD
- 5 km INTERVAL MARKER

VEGETATION SURVEY PLOT:

- VEGETATION PLOT LOCATION (2005)
- VEGETATION PLOT LOCATION (2006)
- VEGETATION PLOT LOCATION (2007)

NOTES:

1. BASE MAP 1:250,000 © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004).
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
3. CONTOURS ARE IN METRES. CONTOUR INTERVAL VARIES.
4. RAILWAY ALIGNMENT PROVIDED BY CANARAIL CONSULTANTS INC. (AUGUST, 2010).

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
0	16DEC'10	ISSUED WITH OUTCROP REPORT	RAC	ASM	RAC	PB

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

VEGETATION PLOT LOCATIONS MILNE INLET 0 KM TO 35 KM ON TOTE ROAD

Knight Piésold CONSULTING

P/A NO. NB102-181/25

REF NO. NB10-00657

FIGURE 3

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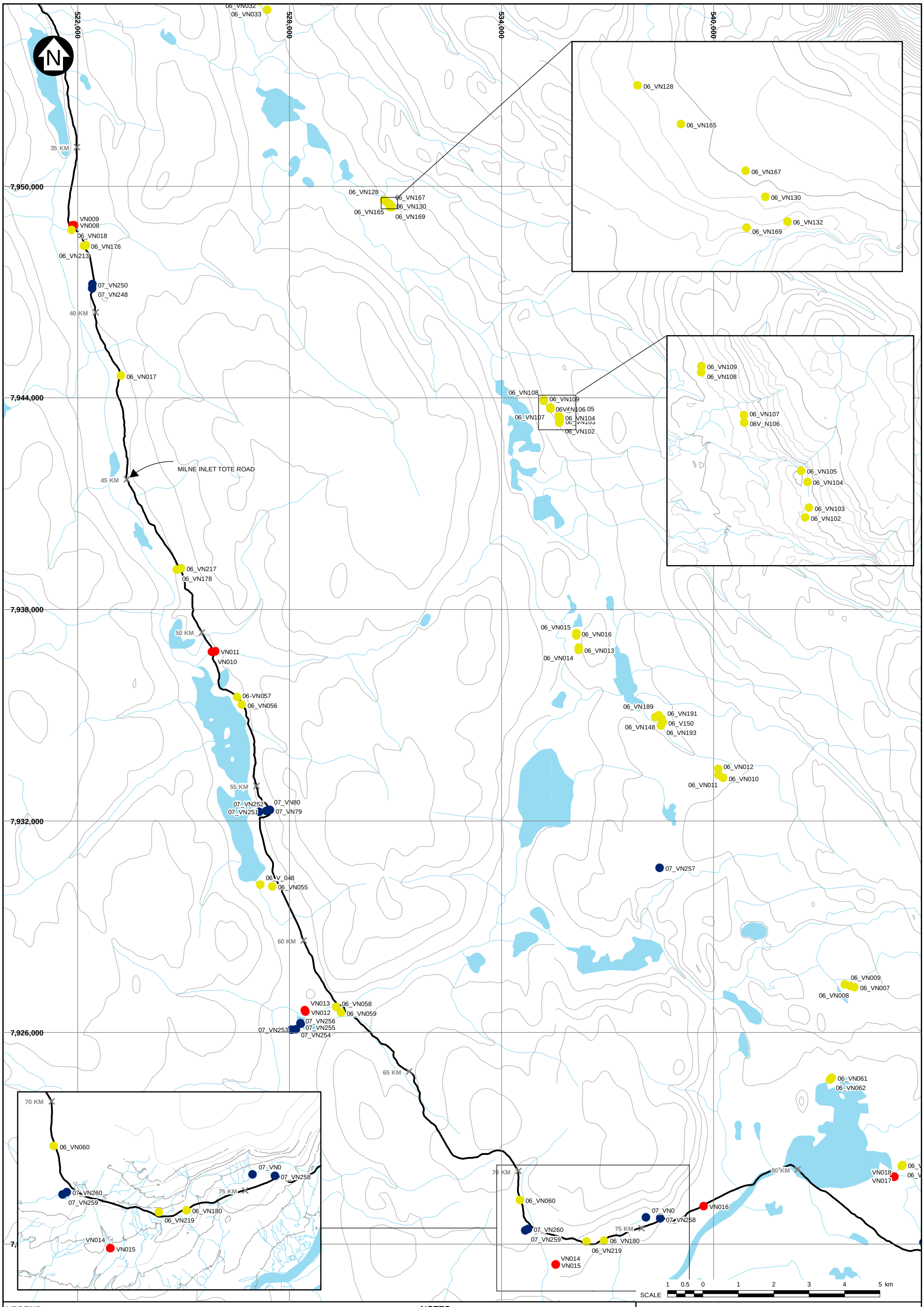

LEGEND:

- WATER
- RIVER/STREAM/DRAINAGE
- MILNE INLET TOTE ROAD

VEGETATION SURVEY PLOT:

- VEGETATION PLOT LOCATION (2005)
- VEGETATION PLOT LOCATION (2006)
- VEGETATION PLOT LOCATION (2007)

NOTES:

1. BASE MAP 1:250,000 © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004).
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
3. CONTOURS ARE IN METRES. CONTOUR INTERVAL VARIES.
4. RAILWAY ALIGNMENT PROVIDED BY CANARAIL CONSULTANTS INC. (AUGUST, 2010).

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
0	16DEC'10	ISSUED WITH OUTCROP REPORT	RAC	ASM	RAC	PB

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

VEGETATION PLOT LOCATIONS 30 KM TO 80 KM ON TOTE ROAD

Knight Piésold CONSULTING

P/A NO. NB102-181/25

REF NO. NB10-00657

FIGURE 4

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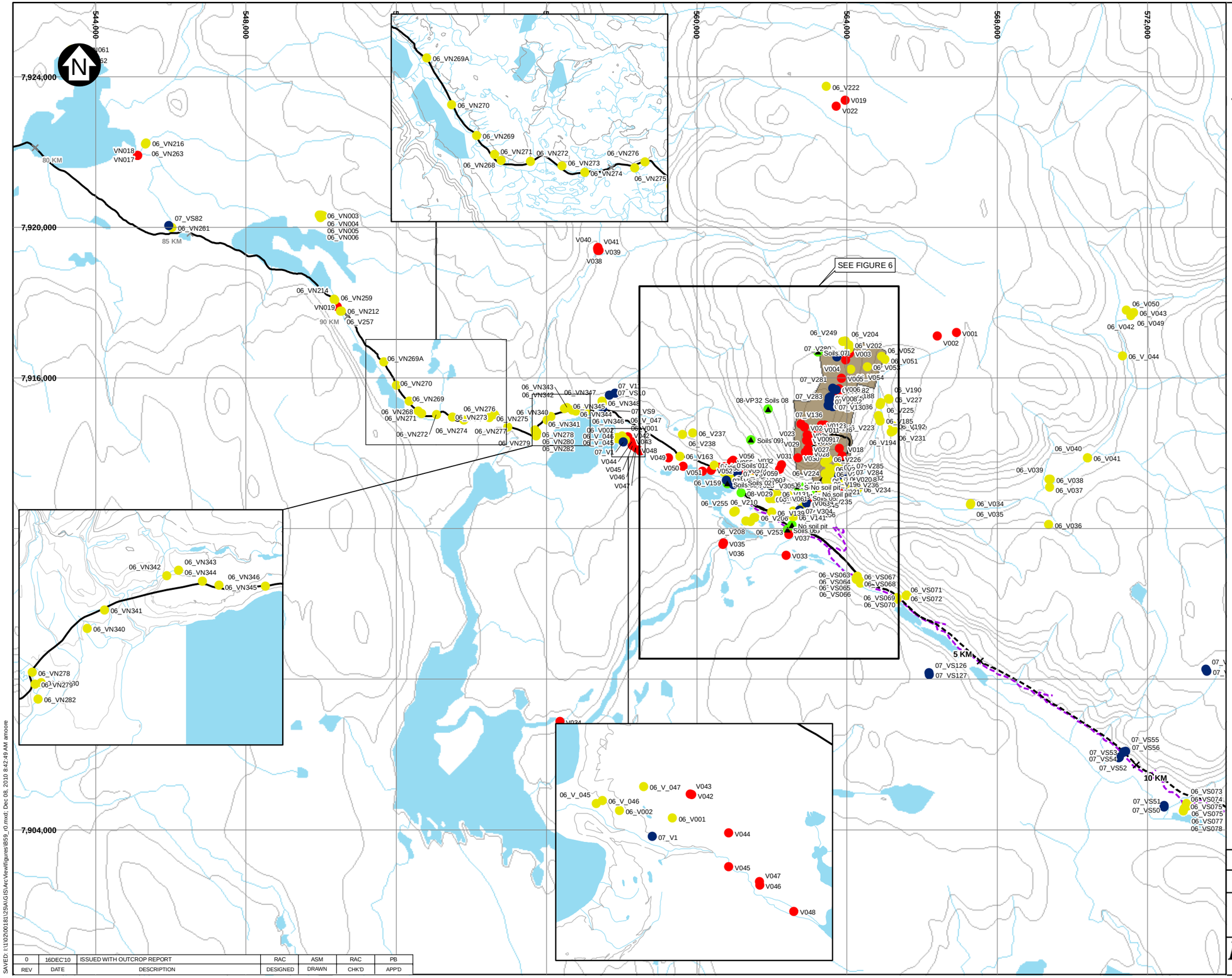
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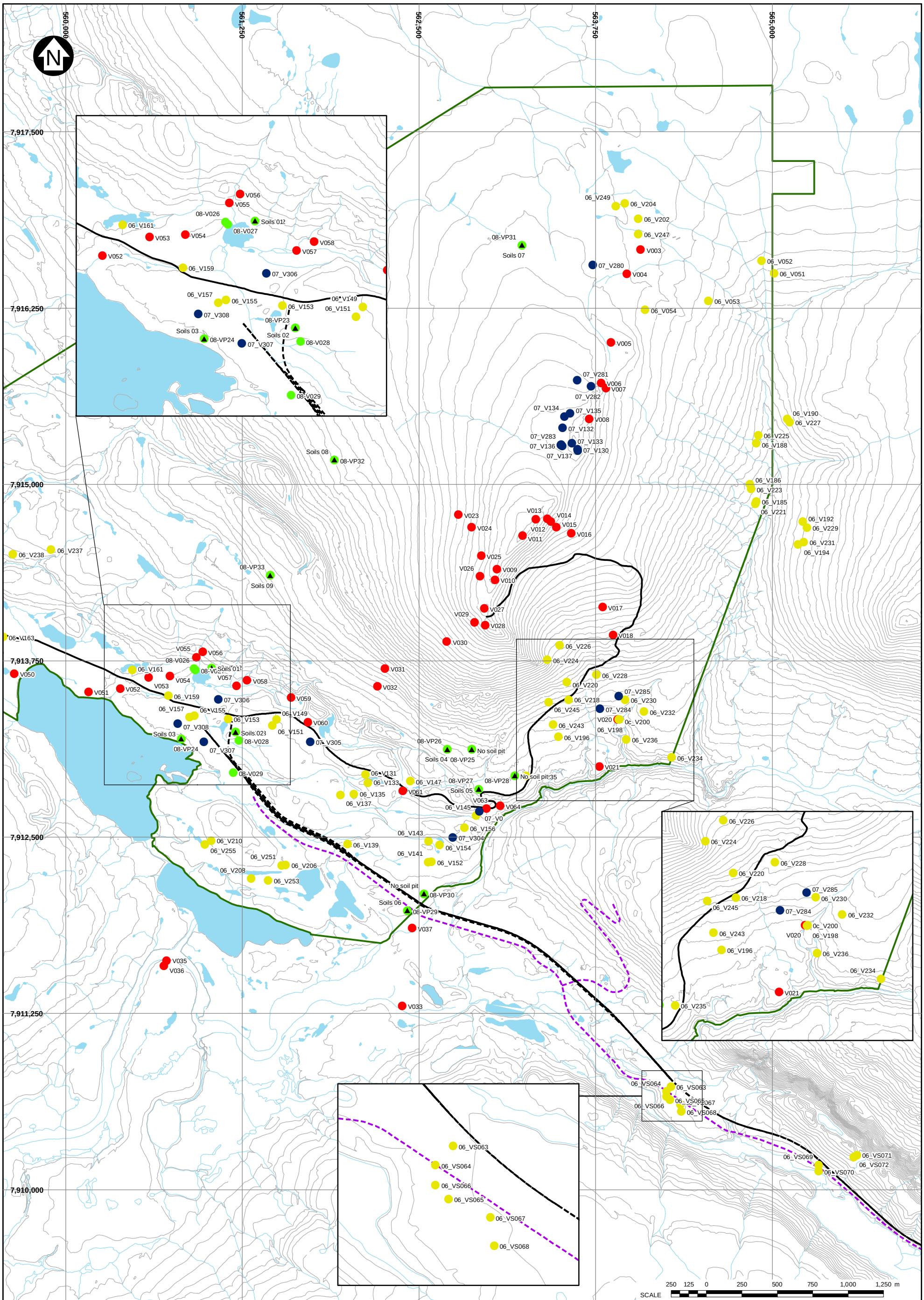

LEGEND:

- WATER
- POTENTIAL DISTURBANCE AREA
- RIVER/STREAM/DRAINAGE
- MILNE INLET TOTE ROAD
- PROPOSED RAILWAY ALIGNMENT
- CONSTRUCTION ACCESS ROAD
- 5 km INTERVAL MARKER

VEGETATION SURVEY PLOT:

- VEGETATION PLOT LOCATION (2005)
- VEGETATION PLOT LOCATION (2006)
- VEGETATION PLOT LOCATION (2007)
- VEGETATION PLOT LOCATION (2008)
- BASELINE STATION

NOTES:

1. BASE MAP 1:250,000 © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004).
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
3. CONTOURS ARE IN METRES. CONTOUR INTERVAL VARIES.
4. RAILWAY ALIGNMENT PROVIDED BY CANARAIL CONSULTANTS INC. (AUGUST, 2010).

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
0	16DEC'10	ISSUED WITH OUTCROP REPORT	RAC	ASM	RAC	PB

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

VEGETATION PLOT LOCATIONS MINE SITE DETAILED VIEW

Knight Piésold CONSULTING

P/A NO. NB102-181/25

REF NO. NB10-00657

FIGURE 6

REV 0

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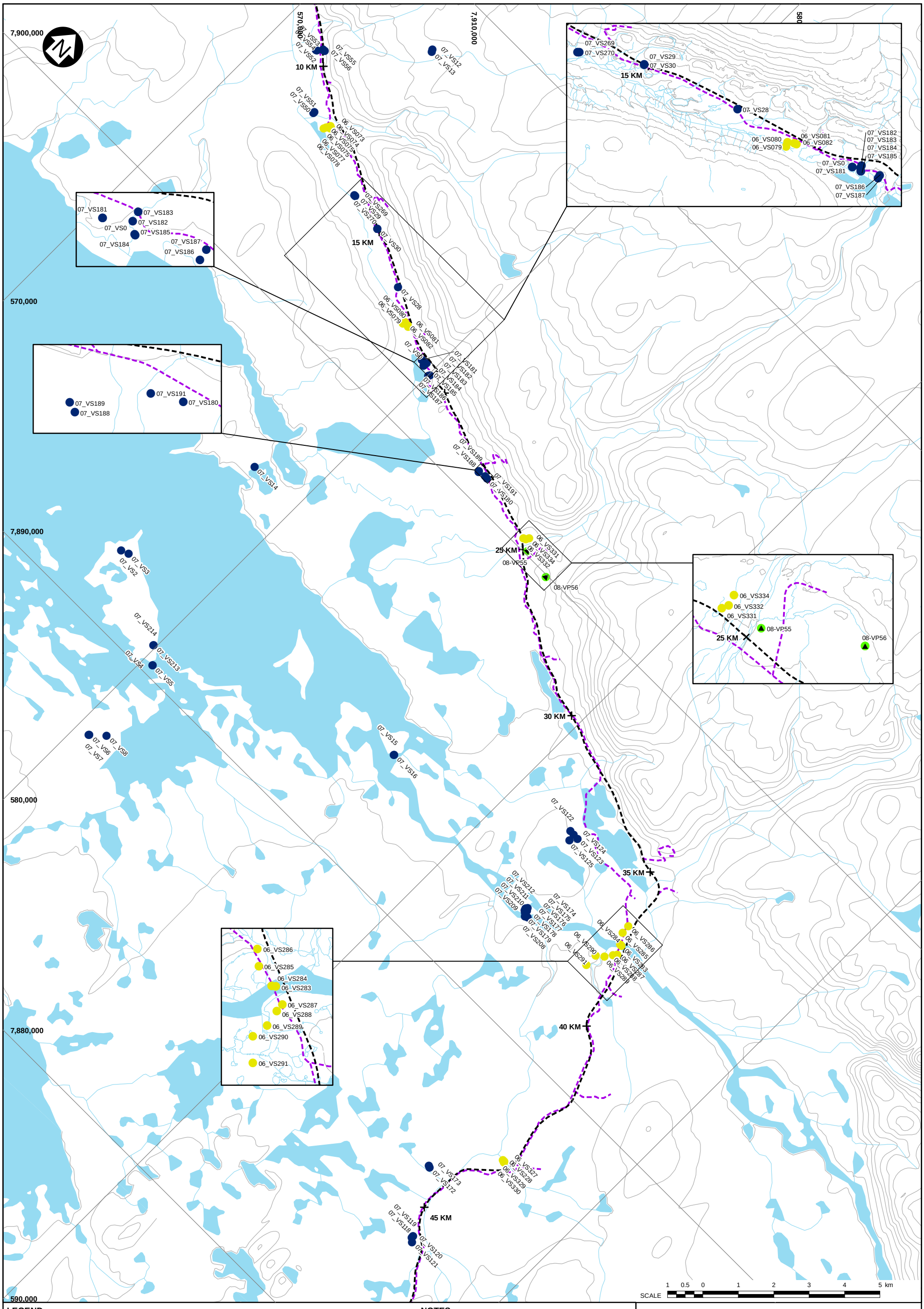

LEGEND:

- WATER
- RIVER/STREAM/DRAINAGE
- PROPOSED RAILWAY ALIGNMENT
- CONSTRUCTION ACCESS ROAD
- 5 km INTERVAL MARKER

VEGETATION SURVEY PLOT:

- VEGETATION PLOT LOCATION (2005)
- VEGETATION PLOT LOCATION (2006)
- VEGETATION PLOT LOCATION (2007)
- VEGETATION PLOT LOCATION (2008)
- ▲ BASELINE STATION

NOTES:

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REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
0	16DEC'10	ISSUED WITH OUTCROP REPORT	RAC	ASM	RAC	PB

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

VEGETATION PLOT LOCATIONS 5 KM TO 45 KM ON RAIL ALIGNMENT

Knight Piésold CONSULTING

P/A NO. NB102-181/25

REF NO. NB10-00657

FIGURE 7

REV 0

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590,000
600,000
610,000
7,880,000
7,870,000
7,860,000
7,850,000
N
45 KM
50 KM
60 KM
65 KM
70 KM
75 KM
80 KM
85 KM
07_VS119
07_VS118
07_VS120
07_VS121
07_VS31
07_VS115
07_VS116
07_VS117
07_VS18
07_VS17
07_VS170
07_VS171
07_VS19
07_VS0
06_VS322
06_VS324
06_VS323
07_VS289
07_VS287
07_VS288
06_VS326
06_VS325
08-VP54
08-VP54
06_VS315A
06_VS318
06_VS324
06_VS323
06_VS322
07_VS287
07_VS288
07_VS289
07_VS276
07_VS277
07_VS278
07_VS279
07_VS286
1 0.5 0 1 2 3 4 5 km
SCALE

LEGEND:

- WATER
- RIVER/STREAM/DRAINAGE
- PROPOSED RAILWAY ALIGNMENT
- CONSTRUCTION ACCESS ROAD
- 5 km INTERVAL MARKER

VEGETATION SURVEY PLOT:

- VEGETATION PLOT LOCATION (2005)
- VEGETATION PLOT LOCATION (2006)
- VEGETATION PLOT LOCATION (2007)
- VEGETATION PLOT LOCATION (2008)
- BASELINE STATION

NOTES:

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3. CONTOURS ARE IN METRES. CONTOUR INTERVAL VARIES.
4. RAILWAY ALIGNMENT PROVIDED BY CANARAIL CONSULTANTS INC. (AUGUST, 2010).

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
0	16DEC'10	ISSUED WITH OUTCROP REPORT	RAC	ASM	RAC	PB

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

VEGETATION PLOT LOCATIONS 45KM TO 85KM ON THE RAIL ALIGNMENT

Knight Piésold CONSULTING

P/A NO. NB102-181/25

REF NO. NB10-00657

FIGURE 8

REV 0

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592,000 596,000 600,000 604,000 608,000 612,000 616,000

7,848,000 7,844,000 7,840,000 7,836,000 7,832,000 7,828,000 7,824,000 7,820,000 7,816,000

N

90 KM 95 KM 100 KM 105 KM 110 KM 115 KM 120 KM 125 KM 130 KM

06_VS281A 06_VS282A 06_VS283A 07_VS275 07_VS274 07_VS0 08-VP53 07_VS272 07_VS273

06_VS282A 06_VS281A 06_VS283A 07_VS275 07_VS274 07_VS0 07_VS271 07_VS272 08-VP53 07_VS273

07_VS299 07_VS297 07_VS298 07_VS300 07_VS301 07_VS302 07_VS303

07_VS24 07_VS25

07_VS193 07_VS194 07_VS195 07_VS205 07_VS206 07_VS207

07_VS201 07_VS202 07_VS203 07_VS204

07_VS22 08-VS30 07_VS23 Soils 12 08-VP37 07_VS198 07_VS199 07_VS200 07_VS197

06_VS302 06_VS304 06-VS303 06_VS305

COCKBURN LAKE

06_VS320 06_VS317

07_VS70 07_VS66 07_VS65 07_VS63 07_VS68 08-VP38 Soils 13

07_VS301 07_VS297 07_VS303

06_VS098 06_VS097 08-VP52 06_VS095 06_VS096 06-VS100

06_VS292 06_VS293 06-VS295 06_VS294

07_VS268 07_VS267 07_VS113 07_VS112 07_VS114 No soil pit 08-VP34

07_VS241 07_VS224 07_VS239

06_VS092 06_VS093 06_VS091 06_VS094

07_VS70 07_VS66 07_VS65 07_VS63 08-VP53 Soils 13 07_VS263 07_VS264 07_VS265 07_VS72 07_VS67

VS007 06_VS299 06_VS296 06_VS301 06_VS300 07_VS74

06_VS091 06_VS092 06_VS093 07_VS241 07_VS224 07_VS239 06_VS094

1 0.5 0 1 2 3 4 km

SCALE

LEGEND:

- WATER
- RIVER/STREAM/DRAINAGE
- PROPOSED RAILWAY ALIGNMENT
- CONSTRUCTION ACCESS ROAD
- 5 km INTERVAL MARKER

VEGETATION SURVEY PLOT:

- VEGETATION PLOT LOCATION (2005)
- VEGETATION PLOT LOCATION (2006)
- VEGETATION PLOT LOCATION (2007)
- VEGETATION PLOT LOCATION (2008)
- BASELINE STATION

NOTES:

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0	16DEC'10	ISSUED WITH OUTCROP REPORT	RAC	ASM	RAC	PB

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

VEGETATION PLOT LOCATIONS 85KM TO 130KM ON THE RAIL ALIGNMENT

Knight Piésold CONSULTING

P/A NO. NB102-181/25

REF NO. NB10-00657

FIGURE 9

REV 0

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590,000 592,000 594,000 596,000 598,000 600,000 602,000 604,000

7,810,000 7,808,000 7,806,000 7,804,000 7,802,000 7,800,000

135 KM 140 KM 145 KM 0 KM

07_VS110 07_VS111 07_VS109 07_VS103 07_VS101 07_VS107 07_VS106 07_VS108 07_VS104 07_VS105 07_VS102 07_VS235 07_VS233 07_VS222 07_VS237 VS006 08-VP21 08-VP20 08-VP19 VP20 08-VP04 08-VP05 08-VP45 08-VS010 08-VP46 08-VP47 07_VS294 07_VS293 07_VS292 07_VS291 07_VS290 08-VP03 08-VP14 08-VS009 08-VP02 08-VS025 08-VS024 08-VP15 08-VP16 08-VS008 08-VS007 08-VS006 08-VS005 08-VS004 08-VP17 06_VS307 07_VS295 06VS090 06_VS089 06_VS083 08-VP18 07_VS219 07_VS32 07_VS192 08-VP05 08-VS021 08-VP10 08-VS017 08-VS018 08-VS016 08-VS020 08-VP07 08-VP09 07_VS61 08-VP08 07_VS62 07_VS57 07_VS60 07_VS59 08-VP11 08-VP12 08-VS023 08-VS022 07_VS227 07_VS225 07_VS220 07_VS229 08-VP13 08-VS005 08-VS004 06_VS307 08-VP17 06_VS083 06_VS084 06_VS086 06_VS085 08-VP01 08-VP21 07_VS295 06_VS087 06_VS088 07_VS0 07_VS296 06VS090 06_VS089 07_VS221 07_VS219 08-VP18 07_VS217 07_VS215 07_VS218 07_VS216 07_VS32 07_VS192 08-VS011 08-VP09 07_VS61 07_VS64 07_VS62 08-VP08 07_VS60 07_VS57 07_VS58 07_VS0 07_VS59 Soils 15 Soils 14 No soil pit Soils 16 Soils 10 08-VP36 08-VS003 08-VS001 08-VP51 08-VP43 08-VP50 08-VS002 08-VP44

LEGEND:

- WATER
- POTENTIAL DISTURBANCE AREA
- RIVER/STREAM/DRAINAGE
- PROPOSED RAILWAY ALIGNMENT
- CONSTRUCTION ACCESS ROAD
- 5 km INTERVAL MARKER

VEGETATION SURVEY PLOT:

- VEGETATION PLOT LOCATION (2005)
- VEGETATION PLOT LOCATION (2006)
- VEGETATION PLOT LOCATION (2007)
- VEGETATION PLOT LOCATION (2008)
- BASELINE STATION

NOTES:

1. BASE MAP: © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004). ALL RIGHTS RESERVED.
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
3. VEGETATION MAP: © CANADIAN CENTRE FOR REMOTE SENSING. ALL RIGHTS RESERVED.
4. 5M CONTOURS PROVIDED BY EAGLE MAPPING (2008).
5. RAILWAY ALIGNMENT PROVIDED BY CANARAIL CONSULTANTS INC. (AUGUST 12, 2010).

SCALE 500 250 0 500 1,000 1,500 2,000 2,500 m

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
0	16DEC'10	ISSUED WITH OUTCROP REPORT	RAC	ASM	RAC	PB

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BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

VEGETATION PLOT LOCATIONS
130KM ON RAIL ALIGNMENT TO STEENSBY PORT

Knight Piésold CONSULTING

P/A NO.	REF NO.
NB102-181/25	NB10-00657

FIGURE 10 REV 0

APPENDIX A

VEGETATION PLOT DATA SHEET

- Vegetation Data Sheet as used in the field in 2008

Date: Y 2008	**M:** 08	**D:**	**Plot #:**	**Code:** Mary River	**Notes:**
Team:					Perm. Plot:
Location:					

Photos	Card:	Photo #'s:			
Coordinates:		**Lat. /Northing**		**Long./Easting**	**Elevation:**
Wpt:	**UTM:**				

SITE INFO:						
Slope:		**Aspect:**		**Moist.**	**Nutrients:**	
Terrain:	**(Circle)**		**Microtopography:**		**(X)**	
beach		alluv fan	hummocky		frost fiss.	
terrace		floodplain	frost boils		flat	
plateau		ridge crest	solifluct		br. outcrop	
valley bottom		cliff:	circles		boulders	
slope:		stream	bould strm		bould field	
delta		old polygons	polygon		shattered br.	

Substrate:						
Organics:		Mineral soil:		Water:		
Bedrock		% Sand	% Gravel	Standing	Flowing	
Rocks:						
% of surf. covered:		**Moisture:**				
dist betw stones:		Wet	Wet-mesic	Mesic	Mesic-Dry	Dry
type of stones:						

Perm. Plot species coll.:	a.	b.
c.	d.	
e.	f.	

Soils notes (for soil plots only):

Misc. notes

Vegetation:									
								Veg. Code 1:	
Representing:								Veg. Code 2:	
% Cover by layer:		Organics, fr other side: _____		Tree/erect shrub: _____				**Lichens:**	%
Shrub:	_____	Herb:	_____	Moss/Lichen:	_____			cetrniva	
Shrubs:	%	**Non-flow:**	%	**Saxifrages**	%			cetrtile	
saliarct		cystfrag		chrytetr				Cladina	
salirich		equiarve		saxiaizo				Cladonia	
Salix		Equisetum		saxicaes				stertome	
ledupalu		Lycopodium		saxicern				thamsubu	
Dwarf shr.	%			saxifoli				Alectoria	
saliherb				saxihier					
salireti		**Forbs:**	%	saxihirc				**Rock lichens**	
Salix		toficocc		saxiniva				map	
Potentilla _____		tofipusi		saxioppo				jewel	
vaccviti		oxyrdigy		saxirivu				rock tripe	
vacculig		polyvivi		saxitenu				bloodspot	
casstetr		ceraalpi		saxitric				blk crustose	
rhodlapp		cerabeer		Saxifraga				sunburst	
dryainte		melaaffi		epillati				Halloween	
Sedges:	%	melaapet		hippvul					
careaqua		Minuartia		pyrogran				**Mosses**	
caremisa		sileacau		armemari				racolanu	
carebige		Stellaria		pediarct				Sphagnum	
carecapi		ranuniva		pedicapi				str. mosses	
carememb		ranupygm		pedihirs				cushion	
carenard		ranulapp		pedilana					
carescir		papacorn		pedisude				**Biol. crust.**	
Carex 1		paparadi		**Composite**					
Carex 2		**Mustards**	%	Antennaria	%			**Other:**	%
Cottongr:	%	Arabis		chryinte				Campanula	
erioangu		Braya		Erigeron				empenigr	
eriocalli		cardbell		matrambi					
erioruss		cardprat		senecong					
eriosche		cochoffi		Taraxacum					
eriovagi		Draba		**Grasses:**				**Legumes:**	
Rushes:	%	drabalpi		arctlati				astralp	
luzuconf		drabglab		calapupu				oxytmayd	
luzuniva		Eutrema		alopalpi				oxytnigr	
Juncus		lesqarct							

WILDLIFE NOTES:	Sighting/heard	Scats	Dens/burrows	Runs/trails	Nests	Other

ARCHAEOLOGY NOTES:	

APPENDIX B

PLOT LOCATION DATA 2005, 2006, 2007 AND 2008

- Spreadsheet of Plot Locations, 2005
- Spreadsheet of Plot Locations, 2006
- Spreadsheet of Plot Locations, 2007
- Spreadsheet of Plot Locations, 2008
- Baseline Stations for Metal Analysis

TABLE 3.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
EXPLORATION PROPERTY - VEGETATION DATA

Print Mar/28/06 9:40:03

M:\1\02\00181\02\A\Data\2005 Baseline Vegetation Data\[veg and soil tables_03-22_+-columns.xls]SR-veg

Rev'd Mar/22/06

Plot	Date	Location	Plot Represents	Community	Association Code	Tree Cover (%)	Shrub Cover (%)	Herb Cover (%)	Moss & Lichen Cover (%)	Tree & Shrub Species	Herb Species	Moss & Lichen Species	Rock-Lichen Species	Vegetation Notes	Wildlife Notes
V001	5-Aug-05	Nuluugoak Mountain, south of east end Deposit 1	Upland association, saxifrage/moss	Moss		-	05	25	30	*Salix* sp. 1 10 small leaves, prostrate *Salix* sp. 2 10 larger leaves, prostrate *Salix* sp. 3 .1 woolly leaves *Salix herbacea* .1 *Dryas integrifolia* 2	*Carex* sp. 5 small, xeric *Poa* sp. .1 *Luzula confusa* 10 *Oxyria digyna* 10 *Cerastium alpinum* 5 *Draba* sp. 1 .1 *Draba* sp. 2 .1 *Saxifraga cernua* .1 *Saxifraga caespitosa* .2 *Saxifraga nivalis* .2 *Papaver radicatum* .5 *Papaver cornwallisensis* .1	mosses 20 *Cetraria tilesii* 5	rocks 60% covered with lichen, map rock tripe black crustose	Ground covered with black lichen film, many cobbles, probably ice-laid. Vegetation is scattered, mostly purple mountain saxifrage, Luzula confusa, mt. sorrel, two poppies, and some mountain avens. Photos: Closeups of Saxicaes, Papacorn, Paparadi, willow, Saxioppo, plus area.	Scats: caribou Small brown birds, immatures, probably redpolls
V002	5-Aug-05	Nuluugoak Mountain, southeast of east end of Deposit 1, centre of drainage area.	Boulder field with some standing water	Boulder	LR	-	-	02	03	*Salix* sp. 1 .1 oval shiny leaves *Salix* sp. 2 .1 pointed leaves	grass (1 species) .1 small, no inflorescences *Luzula nivalis* .1 *Sparganium hyperboreum* .1 *Oxyria digyna* .1 *Cerastium alpinum* .1 *Papaver cornwallisensis* .1 *Cochlearia officinalis* .1 *Saxifraga tenuis* .1 *Saxifraga cernua* .1 *Saxifraga nivalis* .1 *Saxifraga rivularis* .1 *Ranunculus nivalis* .1	bright green cushion moss .5 no lichens		Little vegetation, some bright green moss, small saxifrages (S. cernua, S. tenuis, S. nivalis, S. rivularis, all very small plants), and an emergent plant in a small pool amidst the rocks. This turns out to possibly be Sparganium hyperboreum, and VERY unusual (heretofore not reported) for North Baffin. Photos: Saxifraga oppositifolia, S. tenuis, Cochlearia officinalis, Sparganium sp., area.	Families of small birds in the area, flitting around and calling. Redpolls?
V003	5-Aug-05	Nuluugoak Mountain, southeast of east end of Deposit 1.	Lichen-rock	Lichen Rock	LR	-	01	40	10	*Salix arctica* 5	*Poa* sp. .2 grass (1 species) .1 *Luzula nivalis* .1 *Cochlearia officinalis* .1 *Oxyria digyna* 5 *Cerastium alpinum* 2 *Saxifraga hieracifolia* .1 *Saxifraga oppositifolia* 10 *Saxifraga cernua* .1 *Papaver radicatum* 5 *Papaver cornwallisensis* 1	black lichen film on soil. *Cetraria nivalis* .1 *Cetraria* sp. .5 *Dactylina arctica* .5 *Stereocaulon tomentosum* 2 *Thamnolia subuliformis* 2		Vegetation sparse, including mostly a black soil lichen film, Luzula nivalis, Saxifraga oppositifolia, Cochlearia officinalis, and Cerastium alpinum. A few poppies, mostly Papaver cornwallisense. Photos: Cochlearia officinalis, Saxifraga nivalis, Saxifraga hieracifolia, Senicio congestus (not in plot, nearby), Carex aquatilis (?).	Scats: fox.
V004	5-Aug-05	Nuluugoak Mountain, southeast of east end of Deposit 1.	Riparian community - moss	Moss	R	-	-	-	20		grass (1 species) .5 *Saxafraga foliolosa* .1 *Saxafraga cernua* .1	green moss with red areas 20		Thick cushions of moss on rocks in the stream. Wide areas without defined stream channels, with water flowing across a rocky slope. Photos: Red moss, Senecio congestus (not in plot).	
V005	5-Aug-05	Nuluugoak Mountain, east end of Deposit 1, below snowfield.	Saxifraga/poppy association	Lichen Rock		-	-	15	15		*Alopecurus alpinus* 10 *Oxyria digyna* 5 *Cerastium alpinum* .1 *Papaver radicatum* .2 *Saxifraga nivalis* .5 *Saxifraga cernua* 1 *Saxifraga foliolosa* .2	*Cetraria tilesii* 1 black soil lichen 15 *Stereocaulon tomentosum* 2 *Thamnolia subuliformis* .2	mosses 5	Sparse vegetation amidst boulders on a slope above a snowbank that seems to drain both ways, crest of a drainage. A black lichen (?)forms a crust on the soil in many places.	Scats: ptarmigan, caribou, lemming Lemming nest (old).
V006	5-Aug-05	Nuluugoak Mountain, east end of Deposit 1.	Moss association	Moss Rock		-	-	25	15		*Alopecurus alpinus* 1 grass (2 species) 2 *Oxyria digyna* 2 *Cerastium alpinum* .2 *Draba* sp. .1 *Ranunculus* sp .1 *Papaver radicatum* .2 *Saxifraga nivalis* 5 *Saxifraga caespitosa* .1 *Saxifraga hieracifolia* .1 *Saxifraga cernua* 2			Moss and scattered vascular plants on rocky end of ridge. Photos: Photo of area to SE, open valley; photo of iron-bearing rock.	Scats: lemming, ptarmigan. Snow buntings, two young birds.

TABLE 3.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
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Print Mar/28/06 9:40:03

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Rev'd Mar/22/06

Plot	Date	Location	Plot Represents	Community	Association Code	Tree Cover (%)	Shrub Cover (%)	Herb Cover (%)	Moss & Lichen Cover (%)	Tree & Shrub Species	Herb Species	Moss & Lichen Species	Rock-Lichen Species	Vegetation Notes	Wildlife Notes
V007	5-Aug-05	Nuluugoak Mountain, south side of end of Deposit 1, on slope of deposit.	Moss association	Luzula Moss		-	-	20	40		*Poa* sp. .2 *Luzula nivalis* 15 *Oxyria digyna* .2 *Cerastium alpinum* .1 *Draba* sp. .2 *Papaver radicatum* .5 *Papaver cornwallisensis* .1 *Saxifraga nivalis* .2 *Saxifraga Aizoon* .2 ? *Saxifraga oppositifolia* .5	*Cladonia* sp. .5 *Peltigera* sp. .1 *Thamnolia subuliformis* 1 *Racomitrium lanuginosum* 20 other mosses 20	map rock tripe	Moss carpet on rockfall, with thick growth of woodrush, Luzula nivalis.	Scats of hare, ptarmigan.
V008	5-Aug-05	Nuluugoak Mountain, east end of Deposit 1, south side.	Moss community	Luzula Moss		-	5	25	30	*Salix arctica* 5	*Poa* sp. 5 *Alopecurus arcticum* .1 *Luzula nivalis* 15 *Oxyria digyna* 5 *Cerastium alpinum* .2 *Ranunculus* sp .1 *Draba* sp. .1 *Papaver radicatum* .5 *Saxifraga cernua* 10 *Saxifraga nivalis* .2 *Saxifraga hieracifolia* .2 *Saxifraga caespitosa* 5	*Racomitrium lanuginosum* 1 star moss .1 other mosses 30	map rock tripe	Mosses and a variety of forbs, a few willows, prostrate. Photos: Saxifraga caespitosa ssp. uniflora Caribou	Scats of hare, ptarmigan. Small herd of caribou; 10 adults, 2 calves.
V009	8-Aug-05	Deposit 1, top of deposit in small saddle.	Lichen rock, bedrock	Lichen Rock	LR	-	-	8	2		*Luzula confusa* 2 *Cerastium alpinum* 1 *Draba* sp. .1 *Minuartia* sp. .1 *Papaver radicatum* .5 *Saxifraga oppositifolia* 8 *Saxifraga caespitosa* .1	*Cetraria tilesii* .1 *Alectoria* sp. .5 *Thamnolia subuliformis* .1 star moss 1		Very sparse vegetation, mostly Saxifraga oppositifolia. Photos: Poppy, mouse-eared chickweed	
V010	8-Aug-05	Deposit 1, on top of deposit.	Lichen rock, fractured rock crest	Lichen Rock	LR	-	-	1.5	.5		*Luzula confusa* .1 *Cerastium alpinum* .1 *Papaver radicatum* .1 *Saxifraga oppositifolia* .1	*Racomitrium lanuginosum* .5	bloodspot .1 Halloween .1 map .1 sunburst .1 white lichen .1 (have photo)	Scattered plants in niches between rocks. No shrubs, only forbs and woodrushes, and purple mountain saxifrage.	
V011	8-Aug-05	Deposit 1, crest of middle of deposit, south slope	Lichen rock, crest of narrow ridge	Lichen Rock	LR (DS)	-	-	.5	.5		*Silene acaulis* .1 (very small)	*Alectoria* sp. .2 *Cladonia* sp. .1 *Racomitrium lanuginosum* .2 star moss .1	map rock tripe sunburst unknown orange and grey lichen	Almost no vegetation at all on the fractured rock. It is hard to find a place where there has been no blasting, so the vegetation is almost absent. Photos: spectral hematite, Papaver radicatum, helicopter.	
V012	8-Aug-05	Deposit 1, crest of deposit ridge, in saddle with sandstone outcrop.	Lichen rock, limestone rubble slope	Lichen Rock	LR	-	-	5	1		*Poa* sp. .2 *Luzula confusa* 5 *Oxyria digyna* .1 *Cerastium alpinum* .5 *Draba* sp. .1 *Papaver radicatum* .2 *Saxifraga oppositifolia* 5 *Saxifraga nivalis* .1 *Saxifraga cernua* .1	*Alectoria* sp. .1 green moss .2	calcareous rocks map	Sporadic scattered vegetation. Photos: Draba (unknown, branched hairs, not blooming, possibly D. lactea); Saxifraga cernua.	

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MARY RIVER PROJECT

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Print Mar/28/06 9:40:03

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Rev'd Mar/22/06

Plot	Date	Location	Plot Represents	Community	Association Code	Tree Cover (%)	Shrub Cover (%)	Herb Cover (%)	Moss & Lichen Cover (%)	Tree & Shrub Species	Herb Species	Moss & Lichen Species	Rock-Lichen Species	Vegetation Notes	Wildlife Notes
V013	8-Aug-05	Deposit 1, southeast slope about halfway down slope, mid-deposit.	Lichen rock on rubble slope	Lichen Rock	LR	-	-	07	03		*Luzula confusa* 5 *Oxyria digyna* 2 *Cerastium alpinum* .5 *Ranunculus* sp. .1 (leaves only) *Draba* sp. 1 .1 *Draba* sp. 2 .1 *Papaver radicatum* 1 *Saxifraga oppositifolia* 1 *Saxifraga cernua* .1 *Saxifraga nivalis* .1 *Saxifraga caespitosa* .5	*Alectoria* sp. .1 *Cladonia* sp. .1 *Peltigera* sp. .1 (orange-rimmed) *Racomitrium lanuginosum* 2	orange crustose on iron rocks map rock tripe black crustose	Sparsely vegetated.	Scats: hare, lemming
V014	8-Aug-05	Deposit 1, scree slope below deposit, calcareous slope	Luzula association on scree slope	Luzula		--	--	25	05		*Luzula confusa* 15 *Poa* sp. 2 *Oxyria digyna* 5 *Cerastium alpinum* .5 *Draba* sp. 1 .1 *Draba* sp. 2 .1 *Potentilla nivea* .5 *Papaver radicatum* .2 *Saxifraga nivalis* .1 *Saxifraga tricuspidata* 2 *Saxifraga oppositifolia* 5 *Saxifraga cernua* .1	*Cetraria nivalis* 1 *Cetraria tilesii* .5 *Alectoria* sp. .5 *Cladonia* sp. .1 *Stereocaulon tomentosum* .5	star moss .5 green mosses .1 *Racomitrium lanuginosum* 5 map rock tripe black crustose	Thin vegetation, mostly Luzula confusa plus Poa sp. and mixture of saxifrages, a few poppies. Dry site.	Scats: lemming
V015	8-Aug-05	Deposit 1, below deposit slope, old road along base of deposit.	Disturbed site - old road	Disturbed	DS	-	-	35	35	*Salix arctica* 5	*Luzula confusau* 20 *Cerastium alpinum* 10 *Papaver radicatum* 1 *Saxifraga radiata* 5 *Saxifraga oppositifolia* 5 *Saxifraga nivalis* .1	*Stereocaulon tomentosum* 1 black lichen (?) film on soil small green mosses 15		Old road, likely from 1960s, used only lightly at present. Woodrush, Luzula confusa, is dominant.	
V016	8-Aug-05	Deposit 1, slopes below old road	Avens association	Aven Willow	A									Dry slope with increasing amounts of avens, willow, and purple mtn. saxifrage.	Scats: hare
V017	8-Aug-05	Near Deposit 1, slope to southeast of west end of deposit.	Moss/sedge association	Moss Sedge						*Salix richardsonii* 1 *Salix arctica* 1	*Carex aquatilis* 30 Small grass plant, purple head. .2 *Draba* sp. .2 *Braya purpurascens* .1 imm *Cochlearia officinalis* .1 *Melandrium apetalum* .2 *Saxifraga Hirculus* .1 *Saxifraga foliolosa* .1	green moss 50 with red tips perhaps 3-4 species of moss		Seep on hillside, with moss and sedges. The moss forms cascading mounds. There is a lot of red pigment in the moss, does not seem to be a different species. New species this plot: Braya purpurascens (immature plant), Cochlearia officinalis, Melandrium apetalum.	Scats: hare
V018	8-Aug-05	Near Deposit 1, lower slope south of deposit.	Avens/grass association	Aven Grass	A	-	-	90	05	*Salix arctica* 10 *Salix reticulata* 2	*Carex rupestris 10* *Carex scirpoidea 5* *Poa sp.* *Luzula confusa 5* *Polygonum viviparum 20* *Oxyria digyna 15* *Stellaria longipes 15* *(Blue-green)* *Potentilla Vahliana 10* *Melandrium apetalum .1* *Aster alpinus 2* *Oxytropis Maydelliana 2* *Pedicularis capitata 1* *Saxifraga oppositifolia 2* *Saxifraga cernua .1*	none	no rocks	Unusual assn. in that there is a diverse but uniform cover of a mixture of avens, Polygonum viviparum, small sedges (inc. Carex rupestris), Poa, Luzula confusa, Potentilla vahliana and others. We saw nothing else like this on the project.	Scats: hare, caribou. Lemming trails/runs through the grasses.
V019	8-Aug-05	Near Deposit 1, above water supply for drills, below drills.	Avens association with willows	Aven Willow	A	-	-	90	05	*Salix reticulata* 30 *Salix arctica* 10 *Dryas integrifolia* 40	*Carex rupestris* 15 *Carex scirpoidea* 2 *Oxytropis Maydelliana* 15 *Pedicularis capitata* 10	mosses 1		Avens association with prostrate willows (Salix arctica and Salix reticulata) on gentle slope above ravine with snowbanks.	

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MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
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Print Mar/28/06 9:40:03

M:\1\02\00181\02\A\Data\2005 Baseline Vegetation Data\[veg and soil tables_03-22_+-columns.xls]SR-veg

Rev'd Mar/22/06

Plot	Date	Location	Plot Represents	Community	Association Code	Tree Cover (%)	Shrub Cover (%)	Herb Cover (%)	Moss & Lichen Cover (%)	Tree & Shrub Species	Herb Species	Moss & Lichen Species	Rock-Lichen Species	Vegetation Notes	Wildlife Notes
V020	8-Aug-05	Near Deposit 1, small valley to east of water supply for drills, edge of valley.	Snowbank community	Aven Willow	SB	-	-	60		*Salix arctica* 10 (oval leaves) *Salix herbacea* 10 *Salix reticulata* 5 *Cassiope tetragona* 5 *Dryas integrifolia* 30	*Carex scirpoidea* .5 *Polygonum viviparum* 1 *Oxyria digyna* 10 *Cerastium alpinum* .2 *Silene acaulis* .2 *Draba* sp. .5 *Potentilla Vahliana* 5 *Melandrium affine* .1 *Oxytropis Maydelliana* .1 *Pedicularis capitata* 2 *Saxifraga tricuspidata* .5 *Saxifraga caespitosa* .1 *Pyrola grandiflora* 20 *Saxifraga cernua* .2 *Saxifraga oppositifolia* .1	Adjacent to and below plot: *Senecio congestus* *Saxifraga caespitosa* *Draba alpina* *Oxyria digyna* *Draba* sp. (white) *Chrysosplenium tetrandrum* *Saxifraga nivalis* *Saxifraga rivularis* *Saxifraga oppositifolia* *Salix reticulata* *Saxifraga hieracifolia* *Erigeron humilis* *Melandrium affine*	No lichens on rocks, likely under snow too long each year.	Diverse vegetation on steep slope with vertical drop to small ledges. Snowbank upstream, retreating. Much blooming. New species picked up here: Chrysosplenum tetrandrum. Classic snowbank community. PHOTOS: 233 - 259 (240 - 263) of blooming species.	Scats: hare
V021	8-Aug-05	Near Deposit 1, west of deposit, ridge to west of water supply for drills, top of ridge above the Mary River.	Avens association	Aven Sedge	A	-	-	70	05	*Salix arctica* 5 *Cassiope tetragona* 5 *Dryas integrifolia* 40	*Carex rupestris* 30 *Oxytropis Maydelliana* .1 *Pedicularis lanata* .5 *Saxifraga oppositifolia* .5	small mosses .2		Thin cover of avens and Carex rupestris on gentle slope. Very exposed to wind influence and drying. One of the very few places we encountered Pedicularis lanata.	
V022	8-Aug-05	Near Deposit 1, west of deposit, watershed of stream draining Deposit 1, below drills	Riparian association?	Sedge Willow	R	-	05	80	10	*Salix richardsonii* 15 *Salix reticulata* 25 *Cassiope tetragona* 30	*Carex aquatilis* 15 *Carex* sp. 15 (several) *Eriophorum angustifolium* .2 *Eriophorum* sp. 10 grass 10 *Luzula nivalis* 2 *Stellaria longipes* .2 (monantha) *Draba* sp. .2 *Eutrema Edwardsii* .1 *Oxytropis Maydelliana* 2 *Pedicularis capitata* .5 *Saxifraga oppositifolia* .5 *Saxifraga Hirculus* .2	*Cetraria tilesii* .5 mosses 10		Fairly thick vegetation in watershed of small stream with steep banks below site. Gorge is deep, seems larger than needed for existing watershed. Heather is the dominant plant.	
V023	9-Aug-05	Deposit 1, north side, mid-slope	Riparian moss	Moss	R (M)										
V024	9-Aug-05	Deposit 1, north side, upper slopes.	Lichen rock on boulder field (glaciated felsenmeer)	Luzula	LR	-	-	05	05	*Salix arctica* 3 *Dryas integrifolia* 2	*Carex* sp. .1 *Luzula confusa* 5 *Oxyria digyna* .5 *Cerastium alpinum* .5 *Draba* sp. 1 .5 *Draba* sp. 2 .1 *Potentilla* sp. .1 *Papaver radicatum* .1 *Papaver cornwallisensis* .1 *Saxifraga oppositifolia* .2 *Saxifraga cernua* .1	*Cetraria nivalis* .1 *Stereocaulon tomentosum* .2 *Thamnolia subuliformis* .1 mosses .5 *Racomitrium lanuginosum* 2		Very little vegetation, mostly in mats and between boulders. Some seepage from above boulders.	Scats: hare Sighting: arctic fox, probably yearling, approached from west. We enticed it by squeakin and it came quite close, squinting into the sun, trying to see what we were. Debra got good photos.
V025	9-Aug-05	Deposit 1, north side, upper third of slope, below snowbank.	Lichen rock on boulder field	Luzula	LR	-	-	20	10	*Salix arctica* 1 *Salix* sp. 1	*Carex scirpoidea* .2 *Luzula confusa* 10 *Oxyria digyna* 2 *Draba* sp. .1 *Papaver radicatum* 2 *Saxifraga oppositifolia* 5 *Saxifraga nivalis* .5 *Saxifraga caespitosa* .5			Scattered plants, dom. by Luzula confusa, several saxifrages.	Scats: hare

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Plot	Date	Location	Plot Represents	Community	Association Code	Tree Cover (%)	Shrub Cover (%)	Herb Cover (%)	Moss & Lichen Cover (%)	Tree & Shrub Species	Herb Species	Moss & Lichen Species	Rock-Lichen Species	Vegetation Notes	Wildlife Notes
V026	9-Aug-05	Deposit 1, north side, shoulder of ridge below exposed Fe formation.	Luzula/saxifrage association on solifluction slope	Luzula		-	-	08	02					Sparse vegetation on lobes.	
V027	9-Aug-05	Deposit 1, crest of deposit ridge, calcareous slope.	Luzula/saxifrage association	Luzula		-	-	10	10					Sparse vegetation on gentle slope, seemingly calcareous in origin, mostly gravel and erratics. Dominated by Luzula and Saxifraga oppositifolia.	
V028	9-Aug-05	Deposit 1, west end, below crest, on steep slope of Fe formation.	Xeric moss association	Lichen Rock		-	-	02	08		*Luzula confusa* 2 *Papaver radicatum* .2 *Papaver cornwallisensis* .1 *Saxifraga oppositifolia* 2 *Saxifraga cernua* .1	*Cetraria nivalis* .2 *Cetraria tilesii* .1 *Alectoria* sp. .5 *Stereocaulon tomentosum* .1 *Thamnolia subuliformis* .2 *Racomitrium lanuginosum* 5	orange lichens typical of those growing on Fe slope. map rock tripe	Very sparse vegetation possibly due to instability of slope. Mostly Luzula confusa and moss.	
V029	9-Aug-05	Near Deposit 1, northwest corner of proposed pit (?), below snowbank, seepage area.	Riparian moss association, moss and Luzula	Luzula Moss		-	-	20	40					Vegetated "strip" down a steep slope below large snowbank, mostly Luzula nivalis and green cushion moss.	Scats: hare
V030	9-Aug-05	Near Deposit 1, lower 1/3 of mountain below deposit.	Frost scars, toe of solifluction lobe	Grass Moss		-	-	30	20					Avens, Polygonum, and willows on ledges and Polygonum, grasses, and sedges on vertical faces of lobes. Small ferns, prob. Woodsia glabella.	Scats: hare Funnel web spider.
V031	9-Aug-05	Deposit 1, northwest end, bottom of slope below deposit.	Heather/willow association	Heather Willow		-	-	90	05	*Salix arctica* 15 *Salix reticulata* 20 *Cassiope tetragona* 40 *Dryas integrifolia* 20	*Poa sp.* .5 *Calamagrostis purpurascens* .2 *Luzula nivalis* .2 *Polygonum viviparum* 2 *Oxyria digyna* 2 *Stellaria longipes* 1 *Silene acaulis* 5 *Papaver radicatum* 1 *Aster alpinus* 2 *Oxytropis Maydelliana* 5 *Pedicularis capitata* 1	*Stereocaulon tomentosum* 5 mosses 5		Base of slope with lush growth of heather, net-veined willow, and avens. Thick growth on level terrace with small rivulets crossing the terrace. NOTE: In this area, the heather seems very adaptable, growing in a variety of habitats -- on slopes where the snow stays long, AND on very dry slopes. Not sure why.	Scats: caribou
V032	9-Aug-05	Lower slopes of mountain.	Sedge association, plus riparian willow	Sedge Willow	S (R)	-	-	75	25	*Salix arctica* 20 *Salix* sp. 10 *Salix reticulata* 10	*Carex* sp. 60	mosses 10		Thick growth of sedges and willows on terrace on lower slopes of Deposit 1. Plot located where a stream flows through the area.	
V033	9-Aug-05	Mary River, sample location 2843, secondary channel.	Sedge association, non-tussock	Sedge	S	-	-	70	30	*Salix arctica* 15 *Salix reticulata* 15 *Dryas integrifolia* 20	*Carex sp. 80* *Eriophorum angustifolium* 2 *Equisetum arvense* .2 *Equisetum variegatum* .1 *Alopecurus alpinus* .2 *Polygonum viviparum* 10 *Pedicularis sudetica* 1 *Saxifraga Hirculus* .2	mosses 30		Sedge association on floodplain with small channels. Mixture of sedges and prostrate willows.	Fish bones in raptor or gull pellet, including small jaw bones with visible teeth. Teeth seemed too big for char.
V034	9-Aug-05	Mary River, sandy area	Sedge association, river backshore	Sedge	S	-	15	55	30	*Salix richardsonii* 15 (ca. 30 cm) *Salix arctica* 20 *Salix reticulata* .5	*Carex aquatilis* 15 *Carex sp.* 15 *Equisetum arvense* 10 *Polygonum viviparum* 2 *Ranunculus sp.* .1 *Epilobium latifolium* 1 *Aster alpinus* 2 *Pedicularis hirsuta* .5 *Armeria maritima* .2 *Antennaria sp.* .1 *(no flowers)* *Saxifraga hieracifolia* .2			Sparse vegetatioin on sandy shores of river, inland from river channel, on terrace. This was the only place we found Antennaria. Could not identify to species as there were no flowers.	Scats: goose, ptarmigan. Goose feathers Caribou tracks.

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Plot	Date	Location	Plot Represents	Community	Association Code	Tree Cover (%)	Shrub Cover (%)	Herb Cover (%)	Moss & Lichen Cover (%)	Tree & Shrub Species	Herb Species	Moss & Lichen Species	Rock-Lichen Species	Vegetation Notes	Wildlife Notes
V035	9-Aug-05	Mary River, sandy/gravelly shore	Sandy river shore	Aven	R ?	-	50	20	-	*Salix arctica* 10 *Salix reticulata* 10 *Dryas integrifolia* 30	*Carex sp.* .5 *Luzula confusa* .2 *Poa sp.* .2 *Polygonum viviparum* 10 *Stellaria longipes* .1 *(monantha)* *Silene acaulis* .1 *Potentilla Vahliana* .1 *Minuartia sp.* .1 *Melandrium apetalum* .1 *Epilobium latifolium* 20 *Aster alpinus* 2 *Pedicularis hirsuta* .5 *Pedicularis capitata* .5 *Saxifraga oppositifolia* .5 *Saxifraga Hirculus* .1			Scattered vegetation on sand.	Caribou about 1 km downstream from site. Red-throated loon, calling in flight.
V036	9-Aug-05	Mary River, west of minesite, sample location 35B	Floodplain, Heather association on sand	Heather		-	-	75	05	*Salix arctica* 5 *Cassiope tetragona* 70 *Dryas integrifolia* 5	*Carex* sp. 10 *Carex aquatilis* 10 *Oxyria digyna* .2 *Papaver radicatum* .2 *Oxytropis Maydelliana* .2 *Armeria maritima* 2	*Cetraria nivalis* .2 *Thamnolia subuliformis* .2 *Racomitrium lanuginosum* 5 star moss .2		Thick growth of white arctic heather and avens on sand above the normal flood stage of the river.	Scats: caribou
V037	9-Aug-05	Mary River, west of minesite, braided section.	Stream channel, not active in summer	Moss Willow		-	10	60		*Salix richardsonii* 10 *Salix reticulata* 15 *Salix arctica* 15	*Polygonum viviparum* 10 *Stellaria longipes* 5 *(monantha)* *Epilobium latifolium* 2 *Aster alpinus* 2 *Pedicularis capitata* .5	mosses 30		Low vegetation, lots of moss, willows, some small bush-type willows (Salix richardsonii). Much avens and reticulated willows.	Scats: hare. Wolf spiders.
V038	9-Aug-05	Small river to northwest of camp, in floodplain, near sample sites 2864/2865 above floodplain of river	Heather association	Heather						*Salix arctica* .5 *Salix* sp. .2 (oval leaves) *Cassiope tetragona* 30 *Dryas integrifolia* 20	*Carex rupestris* 10 *Carex scirpoidea* .5 *Polygonum viviparum* 5 *Oxyria digyna* .5 *Oxytropis Maydelliana* .2 *Pedicularis capitata* .2	mushrooms .1		Arctic heather in patchy stands on sand above the annual floodplain of a small river. Some avens and curly sedge, but not much variety of veg.	
V039	9-Aug-05	Small river to northwest of camp, floodplain of tributary stream, near sample sites 2864 and 2865.	Riparian association	Willow	R	-	20	20		*Salix richardsonii* 10 *Salix reticulata* 5 *Salix arctica* 2	*Carex aquatilis* 2 *Poa* sp. .5 *Luzula nivalis* 2 *Stellaria* sp. .1 *Epilobium latifolium* 15 *Papaver radicatum* .2 *Oxytropis Maydelliana* .2 *Saxifraga oppositifolia* .5			Vegetation mostly on sides and margins of the channel. Salix richardsonii shrubs with understory of net-veined willow, arctic willow and woodrush, plus dwarf fireweed.	

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V040	9-Aug-05	Small river to northwest of camp, floodplain, bank above floodplain, near Sample sites 2864 and 2865	Avens/sedge	Aven Sedge	A	-	70	15	20	*Salix arctica* 10 *Salix reticulata* 15 *Cassiope tetragona* 25 *Dryas integrifolia* 2	*Carex aquatilis* 15 *Carex sp. 2* *(pendant head)* *Polygonum viviparum* 1 *Oxyria digyna* 1 *Aster alpinus* .5 *Pyrola grandiflora* 1	*Cetraria nivalis* 1 *Stereocaulon tomentosum* .5 *Thamnolia subuliformis* .5 small brown mushroom .1	mosses 20 sunburst lichen map rock tripe black crustose	Even cover of mixed species (heather is dominant) on gentle slope with sedges above.	
V041	9-Aug-05	Small river to northwest of camp, side of valley at sample site 2864 and 2865.	Heather/moss association	Heather Moss		-	50	01	50	*Salix arctica* 1 *Cassiope tetragona* 40 *Dryas integrifolia* 10	*Carex rupestris* 5 *Oxyria digyna* .2 *Papaver radicatum* .1 *Oxytropis Maydelliana* .2	*Cetraria nivalis* .5 *Cetraria tilesii* .2 *Racomitrium lanuginosum* 50		Mostly heather and Rhacomitrium moss.	Caribou tracks.
V042	10-Aug-05	Mary River camp, flat area to southwest of camp, near weather station.	Sedge/saxifrage association on polygons	Sedge Saxifrage		-	05	40	35	*Salix arctica* 5	*Carex rupestris* 30 *Carex scirpoidea* 5 *Carex* sp. 2 (pendant) *Carex aquatilis* 2 *Tofieldia coccinea* .5 *Oxyria digyna* .5 *Silene acaulis* 1 *Saxifraga oppositifolia* 10 *Armeria maritima* 1	*Cetraria tilesii* 5 mosses 20		Mixture of heather, curly sedge, avens and purple mountain saxifrage on flat area, in polygon surrounded by frost cracks.	Scats: caribou, hare.
V043	10-Aug-05	Mary River Camp, near weather station to southwest of camp.	Avens/heather association in frost cracks in raised-centre polygons	Aven Heather	A	-	-	50	50	*Salix arctica* 10 *Vaccinium uliginosum* 30 *Cassiope tetragona* 40 *Dryas integrifolia* 20	*Carex* sp. 15 (several species) *Poa* sp. 2 *Calamogrostis purpurascens* 2 *Luzula confusa* 5 *Stellaria longipes* .1 (monantha) *Saxifraga tricuspidata* .2	*Cetraria tilesii* 2 *Racomitrium lanuginosum* 20 other moss 10		Thicker vegetation in frost cracks between polygons -- mosses, heather, some sedges, Poa sp.	Scats: caribou
V044	10-Aug-05	Flat area to southwest of Mary River camp, about 300 m south of weather station.	Willow shrub	Sedge WIllow		-	20	25	05	*Salix richardsonii* 20 (about 40 cm) *Salix arctica* 10	*Carex aquatilis 20* *Poa sp. 2* *Calamagrostis* sp. *.2* *Alopecurus alpinus 1* *Tofieldia sp. 1* *(very small plant)* *Polygonum viviparum .2* *Lycopodium Selago .1* *Saxifraga oppositifolia 2*	mosses 5		Scattered vegetation in bottom of what is probably a transitory pond earlier in the season.	Scats: hare. Glaucous gull.
V045	10-Aug-05	Small stream to west of Mary River camp, about 300 m south of weather station.	Riparian association	Sedge Willow	R	-	20	30	15	*Salix richardsonii* 20 *Salix reticulata* 10 *Salix arctica* 5	*Carex sp. 20* *Eriophorum angustifolium 10* *Luzula confusa .1* *Polygonum viviparum .5* *Oxyria digyna 2* *Melandrium apetalum .1*	mosses 15		Shrubs and sedges along shore of small stream, still flowing in August.	
V046	10-Aug-05	Flats to southwest of Mary River camp, along bank of stream about 500 m south of weather station.	Heather/moss association	Heather Moss		-	-	75	25	*Salix arctica* 5 *Cassiope tetragona* 50 *Dryas integrifolia* 20		*Racomitrium lanuginosum* 30			Small fish sighting, arctic char

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V047	10-Aug-05	Flats to southwest of Mary River camp, about 500 m south of weather station.	Disturbed site	Disturbed	DS	-	-	30	10	*Salix arctica* 5 *Salix reticulata* 10 *Cassiope tetragona* 25 *Dryas integrifolia* 15	*Carex scirpoidea* 5 *Carex rupestris* 15 *Poa* sp. 2 grass 1 (tall, slender heads) 5 grass 2 (____ heads, clumps) *Luzula confusa* .2 *Saxifraga tricuspidata* 2 *Saxifraga oppositifolia* 2 *Papaver radicatum* .5 *Oxyria digyna* 2 *Ceratium alpinum* 5 *Stellaria monantha* 2 *Silene acaulis* 2 *Draba* sp. .1 *Minuartia rubella* (?) .5(prob)	*Cetraria nivalis* 1 *Thamnolia subuliformis* .2 mosses 10		On mound, heather at S edge, thick growth of Carex rupestris on S side, sparse vegetation on top and N side. Scattered clumps of vegetation in scooped out area.	Scats: Hare. Geometrid caterpillar.
V048	10-Aug-05	Flats to southwest of Mary River camp, wide area in stream below first lake south of camp.	Sedge association on frost scars	Sedge	S	-	2	50	10	*Salix richardsonii* 2 (in ridge) *Salix reticulata* .5 *Salix arctica* .5	*Carex aquatilis* 10 *Carex* ? ? *Eriophphorum Scheuchzeri* 30 *Luzula confusa* 2 *Pedicularis sudetica* 10	moss on ridge 10			young lap. longspur near pur. site.
V049	10-Aug-05	South end of airstrip, about 200 m south of strip.	Avens/heather on dry polygon crest	Aven Heather		-	-	25	25	*Salix arctica* 2 *Cassiope tetragona* 20 *Dryas integrifolia* 20	*Carex rupestris* 5 *Luzula confusa* .5 (rolled) *Tofieldia coccinea* .2 *Stellaria monantha* 2 *Papaver cornwallis* .1 *Oxytropis Maydelliana* 2 *Saxifraga tricuspidata* 15 *Saxifraga oppositifolia* 2	*Cetraria nivalis* 5 *Alectoria* sp. (hair) .5 blk *Thamnolia subuliformis* .2 other mosses 5 *Racomitrium lanuginosum* 10	star mosses 1		
V050	10-Aug-05	South of airstrip, north edge of large lake.	Riparian association	Moss Willow	R	-	10	20	60	*Salix richardsonii* 20 *Salix reticulata* 30 *Dryas integrifolia* 20	*Carex aquatilis* 30 *Carex* sp. ? 10 *Calamagrostis purpurascens* .5 *Equisetum variegatum* .5 *Polygonum viviparum* 2 *Pedicularis capitata* 2 *Saxifraga Hirculus* 2	*Cetraria nivalis* .2 *Cetraria tilesii* .1 *Thamnolia subuliformis* .1 *Racomitrium lanuginosum* .2 green moss 40			Scats: fox, hare Caribou hair and antler (old)
V051	10-Aug-05	Old camp south of airstrip, near shore of lake.	Riparian shoreline shrub	Willow	R	-	60	30	30	*Salix richardsonii* 60 *Salix herbacea* 15 *Salix arctica* 10 *Dryas integrifolia* 10	*Poa* sp. 10 *Polygonum viviparum* 5 *Oxyria digyna* 5 *Silene acaulis* 5 *Astragalus alpina* 5 *Saxifraga cernua* .5 *Armeria maritima* .2	green mosses under willows 30 slime mold .1			Scats: hare Wolf spider, lemming burrow, caribou tibia bone, glaucous gull, caddisflyy, wolf skull.
V052	10-Aug-05	Near old camp to south of airstrip about 2.56 km from Mary River Camp, in stream valley.	Sedge association, emergent	Sedge	S	-	5	70	5	*Salix richardsonii* 5 *Salix reticulata* 10	*Carex aquatilis* 75 *Eriophorum angustifolium* 10 *Armeria maritima* .2 (at edges) *Saxifraga sudetica* 1	moss in water at edges 10			fresh, recently split caribou bone
V053	10-Aug-05	Near old camp to south of airstrip, about 200 m southeast of old camp.	Avens/xeric sedge association	Aven Sedge		-	15	15	-	*Salix arctica* .2 *Dryas integrifolia* 15	*Carex rupestris* 15 *Saxifraga oppositifolia* .2 *Silene acaulis* 5 *Astragalus alpina* 1		sunburst map rock tripe black Crustose		fox trap in rock pile red throated
V054	10-Aug-05	Flat area to south of old camp, slope of flatland.	Heather/avens association	Aven Heather		-	-	80	15	*Salix arctica* *Cassiope tetragona* 75 *Dryas integrifolia* 10	*Oxyria digyna* .2 *Silene acaulis* 5 *Papaver radicatum* .1 *Oxytropis Maydelliana* .5 *Pedicularis capitata* .5 *Saxifraga oppositifolia* .2	*Dactylina* sp. (glove) .2 *Cetraria nivalis* 1 *Cetraria* sp. 1 *Thamnolia subuliformis* .2 mosses 10 puffball .1			lemming nest and scats

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V055	10-Aug-05	Flat area, about .5 k south of old camp, side of valley.	Riparian willow	Heather Willow	R	-	30	15	15	*Salix reticulata* 25 *Cassiope tetragona* 35 *Dryas integrifolia* 20	*Carex aquatilis* 10 *Polygonum viviparum* 1 *Epilobium latifolium* 10 *Oxytropis Maydelliana* .5 *Pedicularis capitata* 2	mosses 15			
V056	10-Aug-05	Lower slopes to west of Deposit 1, top of sandstone ridge to south of old camp.	Avens association	Aven Sedge	A	-	15	40	15	*Salix arctica* (or *Salix glauca* ssp. *callicarpaea*) 15	*Carex rupestris* 20 *Carex scirpoidea* 10 *Poa* sp. .2 *Tofieldia coccinea* .5 *Cerastium alpinum* 2 *Silene acaulis* 2 *Potentilla nivea* .5 *Papaver radicatum* .2 *Oxytropis Maydelliana* 5 *Saxifraga tricuspidata* .2 *Potentilla Vahliana* .2	mosses 10 *Racomitrium lanuginosum* 2			lapland longsur (young bird)
V057	10-Aug-05	Below Deposit 1, stream draining mine work area, near EKP2894	Sedge association, non-tussock	Sedge	S	-	5	80	5	*Salix arctica* 5	*Carex aquatilis* 50 *Eriophorum angustifolium* 30 *Polygonum viviparum* 1 *Cerastium alpinum* 5 *Silene acaulis* .2 *Pedicularis sudetica* .5 *Saxifraga Hirculus* .2 *Melandrium apetalum* .2	mosses 5 small brown mushrooms .1			
V058	10-Aug-05	Below Deposit 1, stream draining mine area, where it enters flat area at base of mountain.	Riparian association	Sedge Willow	R	-	30	30	10	*Salix richardsonii* 30 *Salix reticulata* 10 *Salix arctica* 5	*Carex aquatilis* 15 *Draba* sp. .1	green/red moss 10			
V059	10-Aug-05	Below Deposit 1, valley below road and above Sample site 2894.	Lichen-rock association on boulder field	Sedge Willow	LR	-	-	20	20	*Salix richardsonii* .5 *Salix arctica* 10 *Salix reticulata* 15 *Dryas integrifolia* 10	*Carex rupestris 10* *Carex aquatilis 10* *Calamagrostis sp. .2* *Polygonum viviparum 1*	green cushion moss 20		Vegetation in mats on top of and between boulders, a mixture of moss and willows, with xeric sedges in the drier spots.	
V060	10-Aug-05	Below Deposit 1, below slopes, area to east of road.	Avens/Oxytropis association on calcareous rock	Aven Oxytrope	A	-	15	15	-	*Salix arctica* .5 *Dryas integrifolia* 15	*Carex rupestris* 5 *Potentilla Vahliana* .1 *Oxytropis Maydelliana* 2 *Saxifraga tricuspidata* 5 *Oxytropis arctobia* 10	*Cetraria tilesii* .1 *Thamnolia subuliformis* .1			scats: hare caribou tibia bone
V061	10-Aug-05	Below Deposit 1, area to southwest of road, along watershed from mine area.	Sedge association, non-tussock	Sedge	S	-	15	50	40	*Salix richardsonii* 10 *Salix reticulata* 5 *Cassiope tetragona* 10	*Carex aquatilis* 50 *Eriophorum angustifolium* 10 *Oxytropis Maydelliana* .2 *Pedicularis capitata* .5	mosses under sedges 40			
V062		Number not used for a plot.													
V063	10-Aug-05	Below Deposit 1, above road where road switchbacks up to mine site.	Sedge/Avens association	Aven Sedge		-	30	60	01	*Dryas integrifolia* 30	*Carex rupestris 60* *Polygonum viviparum .5* *Silene acaulis .5* *Epilobium latifolium .2* *Papaver radicatum .2* *Saxifraga oppositifolia 2*	*Cetraria tilesii* .2 *Thamnolia subuliformis* .1 *Racomitrium lanuginosum* 2		Mixture of curly sedge and avens with scattered moss cushions on very dry terrace. Adjacent to calcite/feldspar/mica outcrop.	

TABLE 3.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
EXPLORATION PROPERTY - VEGETATION DATA

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Rev'd Mar/22/06

Plot	Date	Location	Plot Represents	Community	Association Code	Tree Cover (%)	Shrub Cover (%)	Herb Cover (%)	Moss & Lichen Cover (%)	Tree & Shrub Species	Herb Species	Moss & Lichen Species	Rock-Lichen Species	Vegetation Notes	Wildlife Notes
V064	10-Aug-05	Below Deposit 1, road to minesite, at switchback are above Mary River.	Snowbank association	Willow	SB	-	-	30	20	*Salix herbacea* 15 *Cassiope tetragona* 10	*Poa* sp. 1 *Luzula nivalis* 10 *Oxyria digyna* 15 *Cerastium alpinum* 5 *Stellaria monantha* 1 *Silene acaulis* 5 *Draba* sp. 2 *Melandrium apetalum* .1 *Saxifraga tricuspidata* 5 *Saxifraga cernua* 2 *Erigeron eriocephalus* 15 *Taraxacum* sp. 2	*Stereocaulon* sp. 10			scats: hare

TABLE 3.2

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
EXPLORATION PROPERTY - SOIL AND LOCATION DATA

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Rev'd Mar/22/06

Plot	Date	Location	UTM zone	Latitude (North)	Longitude (East)	Elevation (meters)	Slope (%)	Aspect	Moisture*	Nutrients*	Substrate					Soil Notes
											Organic Material (%)	Rocks (%)	Mineral Soil (%)	Bedrock (%)	Water (%)	
V001	5-Aug-05	Nuluugoak Mt., S of E end Deposit 1	17W	0566916	7917216	563	> 5	s	l	l	60	40	01	01	-	Plot at edge of open valley, thin soil with many rocks. Open slopes to small drainage.
V002	5-Aug-05	Nuluugoak Mt., SE of E end of Deposit 1, centre of drainage area.	17W	0566404	7917126	552	<5	SW	H	L	05	90	-	-	05	No soil except a bit between rocks. The soil is saturated, and there are no lichens. This area likely receives sheet flow during much of the growing season. I am guessing that this area is not long exposed from under ice.
V003	5-Aug-05	Nuluugoak Mtn., SE of E end of Deposit 1.	17W	0564069	7916669	581	<1	S	usually low		50	50	-	-	-	Thin soil amidst rocks and gravel on crest of ridge near stone cairn with iron rod.
V004	5-Aug-05	Nuluugoak Mtn., SE of E end of Deposit 1.	17W	0563972	7916498	576	<5	S	H	M	30	40	-	-	30	Laminar flow of water across the land. Soil between rocks is saturated with water and spongy. You must walk on the rocks or sink into the ground.
V005	5-Aug-05	Nuluugoak Mtn., E end of Deposit 1, below snowfield.	17W	0563860	7916008	604	15	NW	L	L	20	60	20	-	-	Thin soil with many rocks on a slope above a snowbank.
V006	5-Aug-05	Nuluugoak Mtn., E end of Deposit 1.	17W	0563790	7915724	623	20	SE	M	M	40	30	-	30	-	Thin soil between bedrock outcrops and erratic rocks on fairly steep slope on end of iron deposit ridge.
V007	5-Aug-05	Nuluugoak Mtn., S side of end of Deposit 1, on slope of deposit..	17W	0563823	7915685	612	steep	SE	M	M	60	40	-	-	-	Rockfall, little soil at surface.
V008	5-Aug-05	Nuluugoak Mtn., E end of Deposit 1, S side.	17W	0563704	7915468	642	steep	S	H	M	60	25	-	15	-	Thin soil, very steep, surface runoff.
V009	8-Aug-05	Deposit 1, top of deposit in small saddle.	17W	0563051	7914403	675	crest of ridge		L	L	10	86	02	02	-	Little soil, but this area is calcareous bedrock which is frost-shattered, and/or affected by blasting. It is on top of the iron formation and surrounded by the iron bearing rock.
V010	8-Aug-05	Deposit 1, on top of deposit.	17W	0563038	7914327	672	crest of ridge		L	L	02	78	-	20	-	Virtually no soil. Much shattered rock, maybe due to blasting. Some areas look weathered and have more lichens, but most of the crest has no plants.
V011	8-Aug-05	Deposit 1, crest of middle of deposit, S slope	17W	0563232	7914640	703	<1 (crest)	S	L	L	01	88	-	10	-	Virtually no soil. Mostly fractured rocks due to weathering and blasting, and bedrock. Iron bearing ore.
V012	8-Aug-05	Deposit 1, crest of deposit ridge, in saddle with sandstone outcrop.	17W	0563326	7914756	688	>1	N	L	L	10	80	-	10	-	Little soil, mostly rocks and gravel/cobbles; small seep at lower end of plot.
V013	8-Aug-05	Deposit 1, SE slope about halfway down slope, mid-deposit.	17W	0563408	7914760	661	58%	E	L	L	10	90	-	-	-	Unstable scree slope, rubble
V014	8-Aug-05	Deposit 1, scree slope below deposit, calcareous slope	17W	0563434	7914738	655	50%	SE	M	?	30	70	-	-	-	Rocky, scree slope.
V015	8-Aug-05	Deposit 1, below deposit slope, old road along base of deposit.	17W	0563472	7914724	627	flat	NA	M		70	15	15	-	-	gravelly soil levelled when road was built.
V016	8-Aug-05	Deposit 1, slopes below old road	17W	0563578	7914656	595							-	-	-	

TABLE 3.2

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
EXPLORATION PROPERTY - SOIL AND LOCATION DATA

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Rev'd Mar/22/06

Plot	Date	Location	UTM zone	Latitude (North)	Longitude (East)	Elevation (meters)	Slope (%)	Aspect	Moisture*	Nutrients*	Substrate					Soil Notes
											Organic Material (%)	Rocks (%)	Mineral Soil (%)	Bedrock (%)	Water (%)	
V017	8-Aug-05	Near Deposit 1, slope to SE of W end of deposit.	17W	0563800	7914134	476	17%	S	H	M ?	80	15	-	-	05	Saturated, many rocks, water flowing as sheet across wide area.
V018	8-Aug-05	Near Deposit 1, lower slope S of deposit.	17W	0563874	7913937	430	40%	S	M	M	95	05	-	-	-	Seems to have a fairly deep, turfy soil.
V019	8-Aug-05	Near Deposit 1, above water supply for drills, below drills.	17W	0563947	7923392	298	40%	S	L	M ?	95	05	-	-	-	
V020	8-Aug-05	Near Deposit 1, sm. valley to E of water supply for drills, edge of valley.	17W	0563906	7913338	283	50% to vertical	SW	H	M	60	40	-	-	-	Thin soil on ledges.
V021	8-Aug-05	Near Deposit 1, W of deposit, ridge to W of water supply for drills, top of ridge above the Mary River.	17W	0563776	7913003	265	7%	SE	L	L ?	75	25	-	-	-	Gravelly soil.
V022	8-Aug-05	Near Deposit 1, W of deposit, watershed of stream draining Deposit 1, below drills	17W	0563716	7923227	264	18%	W	H	M	95	05	-	-	-	
V023	9-Aug-05	Deposit 1, N side, mid-slope	17W	0562778	7914788	592							-	-	-	
V024	9-Aug-05	Deposit 1, N side, upper slopes.	17W	0562871	7914698	617	34%	NW	L	L	10	80	-	10	-	Boulder field, glaciated felsenmeer plus erratics. Little real soil, mostly bedrock and rocks.
V025	9-Aug-05	Deposit 1, N side, upper third of slope, below snowbank.	17W	0562940	7914498	639	20%	W	L	L	30	70	-	-	-	Felsenmeer and glacial erratic boulders and cobbles.
V026	9-Aug-05	Deposit 1, N side, shoulder of ridge below exposed Fe formation.	17W	0562930	7914351	654	27%	W	H (seasonal)	M ?	10	30	30	-	-	Solifluction slope with ripples and lobes over boulders. Lobes are 2-5 m wide.
V027	9-Aug-05	Deposit 1, crest of deposit ridge, calcareous slope.	17W	0562961	7914122	658	11%	W	L	L	20	80	-	-	-	Cobbles and gravel.
V028	9-Aug-05	Deposit 1, W end, below crest, on steep slope of Fe formation.	17W	0562968	7914006	643	35%	W	L	L	10	80	-	10	-	Fractured rock, unstable, mostly scree.
V029	9-Aug-05	Near Deposit 1, NW corner of proposed pit (?), below snowbank, seepage area.	17W	0562893	7914024	606	30%	NW	H	L ?	50	40	-	-	10	Gravel, cobbles and water.
V030	9-Aug-05	Near Deposit 1, lower 1/3 of mountain below deposit.	17W	0562698	7913889	587	39%	W	M		50	50	-	-	-	Toe of solifluction lobe.

TABLE 3.2

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MARY RIVER PROJECT

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Rev'd Mar/22/06

Plot	Date	Location	UTM zone	Latitude (North)	Longitude (East)	Elevation (meters)	Slope (%)	Aspect	Moisture*	Nutrients*	Substrate					Soil Notes
											Organic Material (%)	Rocks (%)	Mineral Soil (%)	Bedrock (%)	Water (%)	
V031	9-Aug-05	Deposit 1, NW end, bottom of slope below deposit.	17W	0562260	7913698	341	5%	N	M/H	M ?	95	05	-	-	-	Level terrace, gravelly/sandy soil.
V032	9-Aug-05	Lower slopes of mountain.	17W	0562206	7913570	306	11%	N	M		98	-	2	-	-	
V033	9-Aug-05	Mary River, sample location 2843, secondary channel.	17W	0562382	7911308	211	flat				100		-	-	-	Sandy soil in floodplain of the Mary River, below the slopes of the mountain.
V034	9-Aug-05	Mary River, sandy area	17W	0556362	7906880	172	flat		H (seasonal)		80		20			Sandy soil
V035	9-Aug-05	Mary River, sandy/gravelly shore	17W	0560715	7911628	178					60	-	40	-	-	Sandy soil.
V036	9-Aug-05	Mary River, W of minesite, sample location 35B	17W	0560696	7911591	181	flat		L	L	80	-	20	-	-	Sandy soil.
V037	9-Aug-05	Mary River, W of minesite, braided section.	17W	0562452	7911859	192	2%	W			75	25	-	-	-	Old stream channel.
V038	9-Aug-05	Small river to NW of camp, in floodplain, near sample sites 2864/2865 above floodplain of river	17W	0557375	7919392	245	<1%	N			50	20	30	-	-	Sand.
V039	9-Aug-05	Small river to NW of camp, floodplain of tributary stream, near sample sites 2864 and 2865.	17W	0557401	7919392	249	5%	NW	H (seasonal)	L	40	50	10	-	-	Stream channel in floodplain, not active in mid-summer. Sandy soil.
V040	9-Aug-05	Small river to NW of camp, floodplain, bank above floodplain, near Sample sites 2864 and 2865	17W	0557359	7919450	251	5%	NW	M	M	100	-	-	-	-	Sand.
V041	9-Aug-05	Small river to NW of camp, side of valley at sample site 2864 and 2865.	17W	0557368	7919466	253	5%	NW			100	-	-	-	-	Floodplain of small river.
V042	10-Aug-05	Mary River camp, flat area to SW of camp, near weather station.	17W	0558171	7914435	179	flat		L	L	70	-	30	-	-	Gravelly soil.
V043	10-Aug-05	Mary River Camp, near weather station to SW of camp.	17W	0558165	7914439	180	flat		M	M	100	-	-	-	-	

TABLE 3.2

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
EXPLORATION PROPERTY - SOIL AND LOCATION DATA

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Rev'd Mar/22/06

Plot	Date	Location	UTM zone	Latitude (North)	Longitude (East)	Elevation (meters)	Slope (%)	Aspect	Moisture*	Nutrients*	Substrate					Soil Notes
											Organic Material (%)	Rocks (%)	Mineral Soil (%)	Bedrock (%)	Water (%)	
V044	10-Aug-05	Flat area to SW of Mary River camp, about 300 m S of weather station.	17W	0558289	7914314	180	flat				50	-	50	-	-	Sandy soil with black lichen or algal film.
V045	10-Aug-05	Small stream to W of Mary River camp, about 300 m S of weather station.	17W	0558289	7914206	180	2%	E	H (seasonal)		70	10	20	-	-	Sandy soil.
V046	10-Aug-05	Flats to SW of Mary River camp, along bank of stream about 500 m S of weather station.	17W	0558388	7914148	179	5%	W			100	-	-	-	-	
V047	10-Aug-05	Flats to SW of Mary River camp, about 500 m S of weather station.	17W	0558387	7914158	185					40	-	60	-	-	Gravel. This is a scar made by a machine, not natural. It is a scooped out area with a pile of gravel on the south side.
V048	10-Aug-05	Flats to SW of Mary River camp, wide area in stream below first lake S of camp.	17W	0558497	7914064	181	level	NA	H	M	60	-	-	-	40	
V049	10-Aug-05	South end of airstrip, about 200 m S of strip.	17W	0559253	7913886	178					50	-	50	-	-	
V050	10-Aug-05	South of airstrip, N edge of large lake.	17W	0559637	7913662	178	5%	S			90	-	-	-	10	
V051	10-Aug-05	Old camp S of airstrip, near shore of lake.	17W	0560161	7913532	183	11%				90	-	-	-	-	
V052	10-Aug-05	Near old camp to S of airstrip about 2.56 km from Mary River Camp, in stream valley.	17W	0560385	7913555	178	>1%	NW			80	-	-	-	20	
V053	10-Aug-05	Near old camp to S of airstrip, about 200 m SE of old camp.	17W	0560586	7913634	197	level				30	50	20	-	-	
V054	10-Aug-05	Flat area to S of old camp, slope of flatland.	17W	0560738	7913644	190	15%	NE			95	-	5	-	-	
V055	10-Aug-05	Flat area, about .5 k S of old camp, side of valley.	17W	0560925	7913779	198	20%		H	H?	60	20 in channel	-	-	20 in channel	
V056	10-Aug-05	Lower slopes to W of Deposit 1, top of sandstone ridge to S of old camp.	17W	0560970	7913816	216					70	15 (broken rock)	15 (mineral / gravel)	-	-	
V057	10-Aug-05	Below Deposit 1, stream draining mine work area, near EKP2894	17W	0561209	7913576	190	flat				90	-	10 (sand)	-	-	

TABLE 3.2

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
EXPLORATION PROPERTY - SOIL AND LOCATION DATA

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Plot	Date	Location	UTM zone	Latitude (North)	Longitude (East)	Elevation (meters)	Slope (%)	Aspect	Moisture*	Nutrients*	Substrate					Soil Notes
											Organic Material (%)	Rocks (%)	Mineral Soil (%)	Bedrock (%)	Water (%)	
V058	10-Aug-05	Below Deposit 1, stream draining mine area, where it enters flat area at base of mountain.	17W	0561284	7913614	202	level		H	M?	60	20	-	-	20	
V059	10-Aug-05	Below Deposit 1, valley below road and above Sample site 2894.	17W	0561594	7913493	203	<1%	NW	H (under boulders)	M ?	40	60				Boulders
V060	10-Aug-05	Below Deposit 1, below slopes, area to E of road.	17W	0561712	7913319	212	level				30	70	-	-	-	
V061	10-Aug-05	Below Deposit 1, area to SW of road, along watershed from mine area.	17W	0562386	7912830	207	<1%		H		65	25	-	-	10	
V062		Number not used for a plot.											-	-	-	
V063	10-Aug-05	Below Deposit 1, above road where road switchbacks up to mine site.	17W	0562977	7912706	235	level				90	05	05	-	-	Gravel
V064	10-Aug-05	Below Deposit 1, road to minesite, at switchback are above Mary River.	17W	0563075	7912725	243	30%	W	H (seasonal)	M?	50	50	-	-	-	

* Moisture and Nutrients: L = low, M = medium, H = high.

TABLE 3.3

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
MILNE INLET POTENTIAL TRANSPORTATION ROUTE - VEGETATION DATA

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Rev'd Mar/22/06

Plot	Date	Location	Plot Represents	Community	Association Code	Tree Cover (%)	Shrub Cover (%)	Herb Cover (%)	Moss & Lichen Cover (%)	Tree & Shrub Species	Herb Species	Moss & Lichen Species	Rock-Lichen Species	Vegetation Notes	Wildlife Notes
VN001	6-Aug-05	Near Milne Inlet, small stream to east of road route, near sample site EKP 2801.	Avens / Oxytropis arctobia	Aven Sedge		-	-	85	10	*Salix* sp. 3 5 *Dryas integrifolia* 50	*Carex rupestris* 60 *Oxytropis Maydelliana* 1 *Saxifraga oppositifolia* .2 *Oxytropis arctobia* 5	*Cetraria nivalis* 10			Scats: ptar, hare, caribou, goose Raven and semipalm plover calling
VN002	6-Aug-05	Near Milne Inlet, small stream east of main road route, near Sample site EKP 2801	Riparian moss association	Moss	R	-	-	10	80	*Salix reticulata* 20 *Salix* sp. 15 (tall flowers) *Cassiope tetragona* .5 (edge) *Dryas integrifolia* .1 (edge)	*Carex* sp. 1 .5 (sm) *Carex* sp. 2 .5 *Equisetum variegatum* 1 *Luzula confusa* 2 *Polygonum viviparum* .2 *Oxyria digyna* .2 (edge) *Cerastium alpinum* .1 *Stellaria* sp. .5 *Cardamine* sp. .1 *Draba alpina* .5 *Saxifraga caespitosa* .5 *Melandrium apetalum* .1 *Eutrema Edwardsii* .1 *Epilobium latifolium* .5 (edge) *Saxifraga cernua* 5 *Saxifraga aizoides* .1	bright green moss 75			Scats: hare, ptar, goose, caribou (old) Many lemming burrows in upper levels. Caribou bone (tibia)
VN003	6-Aug-05	Near Milne Inlet, north end of Philip's Creek where it enters lacustrine flats, near Sample site EKP 2802.	Avens association	Aven	A	-	-	50	-	*Salix* sp. .2 (shiny leaves) *Dryas integrifolia* 30	*Carex rupestris* .2 *Polygonum viviparum* .1 *Saxifraga oppositifolium* .2 *Potentilla nivea* .1 *Epilobium latifolia* 5 *Oxytropis Maydelliana* .5 *Pedicularis capitata* .5 *Oxytropis arctobia* 1 *Chrysanthemum integrifolium* .2	*Cetraria nivalis* .1		Mats of avens and dwarf fireweed on low dunes with blowouts. PHOTOS: VN003&4area, VN003, VN003close. (new numbers)	Scats: goose Old antler
VN004	6-Aug-05	Near Milne Inlet, north end of Philip's Creek where it enters lacustrine flats, near Sample site EKP 2802.	Avens association on sand	Aven	A	-	-	40	40	*Salix* sp. 15 (oval, pitd.) *Dryas integrifolia* 70	*Carex rupestris* 5 *Carex* sp. 2 *Polygonum viviparum* 10 *Potentilla nivea* .2 *Melandrium apetalum* .1 *Epilobium latifolia* 2 *Astragalus alpina* .5 *Oxytropis Maydelliana* .1 *Saxifraga oppositifolia* .2	mosses 20 *Thamnolia subuliformis* .1 *Cetraria nivalis* .1		PHOTOS: VN003&4area, VN004, VN004close.	Scats: goose and hare
VN005	6-Aug-05	Philip's Creek near Milne Inlet, west side of creek, near Sample site EKP 2803.	Riparian willow	Sedge Willow	R	-	60	40	15	*Salix lananta* (*richardsonii*?) 60 *Salix reticulata* 15 *Cassiope tetragona* 1 *Dryas integrifolia* 10	*Carex aquatilis* 20 *Carex* sp. (2 or 3 additional species) 20 *Eriophorum angustifolium* .2 *Equisetum variegatum* .2 *Equisetum arvense* .5 *Polygonum viviparum* .5 *Pedicularis sudetica* 1 *Pedicularis capitata* .1 *Chrysanthemum integrifolia* .1	mosses 15			goose flt feather and body feather
VN006	6-Aug-05	Philip's Creek, near Sample site EKP 2804	Avens association	Aven	A	-	-	29	1	*Dryas integrifolia* 25	*Carex rupestris* 15 *Lesquerella arctica* 1 *Saxifraga oppositifolia* 10	*Cetraria nivalis* 10 *Cetraria tilesii* 5 *Thamnolia subuliformis* 10			

TABLE 3.3

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
MILNE INLET POTENTIAL TRANSPORTATION ROUTE - VEGETATION DATA

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Plot	Date	Location	Plot Represents	Community	Association Code	Tree Cover (%)	Shrub Cover (%)	Herb Cover (%)	Moss & Lichen Cover (%)	Tree & Shrub Species	Herb Species	Moss & Lichen Species	Rock-Lichen Species	Vegetation Notes	Wildlife Notes
VN007	6-Aug-05	Philip's Creek, slope below VN006.	Transition from avens association on top of bank to sedge association in stream channel.	Aven Sedge		-	-	75	10	*Salix* sp. .5 *Salix reticulata* .2 *Cassiope tetragona* 20 (zone at slope base) *Dryas integrifolia* 35	*Carex rupestris* 15 *Carex* (2 species) 10 *Tofieldia* sp. .2 *Polygonum viviparum* .2 *Pedicularis capitata* 2 *Tofieldia pusilla* .2 *Epilobium latifolium* .1 *Saxifraga oppositifolia* 5 *Saxifraga aizoides* 1	*Cetraria nivalis* 5 *Cetraria tilesii* 5 *Dactylina* sp. (glove) 1 mosses 10 different mosses 5			scats: ptar, goose
VN008	6-Aug-05	Philip's Creek, near Sample site EKP 2805.	Avens/sedge association	Aven Sedge	A	-	20	45	5	*Salix lanata* ssp. *richardsonii* 10 *Salix arctica* ? 5 *Salix reticulata* 2	*Carex sp.* pend, head (2 sp.) 20 *Carex rupestris* 25 *Luzula confusa* 10 *Carex aquatilis* .2 *Polygonum viviparum* .5 *Oxyria digyna* 1 *Epilobium latifolium* .2 *Oxytropis Maydelliana* .5 *Chrysanthemum integrifolium* .2	mosses 5			scats: goose, ptar, hare
VN009	6-Aug-05	Philip's Creek, gravel bank near Sample site 2805.	Avens association?	Aven Sedge	A	-	-	10	-	*Salix arctica* .1 (mean?) *Dryas integrifolia* 2	*Carex rupestris* 2 *Lesquerella arctica* .1 *Draba* sp. .1 *Oxytropis arctobia* .1 *Saxifraga oppositifolia* 2 *Melandrium apetalum* .1	*Cetraria nivalis* .1 *Cetraria tilesii* .1 *Thamnolia subuliformis*		Sparse vegetation on gravel flats along upper bank.	scats: caribou
VN010	6-Aug-05	Philip's Creek, side creek flowing into main creek from east, near Sample site EKP 2806.	Riparian	Aven Willow	R (SB)	-	-	70	-	*Salix arctica* 2 *Salix herbacea* 2 *Dryas integrifolia* 20	*Equisetum variegatum* .1 *Epilobium latifolium* 60 *Pedicularis capitata* 5 *Saxifraga oppositifolia* .2	*Cetraria nivalis* 1 *Cetraria tilesii* 1		Thick growth of dwarf fireweed along bank in floodplain of side creek flowing into Philip's Creek.	
VN011	6-Aug-05	Philip's Creek, side stream flowing into main creek, near old road. Near Sample site 2806.	Sedge association, non-tussock	Sedge	S					*Salix* sp. 10 *Salix reticulata* 5	*Carex aquatilis* 20 *Carex* sp. (pend. hd.) 20 *Eriophorum angustifolium* 30 *Calamagrostis* sp. 10 *Equisetum variegatum* 2 *Polygonum viviparum* 1 *Saxifraga aizoides* .2	moss 10		Thick growth of sedges and cottongrass in small tributary stream below pond.	scats: goose redpolls heard lemming burrows sighted: red-throuted loon (prob)
VN012	6-Aug-05	Old road route to Milne Inlet, small stream flowing northeast, near Sample site EKP 2808, sandy area above bank of creek.	Riparian (?), sandy river bank	Willow		-	30	5	2	*Salix* sp. (red stemmed) 35 *Salix lanata* ssp. *richardsonii* 10	*Carex aquatilis* 1 *Equisetum variegatum* .2 *Polygonum viviparum* 2	moss 2		PHOTO: 103 (106) red-stemmed willow.	snow goose feathers
VN013	6-Aug-05	Old road route to Milne Inlet, small stream flowing northeast, near Sample site EKP 2808, sandy area above bank of creek.	Sedge association, emergent	Sedge	S	-	-	50	10		*Carex aquatilis* .1 *Eriophorum angustifolium* 50 *Cardamine pratensis* .1 *Pedicularis sudetica* 10 *Saxifraga Hirculus* .2	mosses 10 algae under plants 15		Sedges in end of shallow pond in about 15 cm water. Cottongrass in shallower parts, moss mounds with Pedicularis sudetica and Cardamine pratensis.	snow goose feathers

TABLE 3.3

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
MILNE INLET POTENTIAL TRANSPORTATION ROUTE - VEGETATION DATA

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Rev'd Mar/22/06

Plot	Date	Location	Plot Represents	Community	Association Code	Tree Cover (%)	Shrub Cover (%)	Herb Cover (%)	Moss & Lichen Cover (%)	Tree & Shrub Species	Herb Species	Moss & Lichen Species	Rock-Lichen Species	Vegetation Notes	Wildlife Notes
VN014	6-Aug-05	Old road route, in tributary crossing road, flowing south. Near Sample site EKP 2810.	Snowbank	Heather	SB	-	-	70	20	*Salix arctica* 5 *Cassiope tetragona* 50 *Dryas integrifolia* 15	*Carex* sp. (tall) .2 *Carex rupestris* 2 *Luzula nivalis* 2 *Equisetum variegatum* .1 *Oxyria digyna* 2 *Cerastium alpinum* .2 *Stellaria monantha* ? .1 *Silene acaulis* 2 *Papaver radicatum* .1 *Oxytropis Maydelliana* .5 *Pedicularis capitata* 2 *Saxifraga tricuspidata* 5	*Cetraria nivalis* *Thamnolia subuliformis* .1 *Racomitrium lanuginosum* 40		Band of arctic heather along slope and in small depressions.	scats: caribou calf
VN015	6-Aug-05	Old road route, in tributary crossing road, flowing south. Near Sample site EKP 2810.	Snowbank, moss community, riparian	Moss Willow	R					*Salix reticulata* 20	*Polygonum viviparum* 10 *Ranunculus nivalis* 2 *Saxifraga cernua* 5	bright green moss 60		Moss community or snowbank at small tributary stream, likely a snowbank until recently, shows effects of both snow accum. and running water.	fossils: ammonite and unknown
VN016	6-Aug-05	North road route, small tributary stream opposite tundra pond system near Sample site EKP 2812.	Riparian willow	Willow	R					*Salix richardsonii* 40 *Cassiope tetragona* 5 *Dryas integrifolia* 10	*Luzula nivalis* 2 *Polygonum viviparum* 5 *Oxyria digyna* 5 *Silene acaulis* 10 *Oxytropis Maydelliana* 2 *Saxifraga capitata* 2 *Saxifraga aizoides* .2 *Chrysanthemum Minuartia* ? .1 (*rubella* ?) *Potentilla hyparctica* (?) .1 *Saxifraga oppositifolia* .1 *Stellaria monantha* .1	*Cetraria nivalis* 2 *Cetraria tilesii* .1 mosses 10		Diverse stand of willows and forbs on both sides of small stream.	junenile char in stream
VN017	6-Aug-05	Tundra pond system, at end of lake, near Sample site EKP 2814.	Sedge/moss association on ridges of low centre polygons.	Moss Sedge		-	1	50	50	*Salix herbacea* 30 *Cassiope tetragona* 5 *Dryas integrifolia* 10	*Carex* sp. (2 species) 20 *Luzula nivalis* 5 *Polygonum viviparum* .5 Pedicularis sudetica .1	mosses		Low-centre polygons with 12-20 cm ridges, sedges in lower centres. This plot is in the ridge.	
VN018	6-Aug-05	Tundra pond system, at end of lake, near Sample site EKP 2814.	Sedge association in centre of low-centre polygons.	Sedge	S	-	-	60	30		*Carex aquatilis* 30 *Eriophorum angustifolium* 2 *Eriophorum* sp. (sql. hd.) 2 *Pedicularis sudetica* .2	moss (brownish) 10 star moss 5		Centre of low-centre polygon, sedges, dark moss and star moss.	
VN019	6-Aug-05	Old road route, below rimrock near Sample site EKP 2815	Sedge/willow association, possibly riparian.	Sedge Willow		-	20	60	10	*Salix richardsonii* 20 *Salix arctica* ? 10 *Salix reticulata* 5 *Dryas integrifolia* 2	*Carex aquatilis* 40 *Carex* sp. 1 10 *Eriophorum angustifolium* 20 *Carex* sp. 2 10 *Pedicularis sudetica* .1 *Saxifraga Hirculus* .1	*Cetraria nivalis* .1 mosses 20		Thick growth of cottongrass and willows at base of limestone slope.	Lemming runs and scat

TABLE 3.4

BAFFINLAND IRON MINES C0RPORATION
MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
MILNE INLET POTENTIAL TRANSPORT ROUTE - SOIL AND LOCATION DATA

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Rev'd Mar/22/06

Plot	Date	Location	UTM zone	Latitude (North)	Longitude (East)	Elevation (meters)	Slope (%)	Aspect	Moisture*	Nutrients*	Substrate					Soil Notes
											Organic Material (%)	Rocks (%)	Mineral Soil (%)	Bedrock (%)	Water (%)	
VN001	6-Aug-05	Near Milne Inlet, small stream to east of road route, near sample site EKP 2801.	17W	0505911	7976045	39	flat	NW	L	L	95	1	5	-	-	
VN002	6-Aug-05	Near Milne Inlet, small stream east of main road route, near Sample site EKP 2801	17W	0505942	7976035	36	5%	W	H	H?	90	1	-	-	10	
VN003	6-Aug-05	Near Milne Inlet, north end of Philip's Creek where it enters lacustrine flats, near Sample site EKP 2802.	17W	0502579	7973979	10	<5%	NW	L	L	50	-	50 (sand)	-	-	Marine sand dunes at mouth of river.
VN004	6-Aug-05	Near Milne Inlet, north end of Philip's Creek where it enters lacustrine flats, near Sample site EKP 2802.	17W	0502596	7973937	4	flat	NW	H	M?	80	-	20 (sand)	-	-	
VN005	6-Aug-05	Philip's Creek near Milne Inlet, west side of creek, near Sample site EKP 2803.	17W	0515213	7965400	78	flat		H	H?	80	-	-	-	20 (in channels)	
VN006	6-Aug-05	Philip's Creek, near Sample site EKP 2804	17W	0515031	7964340		flat	NW	L	L	30	65 (limestone)	5	-	-	Flats above river channel, flat, dry, with pavement of limestone rocks.
VN007	6-Aug-05	Philip's Creek, slope below VN006.	17W	0515011	7964339	85	25%	W			85	15	-	-	-	
VN008	6-Aug-05	Philip's Creek, near Sample site EKP 2805.	17W	0521905	7948914	131					75	15	5	-	-	Lacustrine (?) flats along stream, gravel and sand, flat.
VN009	6-Aug-05	Philip's Creek, gravel bank near Sample site 2805.	17W	0521855	7948905	128	<1%	SW	L	L	10	-	90 (gravel)	-	-	
VN010	6-Aug-05	Philip's Creek, side creek flowing into main creek from east, near Sample site EKP 2806.	17W	0525809	7936806	172	<5%				70	30	-	-	-	Gravel and cobbles.
VN011	6-Aug-05	Philip's Creek, side stream flowing into main creek, near old road. Near Sample site 2806.	17W	0525895	7936821	171	<1%	NE	H	M	90	-	-	-	10	
VN012	6-Aug-05	Old road route to Milne Inlet, small stream flowing northeast, near Sample site EKP 2808, sandy area above bank of creek.	17W	0528448	7926612	141	<1%		H	L	40	-	60 (sand)	-	-	Sand
VN013	6-Aug-05	Old road route to Milne Inlet, small stream flowing northeast, near Sample site EKP 2808, sandy area above bank of creek.	17W	0528429	7926655	147	flat	-	H	?	50	-	-	-	50	Saturated soil, standing water.
VN014	6-Aug-05	Old road route, in tributary crossing road, flowing south. Near Sample site EKP 2810.	17W	0535532	7919430	227	NA				90	-	10 (sand)	-	-	

TABLE 3.4

BAFFINLAND IRON MINES C0RPORATION
MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
MILNE INLET POTENTIAL TRANSPORT ROUTE - SOIL AND LOCATION DATA

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Rev'd Mar/22/06

Plot	Date	Location	UTM zone	Latitude (North)	Longitude (East)	Elevation (meters)	Slope (%)	Aspect	Moisture*	Nutrients*	Substrate					Soil Notes
											Organic Material (%)	Rocks (%)	Mineral Soil (%)	Bedrock (%)	Water (%)	
VN015	6-Aug-05	Old road route, in tributary crossing road, flowing South. Near Sample site EKP 2810.	17W	did not get	did not get		5%				80	-	20 (sand / mud)	-	-	Sand and mud. Limestone bedrock in main stream just above confluence. Fossils of ammonite and unknown invertebrate.
VN016	6-Aug-05	North road route, small tributary stream opposite tundra pond system near Sample site EKP 2812.	17W	0539718	7921085	158	>3%		H	H?	60	20 (in stream)	-	-	20 (in stream)	
VN017	6-Aug-05	Tundra pond system, at end of lake, near Sample site EKP 2814.	17W	0545113	7921924	156	level				100	-	-	-	-	
VN018	6-Aug-05	Tundra pond system, at end of lake, near Sample site EKP 2814.	17W	0545106	7921920	151	level				90	-	5	-	5	Saturated dark soil.
VN019	6-Aug-05	Old road route, below rimrock near Sample site EKP 2815	17W	0550424	7917908	171	level		H	L	80	-	-	-	20	Saturated, some standing water.

* Moisture and Nutrients: L = low, M = medium, H = high.

TABLE 3.5

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
STEENSBY INLET POTENTIAL TRANSPORT ROUTE - VEGETATION DATA

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Rev'd Mar/22/06

Plot	Date	Location	Plot Represents	Community	Association Code(1)	Tree Cover (%)	Shrub Cover (%)	Herb Cover (%)	Moss & Lichen Cover (%)	Tree & Shrub Species	Herb Species	Moss & Lichen Species	Rock-Lichen Species	Vegetation Notes	Wildlife Notes
VS001	7-Aug-05	Stream south of Nina Barr Lake, near Sample site 2838.	Heath tundra with boulders	Aven Heather	HT	-	-	30	20	*Salix arctica* 5 *Vaccinium uliginosum* 15 *Cassiope tetragona* 20 *Dryas integrifolia* 25	*Carex rupestris* 2 *Oxytropis Maydelliana* 5 *Pedicularis lapponica* ? .2 *Saxifraga oppositifolia* .5	*Cetraria nivalis* 5 *Thamnolia subuliformis* .5 *Racomitrium lanuginosum* 20 puffballs (*Boletus* sp.)	map rock tripe black crustose	Thin heath and avens on bank above river. Moss between boulders and in hollows.	scat: caribou
VS002	7-Aug-05	Stream south of Nina Bang Lake, near Sample site 2838.	Snowbank	Moss Willow	SB					*Salix herbacea* 70 *Salix arctica* ? 10 *Dryas integrifolia* 5	*Carex scirpoidea* 2 *Carex aquatilis* 5 *Alopecurus alpinus* .1 *Oxyria digyna* 2 *Cerastium alpinum* .1 *Stellaria* sp. .1 (large) *Silene acaulis* .1 *Rananculus nivalis* .2 *Draba* sp. 1 .2 *Draba* sp. 2 .2 *Pedicularis capitata* 5	*Stereocaulon* sp. .2 moss 15		Typical snowbank community with bands of least willow, heather, buttercups.	scat: goose burrows: lemming
VS003	7-Aug-05	North end of large lake, in braided stream, near Sample site 2824.	Avens association in bend of stream.	Aven	A	-	35	15	5	*Salix arctica* 5 *Vaccinium uliginosum* 5 *Cassiope tetragona* nearby *Empetrum nigrum* (?) nearby *Dryas integrifolia* 40	*Carex rupestris* 15 *Carex scirpoidea* 2 *Hierochloe* sp. .2 *Epilobium latifolium* 5 *Papaver* sp. (rad.) nearby *Oxytropis Maydelliana* .5 *Pedicularis lanata* .1 *Pyrola grandiflora* .5 *Eupetrum* sp. and heather just outside plot	*Cetraria nivalis* 1 *Alectoria* sp. .2 *Dactylina* sp. (glove) .2 *Alectoria* sp. (hair) .2 *Cladonia* sp. (pixy cup) .2 *Thamnolia subuliformis* .5 moss 5 *Racomitrium lanuginosum* 30	sunburst map rock tripe black crustose	Thin avens and Rhacomitrium moss between boulders. Blueberry at edge in water. First appearance of sunburst lichen and woolly lousewort.	scats: hare caribou scapula
VS004	7-Aug-05	Near mouth of stream, near Sample site 2823.	Snowbank or riparian	Sedge Willow		-	35	55	5	*Ledum palustre* var. *decumbens* .5 *Salix lanata* ssp. *richardsonii* ? 10 (50cm) *Salix reticulata* .5 *Salix arctica* 5 *Salix herbacea* 40 *Vaccinium uliginosum* 2 (at edge) *Cassiope tetragona* 10 *Empetrum nigrum* (?) 2 (at edge) *Dryas integrifolia* 1	*Carex scirpoidea* .2 *Carex collinsii* 15 *Poa* sp. 15 *Alopecurus alpinus* .1 *Calamagrostis purpurascens* 10 (dark heads) *Luzula* sp. .5 *Polygonum viviparum* 10 *Oxyria digyna* 1 *Cerastium alpinum* 2 *Stellaria monantha* 5 *Silene acaulis* .1 *Ranunculus* sp. .5 (same as previous) *Draba* sp. (unknown mustard) .1 *Potentilla nivea* .1 *Melandrium affine* .1 *Cardamine bellidifolia* .1 *Pedicularis capitata* 2 *Pedicularis hirsuta* ? 5 (prob) *Pedicularis lanata* *Taraxacum* sp. .1 (not blooming) (*lacerum* ?)	*Cetraria nivalis* .1 *Stereocaulon* sp. .5 moss 5		Beautiful example of snowbank community in a tiny valley. Several new species for this project show up here: Pedicularis hirsuta, Ledum palustre decumbens, Melandrium affine, Potentilla nivea, Taraxcum sp., and Cardamine bellidifolia.	Caribou skull with antlers. (Possible wolf kill?) Lemming nest Scats: goose, hare, lemming.
VS005	7-Aug-05	Near Sample site 2817, margin of small stream flowing into small lake.	Sedge association, non-tussock	Sedge	S	-	2	80	5	*Salix lanata* ssp. *richardsonii* ? 10 *Salix arctica* 5 *Salix reticulata* 10 *Dryas integrifolia* 5	*Carex aquatilis* 80 *Carex* sp. (3-5 other species) *Eriophorum angustifolium* *Pedicularis sudetica* 10	*Cetraria nivalis* .5 mosses 10 small red mushroom .1		Low vegetation, thick growth of sedges in low area around lake and small stream.	Caribou trails. Scats: snow goose. Many snow geese in area, flying in flocks, some on lakes with grey young.

TABLE 3.5

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
STEENSBY INLET POTENTIAL TRANSPORT ROUTE - VEGETATION DATA

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Rev'd Mar/22/06

Plot	Date	Location	Plot Represents	Community	Association Code(1)	Tree Cover (%)	Shrub Cover (%)	Herb Cover (%)	Moss & Lichen Cover (%)	Tree & Shrub Species	Herb Species	Moss & Lichen Species	Rock-Lichen Species	Vegetation Notes	Wildlife Notes
VS006	7-Aug-05	Near south end of road route to Steensby Inlet, near Sample site 2818.	Avens/heather association	Aven Heather	A	-	2	40	20	*Salix arctica* 10 Salix reticulata 15 *Vaccinium uliginosum* 15 *Cassiope tetragona* 15 *Dryas integrifolia* 15	*Poa* sp. 2 *Luzula confusa* .1 *Polygonum viviparum* .1 *Stellaria monantha* .5 *Astragalus alpina* .5 *Oxytropis Maydelliana* 2 *Pyrola grandiflora* 15	*Cetraria nivalis* 5 *Dactylina* sp. (glove) .2 *Alectoria* sp. (hair) 5 *Cladonia* sp. (pixy cup) 2 *Racomitrium lanuginosum* 5	sunburst map rock tripe jewel (small amounts)	Low heath tundra on boulders with frost scars. Frost boils with marine shells.	scats: goose burrows: lemming goose feathers
VS007	7-Aug-05	Island in large stream near lake, near Sample site 2819.	Avens/heather	Aven Heather	A	-	-	30	20	*Salix arctica* 10 *Cassiope tetragona* 20 *Dryas integrifolia* 20	*Carex* collinsii 15 (most sedges not in bloom) *Luzula nivalis* .1 *Polygonum viviparum* .1 Silene acaulis .2 *Oxytropis Maydelliana* 2 *Pyrola grandiflora* Unknown 1.	*Racomitrium lanuginosum* 15	sunburst map rock tripe black crustose	Low vegetation on boulders in island in stream, mostly moss, heather, avens and low sedges with some arctic willows.	goose sighting, scats and feathers
VS008	7-Aug-05	Ravn River, about 0.5 k downstream from Angajurjuak Lake, near Sample site ___.	Sedge association, tussock	Sedge	S	-	20	70	1	*Salix lanata* ssp. *richardsonii* 5 *Salix reticulata* 5 *Vaccinium uliginosum* 2 *Cassiope tetragona* 2 *Dryas integrifolia* 5	*Carex* sp. (4-5 species) 20 *Eriophorum angustifolium* 10 *Eriophorum vaginatum* 50	*Cladina* sp. 1		Tussock assn.	
VS009	7-Aug-05	Outlet of Mary Lake, into Mary River, near Sample site 2834.	Moss association, shoreline	Moss	M	-	15	15	75	*Salix* sp. (low oblong) *Salix herbacea* (?) 5 *Dryas integrifolia* 10	*Carex* sp. (2?) 10 *Polygonum viviparum* .5 *Oxyria digyna* 1 *Cerastium alpinum* .5 *Stellaria monantha* .5 *Potentilla nivea* .1 *Saxifraga oppositifolia* .5 *Saxifraga cernua* .5	moss 75		Low vegetation on saddle between two lakes, low moss carpet with many small red-stemmed willows, small sedges.	Glaucous gulls with one fledged young, nested on nearby rock outcrop.
VS010	7-Aug-05	Mary River, near Sample site 2834.	Avens/moss association	Aven Moss	A	-	-	50	40	*Salix* sp. (red stemmed) 10	*Luzula confusa* 2 *Polygonum viviparum* .5 *Oxyria digyna* .5 *Silene acaulis* 1 *Potentilla nivea* .1 *Boletus* sp. .1 *Oxytropis Maydelliana* 1 *Pedicularis capitata .2* *Saxifraga oppositifolia* .2	*Cetraria nivalis* 10 *Dactylina* sp. (glove) 1 *Cladonia* sp. (pixy cup) 1 *Stereocaulon* sp. 2 *Racomitrium lanuginosum* 40	bloodspot sunburst map rock tripe black crustose	Mats of Rhacomitrium and avens on thin soil on rocks (boulders).	scats: goose gull

TABLE 3.6

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

2005 BASELINE VEGETATION REPORT
STEENSBY INLET POTENTIAL TRANSPORT ROUTE - SOIL AND LOCATION DATA

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Rev'd Mar/22/06

Plot	Date	Location	UTM zone	Latitude (North)	Longitude (East)	Elevation (meters)	Slope (%)	Aspect	Moisture*	Nutrients*	Substrate					Soil Notes
											Organic Material (%)	Rocks (%)	Mineral Soil (%)	Bedrock (%)	Water (%)	
VS001	7-Aug-05	Stream south of Nina Barr Lake, near Sample site 2838.	17W	0572609	7851124	dnr	level	-	M	M	50	50	-	-	-	Many boulders and frost boils.
VS002	7-Aug-05	Stream south of Nina Bang Lake, near Sample site 2838.	17W	0572592	7851091	95	15%	NW	H (seasonal)	L?	80	20	-	-	-	
VS003	7-Aug-05	North end of large lake, in braided stream, near Sample site 2824.	17W	0575391	7846636	50	level	-	L	L	50	50	-	-	-	Many water-laid boulders, boulder streams and circles.
VS004	7-Aug-05	Near mouth of stream, near Sample site 2823.	17W	0577300	7844889	35	-	-	-	-	90	-	10	-	-	
VS005	7-Aug-05	Near Sample site 2817, margin of small stream flowing into small lake.	17W	0594942	7802735	25	flat	-	-	-	90	2	-	-	5	Saturated soil.
VS006	7-Aug-05	Near south end of road route to Steensby Inlet, near Sample site 2818.	17W	0598161	7807311	12	-	-	-	-	60	40	-	-	-	
VS007	7-Aug-05	Island in large stream near lake, near Sample site 2819.	17W	0592159	7817715	29	level	-	-	-	50	50	-	-	-	
VS008	7-Aug-05	Ravn River, about 0.5 k downstream from Angajurjuak Lake, near Sample site ____.	17W	0556885	2892782	127	<1%	NW	H	M	90	-	-	-	10	Terraced bank of Ravn River, above high water mark.
VS009	7-Aug-05	Outlet of Mary Lake, into Mary River, near Sample site 2834.	17W	0557367	7903281	159	-	-	-	-	80	15	5	-	-	
VS010	7-Aug-05	Mary River, near Sample site 2834.	17W	0557367	7903233	165	<2%	SE	M	M	80	20	-	-	-	

* Moisture and Nutrients: L = low, M = medium, H = high.

Baffinland Iron Mines Corporation
Mary River Project

Vegetation Baseline Study Report
2006 Vegetation Plots

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope		Moisture	Soil notes	Veg. notes	Cover, %				Species and % cover for each									
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect				Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_V_044	04/08/2006	17W	7916594	571339	Mary River, upper reaches, sample site G0-09 river right at 5m stream						5	SE	dry		Thin vegetation on crest of small ridge/knob overlooking the confluence of stream and river. Mostly pricly sax and luzula confusa.			20	10			paparada .1		Rushes luzuconf 15	Poa sp. 1; other grasses .5		saxitric 10	cetrniva .2; cetrtile .1; Alectoria 10; glove .5	asstd mosses 5	Scats: Fox and hare Runs/trails and Den/burrows: lemmings	
06_V_045	05/08/2006	17W	7914407	557866	Mary River Camp area, stream valley to SW of camp, ca. 300 m from camp	Moss community along stream	M	s	GF	s	level		wet	Saturated, sandy bottom.	Thick growth of mosses in stream valley between glaciofluvial hills. Water is standing or only slowly flowing in this area. Sandy substrate. Lots of mastodon flower, yellow marsh saxifrage, golden saxifrage, and Calamagrostis, some Alopecurus alpina, and Pleuropogon sabineii.			40	60			melaapet 1; stellong 2; epilarct .2 ?		Rushes luzuniva .1	pleusabi .5; calapupu 10; alopalpi 5;		chrytetr 5; saxicern 2; saxifoli 1; saxihirc 5		Bryum sp. (red) 2; Mixed mosses 60; green algae, filamentous	Arctic fox seen in this area, hunting in the hills and along the stream.	
06_V_046	05/08/2006	17W	7914417	557885	Slope above stream valley to W of camp, sandy hills with patterned gr. on top (lacustrine?)						22	W	mesic		Thin veg. scattered plants on sand/gravel slope with abundant flowers at this time.						potenive .1	oxyrdigy 15; ceraalpi 10; melaffi 1; melaapet .1; Stellaria 3; paparadi 1	xytmayd .1; saginap ? .1 (photo); ranunc sp? .1 (photo)	Rushes luzuniva .1		cardbell .1; draba sp., several, 10	saxicaes 2; saxicern 2			Scats: ptar and lemming. Tracks: fox	
06_V_047	05/08/2006	17W	7914462	558017	Mary River Camp area, between camp and weather station, on patterned ground.	Barrens, avens - xeric sedge association; glaciofluvial complex	B	ax	GF		~1	sw	Mesic	Sandy/gravelly soil, mesic	Vegetation in frost fissures in patterned ground (high centre polygons). Fairly deep cracks in a glaciofluvial surface, plot located at the juncture of two cracks.		tall 15, dw 30	25	15	saliarct 5; salirich 15	salireti 10; casstetr 25; dryainte 15	oxyrdigy 1 polyvivi 0.1 minuartia 0.1 sileacau 5 stellaria 0.5	pea 0.2; oxytmayd 0.5; mushroom 0.1	Sedges carerupe 0.2; careatro 1; caresciu 1; Carex sp. 10 Rushes luzuniva 0.2		Draba sp. .2; eutredw .1	saxicaes 0.1; saxioppo 0.2; saxitric 0.2; pedicapi 0.1	cetrniva 2; cetrtile 0.1; cladina 0.1; stertome 0.1; thamsubu 0.1; glove 0.1	racolanu 10; other moss 5	Scats: lemming, caribou. Lemming runs, burrows. Ptarmigan feathers.	
06_V_048	05/08/2006	17W	7930216	527164	Near road route-beside abandoned airstrip north west of camp on lakeshore						flat				Lacustrine Flat - heather and moss		50	2	28		salix 10; casstetr 35; dryainte 2	ceraalpi 1		Sedges carerupe 2 Rushes luzuniva 1			armemari 2; pedihirs 0.1	cetrniva 3; thamsubu 2; alectoria 2	racolanu 25	Scats: Goose, Caribou(old), Fox	
06_V_184	12/08/2006	17W	7914880	564886	Deposit #1, foot of the mountain						10	SE	mesic		shrub (aven)forb on gentle slope		50	30	20		salireti 10; dryainte 40	polyvivi 5	oxytmayd 15; 3 mushrooms	Sedges sedges 0.1 Rushes luzuconf 1	alopalpi 5;		saxifraga sp. 10	lichens: cetrniva 5; cetrtile 1; alectoria .2 glove .1 0.1	mosses 15; biol. crust 5	sighting/heard: snowy owl	
06_V001	01/08/2006	17W	7914361	558109	Mary River Camp, near weather station	Avens - xeric sedge association with some heather	B	ax	GF		level		dry	Dry, gravelly, flat high centre polygons with frost fissures between.	Thin vegetation, mostly avens, Carex rupestris, and heather on flat terrace near weather station.			50	50	saliarct 5; salirich 15	casstetr 15; dryainte 15	sileacau 5	oxytmayd .1	Sedges carerupe 10			saxioppo .2	cetrniva 1; cladonia .1; stertome .1; thamsubu .2; alectoria 2	racolanu 10	none	
06_V002	01/08/2006	17W	7914385	557940	Mary River Camp area, near weather station, vicinity of stream valley to west of camp.	Heath tundra grading into sedge association near pond.	HT	c	GF		> 5	N	wet-mesic	Small swale above tiny pond. Sandy soil, saturated near pond.	Sedges and other plants in small swale above tiny pond in glaciofluvial terrace landform. This area is actually in a large frost fissure between high centre polygons. Dominants: Salix arctica, S. reticulata, Cassiope tetragona and Dryas integrifolia.			50	50	saliarct 10	salireti 15 caaatetr 15 dryaninte 15	oxyrdigy 2 sileacau 5 armemari 2	pedisude .2	Sedges careaqua .2 caremisa 2 Cottongrass Rushes luzuniva 5			saxifoli .1 saxihirc 10 saxioppo 2 saxitric .1	stertome 2		Caribou: old antler and bone pieces.	
06_V034	04/08/2006	17W	7912679	567299	Mary River, near water sample site G0-03.	Sedge association, non-tussock, small sedge meadow.	S	nt			level	NW	wet	Soil saturated	Thick growth of sedges in flat area above Mary River, mounds of moss and reticulated willow, much sign of lemming activity.		2, 20 dwarf shrub	70	10	saliarct 2 salirich 2	salireti 20	polyvivi .5 melaapet .1 ranuniva .1	pedihirs .1	Sedges careaqua 50 Cottongrass erioangu .1 Rushes Grasses: calapurp 5 Other: equivari .2			saxihirc 2	stertome .1 peltapth .1		Active lemming runs, with scats, burrows, etc. Scats: goose, lemming,	
06_V035	04/08/2006	17W	7912650	567287	Mary River valley, near water sample site G0-03, crest of small knob.	Lichen-rock association on boulders/cobbles, on small esker crest near stream (Mary River).	LR	b	EC	c	~ 2	S	mesic-dry	Most fines blown away, leaving only cobbles and boulders, sand under these rocks.	Scattered vegetation, mostly avens and xeric sedgeswith some heather, avens and heather in small mats.		10			saliarct 2 salirich 2	salireti 20 dryainte 1	polyvivi .5 melaapet .1	ranuniva .1 pedihirs .1	Sedges careaqua 50 Cottongrass erioangu .1 Rushes			saxahirc 2	stertome .1 Peltigera apthosa .1		Lemmings, many active lemming runs, dens, scats.	
06_V036	04/08/2006	17W	7912114	569369	Mary River valley, near water sample site G0-05.	Lichen veneer on gravel? Unsure, atypical site.	LR	b	EC	s	~ 1	NW	mesic-dry	Gravelly substrate.	Thin veneer of lichens and mosses with a few vascular plants (Luzula, Cerastium alpinum, and heather) in small depression inshore from cobble ridge. Could be esker slope.		1 dw	5	70		casstetr 1	ceraalpi 1 paparadi .1		Sedges Cottongrass Rushes luzuconf 2 luzuniva 3				cetrniva 10 thamsubu .1 Alectoria sp..2	racolanu 10 asstd sm moss 30	small caribou antler	
06_V037	04/08/2006	17W	7913117	569400	Mary River, near water sample site G0-05, at small side stream flowing into the Mary River	Sedge association in dry pond.	S	nt			< 1	NW	wet	Soil covered with a black "biological crust". Wet soil, sandy with cobbles and boulders.	Black biological crust, least willow and Carex aquatilis. Odd association as it is very simple. Probably floods more than just during spring freshet. Plants recorded in old system.			20	65		saliherb 15			Sedges careaqua 15 Cottongrass Rushes				stertome .1	biological crust 70 brownish moss 15	Scats: caribou, lemming	
06_V038	04/08/2006	17W	7913323	569414	Mary River near sample site G3-01, shore above channel						< 1	W	mesic	Cobble ridge.	Thich growth of heather and mosses on flat ground.		55dw	5	10	saliarct 15	saliherb 2 casstetr 50 dryainte 2	oxyrdigy .1 sileacau .1 Stellaria .2 paparadi .1	Oxytmayd 1 Alopec alpinees 1 pedihirs .1	Sedges careaqua .1 Cottongrass Rushes				cetrniva .1 stertome .2 thamsubu.1 glove .1	asstd. mosses 10		
06_V039	04/08/2006	17W	7913322	569382	Mary River valley, above Plot 038, near water sampling site, G3-01, on cobble ridge facing river.	Heather - moss association and possibly snowbank			EC	s	20	S	mesic	Soil covered with boulders and cobbles. Probably a fragment of an esker or drumlin. Likely too small to show up on aerial photos.	Thick growth of Racomitrium moss on slope in apparent lee of ridge.		10	5	55	saliarct 5	casstetr 5	oxyrdigy .2 ceraalpi .2 sileacau .2 paparadi .2		Sedges Cottongrass Rushes luzuconf .2 luzuniva .1			saxiooppo .2	cetrniva 5 Cladina sp. 10 Cladonia sp .2 Alectoria sp. .1 Pertusaria dactylina .1	racolanu 50 asstd other mosses 10	Scats: hare Caribou antler	

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope			Soil notes	Veg. notes	Cover, %				Species and % cover for each									
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_V040	04/08/2006	17W	7913890	570401	Mary River near site G0-07, right of river						< 1	SE	mesic	Cobble field.	Sparse vegetation, mostly dry mosses.		10dw	5	35	saliarct 3		ceraalpi .2 paparad 2		Sedges Cottongrass Rushes luzuconf 1			saxioppo .2	cetrniva 2 cetrile .2 stertome 1 thamsubu .5	asstd. mosses 30	Scats: goose and hare.	
06_V041	04/08/2006	17W	7913887	570403	Mary River valley, near water sample site G0-07, small knob above shore of river.	Lichen-rock vegetation on cobble crest in boulder field	LR	b	EC	c	level to domed		dry	Sand under cobbles.	Scattered plants, including Potentilla vahliana, on grave top of knob, possibly remnants of a small esker or drumlin.		1	5	2		dryainte 1	potevahl 2		Sedges carerupe 2 Cottongrass Rushes Poa sp. 1			saxitric 1		Biol. crust 2	Scats: ptarmigan, hare Lemming burrows	
06_V042	04/08/2006	17W	7917660	571552	Upper Mary River, Sample site G6-01, slope above river right						11	w	mesic		Relatively diverse veg. on slope above river	dw. 30		20	15	saliarct 1	saliherb .5 salireti 1 casstetr 15 dryainte 15	polyvivi .1 ceraalpi .1 sileacau 1		Sedges careatro 2 Cottongrass Rushes luzuniva 1			saxiniva .1 saxioppo .5	cetrniva 1 cetrile 1 Cladonia .1 stertome .1 thamsubu .1 Alectoria .1		Scats: hare	
06_V043	04/08/2006	17W	7917746	571632	Hill above 042 and sample site G6-01 above Mary River						5	sw	mesic		Vegetation around a frost boil or solid lobe (small). Rim is covered with heather and drya, some moss. Centre is not vegetated, only a few sm, willos, some c. rupestris, some saxi. oppos and sm avens.	dw 20		10	10	saliarct 10	casstetr 10 dryainte 15	polyvivi .5 sileacau .1	oxy maydell 2 astr alpinus .2	Sedges careatro .2 Cottongrass Rushes				cetrniva .1 cetrile .1 stertome .1 thamsubu .2	mosses 5	2 callings: Lapland longspurs	
06_V049	04/08/2006	17W	7917742	571560	Upper Mary River near water sample HO-01										Wetland emergent plant community							ranu hyperboreas 0.2	pleuropogon sabireii 3	Sedges Cottongrass Rushes							
06_V050	04/08/2006	17W	7917814	571440	Upper Mary River near water sample H1-01						5		Wet		in stream vegetation						salireti 0.1	oxydigy 0.5 melaapet 0.2 sileacau 0.1 ranuniva 0.5		Sedges Cottongrass Rushes			saxicaes 0.1 saxifoli 0.1 saihier 0.1 saxiniva 0.2 saxioppo 0.1 saxitenu 0.1		15		
06_V051	04/08/2006	17W	7916502	565012	Open Slope to E of Deposit 1						2	sw	mesic		Thin veg cover only open slope, possibly not too long unglaciated. Dom are avens, poppies, purple kitsax		20	20	30	saliarct 10	salireti 0.5 dryainte 10	oxyrdigy 10 ceraalpi 0.2 paparadi 5	alopolpi 0.1	Sedges Cottongrass Rushes luzuconf 0.1 luzuniva 1			saxicaes 0.1 saxicern 0.1 saxifoli 0.1 saxioppo 10	cetrniva 0.1 stertome 0.1 thamsubu 0.1 glove 0.1	asstd mosses 20 biol. crust 20		
06_V052	04/08/2006	17W	7916591	564924	East end of the Mountain (Deposit 1)						5	s	mesic		boulder field with water seeping beneath vegetation between and on rocks							oxyrdigy 3 ceraalpi 0.1 papacorn 0.1	calapurp 0.2 alopec alp 0.1	Sedges Cottongrass Rushes			saxicern 0.1 saxiniva 0.1 saxioppo 0.1		cushion 0.4		
06_V053	04/08/2006	17W	7916308	564548	East of the mountain on a lower slope						2	s	wet-mesic		Purple mountain saxifrage and sedge association sparse vegetation		10	25	45	saliarct 15	saliherb 0.1 salix dryainte 10	oxyrdigy 5 ceraalpi 0.2 melaapet 0.1 minuartia 0.1 papacorn 0.2 paparadi 0.2	alopecuris 0.1	Sedges careatro 15 Cottongrass Rushes luzuniva 0.1			saxicaes 0.1 saxifoli 0.1 saxioppo 5 saxitenu 0.1 saxifraga 0.1 pedihirs 0.1	cetrtile 0.1	biol crust 45	Scat: ptarmigan nearby	
06_V054	04/08/2006	17W	7916242	564101	East slope of mountain, almost to the height of land north of Deposit 1						level				poineer stage - sparse - tiny immature plants on saturated soil covered in boilogical crust Below blouder field.			5	45		salix 0.2	oxyrdigy 0.1 ceraalpi 1 papacorn 0.2	calapurp 0.1	Sedges Cottongrass Rushes luzuniva 1			saxicaes 0.1 saxicern 0.2 saxiniva 0.1 saxioppo 2	cetrtile 0.1	biol crust	Scats: Lemming Runs/Trails: Caribou	
06_V131	09/08/2006	17W	7912949	562121	Mammal trapping area near proposed mine site. Small valley to W of road at trap #17.						5	S	wet		Riparian sedge and Rich. willow assn on hillside seep, some solifluction slope above plot.		25	50	10	1 saliarct; 15 salirich	5 salireti; 1 casstetr; 5 dryainte	0.1 pedicapi; 0.1 pedilana		Sedges 35 careaqua; 15 careatro; 10 carememb; 5 carex sp. Cottongrass erioangu Rushes				2 cetrniva	1 cushion; 2 asstd mosses		
06_V133	09/08/2006	17W	7912890	562138	Mammal trapping area near proposed infrastructure. Ridge crest with small depression. (Trap 19)						10	NW	mesic-dry		Avens/heather/moss assn. on small slope		40	10	20	2 saliarct	10 casstetr; 30 dryainte	0.1 polyvivi; 0.1 pedicapi		Sedges 0.1 carenard; 0.2 carescir; carex (rupestris) Cottongrass Rushes			0.2 saxioppo	5 cetrniva; 0.1 stertome; 0.1 thamsubu; 0.1 Alectoria	15 racolanu	Mammal trap set here, not successful over 3 weeks.	

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope			Soil notes	Veg. notes	Cover, %				Species and % cover for each								
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_V135	09/08/2006	17W	7912809	562040	Mammal trapping area by trap #23. Small valley between ridges						1	N	mesic-dry		Thin avens/ xeric sedge assn with some heather, some biol. crust. Heather increases as snow accumulation increases - very dry will have less.		35	15	20	0.5 saliarct	15 casstetr; 20 dryainte	0.1 toficocc; 0.1 polyvivi		Sedges 15 carex (rupes.) Cottongrass Rushes luzuconf					20 racolanu; 5 other mosses	Trap set.	
06_V137	09/08/2006	17W	7912803	561943	Infrastructure area/ mammal trap area (near, not at, trap #25), S of road						20	SE	mesic-dry		Dryas and curly sedge/moss veg on boulder slope with some grasses, fine, small, but not foa.		25	15	15	0.5 saliarct	0.2 potevahl; 25 dryainte; casstetr (nearby)	0.1 polyvivi		Sedges 5 carenard; 0.5 carescir; 2 carex (rupestris) Cottongrass Rushes 0.5 luzuconf			0.5 saxioppo	5 cetrniva; 0.1 cladonia; 0.2 thamsubu	15 racolanu; 0.5 other mosses	Sighting/heard; hare. Dens/Burrows; Lemming.	
06_V139	09/08/2006	17W	7912452	561995	Top of small ridge in infrastructure area, with signs of raptor activity						level and drops on sides	NW	mesic-dry		Plot only, rest of ridge is relatively unvegetated. Thick growth of grasses, prickly saxifrage and avens on crest of ridge where raptors perch.		12	50	10	2 saliarct	10 dryainte	0.5 polyvivi; ceraalpi; 5 stellaria (longi)		Sedges Cottongrass Rushes				1 cetrniva; 0.5 thamsubu; 2 Alectoria	10 asstd.	Scats; hare (jaw(mandible)).	
06_V141	09/08/2006	17W	7912327	562566	Infrastructure area/ mammal trap area (trap #10) to SW of deposit #1						10	SW	mesic-dry		dryas/avens/sedge assn. on bouldery slope below sedge meadow. Sedges here are mixture of wet and dry species. Small wet areas in slope likely hold water earlier.		35	15	10	2 saliarct; 0.1 salirich (outside?); 2 salix (sp. arctophila)	5 salireti; 5 vacculig; 5 casstetr; 20 dryainte	0.1 toficocc; 0.1 polyvivi; 0.2 sileacau; 0.1 Stellaria; 0.1 pedicapi (rb); 0.1 pedihirs		Sedges 3 careaqua; 1 careatro; 1 carememb; 5 carenard; 1 carescir; 5 carex (rapestris) Cottongrass Rushes 0.1 luzuniva			0.5 saxioppo (fb)	0.2 cetrniva; 0.2 cetrtile; 0.1 cladonia; 0.1 stertorne; 0.1 thamsubu; 0.2 Alectoria	10 racolanu; 2 asstd mosses; 5 biol. crust	Scats; hare. Runs/trails; lemming.	
06_V143	09/08/2006	17W	7912474	562569	Small pond in infrastructure area, near mammal trap #7						level	NW	wet		Emergent assn. Emergent sedges in edge of small pond in cobble ridge complex. Mostly carex aquatilis with moss on ridges at pond edge. Most of the emerg. veg. is C. aquatilis.		20	25		5 saliarct; 5 salirich (edge)	5 salireti (edge); 2 casstetr; 5 dryainte	1 polyvivi; 0.1 ceraalpi; 0.5 Stellaria; 0.5 pedicapi		Sedges 25 careaqua (in water); 3 careatro; 2 carememb (edge) Cottongrass 0.1 erioangu (more nearby) Rushes			0.5 saxihirc	0.1 cetrniva; 0.1 thamsubu	5 cushion (mosses); 15 pond algae; 10 pond mosses	Sighting/heard; pipits. Scats; hare. Heard; Lapland longspur. Runs/trails; lemming.	
06_V145	09/08/2006	17W	7912656	562903	Near road infrastructure area, mammal trap area near trap. Bouldery slope above wetland.						22	S then W	mesic		Heather/avens assoc. on steep slope that prob. retains snow. Many old lemming burrows but no action.		60	10	5	1 salirich	3 saliherb; 5 salireti; 40 casstetr; 15 dryainte	5 oxyridgy; 1 polyvivi; 5 sileacau; 0.5 paparadi; 5 pyrogran; 1 pedicapi		Sedges 0.5 carememb; 0.5 carenard; 0.2 carescir Cottongrass Rushes			0.2 saxitric	0.5 cetrniva; 0.1 cetrtile; 0.2 Cladina; 0.1 Cladonia; 1 stertorne; 0.5 thamsubu	5 biol. crust	Hare. Lemming runs.	
06_V147	09/08/2006	17W	7912900	562439	Small valley between road and deposit, traps 12/13								mesic-dry		Snowbank assoc., or place where snow stays late. Sandy slope, possibly unstable for plants, with a diverse collection of species.		15	40	5	5 saliarct	5 salireti; 1 potehypou; 2 potevahl; 5 casstetr; 0.5 dryainte	15 oxyrdigy; 5 polyvivi; 5 ceraalpi; 0.5 melaaffi; 0.1 Minuartia; 15 sileacau; 0.2 Stellaria; 0.1 paparadi; 5 pedicapi		Sedges 5 carenard; 5 carescir Cottongrass Rushes 10 luzuniva			1 saxicern; 1 saxihier; 1 saxinivi; 1 saxitric	5 cetrniva; 2 stertorne; 1 thamsubu; 0.1 glove	0.1 very small mosses	Sighting/heard; many bumble bees visiting flowers. Arctic Frittilary. Caribou. Scats; goose. Heard; raven. Scats; hare. Runs/trails; lemming nest.	
06_V149	09/08/2006	17W	7913337	561490	Infrastructure area/ mammal trapping area, near trap						< 1	NW	mesic-dry/dry?		Thin mat of avens and xeric sedges on tundra between boulders, on gentle slope above small depression pond					0.2 saliarct	45 dryainte	0.2 pedilana		Sedges 5 careatro; 5 carenard; 10 carescir; 15 carex (rupestris) Cottongrass Rushes			0.2 saxioppo	0.2 cetrniva; 0.2 cetrtile; 0.1 thamsubu; 0.5 Alectoria	0.1 small mosses; 0.2 biol. crust		
06_V150	10/08/2006	17W	7934810	538553	north rail route, stream bank(high) 28km NW of camp						3	N	mesic		avens herb(oxytropis maydelliana)		50	30	20		casstetr 20 dryainte 30		oxytmay 20	Sedges caremis 10 carex rupestris 5 Cottongrass Rushes luzuconf 1			saxioppo 2 pedicapi 2	cetrtile 1	mosses 10	scats: caribou	
06_V151	09/08/2006	17W	7913295	561461	Area to W of road, near trap #28						> 1	W	wet		Small wetland, edge of small pond, with some standing water. Mostly a mixture of C. aquatilis and C. membranacea with some moss mounds.					0.2 saliarct				Sedges 70 careaqua; 10 carememb; 5 carex (sp., coll) Cottongrass Rushes 0.1 erioangu					5 cushion		

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope			Soil notes	Veg. notes	Cover, %				Species and % cover for each									
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_V152	01/08/2006	17W	7912329	562589	Development area small mammal trap #7						35	S	mesic		shrub (avens, heather) forb		70	10	10		casstetr 25 dryainte 40	forbs 10 polyvivi 0.1 sileacau 2	oxytmayd 2	Sedges carex rectic 5 Cottongrass Rushes luzuconf 2			pyrogran 1 armemari 0.1 pedicapi 2		mosses 10	sighting/heard: hare scats: hare, caribou dens/burrows: lemming	
06_V153	09/08/2006	17W	7913342	561149	Below road in infrastructure area, above small pond, in bouldery inflow area								wet-mesic		Slope which receives drainage to small pond, slope is bouldery and area below is more bouldery, almost a boulder stream.		10	20	10		5 saliherb; 5 salireti; 0.2 casstetr	7 oxyrdigy; 5 polyvivi; 5 ceraalpi; 1 melaapet; 1 sileacau; 0.2 ranupygm (prost butt.)		Sedges 2 careaqua; 2 carememb Cottongrass Rushes 1 luzuniva			0.5 saxicaes; 5 saxicern; 1 saxihirc; 0.1 saxiniva; 2 saxioppo		5 mosses; 2 biol.crust	Scats; caribou. Scats; hare.	
06_V154	01/08/2006	17W	7912447	562646	Between moutain and Mary River, mammal trap #8						5	N	dry		Sparse vegetation - dry avens dominated		10	5	5		salix 1 dryainte 10	sileacau 1		Sedges Cottongrass Rushes luzuconf 1			saxioppo 2 saxitric 1 pedicapi 0.1			sighting/heard: hare	
06_V155	09/08/2006	17W	7913366	560910	Flat area to S of old camp, near mammal trap #39						level		mesic-dry		Thin veg. on gravel, flat area but plot loc. in small temp drainage channel that may follow a frost fissure.		45	35	20	5 saliarct	40 dryainte	1 toficocc; 0.1 polyvivi; 10 epillati; 0.5 pedicapi (small); 0.1 pedihirs; 0.1 pedilana		Sedges 5 carenard; 0.5 carescir; 20 carex (rupestris) Cottongrass Rushes 1 luzuniva			10 saxioppo	5 cetrniva; 0.5 Alectoria	10 biol. crust	Caribou bone.	
06_V156	01/08/2006	17W	7912569	562819	between mountain and Mary River, mammal trap #3						2	W	mesic		avens sedge		30	30	15		salix 3 dryainte 30	sileacau 2		Sedges Cottongrass Rushes luzuconf 25			saxioppo 3 pedicapi 0.1	lichens 10	mosses 5	scats: hare, caribou and ptarmigan sighting/heard: hare, st. weasel	
06_V157	09/08/2006	17W	7913354	560877	Infrastructure area to W of road, flat area S of old camp						level				Thin, sparse veg. in tiny clumps or mats on gravel.		15	3	2		15 dryainte	0.1 sileacau		Sedges 5 carenard; 3 carex (rupes) Cottongrass Rushes			0.1 saxioppo	0.2 cetrniva; 0.2 thamsubu; 1 Alectoria	small mats	Scats; hare.	
06_V158	11/08/2006	17W	7976405	503339	Milne Inlet 82 km NW of Mary River Camp						0		dry		avens herb(saxifrage) on exposed upper beach						dryainte 20		oxytarct 5	Sedges Cottongrass Rushes			saxioppo 5 saxitric 10				
06_V159	09/08/2006	17W	7913504	560727	At road crossing of small stream infrast area, mammal trap area, small island on stream								wet-mesic		Thick sedges and rich willow and s. retic on small island in rocky stream flowing from W side of Dep. 1		40	40	10	salirich 20	salireti 10 vacculig 5 casstetr 2 rhodlapp .5 dryainte 5	polyvivi .5	Oxyt mayd .1 pedicapi .1	Sedges careaqua 20 careatro 5 carememb 10 carescir 5 Cottongrass erioangu 1 Rushes					str. mosses 10	small char in stream	
06_V161	09/08/2006	17W	7913686	560471	Infrastructure area, E of road, mammal trappin area, shoreline of small lake						<1	E	Wet		Beach at end of small lake, with solfl. ridge at side of beach. Ridge is of moss with sedges and avens. Beach proper has sedges, few mosses, sid. lousewort		5	20	15	saliarct 2	salireti .2 dryainte 3	toficocc .1 polyvivi .2	Oxyt mayd .2 pedicapi 1 pedisude 2	Sedges careaqua 10 carememb 5 carescir 5 Cottongrass Rushes luzuniva 5				cetrniva .5 thamsubu .1 glove .2	cushion .5	caribou bone	
06_V163	09/08/2006	17W	7913921	559559	infrastructure area S end of runway, against bane						40	NW	wet-mesic		Heather assn in lee of edge of lacustrine flat above small wetland		70	15	15	saliarct 5	salireti 15 casstetr 45	oxyrdigy 10 polyvivi .2 sileacau 5	oxyt mayd 10 pedicapi	Sedges carescir 5 Cottongrass Rushes			saxihirc .5 saxitric 2	cetrniva 1 thamsubu .1	sm mosses 15	Scats: hare	
06_V185	12/08/2006	17W	7914880	564886	N rail rt, open slopes S of confluence, valley behind front ridge						>1	N	wet		Sedge wetland behind ridge, small streams flow out of canyons and join sedges with moss mounds		10	40	5	saliarct 2	salireti 3 dryainte 5	streambuttercup		Sedges Carex sp (2-3) Cottongrass Rushes					cushion mosses		
06_V186	12/08/2006	17W	7915006	564841	foot of the mountain						20	S	mesic		boulder stream-veg between boulders very sparse		1	1	3		salix 0.3 casstetr 0.3 dryainte 0.3	oxyrdigy 0.1 polyvivi 0.1 minuartia 0.1		Sedges Cottongrass Rushes			saxicern 0.1 saxioppo 0.5	lichens 15 cetrilie 0.1 glove 0.1	mosses 2	scats: caribou and hare dens/burrows: lemming runs/trails: caribou	

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		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_V188	12/08/2006	17W	7915296	564886	East foot/side of mountain 7km east of camp						5	S					40	15	30	saliarct 5	dryainte 35	ceraalpi 0.1		Sedges sedges 5 Cottongrass Rushes			saxioppo 5	cetniva 2 cetrile 1 thamsubu 2	racolanu 3 biol crust 15		
06_V190	12/08/2006	17W	7915466	565106	one stream valley away east of mountain						5	W	mesic		recently glaciated-glacier 10m uphill pioneer community			13	17			oxyrdigy 2 ceraalpi 0.1 melaapet 0.1 minuartia 0.1		Sedges sedges 3 Cottongrass Rushes luzuconf 0.1			saxicern 2 saxioppo 5	lichens 5 white foamy 4	mosses 3 biol crust 10		
06_V192	12/08/2006	17W	7914739	565216	South of mountain						5	N	mesic		sparse stony shrub(avens) sedge		30	10	30	saliarct 5	dryainte 25			Sedges sedges 5 Cottongrass Rushes luzuconf 1			saxioppo 5 pedihirs 0.5	cetniva 2 cetrile 3 thamsubu 3	mosses 5 biol crust 15	dens/burrows: lemming	
06_V194	12/08/2006	17W	7914577	565183	South of mtn								wet		Stream(tiny) and surface flow between boulders moss dominant and herbs		5	15	40		salix 5	melaapet 3	poa 2 alopecuris 0.1	Sedges sedges 5 Cottongrass Rushes			saxicern 0.1 saxifoli 1 saxiniva 1 saxioppo 2 saxirivu 0.2		mosses 40 red moss 10		
06_V196	14/08/2006	17W	7913214	563487							10	S			Shrub (avens heather) sedge		35	25	20		salireti 5 casstetr 15 dryainte 15	oxyrdigy 5 polyvivi 0.1		Sedges sedges 20 Cottongrass Rushes				cetniva 5 cetrile 1 thamsubu 1 glove 3	mosses 10		
06_V198	14/08/2006	17W	7913335	563915	South foot of mountain							S	wet-mesic		sedge moss herb		25	25	25		salireti 20 salix 2 casstetr 5	polyvivi 5 sileacau 1	oxytmayd 5	Sedges sedges 10 Cottongrass Rushes luzuconf 2			pedicapi 2	lichens 10	mosses 20	Trail/Runs: caribou	
06_V202	14/08/2006	17W	7916890	564051	West slope of mountain								Wet		forbs - sparse			12	3			ceraalpi 1 melaapet 1 papacorn 2 paparadi 2	alopecurs 1	Sedges sedges 2 carex 2 Cottongrass Rushes juncus 0.1			saxicern 0.1 saxihirc 0.1 saxiniva 0.5 saxioppo 5		mosses 3		
06_V204	14/08/2006	17W	7916997	563957	With slope of Mountain								Wet				1	9	5	saliarct 1		oxyrdigy 0.1 ceraalpi 0.1	alopecuris 1 poa avctica 0.1	Sedges sedges 2 Cottongrass Rushes juncus 0.1			saxicaes 0.1 saxiniva 1 saxioppo 5		sphagnum 5		
06_V206	14/08/2006	17W	7912307	561555	Development area south of mountain						15	N	dry		sparse avens rock		12	3	20	saliarct 2	casstetr 2 dryanite 8		oxytmayd 0.1	Sedges sedges 2 Cottongrass Rushes			saxitric 0.1	lichens 17 cetriniva 2 thamsubu 1	mosses 3		
06_V208	14/08/2006	17W	7912210	561312	development area						0		dry		herbs - (sedge, saxitric)		3	7			potevahl 0.1 dryainte 3			Sedges sedges 4 carex 4 Cottongrass Rushes			saxioppo 0.1 saxitric 3	lichens 20			
06_V210	14/08/2006	17W	7912478	561030	development area						2	S	Dry		stunted shrub(avens) sedge		30	30	45		dryainte 30	tofi 0.1 sileacau 3	oxytmayd 1	Sedges sedges 20 Cottongrass Rushes			saxioppo 5 pedihirs 0.1	cetniva 20 cetrile 2 thamsubu 1	biol crust 15	scat: caribou	
06_V218	15/08/2006	17W	7913476	563559	S side of depos 1, near water line and pump on side of mtn.						<1	NW	dry		Thin mats on gravel surface high centered polygons, ancient lacustrine terrace. Frost fissured have most ved tops an pretty base		30	5	5	saliarct 2	casstetr 15 dryainte 15		oxyt mayd .1	Sedges carenard 5 Carex rupes 2 Cottongrass Rushes			saxioppo 1	cetnriva .5 cetrile .5 thamsubu .5 Alectoria 1	few small mosses 2	Sighting/heard: snow buntings (4birds) Scats: hare	

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		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_V220	15/08/2006	17W	7913600	563546	Side of Dep. 1 below shoulder						20	S	mesic		Heather/avens on steep slope, fully veg among boulders		70	15		saliarct 5	salireti 15 casstetr 40 dryainte 30	oxyrdigy 2 polyvivi	oxyt mayd .1 pedicapi 5	Sedges caremis 2 carememb (?) .1 carescir 2 Carex rupe 5 Cottongrass Rushes luzuconf 1				cetrniva 5 cetrtile .2 stertome .1 thamsubu .1	mosses 15	Scats: hare Sighting: small birds with white on tail pipits (3bathing in show from leak in waterline)	
06_V221	12/08/2006	17W	7914864	564879	valley between dep 1 and 2 on proposed rd on conveyor system , slopes of dep 1						10	SE	wet		seep on hillside with sedges		20	30	15	saliarct 5	salireti 10 dryainte 10	oxyrdigy 2 polyvivi .1 melaapet 1		Sedges careatro 5 carememb 2 carescir 2 Carex 10 Cottongrass Rushes Juncun .2			saxihirc .1 saxiniva .2 saxioppo 5		asstd 2 biol crust 15		
06_V222	15/08/2006	17W	7923756	563448	E slope of mtn below deposit 1 in calcareous outcrops , m water lines to drills						30	SE	mesic-dry		Thin mats of avens and purple saxifrage amidst boulders and slabs of sandstone		30	10	5	saliarct 2	potevahl .1 dryainte 25	polyvivi .1 astralp .1	oxy mayd .1	Sedges carenard 1 Carex rupes 5 Cottongrass Rushes			saxioppo 1	cetrniva 1 stertome .1 thamsubu .2 Alectoria .5	cushion 2	scats: hare	
06_V223	12/08/2006	17W	7914970	564850	Valley to S of Dep 1, near straem						10	SE	mesic		disturbed site due to natural causes, stream erosion and slippage		5	25	5	saliarct 5	salireti 5	oxyrdigy 5 polyvivi 1 ceraalpi 1 melaapet .2 sileacau .1 paparadi 2	poa 2 oxyt mayd .1	Sedges caremis .1 Cottongrass Rushes luzuniva 2			saxicaes 1 saxicern 2 saxioppo 5		small mosses 5	snowy owl.. when landing.	
06_V224	15/08/2006	17W	7913758	563407	Side of deposit below iron outcrop in scree slope						50		mesic-dry		Mostly purple sax, sax tricus, some grasses, luzul, arctic willion. Thin splash of veg on steep slope of mostly iron ore, but iron ore has tumbled down over calcarous rock and sand/gravel when you move on the ore, the sand is there.					saliarct 5		ceraalpi arct 5 Minuartia .1 paparadi .5	poa 2	Sedges Cottongrass Rushes luzuniva 1			saxicaes .2 saxicern .1 saxiniva .5 saxioppo 5 saxitric 10	cetrniva .5 cetrtile .1 thamsubu .5 Alectoria .5	racolanu 2		
06_V225	12/08/2006	17W	7915352	564900	upper part of valley below dep 1						10	E	wet		sedge assn on slope with boulder streams. Also mosses dryas on mounds, rocks pushing up under turf.					salirich 10	salireti 10 dryainte 15	polyvivi .2 ceraalpi 2 melaapet 2	poa oxyt mayd 5 pedicapi .5 pedilana .2	Sedges caremis 25 Cottongrass eriangu Rushes			saxihirc 2 saxioppo 5		asstd mosses 15 biol. crust 10	run/trails: lemming sighting/heard: Lapland	
06_V226	15/08/2006	17W	7913863	563496	Side of mtn below deposit						15	S	mesic-dry		Thin mat of veg. on exposed knob on side of mtn. Mostly Dryas but good showing of other species. sm gravel solifl lobes.					saliarct 1	casstetr .2 dryainte 60	polyvivi 5 paparadi .1 sm grass no fl. .1	oxyt mayd .5 pedicapi .2	Sedges caremis 2 carenard 1 Carex rupes 15 Cottongrass Rushes			saxioppo 5	cetrniva .5 cetrtile .2 stertome .2 thamsubu .2 Alectoria .5	brown moss 10	Den/burrow: lemming	
06_V227	12/08/2006	17W	7915444	565122	below ice field						15	N	wet-mesic		aven immediately below glacier (sm one), mostly rocks, sheet flow small plants.							oxyrdigy 2 Minuartia .1 sileacau .1 paparadi 2		Sedges Carex sp 2 Cottongrass Rushes luzuniva			saxicern 2 saxiniva .1 saxioppo 1	stertome	mosses 2 biol. crust 15		
06_V228	15/08/2006	17W	7913653	563756	Area below mtn. deposit 1, in open valley with stream						3	SW			Moss assn. Thick layer of moss over boulders in stream valley with rooted veg. growing in moss		25	20	35	saliarct 10	salireti 15	oxyrdigy 2 polyvivi .1 melaapet 2	Alopecurus 1 Poa .5	Sedges carememb 15 Cottongrass Rushes			saxihirc 5 saxiniva .1 saxioppo .5		sm mosses 25 cushion 10	Sighting/heard: pipit calling, flying around	
06_V229	12/08/2006	17W	7914696	565246	open slope across valley to E of dep 1						5	W	wet-mesic		Tufts of Carex misandea on slope in space without boulders (most has boulders). Area between tufts is covered by biol. crust.		10	40	10	saliarct 10	salireti .5 casstetr 1 dryainte 5	oxyrdigy .5 polyvivi 1 ceraalpi 2 melaapet .2 papacorn 1		Sedges caremis 30 Cottongrass Rushes luzuniva .5 Juncus .2			saxihier .1 saxiniva 1 saxioppo 2 saxitenu .1	cetrniva .5 cetrtile .5 stertome .1 thamsubu .2 glove 1	biol. crust 25	scats: caribou (old)	
06_V230	15/08/2006	17W	7913477	563959	Slope below deposit 1 (to E), flat area above water supply						5	W	wet		Thick growth of S arctica sedges along and around a small stream. Base of moss with thick cover oc c. aquatilis, yellow march sax and s. arctica		20	50	70	saliarct 20		ceraalpi .2 melaapt .5		Sedges careaqua 50 carememb 5 Cottongrass Rushes					str. mosses 70	sighting/heard: pipits in area	
06_V231	12/08/2006	17W	7914596	565223	slope opposite mine								mesic		Dryas and sedges on slope		31	15	30	saliarct 5	saliherb .5 salireti .2 casstetr 10 dryainte 15	oxyrdigy 2 polyvivi 1 paparadi	poa .5 pedicapi .2	Sedges caremis 10 Cottongrass Rushes luzuniva 2 Juncus biz .2			saxicern 1 saxioppo 2	cetrniva .5 cetrtile .1 stertome .2 thamsubu .1	heather moss 10 biol. crust 10 other moss 10	scats: hare	

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		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_V232	15/08/2006	17W	7913392	564092	Slope opposite deposit 1 and across from water supply between 2 forks of mary river						7	W	mesic-dry		Thin cover of veg. on gravel and boulders					saliarct 15	dryainte 35	oxyrdigy .1 polyvivi .5 ceraalpi .2 sileacau 2 paparact 1	pedicapi .5 pedihirs .1	Sedges carenard 5 caresci 5 carex rupestris 20 Cottongrass Rushes				cetrniva .2 stertome 5 thamsubu .2		Scats: caribou (old) pipits	
06_V234	15/08/2006	17W	7913069	564286	Steep slope above the miver river, downstream from the falls						50%	SW	mesic		Naturally disturbed site. This plot was done in a landslide area, narrow slide down a steep slope to the river. There are large chunks of moss, rooted veg. and soil that have slid out of a concair depression. Variety of plants					saliarct 10	salireti 20	polyvivi B/C Stellaria longi B/C pyrogran .1	Poa sp 5 oxyt mayd .2	Sedges Cottongrass Rushes					mosses c=15	pipits	
06_V235	15/08/2006	17W	7912936	563256	Road to minesite, just below "rocky defile"						4	SW	mesic		Solid turf of avens, xeric sedges among large boulders					saliarct 10	casstetr 15 dryainte 30	oxyrdigy 5 polyvivi 2	oxyt mayd 2 pedicapi 1	Sedges caresci 5 Carex rupes 50 Cottongrass Rushes				cetrniva 2 Cladina 2 Cladonia .5 thamsubu .1 Alectoria 2	racolanu 20 mosses 10	Scats: hare and young hare	
06_V236	15/08/2006	17W	7913197	563967	small stream below water supply for drills, in valley below ice pack/snowdrift						level		wet		Lush veg. in small stream valley. Comb of riparian sedge and snowbank effect. Diverse grasses in stream channel mosses to sides					saliart 15	salireti 10	oxyrdigy 5 polyvivi .5 ceraalpi .2 melaapet .5 Stellaria 5	Allopecurus 5 Arclagrostis 10 Poa 10	Sedges careaqua 10 carememb 5 Cottongrass Carex coll 5 Rushes luzuniva 1			saxicern 10 saxihier .5 saxihirc 10 saxoniva .5 saxuruvu .5		mosses 50 Bryum 10	Scats: hare Nest and dens/burrow: lemming skull	
06_V237	15/08/2006	17W	7914541	559898	Top of ridge between flat area/camp and deposit 1 at head of sm canyon that enters flat opposite old camp/air						5	W	mesic-dry		Thin veg. over rocks and gravel mostly avens, xeric sedges, herbs and lichens. Veg. is patchy and gravel sand are exposed in places. This place is subject to strong wind erosion			30	20	5	saliarct .5	dryainte 30		oxyt mayd .5 astr alpina 1 pedicapi 1	Sedges carenard 10 carescir 2 Carex rupes 15 Cottongrass Rushes			saxioppo .2	cetrniva .5 cetrtile .1 stertome 2 thamsubu 1 Alectoria 2 sunburst 2	small mosses .5		
06_V238	15/08/2006	17W	7914508	559627	above top of small canyon opposite the dump						2	N	mesic-dry		Heather/avens and xeric sedges. Uniform cover of veg. c small depression in slope.					saliarct	casstetr 30 dryainte 25	oxyrdigy 10	oxy mayd 2 pedicapi .5 pedilana .5	Sedges careatro mis 5 carescir 5 Carex rupes 10 Cottongrass Rushes luzuniva 2				cetrniva 1 cetrtile 1 stertome .5 thamsubu .1 glove 1	sm mosses 1 biol. crust 5	scats: ptar (old), hare (old)	
06_V243	14/08/2006	17w	7913300	563448	slope of dep. 1 below dep						5	SW	mesic		relatively lush veg. on boulders slope rich willow, avens raconiti moss, sedges and heather		35	15	30	saliarct .5 salirich 20	salireti 2 casstetr .5 dryainte 20		oxyt mayd 1 pedicapi .5	Sedges caremis 2 carememb .2 carescir 5 Cottongrass Rushes				cetrniva 2 Cladina .5 Cladonia .2 thamsubu 1 glove .5	racolanu 15 heather moss 5 other mosses 5	caribou bone, chewed, fresh clumps of unidentifiable hair	
06_V245	14/08/2006	17W	7913459	563416	hillside below dep.1 in small drainage area under rocky ridge						10	S	wet mesic		partly snowbank veg in protected corner on hillside					saliarct 5	saliherb 15 salireti 25 casstetr 25 dryainte 5	oxyrdigy 10 polyvivi 5 ceraalpi 1 melaapet .2 sileacau .5 Stellaria sp .2	oxy mayd 2 grass 2 pedicapi 2	Sedges caremis 2 carescir 5 Carex sp coll 5 Cottongrass Rushes luzuniva 2			saxicern .5 saxioppo .5	cetrniva 2 cetrtile .2 stertome 1 thamsubu .1	mosses 5	Scats: hare, ptar	
06_V247	14/08/2006	17W	7916779	564051	Upland to E of dep. 1						2	S	wet	saturated and hard to walk on	arean not long out from under ice. upland sax oppos/papaver assn, sparse veg., biol crust, diverse plants					saliarct 5			poa .5	Sedges Cottongrass Rushes luzuniva 10 juncus			saxicaes .5 saxicern 1 saxiniva 5 saxioppo 10 saxitric	cetrniva .2 stertome 5	star moss		
06_V249	14/08/2006	17W	7916979	563893	top of second watershed, ridge to E of dep 1						1	NE	wet mesic		crest of watershed. isol plants							oxyrdigy 1 ceraalpi 1 papacorn .5 paparadi .5		Sedges Cottongrass Rushes			saxicaes .5 saxicern 1 saxiniva 2 saxioppo 5		small mosses 5		
06_V251	14/08/2006	17W	7912303	561526	feats to SW of dep 1 rail turn around a small pond in cobble ridge						level		wet		riparian or pond edge, rich willows to 20cm at edge of pond small mounds with sedges solidified ridge at end o pond. moss mounds with heather and dryas		40	25	15	saliarct 5 salirich 15	salireti 15 casstetr 5 dryainte 10	polyvivi .5 sileacau 10 armemari 2	pedilana .1	Sedges caremis 10 carebige 1 carememb 2 carescir 2 Cottongrass Rushes			saxioppo 2	cetrniva .5 cetrtile Cladina .5 stertome .2 thamsubu .2	mosses 15 biol crust 15	scats: caribou	

Baffinland Iron Mines Corporation
Mary River Project

Vegetation Baseline Study Report
2006 Vegetation Plots

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope		Moisture	Soil notes	Veg. notes	Cover, %				Species and % cover for each									Wildlife notes	Archaeology notes
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect				Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses		
06_V253	14/08/2006	17W	7912196	561432	possible train turn around						2	NW	mesic-dry		flat/slight slope terrace with frost fissures, plants growing in fissures			20	10			ceraalpi .2	poa .1	Sedges carex rupes 10 Cottongrass Rushes			saxitric 15	cetrniva .1 cetrtile .1 thamsubu .1 Alectoria .2	sm mosses 5	hare seat caribou upper max	
06_V255	14/08/2006	17W	7912450	560985	train turn around						20	W	wet mesic		snowbank ass mon NW slope. mixture of species inc. willows, dryas, sedges, heather, below clear heather zone		35	20	15	saliarct 5	saliherb 10 salireti 10 casstetr 20 dryainte 10	oxyrdigy 1 polyviv .5 sileacau 15	pedicapi 10 pedilana .1 poa .2	Sedges carememb 2 carescir 2 Cottongrass Rushes luzuniva 2			saxicern 2 saxihirc .2 saxitric .5	cetrniva .5 Cladina 2 stertome .5 thamsubu .1 glove 10	mosses 20 biol crust 10	caribou trail	
06_V257	14/08/2006	17W	7917790	550513	N of mary river camp, rd.rt near 1k with peninsula under rimrock, across valley from yellow sand ridge						3	NE			odd assn: moss hummocks or tussocks with luzula hierchloe		5			saliarct 2 salirich 2	salireti 2 casstetr 1 dryainte 3	ceraalpi .2 Stellaria 5 paparadi .2	poa 2	Sedges Cottongrass Rushes luzuconf			saxihier .2 saxiniva 1	cetrniva 1 cetrtile .1 Cladina 10 Cladonia .1 stertome .1 thamsubu .1 Alectoria .5	moss carpet 75	scats: caribou, goose	
06_VN 057	05/08/2006	17W	7935517	526514	Norh end of Lake north of airstrip adjacent to road						flat		dry		thin mat of veg on gravelly slope sedge avens		25	50	5	saliarct 5	casstetr 3 dryainte 15			Sedges careatro 20 carex 30 Cottongrass Rushes			saxiaizo 10 saxioppo 2 pedilana 0.1	cetrniva 2 cetrtile 2 thamsubu 0.5		funnel web spider	
06_VN 174	11/08/2006	17W	7966495	513149	confluence of Philips creek and tributary 69 km NW of camp								dry				17	3	30		dryainte 17			Sedges cupertris 1 Cottongrass Rushes			saxioppo 2	thamsubu 5			
06_VN003	02/08/2006	17W	7920330	549994	Small lake about 10 k N of camp, E side, terrace above stream.	Avens/sedge association on lacustrine terrace	AS				level		dry	Gravelly soil with cobbles and boulders. Exposed open terrace with fines removed by wind.	Mostly a mixture of avens and curly sedge plus some additional sedges (collected).		7	2	2	saliarct .1 Salix .1 (coll.)	potevahl .1 dryainte 7	slieacau .2 saxioppo .1		Sedges carerupe 2 Carex sp. 1 Cottongrass Rushes				cetrniva .1 stertome .1 thamsubu .1 Alectoria .1	asstd small mosses 2	Scats: hare (old)	
06_VN004	02/08/2006	17W	7920327	550046	Small lake about 10 k N of camp, E side, above small stream, near VN003.	Riparian association, plus avens/xeric sedge assn on lacustrine terrace	R	w	LT		level		wet-mesic		Lower terrace above small stream, probably holds snow until late in summer. Lots of Richardson's willow, reticulated willow, sedges, a few grasses, and some forbs. Some standing water nearby, not in plot. Isolated boulder emerging from ground, vegetation on top. Some Dryas.	-	80	5	10	saliarct 05 salirich 50	salireti 25 vacculig 05 casstetr 05 dryainte 01	oxyrdigy .5 polyviv 1 Stellaria .5 epilat nearby pyrogram .2 Sagina ? .1 (lacks flowers)	oxytmayd .1 pedicapi .2	Sedges careaqua 05 caremisa .2 Cottongrass erioangu .1 eriophorum .2 sgl fl, nt eriovagin ? .2 sgl fl, tussock Rushes luzuniva .1 coll			saxihirc .2	cetrniva .1	asst'd moss 10	pipits (seen and heard nearby) Scats: goose	
06_VN005	02/08/2006	17W	7920269	549980	Small lake about 10 k N of camp, N side of small stream, below Plot 003	Heather/dwarf shrub assn.	HT	c	LR	r	20	S	wet-mesic	Bedrock outcrops and fractured bedrock with vegetation between, also with lemming runs/burrows, etc.	Possible heather/dwarf shrub association with a variety of forbs and sedges.	-	80	5		saliarct 5	salireti 5 Salix sp. .1 casstetr 55 dryainte 15	oxyrdigy 2 polyviv .5 sileacau .1 Stellaria .1	oxytmayd 5	Sedges caremisa .5 carescir 1 Cottongrass Rushes luzuconf .1 grasses .2 Hierochloe .2			saxioppo .2 pedicapi 2	cetrniva 10 cetrtile .1 thamsubu .1	asst'd mosses 5	Scats: lemming Lemming nest, latrines, runs and burrows. No cuttings, do not think these are active in 2006. Arctic fritillary butterfly.	
06_VN006	02/08/2006	17W	7920333	549942	Small lake about 10 k N of camp, NW side of rocky ridge where Plot VN003 is located. At base of W-facing slope.	Snowbank association	SB				< 1	W	wet	Felsenmeer at base of slope, with soil amidst rocks.	Clearly a snowbank community extending out about 2 m from base of slope. High diversity of species, blooming late.	-	10	30	20		saliherb 10 casstetr 10	oxyrdigy 10 ranupygm 15	pedicapi .2 pedihirs .1 near	Sedges Cottongrass Rushes alopecurus alpinus .1			saxicaes .1 saxicern 2 saxiniva .1 saxirivu 1 Saxifraga sp. .2 (young plants)		asst'd mosses 20	Scats: lemming (old) Lemming burrows, not currently active	
06_VN007	02/08/2006	17W	7927300.66	543985.74	North rail route, to E of Deposit 4.	Dwarf shrubs (heather and avens) on upland with boulders, some of foliated sandstone.	HT	c	B	ax	level		dry	Most loose soil has been blown away, leaving pebbles to boulders.	Thin vegetation, mostly heather and avens, on upland with boulders, some of foliated sandstone.	-	30	10	10	saliarct 1	salireti 2 casstetr 15 dryainte 15	polyvivi .1 sileacau .2	pedilana .1 oxytmayd 1	Sedges carerupe 5 Carex sp. .1 Cottongrass Rushes luzuconf .1			saxioppo .5	cetrniva 1 cetrtile 2 stertome 1 thamsubu .5 Alectoria 1 dactarct .1	racolanu 5 sm. mosses .5 biol crust 1	Scats: caribou (old)	
06_VN008	02/08/2006	17W	7927343.09	543859.55	North rail route, to E of Deposit 4, small wetland to NW of plot 007.	Wetland, emergent sedge assn. in edge of small pond	S	e			level		wet	Saturated soil	Emergent sedge association in edge of small pond, several sedge species in about 10-15 cm of water. One rock in plot has several plant species on it, but is atypical.		0.5	65	2	saliarct .5 (on rock)		melaapet .1 (on rock)		Sedges careaqua 5 Carex sp. 40 (about 3 species, coll.) Cottongrass Rushes			saxihirc .1		mosses 2 (on rock)	Scats: goose Wolf spiders	

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		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_VN009	02/08/2006	17W	7927381.35	543718.89	North rail route, slope above small valley.	Heather and avens association on slope with embedded boulders and cobbles.					5	NE	mesic	Gravelly, cobbly substrate, well-drained, N-facing, may accumulate snow.	Thin heather and avens plus curly sedge and yellow oxytrope on slope.	-	35	12	25	saliarct 1	casstetr 15 dryainte 20	sileacau 1	oxytmayd 5	Sedges caremisa 5 carerupe 2 Cottongrass Rushes			saxioppo .1	cetrniva 5 cetrlle .2 Cladonia .1 thamsubu .2	racolaun 10 biol crust 10	Scats: caribou (old). Lemming dens/burrows	
06_VN010	02/08/2006	17W	7933234.29	540271.92	North rail route, open area to NE of Deposit 4.	Heather/avens/curly sedge assn. in area with many boulders and possibly calcareous bedrock.					< 2	NW	dry	Scattered erratic boulders and slabs of sandstone, may be bedrock.	Thin layer of vegetation on rocky substrate on ridge crest. Mostly heather, avens, and curly sedge. Lots of yellow oxytrope in bloom.	-	20	15	10	saliarct .5	salirebi 2 casstetr 10 dryainte 10		oxytmayd 10 pedicapi .1	Sedges caremisa 5 carerupe 5 Cottongrass Rushes luzuniva 1			saxioppo 1	cetrniva .5 cetrlle .1 stertome .5 thamsubu .1 Alectoria sp. .2	racolanu 5	Scats: goose, caribou (old). Lemming dens/burrows.	
06_VN011	02/08/2006	17W	7933319.59	540135.49	North rail route, open area to NE of Deposit 4, gentle N facing slope.	Wetland, moss and sedges					level	-	wet	Saturated, standing water, solifluction ridges.	Large open swale on gentle slope facing N, with standing water. Dense growth of sedges and mosses.	-	-	40	30			ceraarct .1 melaapet 1		Sedges Carex sp. 30 (likely Careaqua) Eriophorum .2 (sgl fl, non-tuss) Cottongrass Rushes			saxicern 2 saxifoli .2 saxihirc 2		asst'd mosses 30	Scats: goose	
06_VN012	02/08/2006	17W	7933486.32	540127.11	North rail route, open area to NE of Deposit 4, N-facing slope above bedrock outcrops.	Heather, avens, and xeric sedges on slope with boulders.					5	N	mesic	Many boulders, some sandstone bedrock outcrops, foliated/shattered.	Relatively rich vegetation on slight slope with lots of boulders, some sandstone bedrock. Heather, avens and curly sedge dominant.		30	15	10	saliarct 3	salirebi 5 casstetr 20 dryainte 10	polyvivi .5 sileacau .5	oxytmayd 2	Sedges caremisa 2 carerupe 5 Cottongrass Rushes			saxioppo .1 Saxifraga sp. .1 (coll.) Likely Saxifraga nivalis, young plant.	cetrniva .2 cetrlle .1 stertome .2 thamsubu .5 dactarct .2	racolanu 10	Scats: goose	
06_VN013	02/08/2006	17W	7936868.06	536187.57	North rail route, open area to NE of Deposit 4, esker to W of rail route in large open valley.	Esker complex, crest	EC	c			level, ridge crest		dry	Cobbly crest of small esker system running S-N in wide valley.	Thin vegetation on crest of esker, mostly avens and Oxytropis arctobia, with some prickly saxifrage.		20	20	10		dryainte 20	Minuartia sp. .1	oxytnigr 15 (Oxytropis arctobia) oxytmayd 1 pedicapi .1	Sedges Carex sp. 2 (prob. C. nardina) carerupe 2 Cottongrass Rushes			saxioppo .1 saxitric 5	cetrniva .2 cetrlle .2	asst'd small mosses 5	Scats: hare, fox (small, but larger than weasel scats, twisted, hair incl.) "Bird stones" on top of this esker.	
06_VN014	02/08/2006	17W	7936923.8	536182.71	North rail route, open area to NE of Deposit 4, esker to W of rail route in large open valley.	Disturbed site, enriched area,	EC	c	DS	bs	level		dry	Cobbly crest of esker with some large stones, one of which is used as a perch for raptors.	Disturbed/enriched site, with lush growth of grasses, avens, and mouse-eared chickweed on small mound with base of mosses. Manuring effect plain.		20	30	20		dryainte 15	ceraalpi 30 Minuartia 1		Sedges carerupe .2 Carex sp. .2 Cottongrass Grasses(coll) 15 Rushes			saxioppo .2	cetrniva .2 cetrlle .2 thamsubu .1 Alectoria .1	Mosses 10	Scats: hare, weasel, fox Pellets of small raptor, mostly with lemming bones included (jaeger?)Do peregrines here ea lemmings?	
06_VN015	02/08/2006	17W	7937273.12	536112.53	North rail route, open area to NE of Deposit 4, esker to W of rail route in large open valley, W side of esker, lee slope.	Esker complex, lee slope, snowbank association.	EC	s	SB		30	NW	seas high, or mesic dry	Seasonally wet when snow is present/melting, then likely mesic-dry after snow is gone.	Snowbank association on NW (lee)-facing slope with considerable diversity: heather, avens, capitate lousewort, Oxytropis arctobia, prickly saxifrage.		20	30	5	saliarct .5	casstetr 5 dryainte 20	polyvivi 2	oxytnigr 2 (Oxytropis arctobia) some blooming pedicapi 5 (blooming)	Sedges Cottongrass Grasses: .5 Rushes			saxioppo .2 saxitric 1	cetrniva 1 cetrlle .5 thamsubu .2	mosses 5	Lemming burrows and runs with scats, prob. active, on slope below plot. On lake to east of esker: long-tailed duck with single duckling. Juvenile shorebird, likely Baird's sandpiper.	
06_VN016	02/08/2006	17W	7937336.82	536114.57	North rail route, open area to NE of Deposit 4, esker to W of rail route in large open valley, crest of esker.		EC	c	DS	bs	level, crest		dry	Most fines blown away, leaving only cobbles and boulders except where grass protects and holds sandy soil.	Disturbed site on top of esker, with clumps of grass, prickly saxifrage, and Cerastium.		10	70	10	salirich 2	dryainte 10	ceraalpi 30		Sedges Cottongrass Grasses 20 Rushes			saxitric 30	cetrniva .5 Cladonia .1 thamsubu .1		Glaucous gulls (sighting) Feathers: snowy owl, r-b merganser Scats: weasel, lemming Pellets: raptors (likely rough-legged hawk, perhaps snowy owl Lemming burrows	
06_VN017	03/08/2006	17W	7944640	523225	N road route, Philip's Creek, near water sample site N1-53, slopes above river.	Avens/purple saxifrage on limestone slope					5	NW	dry	Wide valley with deep stream channel, stream flowing north, all limestone gravel slopes.	Scattered mats of avens and purple saxifrage on open exposed limestone slope, mostly gravel. Only a few plants.		10	2		saliarct 1	dryainte 8			Sedges Cottongrass Rushes			saxioppo 2		thamsubu .1	Pacific loons, pair, flying upstream, calling.	
06_VN018	03/08/2006	17W	7948783	521830	N road route, small side stream flowing into Philip's Creek, near water sample site N1-050.	Wetland, sedge assn on solifluction lobe.					3	N	wet	Rocky soil, lots of gravel, biological crust. Peat ridge at edges of lobe. Rocks moved with the lobe.	Sedges purple and yellow mountain saxifrage on solifluction lobe below hillside. Cryoturbation present.		10	40	30	saliarct .2	dryainte 10	oxyrdigy .2 polyvivi .1 melaapet .1 Stellaria sp. .1 epillati .2 (nearby)	pedilana .2	Sedges careaqua .1 caremisa 5 Carex sp. 2 Cottongrass Rushes			saxiaizo 15 (blooming) saxihirc .1			Lapland longspurs, heard/seen, flying/calling.	

Baffinland Iron Mines Corporation
Mary River Project

Vegetation Baseline Study Report
2006 Vegetation Plots

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope			Soil notes	Veg. notes	Cover, %				Species and % cover for each									Wildlife notes	Archaeology notes
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses		
06_VN019	03/08/2006	17W	7964133	514990	N road route, wide valley in graben, river right, floodplain of Philip's Creek, near water sample site _____.	Riparian, Richardson's willow and sedges.	R				level		wet-mesic	Seasonally inundated.	Richardson's willow and sedges with small moss mounds being colonized by heaths.		15	75	10	saliarct 2 salirich 15	salireti 2 Saliv sp. 1 casstetr 5 on mounds dryainte 10 on mounds	polyvivi .1	pedicapi .5 pedisude 2	Sedges careaqua 10 caremisa 10 Carex sp. 2 (coll) erioangu 2 Cottongrass Grass: 15 poss: arctlati Rushes			saxihirc .1	cetrniva .1 cetrtile .1 thamsubu .1 dactarct .2	moss mounds 10	Scats: lemming (old); goose.	
06_VN020	03/08/2006	17W	7965307	515248	N road route, W side of stream flowing into Philip's Creek from E, sample site _____.	Avens/ purple saxifrage/curly sedge association on level floodplain of creek.					level		mesic-dry	Gravelly/sandy soil.	Sparse vegetation on level floodplain of side creek. Mostly consists of purple saxifrage, avens, curly sedge, yellow mountain saxifrage, and Cetraria tilesii.		10	30	10		casstetr .5 dryainte 10	polyvivi.2	oxytmayd 5 pedilana .1	Sedges caremisa .1 Cottongrass Rushes			saxiaizo 10 saxioppo 5	cetrniva 10 cetrtile 10 thamsubu 1	Small mosses 2	Scats: goose, caribou (old). Some caribou bones nearby.	
06_VN021	03/08/2006	17W	7966780	511840	N road route, floodplain of Philip's Creek, near sample site ___ below high rimrock.	Thin heath tundra (heather, rhododendron, blueberry, and avens) on dry site near river and small side stream.	HT				level		mesic-dry	Dry site with large boulders.	Heath tundra with curly sedge, avens, and purple saxifrage around boulders, some large, on terrace above river. First appearance on North routes of Rhododendron lapponicum.		30	20	5		vacculig .5 casstetr 10 rhodlapp .2 dryainte 15	toficocc .2 sileacau .1	oxytmayd 2 oxytnig .5 (O. arctobia) pedicapi .1	Sedges carerupe 20 Carex sp. .2 Cottongrass Rushes			saxioppo 5	cetrniva .3 cetrtile .1 thamsubu .1	racolanu 1 other mosses 2	Scats: goose, caribou (old). Sighting/heard:Wolf spiders and Funnel web spider	
06_VN022	03/08/2006	17W	7966760	511958	N road route, Philip's Creek, near water sample site ____, edge of river	Riparian association, sedges and Richardson's willow, moss substrate.	R	w			< 1	NW	wet-mesic	Evidence of seasonal overflow, soil wet.	Riparian association in stream floodplain, mixture of several sedges plus Richardson's willow on a moss substrate.		55	40	40 under	saliarct .2 salirich 50	salireti 15 casstetr 5 rhodlapp 10 toward slope dryainte 10	polyvivi 10	pedicapi .1 pedisude .2	Sedges careaqua 5 Carex sp. 30 (2-3 sp., coll) Cottongrass erioangu 1 Eriophorum sp. 5 Rushes			saxihirc .1 saxioppo .2	cetrniva .2	asstd mosses 30	Lemming burrows, runs. Prob. not active in 2006.	
06_VN023	03/08/2006	17W	7977152.32	505211.62	N road/rail route, at Milne Inlet, small alluvial fan.	Avens and arctic willow on mud on alluvial fan.					10	E	mesic-dry	Dried mud, cracked, with vegetation limited to small depressions or frost fissures.	Sparse vegetation, mats of avens and arctic willows in depressions in alluvial fan near ocean shoreline.		30	5	5	saliarct 20	dryainte 10			Sedges Carex sp. 5 (coll.) Cottongrass Rushes					Small mosses 5	Many small clam shells weathering out of the mud. Caribou bot fly.	
06_VN024	03/08/2006	17W	7976726.64	505317.14	Milne Inlet, E side of small stream in eastern side of proposed port site, where it reaches base level.	Mossy streambank and, possibly, snowbank.	M	s	SB		< 1	NW	wet-mesic	Soil likely saturated during most of growing season.	Ground covered with mosses, with scattered plants of arctic willow, reticulated willow, avens, and capitate lousewort.		30	30	30	saliarct 15	salireti 10 dryainte 15	oxyrdigy 5 polyvivi .2 Stellaria sp. 10	pedicapi 2 pedilana .1 oxytmayd .5	Sedges Cottongrass Rushes				cetrniva .1 thamsubu .1	assr'd mosses 30	Scats: hare	
06_VN025	03/08/2006	17W	7966557.27	515146.13	N road route, Philip's Creek valley, 2 km S of confluence of rivers, beside long narrow lake.	Avens/curly sedge assn on dry terrace.					level		dry		Full vegetation cover on dry site, almost entirely mountain avens.		75	5	15		dryainte 75	toficocc .1 polyvivi .1 sileacau 2	pedicapi 1	Sedges carerupe 5 Cottongrass Rushes			saxioppo 1	cetrniva 5 cetrtile 2 thamsubu 3	mosses 5	Scats: goose, ptarmigan, hare. Sightings: Pacific loons on lake below plot. Lapland longspur foraging in area.	Storage cache located in frost fissure adjacent to plot. Simple cache, circle of boulders with covering boulders fallen into centre of circle. (See photos150,151,152.)
06_VN026	03/08/2006	17W	7966425.99	515309.23	N rail route, about 2.5 km S of where it joins the road route.	Avens and Oxytropis nigrescens on calcareous substrate.					< 2	NW	dry	Calcareous soil due to deterioration of sandstone boulders.	Thin veneer of avens and Oxytropis nigrescens (arctobia) on gravel and calcareous substrate.						casstetr 5 dryainte 15	oxytnigr 10 (O. arctobia)		Sedges carerupe 15 Cottongrass Rushes			saxioppo .2	cetrniva 5 thamsubu .5		Scats: Hare (old) Lemming burrows. Wolf spiders	
06_VN027	03/08/2006	17W	7963714.78	519246.04	Side of main valley above rail route, just S of SM canyon in multi-coloured slopes	none					level		none	Mostly sandstone boulders below Pelsonmeer slopes. Boulders are rounded faceted and many are fracturing in foliated layers.	Vegetation is very sparse and limited to areas between boulders, no mats over boulders.		3	2			Salix sp. 1 dryainte 3			Sedges Cares rupe 1.5 Cottongrass Rushes			saxuiooi .5			None	
06_VN028	03/08/2006	17W	7963942.59	519316.14	Canyon E of Phillips Creek Valley,valley bottom with stream	none					level		wet-mesic		Area adjacent to small stream in fault canyon mostly vegetated with sedges. Adjacent wet ditch - saxi cernua, saxifoliolosa, chrysosplenum tetra...purple bladder campion and saxihier nearby.		30		40	saliarct 10 salirich 1	salireti 5 casstetr 5 dryainte 10	polyvivi 1 Stellaria .5 ranunviv .5	pedihirs 1 pedisude 1	Sedges careaqua 30 carex sp 5 Cottongrass Rushes luzunival (prob) .1			saxifoli .5 saxihirc .1	stertome 5 brown ground lichen 1		Dens/burrows: lemming Scats: goose	
06_VN029	03/08/2006	17W	7957124.11	524823.12	Slope to E of small stream, opposite coloured hills						level		dry		Sedge and Avens association. Thin cover of carex rapestris and mountain avens with a few other sedges. Very exposed and dry.		1	45	10	sakuarct .1	dryainte 40	toficocc .1 polyvivi .2	oxytarct 2 oxytmayd 1	Sedges carescir (?) 2 Cottongrass Rushes luzuconf .1			saxioppo 2	cetrniva 3 cetrtile .3 thamsubu .1 Alectoria .2 Whitecrusty .1	moss .1 Biol. crust .5	Scats: goose and hare	

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06_VN030	03/08/2006	17W	7957132.04	524953.05	N E rail route in valley above pond beside deep canyon to the east						10		wet		sedge association - seep on gentlr slope		4			salirich 2	salireti 2	2% cover polyvivi 1	pedisude .5	Sedges 20% cover careaqua 10 carex sp. .2 (10?) Cottongrass 15% cover eriangu 15 eriorus 2 Rushes			saxihirc .2		mosses 10	Scats: goose	
06_VN031	03/08/2006	17W	7955255.54	527129.53	Rail route (NE) S end of valley leading to Phillips Creek								mesic-dry	sandstone bedrock	Thin layer of moss and heather and wood rushes on bedrock						salireti 1 casstetr 15 dryainte .1	sileacau .5		Sedges carex rupe .5 Cottongrass Rushes luzula canbusa 1				cetrniva .1 cetrtile .1	racolanu 25	Scats: hare and wolf (hare bones in scat) Run/trails: caribou (fresh)	
06_VN032	03/08/2006	17W	7955015.85	527361.82	Along rail route near bedrock (sandstone) outcrops						~ 1		mesic-dry		Avens/sedge association. Mountain avens and curly sedge in flat terrace area below sandstone berock.		70	25	5		salireti 10 Salix sp. 10 dryainte 50	oxyrdigy 5 polyvivi 1 sileacau 2	Oxytmayd .5	Sedges carescir 2 Cottongrass Rushes			saxioppo .5	cetrniva .5 cetrtile .1	asstd mosses 2 biol. crust 5	Scats: goose Run/trails: caribou (new) caribou bot fly puparium case	
06_VN033	03/08/2006	17W	7955015.4	527359.79	Proposed rail route S end of valley leading to Phillips Creek						25	SW	mesic		lush growth on slope		90	5	5		salireti .1 Salix sp. 2 casstetr 80 dryainte 15	oxyrdigy .2 sileacau .1	pedicapi .5 oxymay 3	Sedges careatro .1 carescir .1 carex re 3 Cottongrass Rushes			saxioppo .1	cetrniva 4 cetrtile .1 thamsubu .1	mosses 5	Den/burrows: lemming	
06_VN055	05/08/2006	17W	7930160	527506	Airstrip at end of long lake, abandoned when?						level	na	mesic-dry	fine sand has all been blown off leaving a fine gravel	Thin veg on old airstrip, last used in?? strip has been recolonized.		15	15	30	saliarct 2	saliherb 10 casstetr 7	polyvivi 0.1 sileacau 10	pea 0.1 mushrooms 0.1	Sedges careatro 1 Cottongrass Rushes luzuniva 3			pedihirs 1	cetrniva 0.1 thamsubu 0.1	mosses57 biol crust 30		
06_VN056	05/08/2006	17W	7935320	526649	N end of long lake, on dry slope						19	NW	dry		small isolated nats of avens on slope of gravel ridge		20	5	10		dryainte 20			Sedges Cottongrass Rushes			saxioppo 5 pedicapi 0.1 pedilana 0.1	cetrtile 1			
06_VN058	05/08/2006	17W	7926742	529318	Where rd crosses river to SE of green sedge plains with old airstrip at sand hills						level	W	mesic		Old Inuit composite not used for many years. Tent ring, small hearths and possibly a kayak rock		40	15	10	saliarct 5	salireti 5 casstetr 15 dryainte 25	stellaria 15		Sedges careatro 1 carescir 5 carex 2 Cottongrass Rushes			saxioppo 2 saxitric 0.1 pedicapi 0.5	cetrtile 0.2 cetrniva 1 thamsubu 0.2	mosses 15	very old lemming nest scats: caribou in tent ring	2 tent rings on this site, plus 2 possible hearths, rocks to which lines were tied possible kayak cradle, one end moved... tent ring has a defined sleeping platform.
06_VN059	05/08/2006	17W	7926581	529458	road route-north, near river flowing west from rail route lake						20	NW	dry, seasonally		sand slope, probably holds snow		20	30	10		saliherb 10 potenive 10 dryainte 2	oxyrdigy 10 ceraalpi 5 sileacau 5 stelleria 2 paparadi 0.5	poa 0.5	Sedges carex 5 Cottongrass Rushes luzuconf 7 luzuniva 13			saxihier 0.1 saxioppo 0.1 saxifraga 5 armemari 1	cetrniva 5 cetrtile 6 stertome 0.1 thamsubu 0.5 alectoria 10	mosses 15	scats: lemming, plarmiga, goose	
06_VN060	05/08/2006	17W	7921266	534516	Top of plateau southeast of karst topo area						level		dry		Turfy veg cover on soil w many rocks embedded cassiop and racomit dom and curly sedge.		60	25	15		salireti 3 casstetr 20 dryainte 40	oxyrdigy 0.1 polyvivi 0.1 ceraalp 0.1 sileacau 2 paparadi 0.1	mushrooms 0.2 oxy. mayd 2	Sedges careatro 0.1 carescr 0.2 carex 25 Cottongrass Rushes luzuniva 5			saxioppo 1	cetrniva 1 cetrtile 0.2 stertome 1 thamsubu 0.5	racolanu 10 mosses 2	caribou bot pupariun??? scats: caribou	
06_VN061	05/08/2006	17W	7924730	543351	North end of Lake						2	W	mesic-dry		patterned ground- vegetation in depressions between polygons		35	2	3		salix 0.5 casstetr 15 dryainte 20	steeleria 0.2	astralpi 0.5 oxytmayd 0.1 poa 0.1 grass 0.1 mushrooms 0.1	Sedges small sedge 0.2 carex 0.2 Cottongrass Rushes			pedicapi 0.2			runs/trails: caribou	
06_VN062	05/08/2006	17W	7924684	543299	Norht end of lake north of camp, large irregular lake with mountain to the north							SW	dry		vegetation on gentle slope leading to lake dry slope - mos and herb covered - heather pacthes						saliherb 5 salix 1 casstetr 10	sileacau 2 stelleria 0.1	hierochloe 1 poa 2	Sedges Cottongrass Rushes luzuconf 10			saxitric 1 pyrogran 30	cetrniva 0.1 cetrtile 1 stertome 0.5 thamsubu 0.1	racolanu 15 other 2	scats: hare, goose, caribou trails/runs: caribou	

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope			Soil notes	Veg. notes	Cover, %				Species and % cover for each									
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_VN102	07/08/2006	17W	7943307	535638	north proposed rail route						0		dry		sparse - dryas dom -						salix 2 potevahl 0.3 dryainte 15			Sedges careaqua 0.1 carex 3 Cottongrass Rushes			saxioppo 2			sighting/heard: ampipits	
06_VN103	07/08/2006	17W	7943349	535654	On rail route, alongside a long lake						5	NW			Riparian community in sm. stream basin below hill. Richadson's willow, quens on rocks, sedges.		30	40	5	10% salirich	10% salireti; 5% casstetr; 5% dryainte	0.2% polyvivi; 0.2% pedicapi		Sedges 5% careaqua; 5% careatro; 10% carescir; 2% carex (membranacea) Cottongrass 5% erioangu Rushes				0.1% cetnriva; 0.1% stertome; 0.1% thamsubu	5% mixed mosses	Sighting/heard; pipits in area, chasing, calling (about 6 birds).	
06_VN104	07/08/2006	17W	7943458	535647	north proposed rail route						0		wet		wet snowbank community water table at surface			50	50			melaaffi 0.1 melaapet 0.1 ranupygm 0.1	poa 5	Sedges carex 10 Cottongrass Rushes			chrytetr 2 saxicern 5 saxiheir 0.1 saxihirc 2		mosses 50	sighting/heard: ampipits, snowbunting	
06_VN105	07/08/2006	17W	7943506	535621	stream below snowbank, rail route N of camp						2	W			Sedge and grass assn on sm stream flowing below a snowbank. Shallow channel floored with sand, emergent veg and sedges at both sides.		5	75	2	2 saliarct; 5 salirich	1 salireti; salix (arctophila)	0.2 pedihirs		Sedges 10 careaqua Cottongrass Rushes			2 saxicern; 5 saxihirc		10 red moss	Sighting/heard; pipits (flying about, calling, est. 5 birds). Sighting heard; snow buntings (3 young birds, flying in rocky areas).	
06_VN106	07/08/2006	17W	7943711	535378	north proposed rail route						0		dry		bedrock community		8	4	8		casstetr 3 dryainte 5	polyvivi 0.2	oxytmay 0.1 carex 2	Sedges careatro 1 carex 1 Cottongrass Rushes					mosses 8	sighting/heard: raven	
06_VN107	07/08/2006	17W	7943742	535377	Along E side of open valley						22	N	wet-mesic	Wetland.	Thick sedge assn (non-tussock) on slope of ridge to E of rail line. Some salix rich but mostly sedges inc. arctic cotton.		25	65	10	5 saliarct; 20 salirich	5 salireti; 2 dryainte	0.1 polyvivi		Sedges 10 careaqua; 25 careatro; 20 carex (membranacea) Cottongrass 5 erioangu Rushes			0.1 saxihirc			Sighting/heard; raven	
06_VN108	07/08/2006	17W	7943924	535196									mesic				25	20	10		casstetr 5 dryainte 20	polyvivi 1	oxytmayd 3 astralp mushroom 1	Sedges carex 15 Cottongrass Rushes			saxioppo 2	cetrniva 3 thamsubu 3	racolanu 2		
06_VN109	07/08/2006	17W	7943950	535197	side of hill on N rail rt., about 5 miles S of canyons						> 1	N	dry		Thin mat of veg. on bouldery hillside, level area. Mostly avons, heather, retic willow with some purple saxitrage.		50	20	5	0.2 saliarct	5 salireti; 10 casstetr; 50 dryainte	0.2 polyvivi		Sedges 0.5 careatro; 1 carenard; 1 carescir; carex rupestris Cottongrass Rushes				cetrniva; thamsubu	10 racolanu; 5 asstd mosses		
06_VN110	08/08/2006	17W	7955860	520835	beside north road route - 30 to 40km north						flat		wet-mesic		shrub sedge mass		35	30	30	saliarct 5 salirich 10	dryainte 20	oxyrdigy 0.2 polyvivi 0.2 sileacau 10		Sedges careatro 15 carex 5 Cottongrass Rushes			pedicapi 0.1	lichens 10	mosses 20 biol crust 10	scats: hare	
06_VN110A	07/08/2006	17W	7955836	520816																				Sedges Cottongrass Rushes							
06_VN111	08/08/2006	17W	7955878	520799	Small stream at break in ridge						8	W	wet		Small riparian willow community on slope. Very diverse. Mounds with heather, sedge, willows, etc.					15 saliarct; salix sp. small pointed (olanifolia?)	15 salireti; 10 salix sp. shiny (arctophila?)	0.1 tofipusi; 1 oxyrdigy; 0.5 polyvivi; 0.1 melaapet; 1 pedicapi		Sedges 5 careatro; 5 carememb Cottongrass Rushes 0.2 luzuniva			photos 354, 5 and 6		5 cushion; 15 asstd mosses	Sighting/heard; lapland longspur (foraging nearby, photos 350-353). Sighting/heard; sm. passerine bird (nest near plot).	

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope			Soil notes	Veg. notes	Cover, %				Species and % cover for each									
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_VN112	08/08/2006	17W	7955914	520768	north road route - 56km NW of camp						5	NNW			shrub sedge		35	35	25		salix 5 casstetr 10 dryainte 20	polyvivi 0.5	oxytmayd 1	Sedges careatro 5 carex 10 Cottongrass Rushes			saxioppo 5	lichens 10 cetnriva 5 white crusty 5	mosses 10	scats: caribou	
06_VN113	08/08/2006	17W	7959806	518901	Haul route, on ridge, small pond						level				Emergent assn. in edge of small pond, some mounds, water depth to about 15 cm.		dw 5	40	20		2 salireti; 2 dryainte	0.1 polyvivi; 0.2 pedisude		Sedges 20 careaqua; 5 carememb; 5 carescir; 1 (coll) carex sp. dangly Cottongrass 10 erioangu; 5 (coll) eriosche? Rushes					20 asstd mosses (mounds); 15 algae in water	Sighting/Heard; lapland longspurs	
06_VN114	08/08/2006	17W	7959781	518848	north proposed road route - 60km NW of camp						20	NW	mesic		shrub - dryas heather shrub forb NW facing slope hummock well vegetated		50	25	25		casstetr 25 dryainte 25	oxyrdigy 2	oxytmayd 10	Sedges carex 5 Cottongrass Rushes luzuconf 5			saxioppo 1 pedicapi 5	lichens 15 cetnriva 5 cetrile 5 thamsubu 2 glove 1	mosses 10	dens/burrows: lemming	
06_VN115	08/08/2006	17W	7960015	518828	Further N along haul route						80	W	wet-mesic (seasonally, retains snow)		Tiny cliff face/base assn., which also happens to face W, so collects snow. Diverse mixture. Dry mats of curly sedge overhang it, yet base is wet. Flowers blooming here, early Aug.		15	20	10	5 saliarct (face)	10 salireti (base); 10 casstetr (base; bloom)	5 oxyrdigy (base, bloom); 5 polyvivi (bloom); 2 cerasilp (face, bloom); 0.1 melaapet (base, bloom); 0.5 stellarii (base, long); 1 ranuniva (base, bloom); 5 pedicapi (base); 0.1 pedilhir (base); 0.1 pedisude (base)		Sedges 1 careatro (top); 2 carememb; 10 carescir; 10 carex (rupestris, top) Cottongrass Rushes			0.2 saxicern (base); 0.1 saxihirc (base); 0.1 saxinivi (base); 5 saxioppo (face)	1 cetniva; 2 cetrile; 1 cladina; 0.5 cladonia; 0.1 thamsubu			
06_VN116	08/08/2006	17W	7959950	518886	north road route - 60km NW of camp						0		mesic-dry		sparse veg on rocky ridge, avens dominated		25	20	20		casstetr 2 dryainte 25	toficocc 0.5	oxyt artobia 7 oxytmayd 3	Sedges carex 10 Cottongrass Rushes			saxioppo 5	cetnriva 10 cetrile 5 thamsubu 0.1 white crusty 3		sighting/heard: loor	
06_VN117	08/08/2006	17W	7960015	518828	Ridge S of conf. of 2 rivers, rail and road						5	NW	dry		Sparse mats of veg on rocky ridge, part bedrock and part sandstone felsensneer and euatics. Mostly avins and cur sedge and c. narclina.		15	10	2		15 dryainte			Sedges 10 carex (rupes) Cottongrass Rushes			0.2 saxioppo	0.5 cetrile; 0.1 stertome; 0.5 thamsubu; 0.5 Alectoria		Sighting/heard; sandhill crane (flying high, headed south up valley). Sighting/heard; longspurs	
06_VN118	08/08/2006	17W	7962330	517130	north road route and proposed rail route confluence west side of valley, 63km NW of camp						2	NNW	mesic		avens heather herb		35	25	40	saliarct 5	casstetr 15 dryainte 15	toficocc 3	oxytmayd 5	Sedges carex rupestris 10 Cottongrass Rushes luzuconf 1			saxioppo 10 pedicapi 1	cetrniva 10 cetrile 3 thamsubu 2	mosses 10 biol crust 10	scat: caribou sighting/heard: sherane	
06_VN119	08/08/2006	17W	7962262	517120	Ridge just S of confluence of 2 rivers, plus road and rail lines, slope toward listing rd.						12	W	mesic-dry		Relatively even mat of veg on open slope, facing NW. Mixture of avons, heather, purple saxifrage, etc. This slope is probably in the lee of the hill for prevailing winds so ? veg., snow, water, etc.		75	20	5	1 saliarct	75 casstetr, 25 dryainte	0.2 paparadi; 0.2 armemari; 1 pedicapi		Sedges 0.1 carescir; 5 carex (rubestns) Cottongrass Rushes			1 saxioppo	5 cetrniva; 1 stertome; 0.5 thamsubu; 0.5 Alectoria	5 asstd mosses	Scats; caribou (old)	
06_VN120	08/08/2006	17W	7962186	517101	north road route - 63km north of camp								wet-mesic		shrub dominated flat - salix(heather, avens)		60	10	30	salix 10	salireti 15 casstetr 20 dryainte 20	oxyrdigy 5 polyvivi 1		Sedges Cottongrass Rushes luzuconf 1			saxioppo 5	cetrniva 10	mosses 20	scats: hare	
06_VN121	08/08/2006	17W	7962167	517071	To W of old rd., between road and river, N of a set of rapids (area)						5	NW	wet-mesic		Small wetland area with ridge soliffuction, ridges perpendicular to flow. Some willows (S.rich) but mostly sedges		10	60	10	0.1 saliarct; 5 salirich (r)	0.2 salireti (r); 5 dryainte (rb)	0.2 pedicapi		Sedges 10 careaqua (rb no flow); 30 careatro (rb); 5 carememb; 1 carescir; 10 carex sp. Cottongrass 2 erioangu; 5 eriovagi (tuss, ?); 2 eroph-sge (n.tuss) Rushes			0.2 saxihirc	1 cetrniva; 0.1 cladonia; 0.2 thamsubu; 0.1 glove	15 moss mds.; 25 biol. crust		

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		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses		
06_VN122	08/08/2006	17W	7962145	517052	knob to with of road in rapids crest of small ridge with large pink granite stone										Distrubed site - birdstone veg. sun a stone used by raptors and others. Place is littered with scats and pellets adn there is a road lush veg due to manuring. There is similar site about 40m south, but no distinct 'stone' The crest of the ridge bears scats and pellets and grasses.		30	15	5		saliarctophia 5 salixarctica 10 potehyparctica 10 dryainte 15	polyvivi 0.1 cerasilp 0.5 melaaffi 0.1 melaapet 0.2 stelleria longipes 5 paparadi 1	poa 15	Sedges carex rupes 5 Cottongrass Rushes luzuniva 1			saxitric 15	cetrniva 2 cetrile 2 alectoria 10	cushion moss 0.2	sighting/heard: lapland longspur scats: hare, raptor pellets, fox, caribou dens/burrows: lemming	
06_VN123	08/08/2006	17W	7965886	513408	Confluence of 2 rivers below dark canyon, sedge plain						level	N	wet-mesic		Sedge assn. Thickly vegetated plain where small river joins Philips' Creek, sedges with some willows		15		1 saliarct; 5 salirich	5 salireti; 5 dryainte			Sedges 60 careaqua; 15 carememb Cottongrass 10 eriovagi Rushes				0.2 glove	15 asstd mosses	Sighting/heard; wolf (was by edge of stream beside stake). Runs/trails; caribou. Dens/burrows; lemming. Sighting/heard; loon (heard)	
06_VN124	08/08/2006	17W	7965704	513487	Confluence of Phillips Creek and north prop rail route creek.						30	NNE	mesic-dry		sandy slope - heather higher up - unstable lower down		50	30			salix 10 potevahl 30 casstetr 30 dryainte 5	forbs 25 sileacua 5 stellaria 2 paparadi 1	oxytmayd 5	Sedges sedges 5 Cottongrass Rushes			saxioppo 5 armemari 1 pedicapi 3			sighting/herd: wolf, loon	
06_VN125	08/08/2006	17W	7965776	513505	Confluence of 2 rivers, south of 119								wet		Even growth of sedges in polygon with raised edges. Carex aquatilis and sudetan lousewort.			50				5 pedisude		Sedges 45 careaqua; sedge with dark pond hds. -with 123 coll Cottongrass 1 erioangu Rushes						Runs/trails; caribou	
06_VN126	08/08/2006	17W	7965623	513465	north road route 68km north west of camp								dry		avens-heather sparse short growth		50	15	20		vacculig 5 casstetr 20 dryainte 25		oxytarct 1 oxytmayd 1	Sedges sedges 10 carex rupestris 10 Cottongrass Rushes			saxioppo 2 pedicapi 2	cetrniva 10 cetrile 0.1 thamsubu 3 pixie cup 0.1		scats: caribou dens/burrows: lemming	
06_VN127	08/08/2006	17W	7965776	513505	Confl. of 2 rivers, adj. to plot 121, so same coord.						level	N	wet-mesic		Ridge (raised edge) of polygon. Mounds of moss with veg growing in moss. Dryas, several sedges, few salix rich, sudet louse.		25		5 saliarct; 20 slairich	dryainte	0.1 melaapet; 5 pedisude		Sedges 70 careaqua; 0.5 careatro; 1 carescir; carex sp. (3) coll Cottongrass Rushes			0.1 saxihirc	0.1 cetrniva; 0.1 cetrile; 0.1 thamsubu	60 mosses	Sighting/heard; 2 yellow-billed loons (flying, calling). Runs; lemming	
06_VN128	10/08/2006	17W	7949627	530682	north proposed rail route, 45km NW of Mary River camp								dry		sparse exposed bouldery site		10	5	5		dryainte 10			Sedges carex rupestris 5 Cottongrass Rushes			saxioppo 3	lichens 5 cetrile 1			
06_VN129	08/08/2006	17W	7965636	513455	Beach confl.						2	W	dry		Mats of veg on white sand					5 saliarct	20 dryainte	0.1 oxyrdigy; 2 polyvivi; 10 sileacau; 0.1 paparadi; 0.1 armemari; 0.1 pedilana		Sedges 0.1 careatro; carenard Cottongrass Rushes			5 saxioppo			tracks; caribou (including yearling)	
06_VN130	10/08/2006	17W	7949469	530863	north rail route 43km NW MAry River camp lip of canyon						2	NW	dry		bedrock community, lip of canyon		25	10	15		vacculig 3 casstetr 5 dryainte 20	sileacua 1 paparadi 0.1	carex 3	Sedges carex rupestris 7 Cottongrass Rushes			saxicaes 0.1 saxicern 0.1	cetrniva 10 cetrile 5 thamsubu 2	mosses 1	scats: ptarmigan	
06_VN132	10/08/2006	17W	7949434	530894	north proposed rail route - 43km NW of camp mid canyon						5	SW	mesic		shrub(heather) dominated		70	20	10	saliarct 5	salireti 5 casstetr 40 dryainte 20	oxyrdigy 3 sileacua 2	oxytmay 1	Sedges carex 2 Cottongrass Rushes			pedicapi 1	cetrniva 1 glove lichen 2		scats: lemming, hare	
06_VN134	10/08/2006	17W	7967572	510610	north proposed rail route 70 km NW of camp						2	S	mesic		shrub(aven, heather) sedge boulder		40	25	20		salireti 2 salix 2 vacculig 1 casstetr 20 dryainte 20	saxioppo 2 pedicapi 0.5	oxytmayd 1	Sedges careatro 10 carex 10 Cottongrass erio 0.1 Rushes luzuconf 0.2				cetrniva 10 thamsubu 3 white crust 5	biol crust 10	scats: goose	

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		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_VN136	10/08/2006	17W	7967619	510510	north proposed rail route 70km NW of camp						0		dry		shrub(avens) sedge forb		20	25	25		dryainte 20	sileacau 1	oxytarto 7 oxytmayd 0.1	Sedges carex rupestris 10 Cottongrass Rushes			saxioppo 5	cetrniva 7 cetrile 7			
06_VN138	10/08/2006	17W	7967772	510448	proposed N rail route 20km NW of camp						flat		wet		sedge meadow(Etland) seasonally flooded		30	50	20	salirich 5 salix 3	salireti 7 casstetr 5 dryainte 10			Sedges sedges 50 careaqua 20 careatro 3 carex 20 Cottongrass Rushes			saxihirc 0.5 pedicapi 0.1 pedihirs 0.1		mosses 20 cushion 10		
06_VN140	10/08/2006	17W	7971076	506945	Phillips creek valley, on proposed rail route 76km NW of camp								mesic-dry		shrub(aven) sedge/forb boulder		25	25	10		dryainte 25		oxytarct 15 oxytmayd 0.5	Sedges carex rupestris 10 Cottongrass Rushes			saxioppo 1	cetrniva 7		scats: hare, caribou	
06_VN142	10/08/2006	17W	7971110	506906	proposed north rail route bouldery slope down toward phillips creek						25	SW	mesic		moss herb shrub (aven/heather)		20	15	20	saliarct 2	casstetr 5 dryainte 15		oxytmayd 1	Sedges carex rupestris 5 Cottongrass Rushes			epillati 15 pedicapi 0.1	cetrniva 5 cetrile 1 glove 2	mosses 10		
06_VN144	10/08/2006	17W	7961548	520938	north rail route 60km NW of camp						0		dry		avens sedge - very dry and sparse exposed ridge top		20	20	10			sileacau 2	oxytarct 1 oxytmayd 0.5	Sedges sedges 20 carex rupestris 15 Cottongrass Rushes			saxioppo 2	cetrniva 5 cetrile 2 thamsubu 2		other(eggshell): goose	
06_VN146	10/08/2006	17W	7961562	521038	stream valley N of north rail route 60km NW of camp						2	NW	wet		wet sedge meadow beside stream		2	86	2		salireti 2	ceraalpi 0.1 melaapet 0.1 melaaffi 0.1 stellaria 5	grass 10	Sedges careaqua 20 carememb 10 Cottongrass Rushes			chrytetr 10 saxihirc 3		mosses 2		
06_VN148	10/08/2006	17W	7934956	538342	north rail route - south end of lake 28km NW of camp						2	SW	mesic		heather avens moss		60	5	35	saliarct 2	casstetr 30 dryainte 25		oxytmayd 1	Sedges caremis 2 Cottongrass Rushes			saxioppo 2	cetrniva 5 cetrile 2 thamsubu 1	racolanu 20 biol crust 10		
06_VN160	11/08/2006	17W	7976290	503470	Milne Inlet						0		dry		gravel beach with avens and saxifrage		10	10			salix 0.5 dryainte 10		oxytarct 2	Sedges carex rupestris 0.1 Cottongrass Rushes			saxioppo 8				
06_VN162	11/08/2006	17W	7974585	503766	Milne Inlet						40	N/NW	dry		steep slope, sandy, facing Milne Inlet, lower slope forbs, upper slope shrubs		25	35			salix 15 dryainte 10	oxyrdigy 2 polyvivi 1 ceraalpi 1 melaaffi 1 minuartia 1 papacorn 1	grass 1	Sedges sedges 5 careatro 2 Cottongrass Rushes luzuconf 1			saxicaes 10 saxicern 3 saxioppo 5 armemari 2 pedicapi 1				
06_VN164	11/08/2006	17W	7975938	502994	Milne Inlet						0		dry		shrub sedge flat dry(poor condition)		25	30	15		dryainte 25	polyvivi 1	oxytarct 5 oxytmayd 1	Sedges sedges 15 Cottongrass Rushes			saxioppo 5 pedihirs 2	cetrniva 5 cetriles 5 thamsubu 5		scats: goose	
06_VN165	10/08/2006	17W	7949572	530743							5	W	mesic-dry		Thin Dryas/curly sedg assn on slight slope on calcareous rock		20	50	10	saliarct .1	casstetr .2 dryainte 15	toficocc .1 sileacau 5	oxyt arctobia 2 oxyt mayd .2 pedicapi .1	Sedges careatro 3 carememb .1 carenard 15 carescir .2 Carex rupestris 30 Cottongrass Rushes luzuconf 1			saxioppo 2	cetrniva 2 cetrile 5 thamsubu 1		Scats: hare	

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope			Soil notes	Veg. notes	Cover, %				Species and % cover for each									
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_VN166	11/08/2006	17W	7975663	502702	Milne						0		dry		shrub sedge						salix 1 dryainte 25		oxytmayd 2	Sedges Cottongrass Rushes			saxioppo 20 pedilana 2	cetrniva 10 cetrtile 5 thamsubu 5		scats: goose	
06_VN167	10/08/2006	17W	7949506	530835	N rail route S of slot canyons on calcareous strata						3	W	dry		Isolated small patches of avens and ind. sm xeric sedges on gravel sub strate near canyon		5	5			potevahl .1 dryainte 5		oxyt arct .1 near plot	Sedges carenard 3 Carex rupestris 1 Cottongrass Rushes			saxioppo 1	cetrtile .1		Pipits abt 5 young birds flying together	
06_VN168	11/08/2006	17W	7974585	503766	Just inland from Milne Inlet - on ridge								dry		sparse bouldery dry shrub(avens) sedge, exposed site		20	15	40		dryainte 20		oxytarct 5	Sedges rupestris 10 Cottongrass Rushes			saxioppo 5	lichen 40		dens/burrows: lemming - fresh digging in nearby gully	
06_VN169	10/08/2006	17W	7949425	530836	N rail road, small canyon shattered bedrock edge of N side of canyon, canyon slope						45	S	dry		Thin avens/curly sedge assn on steep slope with heather and large fl. wintergreen in protected niches.		30	20	5		potehyp .1 potevahl .1 vacculig 2 casstetr 5	oxyrdigy 1 sileacau 2	oxyt mayd .1	Sedges carenard 5 Carex rupestris 15 Cottongrass Rushes			saxicern .1	cetrniva 2 cetrtile .1 brn lettuce lichen .1		pipits - calling, flying around Dens'burrows: lemming Caribou bone (tibia)	
06_VN170	11/08/2006	17W	7968481	509312	north road route 73 km NW of camp								wet-mesic		seasonally flooded wetland - pond contiguouse wetland sedge		20	35	5		salirети 5 salix 10 dryainte 5		oxytmayd 0.1	Sedges sedges 25 Cottongrass erioangu 10 Rushes					mosses 5	dens/burrows: lemming	
06_VN171	10/08/2006	17W	7967520	510632	N rd/rail rt, N of confluence of rivers and routes, above small gorge in philips creek						level		wet		Sedge assn. in small depression/swale to E of road mixture of Carex sedges and cottongrasses.		15	40	15	salirich 10	salirети .1 casstetr .2 dryainte 2	polyvivi .5	pedisude	Sedges careaqua 10 careatro 2 Cottongrass erioangu 10 Rushes			saxihirc .1	cetrniva .5 thamsubu .1	moss mounds 15	Scats: hare Caribou bones	
06_VN172	11/08/2006	17W	7968358	508865	north road route - between river and road 73km NW of camp								mesic		shrub(aven, heather) moss		45	10	35		salix 1 casstetr 20 dryainte 25	paparadi 0.1		Sedges sedges 5 Cottongrass Rushes luzuconf 5			saxitric 0.5 pedicapi 5	cetrniva 5	mosses 30 racolanu 20	dens/burrows: lemming	
06_VN173	10/08/2006	17W	7967470	510527	N rd/rail rt, near small gorges - to W of rd, area upstream								mesic-dry		Thin mats of avens, curly sedge, c. nardina and oxy arctobia on unstable hillside		55	10	5		casstetr 2 dryainte 45		pedicapi .2 oxyt mayd 2 oxytarctobia 5	Sedges carenard 3 carescir 5 Carex rupes 5 Cottongrass Rushes				cetrniva 3 cetrtile .2 thamsubu 1 Alectoria 1		Scats: hare, caribou (old) Sighting/heard: pipits	
06_VN175	10/08/2006	17W	7967599	510429	Along N rd/rail rt						depression		wet-mesci		Disturbed site, soil, pit, prob. done in 1970's ?? Mound o gravel to NW, pit goes to abt 6ft deep. Revegetated partially most sedges, growth in depr. is C. membranacc Grasses on S side. Mound above is vegetated with avens.		10	25	5	saliarct 5 saliarch 2	casstetr .5 dryainte 5	polyvivi .1 sileacau .1	oxyt mayd .1 Poa 2 Calam 2	Sedges carememb 20 Carex rupes 2 Cottongrass Rushes			saxioppo .1		cushion .2		
06_VN176	11/08/2006	17W	7948336	522219	north road route 50km NW of camp						0		wet		cobble wet area - seasonally flooded sedge-shrub		30	20	10		salix 5 dryainte 15		calamagroskis 5	Sedges sedges 15 Cottongrass Rushes			saxihric 3 saxioppo 3 epillati 0.1 pedicapi 1	cetrniva 5 cetrile 5 thamsubu 1			
06_VN177	10/08/2006	17W	7967596	510425	N rd/ rail rt, top of hill to W of rd. Disturbed site where someone sampled ddg mat						mound		dry		Disturbed site. Mound of material removed from pit (plot 175) and left on the land. Has become colonized with avens, Draba alpina, salix arctiva, purple sax and oxy aratabia. - plants appear to get started in lee of rocks or grow alonside others, taking adv. of protection. Dryas can start anywhere, or may be growing from previous mats.		20	10		saliarct 5	dryainte 15	minuartia 1	oxyt arctobia 5	Sedges Cottongrass Rushes			saxioppo 2			caribou tracks	
06_VN178	11/08/2006	17W	7939148	524804	north road route						0				brokem up rock-cobble gravel		8	2			salix 1 dryainte 7			Sedges Cottongrass Rushes			saxioppo 2				

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope			Soil notes	Veg. notes	Cover, %				Species and % cover for each									
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_VN179	10/08/2006	17W	7971131	506938	N rd/Rail rt by large cliffs, area upstream abt 25m S of Milne						<10	NW	wet mesic		Riparian assn. on small temperature stream, mostly rich willow and Carex atrofulrea, but with mats of Dryas on mounds		65	35	5	saliarct 5 salirich 40	salireti .2 dryainte 20	oxyrdigy 40 polyvivi 1	pedicapi .5 pedihirs .1	Sedges careatro 10 carecapi (carex sp 5) carememb (2-3) Carex rupestris 5 Cottongrass Rushes				cetrniva .5		Scats: hare, ptar Den: lemming Trails:lemming	
06_VN180	11/08/2006	17W	7920110	536904	north road route 22km W						2	S	wet-mesic		salix moss vegetation in layers		60	20	20	salirich 20	salireti 20 casstetr 20 dryainte 20	polyvivi 0.1 sileacau 1	calaporp 1	Sedges sedges 30 careatrc 20 Cottongrass erioangu 1 Rushes luzuconf 1			pedicapi 0.5	cetrniva 1	mosses 20	scats: hare dens/burrow: lemming	
06_VN181	10/08/2006	17W	7971162	506917	N rd/rail rt						<1	NW	mesic dry		heath tundra? Baffin version. Blueberries and heather plu some Draba on shelf . Rhododendron present		80	5	5		salireti .1 vacculig 50 casstetr 15 rhodlapp 2 dryainte 20	toficocc .1 tofipusi .1	oxyt, mayd 3	Sedges carescir 3 Carex rupes 2 Cottongrass Rushes				cetrniva 2 stertome .1 thamsubu 1 Alectoria 1	sm. mosses 1	Scats: ptar, hare	
06_VN183	10/08/2006	17W	7961617	520789	N rail rt S of confluence, oppos. slot canyons						12	W	mesic dry		Dryas/heather/blueberry assn on open slope with		dw50	15	5		vacculig 5 casstetr 25 rhodlapp 5 dryainte 15		pedicapi .2 pediliana .1 oxyt arctobia 2 oxyt mayd 2	Sedges carenard 5 carescir 3 Carex rupes 5 Cottongrass Rushes				cetrniva 3 cetrile .1 thamsubu 1 Alectoria 1		Scats: hare lapland longopur (??) juvenille	
06_VN185	10/08/2006	17W	7961603	520999																				Sedges Cottongrass Rushes							
06_VN187	10/08/2006	17W	7961473	521050	N rail rt, near slot canyons, on rocky hillside facing E into small valley						12	E	mesic		Slope is composed of tumbled slabs. Veg is in mats between and on the slabs		dw30	5	10	saliarct 5	casstetr 5 dryainte 25	polyvivi .2	oxyt mayd 2 oxyt arct .1	Sedges carenard .2 Carex rupes 5 Cottongrass Rushes luzuniva .2			saxioppo .2 saxitirc .5	cetrniva 5 thamsubu .1	racolanu 10	Scats: hare hawk feather	
06_VN189	10/08/2006	17W	7935017	538447	N rail rd rt where rd jogs around end of a lake, crossing a small stream						5	NW	mesic		Heath tundra on slope. Much Dryas and heather , salix retic and yellow oxytrope		70	20	10	saliarct 2	salireti 5 casstetr 30	oxyrdigy 2 polyvivi .1	pedicapi 1 pedilana .1 oxyt mayd 5	Sedges dryainte 35 Cottongrass Rushes luzuniva .2				cetrniva 3 cetrile .1 stertome .5 thamsubu 1	asstd mosses 5	Scats: hare	
06_VN191	10/08/2006	17W	7934904	538530	N rail rt, near end of long lake where road way jogs						5	SW	mesic		Thin cover of heather and dryas plus xeric sedges on gentle slope		55	30	10		vacculig 10 casstetr 15 dryainte 30	polyvivi .5 sileacau .1	pedicapi .2 oxyt mayd 1 astr. alpin .1	Sedges carenard 10 carescir 10 Carex rupestris 10 Cottongrass Rushes				cetrniva 2 stertome .2 thamsubu .1 Alectoria 2	cushion 1 asstd mosses 2 racolanu 3	Scats: hare	
06_VN193	10/08/2006	17W	7934714	538503	n rail rt S of end of lake, area of S curve						>1	SW	dry		Gravel knoll with little rooted veg. Rocks 70% covered wi lichens, but there's not much in the way of rooted plants					saliarct 2	potevahl 2 dryainte 2			Sedges carenard 1 Carex rupestris 1 Cottongrass Rushes			saxioppo 1	cetrniva .2 cetrtile .1 thamsubu .1 Alectoria .5	cushion moss .5	Sighting/heard - pipits calling nearby	
06_VN195	11/08/2006	17W	7976456	503350	Shore of Milne Inlet, above sheer bank, to E of small stream with junk						5	N	mesci-dry		Backshore veg (but w/o any halophytes) Mats of avens, oxytr. arctobia and salix arctica on mounds some moss and small sedges.		20	15	15	saliarct 5	dryainte 15	polyvivi .2	pedilana .2 oxyt arctobia 10 oxyt mayd .1	Sedges Carex sp. not blooming .1 Cottongrass Rushes			saxioppo 2		blk scattered moss 15	Flock of shorebirds passed (larger than Bairds' darker) about 9 Caribou bones along beach	
06_VN197	11/08/2006	17W	7976345	503467	Milne Inlet, port site, terrace above beaches, at inshore edge of small freshwater depression						level	N	wet-mesic		Thin cover of sedges and a variety of other plants by a dark temp. pond/spring, prob. Sedges grow in clumps		5	65	10	saliarct 10	saliresi 2	oxyrdigy .2 polyvivi .5 Stellaria monantha .1 arnenaru 5	pedicapi .2	Sedges caremis 5 carenard prob. 5 Carex sp (abt 5) coll 25 Cottongrass Rushes luzuniva			saxihirc 1 saxioppo 1	cetrniva .5 cetrtile .1 thamsubu .1	mixed 5 biol. crust 15	Scats: ptar, lemming	

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope		Moisture	Soil notes	Veg. notes	Cover, %				Species and % cover for each								Wildlife notes	Archaeology notes
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect				Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses		
06_VN201	11/08/2006	17W	7976068	502957	Top of bank W if airstrip open area with frost fissures						level		mesic-dry		Mats of veg. on gravel and sand flat. Mostly avens, xeric sedges, purple saxifrage		dw25	25	10	saliarct 5	dryainte 20		pedicapi .1 pedilana .5 oxyt arct 3	Sedges caremisandra 5 Carex rupes. 10 Cottongrass Rushes				cetrbuva .5 cetrtile .2 thamsubu .1	asstd mosses small 10		Scats: goose semi palm or ringed plovers 5 adults and 2 young and others in area	
06_VN203	11/08/2006	17W	7975719	502633	Port site, Milne, E bank of Philips' Creek almost to the sea						<1	W	dry		Thin mats of avens, oxytarctob, and purple sax on sandy bank of old river delta, not present delta xeric sedges		20	20	10		dryainte 20	polyvivi .1	pedilana oxyt mayd 1 oxyt arctobia 10	Sedges Carex rupes 10 Cottongrass Rushes				cetrniva .1	biol. crust 10		Scats: ptar Sighting/heard: plovers (8birds), glaucous gulls	
06_VN205	11/08/2006	17W	7974545	503842	Milne Inlet, port site, rd as it leaves the Inlet, terrace along E slope of valley						level		mesic dry		Thin mat of avens, sax opp. and curly sedge on level		15	60	5		dryainte 10	toficocc 1	oxyt arctobia 1 oxyt mayd .2	Sedges caremis .2 carebard no nardina 1 Carex rupestris 40 Cottongrass Rushes			saxioppo 5	cetrniva 3 cetrile2 stertome .2 thamsubu .5			Scats: caribou, hare, goose, ptar	
06_VN207	11/08/2006	17W	7968483	509231	n rd rail rt opposite S end dark cliffs where river flows in from W						2	SE			Avens/xeric sedge assn. Dry assn on ridge crest heavily with boulders almost a boulder field. Felsonmeer and erratics. Well drained but seasonally theres standing water		35	15	10	saliarct 5 salirich 5	salireti 5 vacculig 2 casstetr 5 dryainte 15	oxyrdigy 1 polyvivi.2 sileacau 1	pedilana	Sedges caremis 2 carenard 5 carescir 2 Carex rupesris 30 Cottongrass Rushes			saxioppo	cetrniva cetrtile stertome thamsubu			hare, caribou antlers nearby (hunted not shed)
06_VN209	11/08/2006	17W	7968529	509206	Crest of hill before last valley to N						level		mesic		Disturbed site - man Recently used meat cache with caribou in it. Badly made or disturbed storage cache with caribou skeleton assc with cache. Bones in caches other spread aound. All bones are white so not recent use		60			saliarct 10	salireti 2 casstetr 5 dryainte 10	oxyrdigy 2 polyvivi .5 Stellaria 1	poa sp 10 poa sp2 10 oxyt mayd .1	Sedges careatro mis .2 carenard .1 carescir .5 Carex rupes 5 Cottongrass Rushes luzuniva 5			saxioppo 2		mosses 15	Scats: fox and wolf Dens/burrows: lemming	This use of stones for storage has affected the veg. around the cache. Its much richer, more mustards and grasses, etc.
06_VN211	11/08/2006	17W	7966457	513190	About 2 km N of confluence of rivers and rd/rail						<1	N	mesic		Even cover of veg on small depression. Heather/avens/moss, solid ground cover		90	10	5	saliarct 5 salirich 10	salireti 15 casstetr 50 dryainte 10	toficocc .5 oxyrdigy 1 sileacau .5	pedicapi .5 oxyt mayd .5	Sedges caremis 5 carescir .1 Cottongrass Rushes luzuniva 5			saxioppo	cetrniva 2 cetrile .5 stertome 1 thamsubu 1	mosses .5	Scats: caribou, ptar, hare	
06_VN212	14/08/2006	17W	7917790	550540	north road to Milne 8km NW of MAry River camp						10	NE	Mesic		shrub(heather) moss		70	20	10	saliarct 10	salireti 10 casstetr 30 dryainte 20	oxyrdigy 0.1 polyvivi 0.1	oxytmay 1	Sedges sedges 20 Cottongrass Rushes luzuconf 1			saxioppo 5 pedicapi 0.1 pedihirs 0.1	lichens 20 cetrniva 20 glove 2	racolanu 10	scats: caribou	
06_VN213	11/08/2006	17 W	7948328	522170	N rd rt. where rd leaves						level	NW	wet		Thick growth of c. aquatilis on level above pond at edge moss mds with c. membrane			70						Sedges careaqua 75 Cottongrass erioangu .1 Rushes					sm moss .1 algae 25		
06_VN214	14/08/2006	17W	7918108	550345	north rd 8km NW of camp						25		mesic		Distrubed community-vegetated bank of old road (~40 yrs)		40	10	10		dryainte 40		grass 1	Sedges sedges 25 carex 2 Cottongrass Rushes luzuconf 2			saxitric 10	cetrniva 7	thamsubu 3	scats: caribou dens/burrows: lemming	
06_VN215	11/08/2006	17W	7948335	522234	n rd rt.						level	NW	wet-mesic		Frost boil with scattered plants in centre and thickly veg. rim					saliarct 5 salirich 2	dryainte 5			Sedges caremis 5 carememb 10 Carex sp (2-3) colli 5 Cottongrass eriosche (?) sgl nontus .2 Rushes juncus biglumis 2			saxialzo 1	cetrniva 2 cetrile 1 thamsubu .1			
06_VN216	14/08/2006	17W	7922247	545341	north rail route 15km NW of camp										stony ridge top(1m wide) between 1m wide mossy gullies dw shrub dom		30	10	10		vacculig 10 casstetr 10 dryainte 10		oxytmayd 0.1	Sedges sedges 5 carex 3 Cottongrass Rushes luzuniva 1			epillati 5	cetrniva 5 thamsubu 0.1	mosses 5 racolanu 3	dens/burrows: lemming	

Baffinland Iron Mines Corporation
Mary River Project

Vegetation Baseline Study Report
2006 Vegetation Plots

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope			Soil notes	Veg. notes	Cover, %				Species and % cover for each								
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_VN217	11/08/2006	17W	7939175	524929	N rd rt. just N of long lake with airstrip at S end						2	NW	mesic-dry		Boulder field. Limestone boulders which are rapidly foliating water flows thru in spring					saliarct 5 salirich 5		polyvivi .1 melaape .2		Sedges caremis 1 Cottongrass Rushes					asstd moss 20		
06_VN219	01/08/2006	17W	7920079	536401	N rd rt as rd leaves the limestone plateau						7	E	mesic dry		avens, heather, xeric sedge assn on slope and in small depression by bedrock outcrop					saliarct 1	salireti .2 casstetr 25 dryainte 20	oxyrdigy .1 polyvivi .2 sileacau .1	oxyt mayd .1 pedicapi .2	Sedges caremis 5 carescir 10 Carex rupes 20 Cottongrass Rushes			saxioppo .2	cetrniva 10 thamsubu .5	racolanu 10	sighting/heard: raves 2 flying by cliffs dens/burrow: lemming	
06_VN259	14/08/2006	17W	7918080	550361	rd/rait rt near penisula lake on old rd								wet mesic		natural progression of plant community, completely covered with sedges and avens, lots of rich willow		30			saliarct 10 salirich 20 salix arctophila 10	salireti 5		poa 1 pedicapi 5	Sedges careaqua 50 Carex 10 Cottongrass Rushes luzuconf .5 luzuniva 2				cetrniva .5 stertome .1 thamsubu .1		common loons	
06_VN261	14/08/2006	17W	7920004	546024	slot canyons N of peninsula lake E of large round lake with mountain pergrine nest site								mesic-dry		pale sandstone cliffs with harder strata on top, forms shelters for birds. Veg sparse					saliarct	casstetr (dominant)		poa	Sedges Cottongrass Rushes			saxutric	cetrniva Cladonia stertome thamsubu	racolanu	3 chicks in nest one parent bird flying around duck wing	
06_VN263c	14/08/2006	17W	7922228	545323	where river enters large lake with mountain						1	SE	mesic		odd ice - laid forms, like snakes coiling within each other in depression - racon moss, heather, luzula, hierchloe, blueberries, dryas, yellow oxyt					saliarct 5	vacculig 10 casstetr 10 dryainte 10			Sedges Cottongrass Rushes luzuniva 2				cetrniva 5 cetrile .2 Cladina .1 cladonia 10 Alectoria	racolanu 60		
06_VN268	17/08/2006	17W	7915132	552587																				Sedges Cottongrass Rushes							
06_VN269	17/08/2006	17W	7915389	552347	along NE shore peninsula lake						10	S	mesic		heather moss assn. lots of lichen and hierchloe. empetrum nigrum									Sedges Cottongrass Rushes luzuconf 5 luzuniva .2				cetrniva 5 cetrile .1 Cladina 10 stertine 1 thamsubu .5 glove	racolanu 60	scats: caribou	
06_VN269A	17/08/2006	17W	7916436	551673	N side of 3 lake chain by ascarpment about end of middle lake, hillside above lake						7	w	dry		mats of veg on exposed hill top, much evid of wind, erosion, blow outs fines removed						potevahl dryainte 15	minuartia .1		Sedges Carex rupes 5 Cottongrass Rushes luzuconf .1			saxioppo 5 saxitric 2	cetrniva .1 thamsubu .1 Alectoria 1	mosses tiny 2	sighting/heard: lapland, loons	
06_VN270	17/08/2006	17W	7915807	552008	N side of first of 3 lakes along ecarp, oppos canyon terrace slope above lake shore						25	SW	mesic		heather moss assn, in sm valley (depression) onside of lake below terrace. mostly mats of heather surrounded by mixture of lichens		60	8	50		casstetr 60		poa .1	Sedges Cottongrass Rushes luzuniva 2				cetrniva 10 Cladina 30 stertome 10 glove 5	racolanu 25 mosses 10		
06_VN271	17/08/2006	17W	7915054	552677	N rd rt as it descends to go along N shore of 3 lakes beneath escarpment							E	mesic-dry		thin layer of veg. mostly heather blueberry dryas and mos on rocky					saliarct 2	vacculig 40 casstetr 15 dryainte 15		oxyt mayd .2 pedicapi .1 poa .1	Sedges Carex rupes .5 Cottongrass Rushes luzuconf .5				cetrniva 2 Cladina .2 Cladonia .1 stertome 5 thamsubu 1 Alectoria 10	cushion .5	den/burrow: lemming	
06_VN272	17/08/2006	17W	7915040	553075	end of ridge N side of rd as it enters valley						50	E	mesic dry		thin veg on ledges between boulders mostly heather and lichens but some dryas plus grasses/rushes		30	32	7		saliherb 1 potepulchela .1 potehypearct .2 casstetr 20 dryainte 10	oxyrdigy 1 Stellaria .5 ranuniva .1	poa .5	Sedges Cottongrass Rushes luzuniva 1			saxitric	cetrniva 1 cetrile .2 Cladina .1 Cladonia 5 stertome 5 thamsubu .2 Alectoria .1 peltigera .1	racolanu	scats: lemming, caribou sighting/heard: rough legged hawk flew over, pipits, lapland	
06_VN273	17/08/2006	17W	7914974	553498	flat area between escarp valley camp						level				patchy veg on moss base, mush carex, some heather lots of willow						saliherb 20 casstetr 15	mertmari .1	pedicapi .2 pedihirs .2	Sedges careaqua 2 carememb 2 Cottongrass erioangu 5 Rushes luzuniva 2				cetrniva .5 Cladonia .2 stertome .5 thamsubu .1	sm mosses 60	scats: hare, goose sighting: sandhill cranes	

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope			Soil notes	Veg. notes	Cover, %				Species and % cover for each								
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_VN274	17/08/2006	17W	7914887	553807	along N rd rt flat area NW of camp in road itself						level		mesic		plot done in rd incl berm - disturbed site, clumps or mats of veg, plus biol crust on ground					saliarct 2	saliherb 2 casstetr 15 dryainte 20	sileacau 5 paparadi .1 armemari .5	poa 1	Sedges carenard 10 carex 5 Cottongrass Rushes luzuconf				cetrniva .2 stertome .2 thamsubu .5	asst mosses 25 biol crust		
06_VN275	17/08/2006	17W	7914951	554484	sandy hills terrace to NE of camp lake, plot located in depression formed by frost fissures						7	SW	wet mesic		thick veg, in depression where 2 frost fissures joins protected from winds mosses underlie most					salirich 10	salireti 20 vacculig 5 casstetr 60	tofipusi .5 oxyrdigy 10 polyvivi .2 sileacau .2 Stellaria 1 armemari .3	oxyt mayd .5 pedicapi .5	Sedges carescir 5 Cottongrass Rushes luzuniva				cetrniva 2 cetrile .2 stertome 5 thamsubu .1 glove .5	mosses 80	scats: hare, goose den/burrows/nest: lemming	
06_VN276	17/08/2006	17W	7915029	554622	rd rt to NE of camp lake								mesic dry		disturbed site - thick growth of grasses where road has slid a bit mostly grass with a few willows					saliarct 2 salirich 2 salix	vacculig 5 casstetr dryainte 5	oxyrdigy 2 polyvivi 5 ceraalpi 10 melaaffi .1 Stellaria 2 paparadi .2 armemari .1	pedicapi .1 poa 2	Sedges carescir 5 Cottongrass Rushes luzuconf .5 luzuniva .2						scats: hare	
06_VN277	17/08/2006	17W	7914705	554975	along rd rt E of camp lake						2	E	mesic		heather/moss assn on gravel lacustrine terrace mostly racon with ass forbs						vacculig 10 casstetr 50 dryainte 2	oxyrdigy .2 ceraalpi .2 paparadi .5		Sedges Carex 5 Cottongrass Rushes luzuconf 5 luzuniva .5				ctrniva .2 Cladonia .1 thamsubu .1 Alectoria .5	racolanu 50	scat: hare	
06_VN278	17/08/2006	17W	7914626	555694	along rd rt by largest river						20	SE	wet mesic		riparian sedge assn at edge of stream channel in floodplain of small river					salirich 20	salireti 15 dryainte 5	toficocc .2 topifusi .1 oxyrdigy 1 polyvivi .5 ceraalpi .1 Stellaria .1 paparadi .1 pedicapi 2 pedilana .Sepillati 20	pedicapi 2 pedilana .5	Sedges carememb 5 Carex 10 Cottongrass erioangu 2 Rushes luzuniva .1				cetrniva .2 Cladonia .1 stertome 10 thamsubu .1	mosses 25		
06_VN279	17/08/2006	17W	7914558	555711	in floodplain of river near where rd crosses stream						5		wet mesic		scattered plants amidst cobbles and boulders mostly rich willow with some grasses, sedged and mosses					salirich 20	dryainte 2	polyvivi .2 melaape .1 epillati 5		Sedges caremis .2 carememb .2 Cottongrass Rushes juncus .1					asstd 2		
06_VN280	17/08/2006	17W	7914567	555747	floodplain of river near rd crossing centre of raised terrace						2		mesic-dry		avens assn almost 100% avens// with unveg spaces between					saliarct .5	dryainte 75		pedicapi 1 pedilana .2	Sedges caremis 1 carescir .5 Cottongrass Rushes			saxioopo .1	cetrniva .5	mosses .2	scats: goose, hare den/burrows: lemming	
06_VN282	17/08/2006	17W	7914472	555729	flood plain of river, edge of channel						20	N	mesic		Riparian - growth of willows along edge of bank with grasses between		50			saliarct 5 salirich 50		polyvivi .5		Sedges carememb 2 Cottongrass Rushes			saxicern .1		str. mosses 5 under willows 10	scats: goose	
06_VN340	20/08/2006	17W	7914883	556017	Lacust system to NW of camp along rd rt at edge of pond						5	E	mesic dry		Thin mat of dryas, heather and xeric sedges on sandy hil					heather 10	vacculig 5		oxyt mayd .1 Pedicapi .1	Sedges c. rupestris c. nardina Cottongrass Rushes			saxioppo .2			red throated loon fishing in pond scats: hare	
06_VN341	20/08/2006	17W	7914992	556117	Along N rd, abt 1k from camp on lac flats, terrace of hills						<1	SW	mesic dry		mats of heather and blueberry surround by Raconit moss some dryas on higher spots. This is undulating terrain with sedges donminating on the lower sections and heather dominating on slopes, blueberry and avens on higher spots.					saliarct 10	dryainte 5 vacculig 20 casstetr 15	paparadi 3 armemari 2 toficocc 5 sileacau 2	pedicapi .5	Sedges carerupe10 carenard 10 Cottongrass Rushes luzuconf 2 care scir 5					mosses 5	caribou scats	
06_VN342	20/08/2006	17W	7915192	556483	slope of sandy hill to B of N rd rt, lacus. complex N of camp						12	N	mesic dry		Scattered clumps of veg on sandy hillside with much Luzula confusa, mats of dryas and arctic willow lichen cover thin						dryainte 10 casstetr 2 saliherb .2	oxyridigy 1 sileacau .5 Minuartia .1	poa 1	Sedges carenard .2 Cottongrass Rushes			saxicorn .1 saxinivd .5 saxitric .5 saxicaes .2		biol. crust 5	Caribou skull nearby Pipits passed, calling	
06_VN343	20/08/2006	17W	7915222	556551	Lacus complex NW of camp N rd rt, in small stream valley						3	N	wet		Riparian assn of sedges and rich willow. Wet area with several sedges (mostly c. membranacea) under rich willow on moss hummocks					saliarct 5 salirich 20	salireti 20 dryainte 5		poa 2 pedisude 2	Sedges careaqua 5 carememb 15 Cottongrass erioangu 5 Rushes					mosses 40	scats: lemming dens and burrown: lemming	

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		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses		
06_VN344	20/08/2006	17W	7915159	556691	Lacust complex to N of camp, near rd						level		mesic		Relatively lush veg in juncture of 2 frost fissures. In bottom sedges and salix. On slopes, heather and Racomi higher Dryas and salix arctica and saxtric					saliarct	salireti vaccuilig casstetr 40 dryainte	toficocc 1 Stellaria .5	oxyt mayd .1 pedicapi .2	Sedges caremis 5 carememb 20 Cottongrass Rushes				cetrniva .2 cetrtile .1 stertome .5 thamsubu .1 Alectoria .5	mosses 2 racolanu 30	scats, burrows and trails: lemming	
06_VN345	20/08/2006	17W	7915135	556789	Lacustrine area to N of camp, level top with fain frost fissures polygons near 344						level		dry		Plants in frost fissures however faint. Only a few lichens on pebbles on gravel centre					saliarct .5	casstetr 5	ceraarct .1 paparadi .2	poa 2	Sedges Carex rupe 2 Cottongrass Rushes luzuconf 2			saxioppo 1 saxitric 1	stertome .5 thamsubu .5 Alectoria 10	mosses 2	Pipits in vicinity	
06_VN346	20/08/2006	17W	7915132	557061	N rd rt across arm of camp 2km from camp in lacustric terrace						dep 50	N	wet mesic		Riparian shoreline shrub (rare here) Fringe of rich willow at edge of depression overhanging small pond. Willows grow high out of bank and are pruned flat on top. Under willos, moss, saxif retic, Oxyr. figyma and leaf litter					saliarct 10 salirich	salireti 10 pohyp .2 casstetr 20 dryainte 10	tofipusi .5 oxyrdigy 20 polyvivi .2 Stellaria .2	poa 2 pedicapi .2 oxyt mayd 5	Sedges carememb .2 carescir 1 Cottongrass Rushes luzuconf .2 luzuniva .5				cetrniva .1 stertome .5 thamsubu .1	mosses 60	red-th loon heard flying Pacific loon on camp lake nearby Lapland - sm flock passing lemming burrow	
06_VN347	20/08/2006	17W	7915395	557480	Stream near road, lacus area N of camp, flows into camp lake three small conyon at snowdrift						stream 10, plot 25	N, SW	wet mesic		Snowdrift assn, affected by snow that remains long into summer. Many plants blooming now. Thingly veg on unstable slopes, grasses, saxi, cernua, oxyria, and bistor on level part					saliarct 2 salirich 2	salireti 5	oxyrdigy 15 polyvivi 2 ceralarct 1 melaapet .5 sileacau .5 Stellaria .2 ranuniva .2 ranupygm .1 paparadi 1 oppiliat .1	poa 5	Sedges carescir .5 Cottongrass Rushes luzuconf .1			saxicaes 5 saxicern 10 saxihier 5 saxihirc 5 saxiniva .1		liverwort 2 biol crust 5 mosses 2	Pipits feeding around snowbank	
06_VN348	20/08/2006	17W	7915356	557487	Canyon, stream flowing into camp lake abt 1 km from camp						10	NE	wet mesic		Snowbank comm. Mat of oxyria digyma on slope with other species intermingled ind. draba and poppies							oxyrdigy 50 ceraalpi 5 ranuniva .1 ranupygm .1		Sedges Cottongrass Rushes			saxicaes .2 saxicern 2 saxiniva 1 saxioppo .5 saxirivu .5	Peltigera 1	sm. mosses 30 biol. crust 10	scats: lemming and goose	
06_VS063	06/08/2006	17W	7910734	564282	S. Rd route, where it enters valley						level		mesic-dry		dryas, sax oppos, carex rupestris on gravel in high centre polygon, patterned ground		40	30	10	saliarct 2	casstetr 20 dryainte 20	ceraalpi 2 sileacau 2	oxytmayd 5	Sedges carenard 5 carescir 5 carex 15 Cottongrass Rushes			armemari 0.2	cetrniva 5 cetrtile 1 thamsubu 15 alectoria 1	racolanu 5 asstd 3	runs/trails: caribou, hare	
06_VS064	06/08/2006	17W	7910700	564251	beside Mary River tributary at North end of Proposed rail alignment						flat		mesic		avens - sedges bouldery flat area mushrooms		25	15	25		salix 5 casstetr 1 dryainte 20	ceraalpi 0.1	oxytmayd 0.1 carex 10	Sedges carex 5 Cottongrass Rushes			saxioppo 2 epillati 1 pedisude 0.1	lichens 15 cetrniva 10 cetrtile 3 thamsubu 0.5	racolanu 10		
06_VS065	06/08/2006	17W	7910640	564274	About 100m from plot 64 up small valley, really a large frost fissure								wet-mesic		plot done in frost crack in patterned ground relatively thick veg in frost crack, salix arctophila is the dominant shrub here, along with cassippe		50	20	30	saliarct 2 salix 15	salireti 5 casstetr 25 dryainte 5	tofipusi 0.1 oxyrdigy 0.5 polyvivi 0.1 ceraalpi 0.2 sileacau 2 stelleria 0.5	poa 0.2 oxytmayd 3	Sedges careatro 2 carescir 1 carex 1 Cottongrass Rushes luzuniva 2				cetrniva 2 cetrtile 1 thamsubu 0.5 brn lettice 5	racolanu 40	dens/burrows: lemming	
06_VS066	06/08/2006	17W	7910665	564251	Mary River trib north end of south proposed rail route						45	S					40	10	30		salireti 5 casstetr 10 dryainte 20	polyvivi 1 melaapet 0.1	oxytmayd 3	Sedges Cottongrass Rushes			saxicaes 5	cetrniva 10	racolanu 10 other moss 10	dens/burrows: lemming runs/trails: caribou	
06_VS067	06/08/2006	17W	7910607	564348	Further up with fork valley, in flat lacustrine terrace						<2	N	wet		Mixture of sedges and rich willies in frost fissure in patterned ground. Association extends only about 15m from centre of crack before giving way to the more xeric assn.		35	20	10	saliarct 5 salirich 30	salireti 10 casstetr 15 dryainte 15	oxyrdigy 0.5 polyvivi 0.2	cula pupi 0.5 poa 0.2	Sedges careatro 2 carescir 3 carex 3 Cottongrass Rushes luzuconf 0.5				cetrniva 1 cetrtile 0.2 stertome 0.1 thamsubu 0.1 glove 0.2		sighting/heard: lapland longop dens/burrows: lemming	
06_VS068	06/08/2006	17W	7910557	564355	Mary River tributary at north end of south potential rail route - broad valley bottom						flat		mesic		avens moss sedge mushrooms - small brown		25	10	30		dryainte 20		oxytmayd 1	Sedges carex 7 Cottongrass Rushes luzuconf 1			saxioppo 2 pedicapi 0.1	cetrniva 10 cetrtile 2	racolanu 25		
06_VS069	06/08/2006	17W	7910177	565329	~1m up valley(SE) from 068,067 - open slope of the N side of the valley, below high cliffs						25	SW	mesic-dry		Avens/sedge assn. on slope of the cliffs, forming a seperate ridge		35	25	15	salix 0.2	salireti 5 casstetr 0.1	polyvivi 0.2	oxytmayd 0.5 small brn mushroom 0.1	Sedges careatro 2 carenard 15 carex 15 Cottongrass Rushes			saxioppo 0.1	cetrniva 1 cetrtile 0.2 thamsubu 0.2		sighting/heard: peregrines	

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		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_VS070	06/08/2006	17W	7910133	565329	beside small lake, mary river trib, possible south rail route						2	SW	mesic				8	5	15		salirets 5 casstetr 50 dryainte 25		oxytmayd 3 grass 3 pedi 0.1	Sedges Cottongrass Rushes			saxioppo 1 pyrogran 0.1 pedicapi 0.1	cetrniva 10		scats: goose sighting/heard: peregrin	
06_VS071	06/08/2006	17W	7910248	565596	ridge in front of fault valley, oppos end of esker, below 2 snowbanks						level	W	dry		thin veg on knob above small sedge valley. below 2 snowbanks		15	15	15	saliarct 2	potevahl 0.1 dryainte 15		oxytmayd 0.1	Sedges carex 10 Cottongrass Rushes luzuconf 1			saxioppo 2 saxitric 2	cetrniva 2 cetrile 0.1 alectoria 5	racolanu 5	signs of some bird use of rocks but no pellets (too windy? veg. around rocks is slightly more lush	soapstone deposits - some evid. ofuse deposits are to the NE above, on the cliff and are extensive. About 0.5km to east, up the vally, theres a peninsula with many signms of old camps(and some not so old). People come here to collect soapstone
06_VS072	06/08/2006	17W	7910233	565575	base of cliffs - mary river trib						20		mesic		Avens - sparse veg rocky slope mushroom - brown		30	10	10		dryainte 30	sileacau 1	mxytmela 3 sedge 3	Sedges carex 5 Cottongrass Rushes			saxioppo 1	lichens 5 cetrniva 2 cetrtile 1	mosses 5	scats: hare nests: peregrine	
06_VS073	06/08/2006	17W	7904632	573026	2nd river to S of soapstone cliffs, S. side of river huge boulder fields						level				scattered plants on gravel surface, flat gravel surface of terraces			4	1			ceraalpi 0.1		Sedges crupes 1 carex 2 Cottongrass Rushes luzuconf 0.2			saxiniva 0.1 epillati 1	cetrniva 0.2 cetrtile 0.1 alectoria 0.5	sm mosses 0.2	scats: hare	
06_VS074	06/08/2006	17W	7904697	573043	proposed south rail route north of BigA lake on caribou trai						flat		dry		moss heather strip of veg between boulder field and grav cobble flat caribou trail through middle		30	2	60		salix 1 casstetr 30	oxyrdigy 0.1 melaaffi 0.1 sileacau 0.1	poa 0.1	Sedges Cottongrass Rushes luzuconf 0.1				lichens 10 pixie cup 2 thamsubu 0.1 antler 5	racolanu 50	trail/runs: caribou	
06_VS075	06/08/2006	17W	7904668	573094	boulder field above flat area (plot 071+07)						25	SW	dry		sparse bits of veg. clinging to slope, mostly areas where there are smaller stones		1			saiarct 0.2	dryainte 2	sileacau 0.5	grass 0.2	Sedges carenard 0.1 carescir 0.2 Cottongrass Rushes			saxicern 0.1 saxioppo 0.5 saxitric 0.1 epillati 0.1	cetrniva 0.1 cetrtile 0.1 cladina 0.2 cladonia 0.2 alectoria 0.1	racolanu 5 asstd moss 0.2		
06_VS077	06/08/2006	17W	7904568	572988	Hillside below flat spot						50	W	mesic		SNowbank assn on boulder hillside above lake many species, most still blooming		40	8	2	salix arctophila 10	saliherb 1 potenives 1 casstetr 20	oxyrdigy 5 ceraalpi 5 stelleria 0.5 paparadi 0.1	hierochloe 5 poa 1 taraxacum 1 oxytmayd 1	Sedges carenard 2 carex 1 Cottongrass Rushes luzuniva 1			saxitric 2			scats: hare sighting/heard: pipits dens/burrows: lemming	
06_VS078	06/08/2006	17W	7904501	572957	North of Brig A, on south prop. rail route						flat		wet		sedge moss shrub moist community		35	35	30		saliherb 5 salix 5 vacculig 5 casstetr 5 dryainte 15	oxyrdigy 2 polyviv 1	oxytrapos mayd 1	Sedges carebige 5 carex 20 Cottongrass Rushes			saxicaes 1 saxioppo 2 epillati 1	pale green foliose 2	racolanu 15 other moss 10	scats: caribou, hare	
06_VS079	06/08/2006	17W	7902186	578447	Marshy area. height of land in graben between hills						level, <1	N	wet		Wetland, non-tussock Flat area w/ sm stream entering from the E, small pools or ponds draining N		2	60	40	saliarct 2 salirich 0.1			grasses: red head 15 green head 20	Sedges careaqua 10 Cottongrass erioangu 15 eriosche 10 Rushes			saxicern 2 saxifoli 3 pedisude		asstd 10 stream dekris 30	sact: goose dens/burrows: lemming runs/trails: lemming	
06_VS080	06/08/2006	17W	7902260	578473	height of land between Mary river WS and A lake prop south rail route						2	S	wet-mesic		heather moss moist area		45	10	45		salix 5 casstetr 15 dryainte 10		hierochroe 5 grass 2	Sedges Cottongrass Rushes luzuconf 3				lichens 20 antler 5	mosses 25 racolanu 20 grenn mosses 10		
06_VS081	06/08/2006	17W	7902245	578590	Near height of land on N side Big A lake, Behind ridge of hills						−1	N	wet-mesic		unusual landform, veg. to edge of stream but no clear riparian ass. moss assn in watershed of sm boulder-paved stream. Some faint solifuction		25	25	50	saliarct 20	casstetr 5		poa 5 hierochloe 5 calamage pupur 5	Sedges careaqua 5 Cottongrass Rushes luzuniva 5				cetrniva 1 stertomes 5 thamsubu 1 peltigera 0.5 glove 0.5	feather moss 50	scats: hare and goose	

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		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_VS082	06/08/2006	17W	7902227	578626	catchment divide Mary River trib and Big H lake								mesic		sedge dom heather moss moist flat area - open		40	40	10		salix 5 casstetr 30 dryainte 5		hierochloe 2	Sedges carex 35 Cottongrass Rushes				lichens 5 antler 2	mosses 5	scats: fox dens/burrows: lemming	
06_VS083	07/08/2006	17W	7801179	594376	Above port site at Steensby Inlet						level	S	wet		small stream with multiple channels running over terrace; plot includes channel and mounds		40	20	10	shrubs tall 5 salirich 5	salireti 10 vacculig 10 casstetr 10 dryainte 5	polyvivi 0.2		Sedges careatro 2 carenard 0.2 carex 2 Cottongrass Rushes luzuconf 2			epillati 0.2	cetrniva 1 thamsubu 0.2	asstd 8	scats: goose sighting/heard: snow bunting, pipits	
06_VS084	07/08/2006	17W	7801179	594386	on the south coast of Baffin-Steensby Inlet - near proposed port site						0		mesic		avens-sedge with blueberries coastal site mushrooms - red		50	25	25		salireti 10 vacculig 10 casstetr 5 dryainte 25			Sedges carex 20 Cottongrass Rushes			epillati 5	lichens 15 cetrniva 10	mosses 10 cushion 5		scats: goose
06_VS085	07/08/2006	17W	7801097	594394	Slope above port site at steensby inlet, on terrace above sm. stream						15	SW			Mats of avens to xeric sedges on lichened gravel slope s arnt of racomitrum lanuginosum		20	10	10	saliarct 1	dryainte 20	minuartia 0.1 sileacau 1	astrag. alpina 2 oxytmayd 0.1	Sedges carenard 5 carex 5 Cottongrass Rushes			saxitric 0.1 epillati 0.5	cetrniva 2 alectoria 8	racolanu 5	scats: goose, hare, caribou	
06_VS086	07/08/2006	17W	7801107	594387	near south potential port site - steensby inlet						0		mesic		bird perch/ rock type		10	55	20		dryainte 10	ceraalpi 10 stellaris	grass 5 oxytmayd 1 astralpi 2	Sedges carex 10 Cottongrass Rushes			saxicaes 25	antler 2	mosses 20	scats: hare	
06_VS087	07/08/2006	17W	7800970	594357	Steensby Inlet port site, small stream cascading down slope						18	W	wet-mesic		Riparian willow assn, on small stream. water cascades down over boulders and willows grow amidst the boulders and on the bank. Lots of blueberry plants on this slope		25	30	10		salireti 2 vacculig 20 casstetr 10	oxyrdigy 10 polyvivi 0.1 sileacua 5 stelleria 0.1	arctagrostis lat. 5 poa 5 hierochloe 2 oxytmayd 0.1	Sedges careaqua 0.2 careatro 2 caremisandra 0.2 carescir 0.2 Cottongrass Rushes luzuniva 0.5			saxifoli 0.1 saxioppo 2 epillati 5 pedicapi 1		cushion 2 asstd 1	scats: hare	
06_VS088	07/08/2006	17W	7800931	594360	Steensby inlet - proposed port site								mesic		blueberry sedge on the coast		60	20	20		salireti 10 vacculig 35 casstetrt 15	polyvivi 0.1		Sedges carex 15 Cottongrass Rushes			epillati 5 pedicapi 0.1	cetrniva 5 thamsubu 1 antler 5	mosses 5 biol crust 10	scats: goose, caribou sighting/heard: loor	
06_VS089	07/08/2006	17W	7800741	594233	At port side south steensby inlet						5	SW			Mats of veg. on gravel terrace above storm tide line, whe small stream flows in. mostly dryas fireweed retic willow		50	30	10	saliarct 5	salireti 5 salix arctophila 5 dryainte 30	polyvivi 0.1 ceraalp 5 melaapet 0.5	astr. alpina 15 black cup fungus 0.1 brn mushrooms 5	Sedges Cottongrass Rushes luzuniva 0.1			saxioppo 1 epillati 40 pedicapi 0.5	cetrniva 5 thamsubu 2	asstd mosses 10	sighting/heard: glaucous gulls, loon scats: caribou	
06_VS091	07/08/2006	17W	7814478	599531	Valley at inersect o 2 proposal routes						almost level	E	wet		Sedge meadow(non tussock) at edge of small pond in boulder-littered basin. Moss mounds plus n-t sedges			60	20		saliherb 20			Sedges careaqua 60 Cottongrass erioangu 10 eriosche 5 eriovagi 0.5 Rushes			pedisude 0.2	stertome 0.5	asstd mosses 20 biol crust 5	scats: goose, caribou sighting/heard: white wolves, hare	
06_VS092	07/08/2006	17W	7814508	599519	south end of cockburn lake in lowland								dry		sparse veg with gravel showing between plants ledum-heather dom with boulders		30	10	10	ledupalu 15	salix 5 casstetr 10		diaplapp 8	Sedges carex 2 Cottongrass Rushes				cetrniva 5	mosses 5 biol crust 20		
06_VS093	07/08/2006	17W	7814467	599594	Larger marsh at rd junct(old& new proposed rds)						<1	S	wet		cottongrass wetland with moss hummocks being colonized by heaths		2	15	15	ledupalu 2	saliherb 1			Sedges careaqua 0.5 carescir 60 Cottongrass erioangu 40 salgla fir 20 Rushes			pedisude 0.5			scats: goose sighting/heard: sandhill cranes	
06_VS094	07/08/2006	17W	7814467	599557	south end of cockburn lake						0		wet-mesic		gully community btwn polygon tops		30	10	50		casstetr 30		grasss 5	Sedges Cottongrass Rushes lusuconf 5					racolanu 50	scats: caribou	

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope			Soil notes	Veg. notes	Cover, %				Species and % cover for each									
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_VS095	07/08/2006	17W	7820613	598057	Cliff at S end of Cockburn Canyon, east side Ledge on lower part of cliff						12	S	dry		Mat of veg on low ledge on cliff, facing south. (prob exposed in winter)		15	30	5	salix 10	potehypa 2 potevahl 2 dryainte 5	polyvivi 1 ceraalpi 2	heirochloe 15 oxytmayd 5	Sedges carescir 15 Cottongrass Rushes luzuniva 0.2			saxiniva 0.2 saxioppo 0.1 saxitric 1		racolanu 2 asstd 5 black cushion moss 0.2	scats: hare	
06_VS096	07/08/2006	17W	7820565	598058	south end of cockburn lake						2	S	wet-mesic		gentle south slope at cliff base, fully veg-thick blueberry/mass shrubs sedge groding out of moss		50	20	40		salix 5 vacculig 35 casstetr 10		hiprodae 5 carry rupestris 1	Sedges carex 10 Cottongrass Rushes luzuconf 0.1					cushion 30 biol crust 10	sighting/heard: falcon scats: goose runs/trail: caribou	
06_VS097	07/08/2006	17W	7820644	597960	Entrance to Cockburn lake cliffs						12	N	wet		Tussock sedge assn at edge of valley/base of cliff. Mixture of cotton gr. tussock, moss betw and boul covered with moss + veg		20	30	30	saliarct 15 ledupalu 0.5	vacculig 2 casstetr 5			Sedges careaqua 5 Cottongrass eriovagi 25 Rushes luzuniva 1			pyrogran 1	cetrniva 2 cetrtile 1 Cladonia 0.2 thamsubu 0.1	mosses betw tuss 25	scats: goose runs/trails: caribou	
06_VS098	07/08/2006	17W	7820692	597980	south end of cockburn lake						2	S	wet-mesic		snowbank community salix herbacea dominated		60	2	30		saliherb 60	oxyrdigy 0.5 polyvivi 0.1 ranuniva 1	grass 20	Sedges Cottongrass Rushes				pisie cup 0.5	cushion 30	sacts: goose, fox, caribou, hare	
06_VS099	07/08/2006	17W	7820906	598101	N side of cliffs at W end, base of cliffs, slope - at base of solif. lobe						20	NE	Mesic		Veg, on toe of solif. lobe, below sedge meadow, woody plants dominate, esp. willows, blueberry and heather. Heath tundra? In centre and on top (grasses) several species on top of lobe.		ta 50; dw 30	10	5	15% salirich; 10% ledupalu	5% salireti; 2% salix (sp. calli); 20% vacculig; 15% casstetr	1% polyvivi; 5% pyrogran		Sedges 0.1% carex Cottongrass Rushes 1% luzuniva				0.1% cetrniva; 0.1% cetrtile; 0.1% thamsubu	5% asstd	scats; goose (feathers, Canadian goose). Fox seen in area as helicopter came to get us.	
06_VS101	07/08/2006	17W	7825263	587238	Fuel cache, at Cockburn Lake, halfway up lake, N shore, on terrace above shoreline						level		dry		Very sparse veg. on cobble crest of ridge. Much appears dry/dead. Racomitrium in depressions but not in plot.			5	20 on rocks			0.1% paparadi		Sedges Cottongrass Rushes 2% luzuconf				5% alectoria	1% blk moss	sighting/heard; caribou (antler, nearby not in plot).	
06_VS228	19/08/2006	17W	7887407	597265																				Sedges Cottongrass Rushes							
06_VS281A	18/08/2006	17W	7847759	606184																				Sedges Cottongrass Rushes							
06_VS282A	18/08/2006	17W	7847684	606169																				Sedges Cottongrass Rushes							
06_VS283	17/08/2006	17W	7894082	595307	S rd rt at large river flowing into Big A Lake						35	S	mesic		Thick mat of veg on slope above river mostly heather bluegrass, wintergreen, blueberries and some lichen					saliarct 5	vacculig 25 casstetr 30 dryainte 15	Stellaria 5 pyrogran 15	poa 5 pedicapi	Sedges Cottongrass Rushes				stertome glove 1	mosses 10	scats: goose den/burrows: lemming	
06_VS283A	18/08/2006	17W	7847657	606174	Site 4 PB map, W side of canyon above						15	E	mesic		Relatively thick mat of blueberry in drainage chaanel in rock slope, along with rich willow, S arctica, heather and Lab tea.					saliarct 2 salirich 15 ledupalu 5	saliherb .5 vacculig 60 casstetr 10	oxyrdigy 5 pyrogran 2	pedihirs 1	Sedges Carex 1 Cottongrass Rushes luzuconf 2 luzuniva 2				cetrniva 2 Cladina 5 Cladonia .2 stertome .2 glove 1	other mosses 15 racolanu 5	scats: lemming Dens/burrows: lemming snow buntings (young) 4 birds	
06_VS284	17/08/2006	17W	7894092	595247	top of hill above river flowing into Big A lake. Tent ring site with inukshuk and doss kayab rack						2	NW	mesic-dry		Tent ring of mod. old origin double ring veg. has recovered from "lush" phase and matches rest of area					saliarct 10	dryainte 15	ceraalpi .5		Sedges Cottongrass Rushes luzuconf .5			saxitric 2	cetrniva 5 Cladonia .2 stertome .2 thamsubu .2	mosses 50	hare bones den/burrow: lemming	
06_VS284A	18/08/2006	17W	7842157	579066	PB map, site10 at cliffs near ocean						3	E	wet-mesic				20	10		saliarct 1	salireti 1 casstetr 3 dryainte 15	rhoduden 3 epillati 3	pedicapi 1	Sedges careaqua carescir Carex Cottongrass Rushes			saxioppo 5	cetrniva thamsubu liver lichen	cushion 5	Scats: goose	

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope			Soil notes	Veg. notes	Cover, %				Species and % cover for each									
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_VS285	17/08/2006	17W	7894369	595063	top of gravel terrace to N of plot 284, toward dep 1 area. Plot straddles frost fissure										almost no rooted veg on gravel high centre polygons, and veg limited to frost fissure						casstetr 15			Sedges Cottongrass Rushes luzuconf 5				cetrniva .5 Cladina .1 stertome .2 thamsubu .1 Alectoria .5	mosses 5 racolanu 25	scats: caribou goose caribou bone	
06_VS285A	18/08/2006	17W	7842165	579064	site pb 10 where rd descends to the sea at the top of solif lobe on lobe face								wet mesic		Solifluct lobe about 15m above sea level on shelf at base of large cliffs. Dominant are grasses, c. scirpoiden, luzula and fireweed. Mosses on top, plus small depression coll water classic lobe					saliarct 5	salirest 10 vacculig 5 casstetr 15 rhodlapp 10 dryainte 5	oxyrdigy 1 polyvivi 2 ceraalpi 1 ranuniva .2 epillati 5	poa 10 oxyt mayd 2 pedicapi 10	Sedges carescir 15 carex 10 Cottongrass Rushes luzuconf 2 luzuniva 1			saxitric5	cetrniva Peltigera .2	asstd mosses 10	scats: caribou, goose sighting/heard: small birds (pipits)	
06_VS286	17/08/2006	17W	7894617	595048	on Srd rt turn to valley run with marg river								mesic		heather moss assn on boulder-strewn slope blueberry with lots moss		50			saliarct 5	vacculig 15 casstetr 15 dryainte 10		poa .2	Sedges careaqua 5 Carex 5 Cottongrass Rushes luzuconf 1				cetrniva 2 cetrile .2 Cladina 2 stertome 1 thamsubu 1 Alectoria 1 glove .2	racolanu 30	heard sandhill cr. nearby	
06_VS286A	18/08/2006	17W	7842037	579352	sleensby Inlet site 10								mesic							saliarct	rhodlapp 3 dryainte 10		pedicapi 1	Sedges Cottongrass Rushes				cetrniva	racolanu	scats: hare goose feather	
06_VS287	17/08/2006	17W	7893826	595398	Ssid of river flowing into Big Lake, upland between main river creek flowing in						8	S	mesic		slope almost entirely covered by heather, blueberry, raconit moss with scattered hierchloe and poa						vacculig 40 casstetr 40	ceraalpi arct? Stellaria .1	poa 1	Sedges Carex 5 Cottongrass Rushes				cetrniva .5 Cladonia 2 stertome 10 thamsubu .1 Peltigere .2		scat: goose	
06_VS287A	18/08/2006	17W	7842601	579347	site 10 PB, side of valley under cliffs open slope solifluct								mesic		Sedges on gentle slope, w avens, etc. Some solif fairly wet slope					saliarct 10	dryainte 30	polyvivi .2 ceraalpi .2	oxyt mayd 5	Sedges Carex 70 Cottongrass Rushes					moss 20	Scats: goose Den/burrows: lemming heard birds, probably snow buntings	
06_VS288	17/08/2006	17W	7893729	595318	further along rd rt at top of moss solif slope						5		W		moss ridges on sand slope with sheet flow on rideges, mostly moss with arctic willow sudetan louse and small sedges					saliarct 15	saliherb 2	polyvivi .2	pedicapi .5 pedisude 15	Sedges Carex 15 Cottongrass erioangu .5 Rushes					mosses 80	scats: goose sandhill crane	
06_VS288A	18/08/2006	17W	7834552	582286	Steensby inlet site 9 on slope below cliffs								mesic							saliarch 3	rhodlapp dryainte 30		oxy may 1	Sedges Cottongrass Rushes				cetrniva			
06_VS289	17/08/2006	17W	7893528	595182	further S along rd rt bank of small stream where geese have been loafing/feeding						25	NE	mesic		protected area along stream where geese have been loafing, molting					saliarct	vacculig 25 casstetr 25		poa 25	Sedges Cottongrass Rushes					small mosses 5		goose feathers, scats, grazing damage to grass
06_VS289A	18/08/2006	17W	7834526	582258	site #9 (PB) on slope below cliffs						2	W	mesic dry		Thin mat of avens and blueberry on gravel slope rhododendron					saliarct 5	vacculig 20 rhodlapp 10 dryainte 20		oxyt mayd .2	Sedges carenard 2 Cottongrass Rushes				cetrniva 1 thamsubu .5	sm mosses 20	many caribou trails along these slope Scats: hare and goose	
06_VS290	17/08/2006	17W	7893378	594982	S rd rt top of hill to E of Big A lake, above small pond								mesic dry		fairly uniform plant cover -heather, blueberry, mosses and mealy lichen, also poa and luzula and hirochloe					saliarct 5	vacculig 30 casstetr 25 dryainte 10		poa 2	Sedges Cottongrass Rushes luzuconf 5				cetrniva 1 Cladonia 5 stertome 10 thamsubu 1 glove .5	other mosses 5 racolanu 35	scats: goose, caribou den/burrows: lemming	
06_VS290A	18/08/2006	17W	7834626	582391	steenby inlet caribou trail site 9, slope below cliffs						7		mesic dry				60			saliarct 5 ledupalu 10	vacculig 20 casstetr 35 rhodlapp 5 dryainte 10			Sedges Cottongrass Rushes				cetrniva		scats: hare caribou antlers	
06_VS291	17/08/2006	17W	7893002	594982	rock on top of slight hill, possible bird stone						4	S	mesic-dry		boulders in middle of open plain with some enhanced plant growth, may be a birdstone, or may just collect wat and snow, near small pnd					saliarct 10 salirich 1	vacculg 60 casstetr 40	Stellaria	poa .2	Sedges Cottongrass Rushes			saxicern .1	cetrniva 5 Cladina 5 stertome 5 thamsubu .1 Peltigera .5	mosses 25	sightin/heard: raven scats: caribou, fox	

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		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_VS291A	18/08/2006	17W	7834540	582357	PB Loc 9 at base of cliff, out in drainage fan						2	SW	wet		Hummocks, appar of tussock origin separated by channels abt .5m wide, thru which water is flowing now. arct willow, sedges, blueberry, some grasses					saliarct 20 ledipalu 5	vacculig 30			Sedges carescir 10 Carex sp 25 Cottongrass eropvago 15 Rushes luzuniva .1 Juncus .1					mosses 50	scats: goose	
06_VS292	18/08/2006	17W	7819698	592221	PB site 6 steensby inlet								mesic				75			saliarct 5 ledupalu 5	vacculig 40 casstetr 1 rhodlapp 3 dryainte 10			Sedges Cottongrass Rushes				cetrniva thamsubu white	sphagum	scats: goose caribou antlers	
06_VS293	18/08/2006	17W	7819681	592242	site 6 S rd rt, about half way between cliff and loke on uneven terrace						3	SW	mesic dry		Thin cover of veg on gravel between boulders, mostly blueberry, lab tea, heather, rhodo. Lots of moss.					saliarct 2 ledupalu	vacculig 40 casstetr 2 rhodlapp 10		oxyt mayd .2	Sedges Carex 15 Cottongrass Rushes luzuconf 2				cetrniva 2 Cladina .5 Cladonia .1 stertome .2 thamsubu .2 Alectoria 1	racolanu 15 sm mosses5	scats: caribou, hare, goose	
06_VS294	18/08/2006	17W	7819555	592410	steensby inlet site 6						15	S (down)	mesic							saliarct 5 salirich 3	vacculig 35 dryainte 5			Sedges Cottongrass Rushes					sphagnum 15 suchion 5	scats: goose	
06_VS296	18/08/2006	17W	7817226	595655	steensby inlet site 7															saliarct 1				Sedges sedges 5 Cottongrass Rushes					mosses 85	scats: goose caribou feathers and antlers	
06_VS299	18/08/2006	17W	7817218	595628	site 7 (PB) at edge of lake near S end of Cockburn lake						1	N	wet		mossy lake shore disturbed. moss sm grass and arctic willow flats along shore of small lake. Goose loafing and moulting spot					saliarct 15	SALIHERB 2			Sedges Cottongrass Rushes			saxihhirc .2		moss 30		
06_VS300	18/08/2006	17W	7817064	595628	steensby inlet site 7 edge of lake S end cockburn lake.						level		mesic dry				70			saliarct 5 salirich 5	salireti 5 vacculig 30 casstetr 20 dryainte 10			Sedges Cottongrass Rushes luzuniva 3				cetrniva white crustq	sphagnum		
06_VS301	18/08/2006	17W	7817110	595660	site 7 (PB) on slope above shore						45	NE	wet mesic		vertical face of solif lobe with diverse veg, lots of lg fl winter green and salix arctica. Lab tea at bottom and heather all over					saliarct 15 salirich 5 ledupalu 5	saliherb 5 salireti 2 vacculig 30 casstetr 35 Empet nigr .2	pyrogran 15		Sedges Carex 10 Cottongrass Rushes luzuconf 2				cetrniva.5 stertome5 Peltigera 5	mosses 30 heather moss 10	goose scats and feathers	
06_VS302	18/08/2006	17W	7831241	593959	steensby inlet site 5 small lake where cross over rt curves to enter canyon						2	NW (down)	dry								casstetr 5			Sedges Cottongrass Rushes luzuniva				cetrniva Cladonia thamsubu		scats: goose and caribou	
06_VS304	18/08/2006	17W	7831223	594074	steensby inlet site 5 small lake where rt curves to enter canyon						18	SE (down)	mesic							saliarct 5	saliherb 5 casstetr 30			Sedges Cottongrass Rushes				cetrniva stertome	racolanu 30 cushion 10	scats: goose	
06_VS305	18/08/2006	17W	7831178	594037	location #5 (PB) at side of small round lake area side						crest		dry		cobble crest of morainal (possibly) ridge not much besides lichen covered rocks. Hierchloe and moss lichen between stones, also luzula confusa						casstetr .1	epillati .2		Sedges Cottongrass Rushes				certniva 1 Cladina .2 Cladonia 1 stertome .5 thamsubu .2 Alectoria .5	racolanu 5 mosses between stones	scats: goose	
06_VS306	18/08/2006	17W	7851847	573902	PB site 11 Steensby Inlet rt by Nina Bang lake						3	NE (downward)	mesic dry							saliarct 3 ledupalu 3	vacculig 15 casstetr 20 dryainte 20		pedicapi 1	Sedges Cottongrass Rushes luzuconf 5				certniva Cladina thamsubu liver lichen	racolanu	sighting/heard: snow geese scats: goose	
06_VS307	18/08/2006	17W	7801299	594142	site 5 in boulders above rapids						12	S	mesic dry		Thin mats of veg among boulders, blueberry, heather and hier. Least willow and moss beneath						saliherb 20 vacculig 20 casstetr 10			Sedges Cottongrass Rushes luzuconf 1				cetrniva .5 Cladina .2 Cladonia .1 stertome2 thamsubu .1 Alectoria.1 glove .5	misc mosses 2	scats: hare and wolf	

Baffinland Iron Mines Corporation
Mary River Project

Vegetation Baseline Study Report
2006 Vegetation Plots

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope			Soil notes	Veg. notes	Cover, %				Species and % cover for each								
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_VS308	18/08/2006	17W	7852067	574154	Steensby Inlet rt near Nina Bang Lake site 11						2	SW (downward)	mesic dry							saliarct 3	vacculig 25 casstetr 10 dryainte 30		pedicapi 1 pedisude 1 oxyt mayd 1	Sedges carescir 1 gr. blk sedge Cottongrass Rushes				cetrniva	Sphagnum cushion	scats: goose	
06_VS309	18/08/2006	17W	7851886	573884	site 11 PB, centre of open area, lots of geese near Nina Bang lake						2	NE	wet mesic		Relatively thick mat of heaths and sedges on boulders, some water					saliarct 15 salirich .1	salireti 15 casstetr 10 dryainte 20	sileacau 2 oxyrdigy 2	pedicapi 5 pedihirs oxyt mayd 3	Sedges carememb 10 Cottongrass erioangu 5 Rushes			saxioppo 2	cetrniva .2 cetrtile .5 stertome .5 thamsubu .1	racolanu 2 mosses 10	scats: hare and geese (abt 150 flew over)	
06_VS310	18/08/2006	17W	7846476	573908	PB site 11 above aufeis						12	S (downward)	mesic							saliarct 3	vacculig 30 casstetr 10 rhodlapp 3 dryainte 20		oxyt mayd 5	Sedges Carex Cottongrass Rushes				cetrniva	racolanu	scats: goose	Talu and game drive inuksuit above
06_VS311	18/08/2006	17W	7852054	574176	site 11 small ridge above drainage to lake near Nina Bang lake						5	SE	mesic		Lush veg below ridge, heather, avens, plus sedges (nonxeric)					saliarct 10 salirich 1	casstetr 25 dryainte 25		oxyt mayd .2 Poa .2	Sedges carememb 5 carescor 5 Cottongrass Rushes				cetrniva .5 thamsubu .1	sm mosses 5 racolanu 10	trails/scats/dens: lemming	
06_VS311A	19/08/2006	17W	7846437	573886	PB Mae site 11 above aufeis						1	N	wet		Thick stand of sedges near small valley with distinct caribou trail.					salirich 1	salireti 2 vacculig 1 casstetr 1 dryainte 5		pedisude 3	Sedges careaqua 40 careatro 2 carememb 15 Carex 35 Cottongrass Rushes				cetrniva 2 Cladina .2 Cladonia .1 thamsubu .1	racolanu 10 mosses 15	small flock of pipits	
06_VS312	19/08/2006	17W	7846358	573963	Site PB, site 10 where rd/rail descends to the sea						17	NE(downward)	mesic							saliarct 5 ledupalu 20	salireti 1 vacculig 25 casstetr 20 rhodlapp 1 dryainte 10		oxyt mayd 1	Sedges Cottongrass Rushes luzuconf 1				cetrniva	racolanu 15 Sphagnum 1	scats: caribou	
06_VS313	19/08/2006	17W	7846430	573904	site 11 (PB map) S rd rt junction S of aufeis						<1	N			Disturbed area. Small gravel area with some frost fissures, plus small hearth and accom. Blk lichens around hearth							epillati .2		Sedges Cottongrass Rushes luzuconf 1			saxiniva .5 saxopppo .1 saxitric 5	cetrniva 2 thamsubu .1 Alectoria 5	small mosses 10	heard: red-th loon sighting/heard: lapland longspurs	
06_VS313A	19/08/2006	17W	7846405	573948	site 11 (PB map) below crest of hill						5	S	wet mesic		Even growth of blueberry,small sedges, retic. willow on slight slope to pond. Diverse solifluct ridges above.					saliarct 1	salireti 10 vacculig 15 casstetr 10 dryainte 25		oxyt mayd .2 pedilana .1	Sedges careatro misand 15 carescir 10 Carex 5 Cottongrass Rushes luzuconf 1 luzuniva .1				cetrniva 10 stertome 1 thamsubu 1	small mosses 10	scats: goose and caribou heard: re-throated loons calling	
06_VS313B	19/08/2006	17W	7843110	579096	PB map site 10, top of slope to the sea, in poten rd route						2	SW	mesic dry		Individual mats of crowberry and raconitrium with some small mats of blueberry						dryainte 15 vacculig 5 Carex 2			Sedges Cottongrass Rushes			saxitric 2		small mosses 15	scats: hare and goose	
06_VS314	19/08/2006	17W	7843240	578871	PB site 10, slope where rd descends to sea						7	E(downwards)	wet mesic							saliarct 3	salireti 1 vacculig 10 casstetr 15 rhodlapp 5 dryainte 30		oxyt mayd 10 pedicapi 1	Sedges carememb carescir Cottongrass Rushes				cetrniva	racolanu 1 Sphagnum 3 cushion 3	scats: goose	
06_VS315	19/08/2006	17W	7843281	578947	Site 10, top of slope, below large boulder yield along rd						5	SE			Mound of pushed up gravel/sand in midst of a large boulder field which fills most of the valley here. On this mound mats of racon moss with lots of lg flat wintergreen hieroch, and luzula. In boulders, drayas, blueberry and more moss		15	30	10		vacculig 5 casstetr 5 dryainte 5	epillati 2 pyrogran 25	oxyt mayd 5	Sedges Cottongrass Rushes luzuconf .2				cetrniva 1 thamsubu .5 Alectoria 1	small mosses 5 racolanu 10		
06_VS315A	19/08/2006	17W	7857880	590693	PB map site 13, middle of open terrain on poten rd route						3	N	mesic dry		boulder streams and stone circles in area		30	7	5	heather 30	Carex rupe 2			Sedges Cottongrass Rushes luzu conf 5				pixy .1 stertome .5 worm .1 odd white raconit 5		scats: caribou, lemming, hare lemming nest (old) and burrows	

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope		Moisture	Soil notes	Veg. notes	Cover, %				Species and % cover for each							Wildlife notes	Archaeology notes
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect				Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses		
06_VS316	19/08/2006	17W	7843014	576951	PB site 10 where rd goes to the sea						6		mesic							saliarct 3 salirich 5	salireti 1 vacculig 40 casstetr 5 rhodlapp 5 dryainte 15		oxytmayd 3 pedicapi .1	Sedges Cottongrass Rushes luzuconf				cetrniva Cladonia	Sphagnum cushion	scats: hare heard/sightin: goose	
06_VS317	19/08/2006	17W	7825108	597289	Fuel cache at Cockburn lake						1	SW	mesic dry		Thin veg isolated plants or clumps, curly sedge, mosses least willow					saliarct 2	saliherb 25 vacculig 5 dryainte 5 casstetr 15			Sedges Carex rupe 2 Cottongrass Rushes luzuconf .2				stertorne 5	racolanu 10	scats: hare caribou antler	
06_VS318	19/08/2006	17W	7857817	590709	PB map site 13, fork in S route site, open terrain, middle of area						17	NE(downward)	mesic dry								casstetr 15			Sedges Cottongrass Rushes				cetrniva Cladonia block liver lichen	cushion 5 racoplanu 5		
06_VS319	19/08/2006	17W	7857261	505826	Site 3 PB map in open valley, above Cockburn canyon						<1	S	wet mesic		Terrace along small stream that feeds river flowing into Cockburn Lake. Heather and sedges.					saliarct 10	saliherb 10 salireti 15 vacculig 5 casstetr 40 dryainte 5		pedihirs .1	Sedges carememb 5 Cottongrass sal headed cotton 2 Rushes				cetrniva .1 Cladonia .1 thamsubu .1 Alectoria .1	cushin	scats: goose	
06_VS320	19/08/2006	17W	7825238	597271	Fuel cash down near Steensby Inlet						8	S (downward)	mesic dry							saliarct 5	vacculig 30			Sedges Cottongrass Rushes luzuniva				cetrniva hair lichen	racolanu str. mosses	scats: hare caribou antler	
06_VS323	19/08/2006	17W	7857255	605763	site 3 along small stream, above channel						<1	E	mesic		Dryas and moss on boulders plus lg. Hr. wintergreen and arctic willow and cushion mosses					saliart 10	dryainte 15			Sedges Carex green /blk 5 Cottongrass Rushes luzuconf 5			saxitric 2	cetrniva 5 Cladonia .5 Alectoria 10	racolanu		
06_VS324	19/08/2006	17W	7857268	605806	site 3, open valley above Cockburn Canyon						flat		mesic								dryainte 5			Sedges caremis Cottongrass Rushes luzuconf			saxitric	cetrniva Cladonia hair lichen	racolanu 1 str.mosses	scats: caribou	
06_VS325	19/08/2006	17W	7874420	599338	site 2 at east edge of 2 fairly lg lbs where stream enters						<1	W	wet		Disturbed site mossy lake shore, tussock assn? Loafing area used by geese - feathers and scats. Tussocks and mounds moss around and under all. Veg is trampled or grazed						saliherb 20 casstetr 20			Sedges Cottongrass eriovagi 40 Rushes				glove .5	mosses 15	scats and feathers: lemmming and goose	
06_VS326	19/08/2006	17W	7874459	599335	PB site 2, east edge of 2 fair sized lake, where stream enters						flat		dry							saliarct 10	casstetr 30		poa	Sedges Cottongrass Rushes				cetrniva hair lichen	racolanu cusion 15	goose feather	
06_VS327	19/08/2006	17W	7887414	597282	site 1 (pB) at intersect of several streams to SW of first valley						level		wet		Sedge assn with rich willow and amidst sedges, dryas, rich vein willow and moss.					saliarct .5 salirich 15	salireti 15 dryainte 10	polyvivi .5	pedicapi .2 pedihirs .1	Sedges careaqua 2 caremis 2 carememb 30 carescir 10 Cottongrass erioangu 2 Rushes			saxioppo .2	cetrniva .2 stertorne .2 thamsubu .1	mosses 20	caribou antler	
06_VS329	19/08/2006	17W	7887399	597289	Site 1 PB Map at edge of small pond						2	E	wet		Lakeshore emergent assn, almost entirely a rather robust sedge, maybe C. aquatilis (coli.) but seems small					salirich 2			pedisude 2	Sedges careaqua 85 Cottongrass Eroopl. sp 5 Rushes							
06_VS330	19/08/2006	17W	7887415	597225	PB map site 1, above Big A, Glacier Lake R															saliarct 10	salireti 5 casstetr 15 dryainte 10	tofipusi		Sedges carememb carescir Carex Cottongrass Rushes			saxihirc	cetrniva hair lichen	str. mosses	scats and feather: goose	

Plot#	Date	Coordinates			Location	Plot represents	Vegetation Codes				Slope			Soil notes	Veg. notes	Cover, %				Species and % cover for each									
		UTM zone	nothing	easting			1	Mod1	2	Mod2	%	Aspect	Moisture			Tree	Shrub	Herb	Moss/lich	Erect shrubs	Dwarf shrubs	Forbs	Legumes/ buttercups	Sedges/cottongrass/rushes	Grasses	Mustards	Saxifrages	Lichens	Mosses	Wildlife notes	Archaeology notes
06_VS331	19/08/2006	17W	7900289	585177	Now site A at slope of hills where stream from Glacier Lake flows down						3	W	mesic		Snowdrift assn at base of terrace slope. Mostly clumps of heather, hierochloe on moss, some sm buttercups (not blooming). Lots of mealy lichen						saliherb 2 casster 15	ranuniva 1 paparadi .1	poa 2	Sedges Cottongrass Rushes luzuniva 1				cetrniva .2 Cladonia .5 stertome 15 thamsubu .5	several mosses 80	scats: goose and hare	
06_VS332	19/08/2006	17W	7900314	585237	PB map site a above Big A lake where stream flows down from Glacier Lake						2	SE (downward)												Sedges carenard Carex Cottongrass Rushes luzuconf				hair lichen	str. mosses		
06_VS334	19/08/2006	17W	7900402	585283																				Sedges Cottongrass Rushes							
06V_N106	07/08/2006	17W	7943711	535378																				Sedges Cottongrass Rushes							
06-VN057	05/08/2006	17W	7935517	526514																				Sedges Cottongrass Rushes							
06-VN174	11/08/2006	17W	7966495	513149																				Sedges Cottongrass Rushes							
06-VN199	11/08/2006	17W	7976365	503110																				Sedges Cottongrass Rushes							
06VS090	07/08/2006	17W	7800776	594218	stennsby inlet rocky shore								mesic		plants between the rocks		8	4	3		salireti 1 salix 4 dryainte 3		oxytmayd 0.1 astraalpi 0.1	Sedges careatro 0.5 carex 0.5 Cottongrass Rushes			saxioppo 2	cetrtile 1	mosses 1		
06-VS100	07/08/2006	17W	7820413	598087	south end of cockburn lake						2	NW	mesic		blueberry sedge		70	20	40	ledupalu 2	salix 10 vacculig 40 casstetr 20			Sedges carex 20 Cottongrass Rushes luzuconf 5				antler 10	mosses 30	scats: goose	
06-VS295	18/08/2006	17W	7819569	592441																				Sedges Cottongrass Rushes							
06-VS303	18/08/2006	17W	7831137	593999																				Sedges Cottongrass Rushes							
08_VS092	07/08/2006	17W	7814508	599519																				Sedges Cottongrass Rushes							
0c_V200	14/08/2006	17W	7913338	563918																				Sedges Cottongrass Rushes							

NOTES:
1. A COMPLETE DATA SET IS CONTAINED IN THE OUTCROP DATABASE.

VEGETATION BASELINE STUDY REPORT
2007 VEGETATION PLOTS

Vegetation Plots, 2007				UTM coordinates are in 1983 datum, North American								
Prefix	Veg plot #	Date	Location	Waypoint # PB GPS	Zone	UTM Eastings	Northings	Altitude meters	Veg Code 1	Veg Code 2	NOTES	Wildlife or archaeology
07_V	1	02-Aug-07		299	17W	558045	7914302	173		GF	Thin veg, forbs, on slope above stream with sedge wetland. Diverse collection of forbs.	
07_VS	2	03-Aug-07	Big A Lake, Loon Is., north end of island, sand island w/low centre polygons, many nesting waterfowl.	300	17W	577367	7891996	177			**W057**, low sedges and prostrate willows plus moss and moss mounds, red sand around ponds.	Canada geese, brood, long-tailed duck brood, r-t loons, caribou track in moss
07_VS	3	03-Aug-07	Big A Lake, Loon Is.	301	17W	577576	7892076	133			**W056**, possibly lichen veneer, mostly lichen and woodrush on sand, small mounds of Stereocaulon tomentosum, Empetrum nigrum nearby.	Snow goose and sandhill crane feathers
07_VS	4	03-Aug-07	Big A Lake, Loon Is., S end of island	302	17W	580288	7890326	127	HTb		**Near W056**, mats of blueberry and crowberry above sand beach, some heather and avens.	Semipalmated plover, r-t loon w/young, snow goose feather.
07_VS	5	03-Aug-07	Big A Lake, Loon Is., S end above shore	303	17W	580295	7890315	130	HT b + c		**Near W056**, blueberry and heather, mixed heath tundra.	R-t loon, snow and Canada goose feathers.
07_VS	6	03-Aug-07	Mainland to S of Big A Lake, gently rolling hills w/old polygons, raised centres. Plot in centre of polygon.	304	17W	580418	7887656	304	HT b + c		**WHA plot, # unknown,** heath tundra, mixture of heather, blueberry, mosses and avens.	Per VB: Caribou use this area in spring, feeding on centres of polygons, as snow has blown off. Golden plovers seen and heard.

Vegetation Plots, 2007				UTM coordinates are in 1983 datum, North American								
Prefix	Veg	Date	Location	Waypoint #	Zone	UTM		Altitude	Veg Code	Veg Code	NOTES	Wildlife
	plot #			PB GPS		Eastings	Northings	meters	1	2		or archaeology
07_VS	7	03-Aug-07	Mainland to S of Big A Lake, gently rolling hills w/old polygons, raised centres. Plot in fissure at side of polygons.	307	17W	580402	7887650	164	Snt		**WHA plot, # unknown,** small sedge wetland between raised centres of polygons. Moss mounds with avens on top, Carex membranacea, C. misandra, C. scirpoidea, shrubs of Salix richardsonii, some S. arctica, biological crust, yellow-green moss.	
07_VS	8	03-Aug-07	Mainland to S of Big A Lake, valley between low hills with raised centre polygons by bedrock outcrop, two small ponds in valley.	308	17W	580784	7887989	137	S nt + t		**Near WHA plot, # unk.,** small valley with saturated soil, sedge assn. with tussocks and non-tussock sedges, Carex aquatilis, C. atrofusca, C. membranacea, Eriophorum angustifolium, E. vaginatum, Salix richardsonii, S. reticulata, Cassiope tetragona, assorted mosses.	Distinct caribou trails through this valley.
07_VS	9	03-Aug-07		309	17W	557519	7915132	170	SB	Ms		
07_VS	10	03-Aug-07		311	17W	557680	7915557	216	Bax	HT c+r		
07_V	11	03-Aug-07		312	17W	557831	7915597	207	Snt			
07_VS	12	04-Aug-07	Ridge to E of 1st valley south of Mary River, high elevation, relatively barren upland. Near Km 25 on rail route.	313	17W	573559	7908263	460	Bax	Bps	**W066**, embedded boulders, some sandstone, some acidic rocks, veg between boulders, sparse, transition between purple saxifrage barrens and avens association, biological crust.	Active lemming area with fresh scats.

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Prefix	Veg	Date	Location	Waypoint #	Zone	UTM		Altitude	Veg Code	Veg Code	NOTES	Wildlife
	plot #			PB GPS		Eastings	Northings	meters	1	2		or archaeology
07_VS	13	04-Aug-07	Ridge to E of 1st valley south of Mary River, high elevation, relatively barren upland. Near Km 25 on rail route. Boulder field below Plot 07_VS012.	315	17W	573586	7908210	455	Bps	LRb	**W067**,no visible soil, all boulders, mostly sandstone/limestone, some rounded erratics, acidic, gneiss, granites, basalts. Diverse association but few plants, Salix arctica, S. herbacea, Carex atrofusca, Luzula nivalis, Cerastium alpinum, Oxyria digyna, Melandrium apetalum, Saxifraga hieracifolia, S. nivalis, S. oppositifolia, S. caespitosa, Senecio congestus, Alopecurus alpinus, biological crust.	
07_VS	14	04-Aug-07		320	17W	578355	7896340	129			Racomitrium moss assn	
07_VS	15	04-Aug-07		322	17W	586922	7893367	122	Ms	GF		
07_VS	16	04-Aug-07		324	17W	586923	7893358		Snt			
07_VS	17	04-Aug-07	Lake to S of Big A Lake, south of lake on slope with caribou trails descending slope.	326	17W	588802	7869130		Snt	Rw	**W027**, Sedge slope with distinct caribou trails, though doubt it was used this year as trails contain vegetation. Open convex slope with sedges and riparian willow.	Per VB: early and late summer use potential by caribou, insect free, good view of any approaching predators.
07_VS	18	04-Aug-07	Lake S. of Big A Lake, south of lake on slope with caribou trails descending slope.	327	17W	588812	7869152	275	Snt		**Near W027**, non-tussock sedge association with some grasses, Salix arctica, S. richardsonii, Dryas integrifolia, Carex aquatilis, C. misandra, C. membranacea, C. scirpoidea, Eriophorum scheuzerii, Arctagrostis latifolia, and assorted mosses.	Sandhill cranes, snow geese, shorebird calling.

Vegetation Plots, 2007				UTM coordinates are in 1983 datum, North American								
Prefix	Veg plot #	Date	Location	Waypoint # PB GPS	Zone	UTM Eastings	Northings	Altitude meters	Veg Code 1	Veg Code 2	NOTES	Wildlife or archaeology
07_VS	19	04-Aug-07	South rail route, approximately Km 85, boulder field area.	328	17W	593935	7867214	254	LRb		**Near WHA plot, # unk.,** gentle slope below an esker ridge. Lichen-rock association on boulders, small mats of vegetation, and lichens on boulders, 15% vegetated, including Cassiope tetragona, Luzula confusa, and lichens, including Cetraria nivalis, Alectoria sp., Cladonia sp., Stereocaulon tomentosum, and Thamnolia subuliformis, Racomitrium lanuginosum. Rocks 80% covered, map lichen, rock tripe, bloodspot, black crustose, sunburst, and a grey lichen with black apothecia.	Per VB: caribou observed earlier on this boulder field, loafing, possibly escaping bugs.
07_VS	19A	04-Aug-07	S. rail route, approx. Km 85, small gravel ridge above boulder field, bird stone surrounded by gravel.	330	17W	593916	7867157	266	DSbs	Bax	**Near WHA plot, # unk.**, vegetation near and around a bird perching stone. Mixed woodrushes (Luzula confusa) and grasses (Trisetum spicatum), some forbs including Epilobium latifolium, Saxifraga tricuspidata, Sagina caespitosa, assorted lichens and mosses.	Possible tool-making site, we found several quartz chips on this small ridge, around the bird stones.
07_VS	20	04-Aug-07	Cockburn River, about 10 km upstream from confluence and upper end of Cockburn Lake. Flat area below tilted bedrock hills.	333	17W	391233	7848351	141	HT mixed		**W043**, heath tundra, mixed including blueberry, heather, and Ledum palustre, also sedges, Carex aquatilis, Luzula confusa, and Trisetum sp. Lichens and mosses including Cladina mitis, Cladonia sp., and Racomitrium lanuginosum.	Caribou bones, possible wolf kill.

Vegetation Plots, 2007				UTM coordinates are in 1983 datum, North American								
Prefix	Veg	Date	Location	Waypoint #	Zone	UTM		Altitude	Veg Code	Veg Code	NOTES	Wildlife
	plot #			PB GPS		Eastings	Northings	meters	1	2		or archaeology
07_VS	21	04-Aug-07	Cockburn River, about 10 km upstream from confluence and upper end of Cockburn Lake. Adjacent to 07_VS20, near small tributary stream.	335	17W	391115	7848384	139	HT mixed		**W043,** mixed heath tundra with Ledum, heather and blueberry. High percentage of Ledum (30%).	
07_VS	22	04-Aug-07	Cockburn Lake, at rail crossing, W side of lake, lake level.	336	17W	607787	7841054	45	HTr	LRb	**Probably near WHA plot, # unk,** mixture of sedges and willow, Racomitrium moss and lichens. Salix arctica, Vaccinium uliginosum, Carex aquatilis, Cerastium alpinum, Saxifraga tricuspidata, Trisetum sp., and lichens including Cetraria nivalis.	
07_VS	23	04-Aug-07	Cockburn Lake, at rail crossing, W side of lake, top of terrace.	337	17W	607718	7841044	44	HTc+b	GF	**Probably near WHA plot, # unk,** Heath tundra with heather, blueberry, avens, and Rhododendron, also Salix arctica, Silene acaulis, and Trisetum, plus Racomitrium lanuginosum.	
07_VS	24	04-Aug-07	Cockburn Lake, upper slopes N of rail crossing.	339	17W	600191	7833726	88	HTr		**Near WHA plot, # unk**, blueberry-Racomitrium moss bouldery slope with Luzula confusa, Dryas integrifolia, Salix arctica, Pyrola grandiflora, and Oxytropis maydelliana.	
07_VS	25	04-Aug-07	Cockburn Lake, E side, upper slopes.	340	17W	600251	7833731	77	HTb		**Near WHA plot, # unk,** mixed sedges and blueberry on exposed slope.	
07_VS	26	05-Aug-07	Rowley River, mouth, at Steensby Inlet, sandy flats.	347	17W	394926	7796367	4	Csb	Cg	**May be near WHA plot, # unk.,** mats of Honckenya peploides and Mertensia maritima plus Carex ursina on sand and gravel beach.	

Vegetation Plots, 2007				UTM coordinates are in 1983 datum, North American								
Prefix	Veg plot #	Date	Location	Waypoint # PB GPS	Zone	UTM Eastings	Northings	Altitude meters	Veg Code 1	Veg Code 2	NOTES	Wildlife or archaeology
07_VS	27	05-Aug-07	Rowley River, mouth, at Steensby Inlet, sand flats, near small salt pond.	348	17W	394911	7796286	6			**Near WHA plot, # unk.,** thin carpet of goose grass (Pucinnellia sp.) with scattered plants of Stellaria humifusa.	Glaucous gull, sandhill crane
07_VS	28	05-Aug-07		342	17W	577623	7902826	198	LRb	GF		
07_VS	29	05-Aug-07		343	17W	576043	7903579	203	Rw	Dssolif		
07_VS	30	05-Aug-07		344	17W	576043	7903574	185				
07_VS	31	05-Aug-07	South rail route, approximately Km 80, boulder field/flesenmeer area, between Ravn River and slope to Cockburn Lake.	345	17W	605917	7872685	248	LRb or f	fs	**WHA plot, # unk**., felsenmeer with frost boils, very sparse vegetation amidst boulders and on frost boils, Cassiope tetragona, Luzula confusa, L. nivalis, Cetraria nivalis, Racomitrium lanuginosum.	
07_VS	32	05-Aug-07	Steensby Inlet, port site, between camp and the sea. Embedded boulders and frost boils.	346	17W	594638	7800463	16	Bax	DSfs	**WHA plot, # unk.,** mixed association of avens, xeric sedges, and assorted forbs, Dryas integrifolia, Salix arctica, Salix reticulata, Vaccinium uliginosum, Carex rupestris, C. scirpoidea, Astragalus alpina, Oxytropis maydelliana, Cetraria nivalis.	

Vegetation Plots, 2007				UTM coordinates are in 1983 datum, North American								
Prefix	Veg plot #	Date	Location	Waypoint # PB GPS	Zone	UTM Eastings	Northings	Altitude meters	Veg Code 1	Veg Code 2	NOTES	Wildlife or archaeology
07_VS	33	05-Aug-07	Rowley River, edge of basin at river mouth, transect from floodplain to shoreline.	350	17W	395237	7796587	6	Cg	Cs, Csb	**Near WHA plot, # unk.**, bands (zones) of vegetation from sand flats to gravel beachline along side of river. Distinct zones of vegetation on sand, small gravel, mixed sand and gravel, gravel. Pucinnellia, Carex ursina, Honckenya, Armeria maritima, Cerastium alpinum, Astragalus alpinus, Epilobium latifolium, Salix arctica, Carex scirpoidea, Luzula confusa, Silene acaulis, Saxifraga rivularis, and Poa sp.	
07_VS	34	05-Aug-07	Rowley River, edge of flats at river mouth.	351	17W	395268	7796622	15	HTc	SB	**Near WHA plot, # unk.,** even growth of heather, Salix arctica,Ledum palustre, and moss with some Epilobium latifolium at top, Diapensia lapponica, some Dryas, Carex aquatilis, Luzula confusa, Saxifraga tricuspidata, Astragalus alpina, Oxytropis maydelliana, Empetrum nigrum, and assorted mosses.	
07_VS	35	05-Aug-07	Rowley River, near mouth of river at Steensby Inlet, flat area bordered by gravel ridge.	352	17 or 1	395305	7796627	2			**Near WHA plot, # unk.,** Thin mat of heaths and other vegetation on flat area shoreward frm small gravel ridge. Heather, Salix arctica, star moss, blueberry, Astragalus arctica, and Dryas integrifolia, some Trisetum.	R-t loon, antler from killed caribou, not shed.

Vegetation Plots, 2007				UTM coordinates are in 1983 datum, North American								
Prefix	Veg plot #	Date	Location	Waypoint # PB GPS	Zone	UTM Eastings	Northings	Altitude meters	Veg Code 1	Veg Code 2	NOTES	Wildlife or archaeology
07_VS	36	05-Aug-07	Near Rowley River, small lake to west of river valley. Peaty soil by small lake/pond.	354	17 or 1	392365	7801200	51	Ms	DSgoose	**WHA plot, # unk.,** Mossy shoreline with heather, goosegrass (Pucinnellia sp.), Salix arctica, S. richardsonii, blueberry, Pyrola grandiflora, Peltigera, and assorted mosses (50%).	Fresh goose scats, feathers of snow and Canada geese.
07_VS	37	04-Aug-07	Near Rowley River, small lake to west of river valley. Peaty soil by small lake/pond.	356	17 or 1	392362	7801191	55	Ms	DSgoose	**WHA plot, same as 07_VS036, # unk,** heavily damaged due to goose feeding, mossy lakeshore, but most veg. removed by geese. Salix arctica, S. herbacea, Carex aquatilis, Pucinnellia sp., Sphagnum moss, dark moss.	2 r-t loons, pond nearby. Most plants removed by geese, snow and Canada goode feathers, fresh scats.
07_VS	37A	05-Aug-07	Rowley river, west side, near river mouth, sand cliffs above river, small ravine leading to floodplain.	357	17 or 1	392474	7801123	47	Rw		**Near WHA plot, # unk.,** thick growth of moss and Richardson's willow in ravine, Salix arctica, S. richardsonii, S. reticulata, blueberry, avens, Oxyria digyna, Polygonum viviparum, Stellaria longipes, Epilobium latifolium, Pyrola grandiflora, Poa sp., Astragalus alpina, Oxytropis maydelliana, Peltigera, Racomitrium lanuginosum, assorted mosses.	
07_VS	38	05-Aug-07	Aulasivik Peninsula, W of Tarijuaq Arm, near mouth of the Harder River, unnamed small peninsula. Near shore.	359	17W	559046	7814435	-2	Csf		**Near wolf post area. WHA plot, # unk.,** goose-grass flats. Pucinnellia, Stellaria humifusa, stranded kelp.	Glaucous gull, many goose scats, feathers.

Vegetation Plots, 2007				UTM coordinates are in 1983 datum, North American								
Prefix	Veg	Date	Location	Waypoint #	Zone	UTM		Altitude	Veg Code	Veg Code	NOTES	Wildlife
	plot #			PB GPS		Eastings	Northings	meters	1	2		or archaeology
07_VS	39	05-Aug-07	Aulasivik Peninsula, W of Tarijuaq Arm, near mouth of the Harder River, unnamed small peninsula. Near shore.	360	17W	559046	7814435	-2	Csf		**At wolf post, WHA plot, # unk.,** sandy soil, wet area, exposure to salt water. Grassy area with some sedges (Carex atrofusca), Salix arctica, and yellow marsh saxifrage. Also Pucinnellia and Dupontia fisherii.	Fresh goose scats
07_VS	40	05-Aug-07	Aulasivik Peninsula, W of Tarijuaq Arm, near mouth of the Harder River, unnamed small peninsula. Near shore.	361	17W	559076	7814453	-2	Csb		**Near wolf post. WHA plot, # unk.,** area with sandstone slabs, fairly wet. Salix arctica flats, nothing here but S. arctica and a few tiny plants of Pucinnellia.	R-t loons nearby, shorebird calling.
	No plots, 41 - 49.											
07_VS	50	05-Aug-07	Rail route, 1st valley S. of Mary River, glaciofluvial terrace.	362	17W	572443	7904613	161	HTr	GF	Heather, Racomitrium moss, woodrushes	Common ringed plover
07_VS	51	05-Aug-07	Rail route, 1st valley S. of Mary River, glaciofluvial terrace.	363	17W	572441	7904647	168	HTr	GF	Heather and Racomitrium, Salix arctica, Luzula sp., Alopecurus alpinus, Pyrola grandiflora, mosses.	
07_VS	52	05-Aug-07		364	17W	571230	7905927	192		GF		
07_VS	53	05-Aug-07		365	17W	571252	7905935	201	Bax	GF		
07_VS	54	05-Aug-07		366	17W	571365	7906060	202	HTavens	GF		
07_VS	55	05-Aug-07		367	17W	571367	7906078	218	RW	VC		
07_VS	56	05-Aug-07		368	17W	571424	7906086	213		VC		
07_VS	56A	05-Aug-07		369	17W	593217	7798330	166			Island, avens on shelf above shore	
07_VS	57	05-Aug-07		370	17W	593177	7798355	10			Island, avens on shelf above shore	
07_VS	58	05-Aug-07		371	17W	593137	7798325	3			Island, Marine backshore upper beach	
07_VS	59	05-Aug-07		372	17W	593134	7798322	15			Island, goosegrass	
07_VS	60	05-Aug-07		373	17W	593090	7798349	20			island, Avens and willow	
07_VS	61	05-Aug-07		374	17W	593004	7798464	11	Snt	DSsolif	island, small pond	
07_VS	62	05-Aug-07		375	17W	593105	7798441	10			island, avens assoc hilltop	

Vegetation Plots, 2007				UTM coordinates are in 1983 datum, North American								
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	plot #			PB GPS		Eastings	Northings	meters	1	2		or archaeology
07_VS	63	05-Aug-07		379	17W	598407	7817745	56	SB		rocky cliff base	
07_VS	64	05-Aug-07		376	17W	593113	7798479	7	Snt		island, small pond edge	
07_VS	65	05-Aug-07		382	17W	598091	7817702	76	Rw	Mcb	cliff base	
07_VS	66	05-Aug-07		376	17W	598097	7817736	65	SB		cliff base	
07_VS	67	05-Aug-07		384	17W	598493	7816337	62		GF	low-center polygons	
07_VS	68	05-Aug-07		380	17W	598384	7817728	65	Snt?		sedges, Pyrola, least willow	
07_VN	69	07-Aug-07		387	17W	503032	7972507	159	Bps		carbonates, limited diversity	
07_VS	70	05-Aug-07		381	17W	598076	7817720	71		Mcb	avens, willow, moss, Poa	
07_VN	71	07-Aug-07		388	17W	502944	7972352	173	SB		carbonate ridge, top	
07_VN	71A	07-Aug-07		393	17W	507300	7969605	98	Bax		carbonates, beneath talus slope	
07_VN	72	07-Aug-07		391	17W	507673	7970129	59	Rw?	GF	GF, small esker in system	
07_VS	72A	05-Aug-07		383	17W	598527	7816369	62	HTc	GF	heather, moss, woodrush	
07_VN	73	07-Aug-07		390	17W	507630	7970188	65	Bax	GF	steep side of esker in GF	
07_VS	74	07-Aug-07		386	17W	593519	7816351	68	HTc	GF	Check coord, S rail route at Km 130	
07_VN	75	07-Aug-07		389	17W	507631	7970175	38	Bax	GF	esker in GF	
	No plot 76											
07_VN	77	07-Aug-07		392	17W	507295	7969600	99			avens, arctic willow and purple sax.	
07_VN	78	07-Aug-07			17W	507380	7969576	102	Snt		sedges, avens and willow on slope	
07_VN	79	07-Aug-07		399	17W	527440	7932318	200	Bax?		carbonate ridge, avens, willow, sedge	
07_VN	80	07-Aug-07		400	17W	527401	7932321	164	Ms	Snt	Epilobium arcticum	
07_VN	81	07-Aug-07		398	17W	507502	7969742	67	Bax?		carbonate ridge, avens, heather, sedge, lichens	
07_VS	82	06-Aug-07		401	17W	545937	7920053	161	Bax?	LC	also heather and Hierochloe	
	No plots 83-100											
07_VS	101	08-Aug-07		402	17W	600046	7809857	73	Snt	Mcb	adj to SB	
07_VS	102	08-Aug-07		403	17W	600053	7809858	74	HTb			
07_VS	103	08-Aug-07		404	17W	599969	7809866	82				
07_VS	104	07-Aug-07		406	17W	600034	7809862	79	SB?		cliff ledge, mixed, Oxytmayd dominant	
07_VS	105	07-Aug-07		405	17W	600043	7809860	71			cliff ledge, grass, moss, lichen	

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07_VS	106	07-Aug-07		407	17W	600197	7809842	90	HTb+c			
07_VS	107	07-Aug-07		408	17W	600188	7809843	71	Snt, Ms	HTc		
07_VS	108	08-Aug-07		409	17W	600233	7809840	87	HT	Bax		
07_VS	109	07-Aug-07		410	17W	600197	7810006	103			Least willow and Racomitrium	
07_VS	110	08-Aug-07		413	17W	600168	7810020	91	HTb+c	M		
07_VS	111	08-Aug-07		411	17W	600195	7810009	94	HTb			
07_VS	112	08-Aug-07		414	17W	598628	7818756	68	LRb	GF		
07_VS	113	07-Aug-07		415	17W	598609	7818712	59	Snt		river floodplain	
07_VS	114	08-Aug-07		417	17W	598688	7818725	71	HTb	LRb	felsenmeer	
07_VS	115	09-Aug-07		424	17W	599380	7871321	223	HTc	LRf	felsenmeer	
07_VS	116	08-Aug-07		423	17W	599322	7871291	222	Snt	S-Mwm	signature plot check S-Mwm	
07_VS	117	08-Aug-07		425	17W	599393	7871303	225	LRb		signature plot: felsenmeer	
07_VS	118	08-Aug-07		426	17W	596955	7884037	201			willow shrubland?	
07_VS	119	08-Aug-07		427	17W	596956	7884086	219	HTr			
07_VS	120	09-Aug-07		427	17W	596956	7884086	219	HTc	avens	Adjacent to Plot 119	
07_VS	121	08-Aug-07		428	17W	597051	7883953	197	Snt	avens	signature plot:	
07_VS	122	09-Aug-07		430	17W	591973	7895366	177	HTc	avens		
07_VS	123	09-Aug-07		431	17W	592276	7895354	154	Snt	fs	mixed, on frost scars	
07_VS	124	09-Aug-07		435	17W	592114	7895359	173	HTc	avens		
07_VS	125	09-Aug-07		434	17W	592140	7895162	164	HTc+r	DSi		
07_VS	126	09-Aug-07		436	17W	566190	7908173	277	Bax			
07_VS	127	09-Aug-07		435	17W	566198	7908131	277			signature plot Bax on sandstone	
	No plots 128-129											
07_V	130	09-Aug-07		438	17W	563622	7915251	665	Bps		Deposit 1	
07_V	131	09-Aug-07		437	17W	563624	7915242	660	LRr		Deposit 1, on top	
07_V	132	09-Aug-07		440	17W	563516	7915405	646			Deposit 1, sedge, moss, grass	
07_V	133	09-Aug-07		439	17W	563581	7915294	665	Mcb?		Deposit 1, moss on ore slope	
07_V	134	09-Aug-07		441	17W	563529	7915485	648	Bps		Deposit 1 area, poppy, moss	
07_V	135	09-Aug-07		442	17W	563569	7915506	647	Bps	M	Deposit 1 moss, purple sax, luzula	
07_V	136	09-Aug-07		443	17W	563503	7915283	643			Deposit 1, moss, luzula	

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07_V	137	09-Aug-07		444	17W	563514	7915276	648			Deposit 1, poppy, luzula, oxyria	
	No plots 138 - 170											
07_VS	170	10-Aug-07		447	17W	597850	7868934	217	HTc			
07_VS	171	10-Aug-07		445	17W	597904	7868943	218	Snt	M	"brown" signature, sedges, mosses,	
07_VS	172	10-Aug-07		448	17W	595914	7885805	202	Bax			
07_VS	173	10-Aug-07		449	17W	595854	7885828	192			willow shrublands	
07_VS	174	10-Aug-07		451	17W	592779	7892739	130	HTc+b			
07_VS	175	10-Aug-07		450	17W	592850	7892782	132	Rw		river floodplain	
07_VS	176	10-Aug-07		454	17W	592770	7892761	137	HTb+c	GF	avens	
07_VS	177	10-Aug-07		452	17W	592779	7892758	137	DSn	GF	possible snowy owl nest mound	
07_VS	178	10-Aug-07		455	17W	592656	7892856	141	S-Mwm?	GF		
07_VS	179	10-Aug-07		456	17W	592699	7892862	136	HTc+fs		willow shrublands?	
07_VS	180	10-Aug-07		470	17W	583250	7900750	169	LRb			
07_VS	180A	10-Aug-07		458	17W	579570	7901837	171	LRb			
07_VS	181	10-Aug-07		459	17W	579571	7901838	174	LRb		Luzula	
07_VS	182	10-Aug-07		461	17W	579706	7901821	179	Snt	HT	GF	
07_VS	183	10-Aug-07		460	17W	579731	7901864	177	Rw			
07_VS	184	10-Aug-07		462	17W	579715	7901763	168	Ms			
07_VS	185	10-Aug-07		463	17W	579717	7901760	167	Snt		grasses also	
07_VS	186	10-Aug-07		465	17W	580008	7901648	174	Rw			
07_VS	187	10-Aug-07		464	17W	580037	7901694	177	Snt	GF		
07_VS	188	10-Aug-07		469	17W	582942	7900721	174	HTr			
07_VS	189	10-Aug-07		468	17W	582928	7900748	177	Bax	GF		
	No plot 190											
07_VS	191	10-Aug-07		472	17W	583158	7900774	174	Rw	Alluvial fan	riparian willow, with Salix arctica?	
07_VS	192	11-Aug-07		473	17W	594668	7800333	19	LRr+b		meat cache	
07_VS	193	11-Aug-07		474	17W	601912	7833422	40	HTb+c	M	soil pit	
07_VS	194	11-Aug-07		475	17W	601981	7833427	43	HTb+c+l		also Dryas and mosses	
07_VS	195	11-Aug-07		476	17W	602044	7833395	57	HTr		soil pit	
07_VS	196	11-Aug-07		477	17W	602076	7833394	62	HTc+b	LRb	Cockburn Lake, east side cliffs	
07_VS	197	11-Aug-07		479	17W	608446	7840406	47	Bax	DSt	GF terrace; soil pit	

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07_VS	198	11-Aug-07		480	17W	608366	7840525	74			NEW, grassy hill (kame?)	
07_VS	199	11-Aug-07		481	17W	608396	7840489	56	HTb		Cockburn Lake, east side, soil pit	
07_VS	200	11-Aug-07		483	17W	608488	7840422	49	HTb	DSc		
07_VS	201	12-Aug-07		484	17W	605547	7834977	202			soil pit; NEW: forbs and heather?	
07_VS	202	12-Aug-07		485	17W	605590	7834906	219	HTr	DSsolif		
07_VS	203	12-Aug-07		487	17W	605578	7834877	223	Mcb	SB	cliff ledges	
07_VS	204	12-Aug-07		489	17W	605524	7834968	193	HTr	DSfs		
07_VS	205	12-Aug-07		490	17W	601744	7832859	126	Rw	HTc+b		
07_VS	206	12-Aug-07		492	17W	601736	7832872	119	Htmixed		soil pit	
07_VS	207	12-Aug-07		493	17W	601825	7832815	128	HTb	avens	hearth by large boulder	
07_VS	208	12-Aug-07		496	17W	592716	7892892	136	Se	Ms	soil pit, nearby	
07_VS	209	12-Aug-07		497	17W	592669	7892964	140	HTr			
07_VS	210	12-Aug-07		498	17W	592636	7892910	140	HTr			
07_VS	211	12-Aug-07		1	17W	592636	7892906	140	DSn		grassy mound	
07_VS	212	12-Aug-07		2	17W	592707	7892812	139	Snt		soil pit	
07_VS	213	12-Aug-07		3	17W	579913	7890746	132	HTb+c	Ms	low-centre polygon, margins	
07_VS	214	12-Aug-07		5	17W	579908	7890742	129	Snt	Ms	low-centre polygon, centre	
07_VS	215	13-Aug-07		7	17W	594767	7800649	17	HT mixed			
07_VS	216	13-Aug-07		8	17W	594752	7800579	16	Bax		soil pit	
07_VS	217	13-Aug-07		9	17W	594764	7800664	16	Snt	Rw	possibly till veneer	
07_VS	218	13-Aug-07		12	17W	594762	7800628	17	Snt	Rw	avens	
07_VS	219	12-Aug-07		10	17W	594710	7800806	26	HT mixed	SB?		
07_VS	220	13-Aug-07		13	17W	595382	7802703	30	HTb	Tss		
07_VS	221	13-Aug-07		11	17W	594624	7800905	33	Tss?			
07_VS	222	13-Aug-07		15	17W	598533	7808081	30	HTb	Bax	Possibly Tss	
07_VS	223	13-Aug-07		14	17W	595414	802741	34	HTb			
07_VS	224	13-Aug-07		26	17W	598970	7814622	59	HT	GF		
07_VS	225	13-Aug-07		15	17W	595443	7802809	57			NEW? Avens - Empetrum?	
	No plot 226											
07_VS	227	13-Aug-07		16	17W	595470	7802842	69	LRr	Dsi	Small talu, cache	
	No plot 228				17W							
07_VS	229	13-Aug-07		19	17W	595360	7802640	39	Snt	HTb		

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07_VS	231	13-Aug-07		21	17W	598684	7808169	24	HTb+c		Complex assn, great diversity.	
	No plot 232											
07_VS	233	13-Aug-07		22	17W	598683	7808163	18	Rw	HT b+c		
	No plot 234											
07_VS	235	13-Aug-07		24	17W	598673	7808101	20	Rw			
	No plot 236											
07_VS	237	13-Aug-07		25	17W	598518	7808076	23	St			
	No plot 238											
07_VS	239	13-Aug-07		28	17W	598926	7814598	57	HT ledum	Lichen veneer		
	No plot 240											
07_VS	241	13-Aug-07		30	17W	598869	7814678	58		GF	Zones along small wetland	
07_VN	242	15-Aug-07		39	17W	504095	7973750	53		Bax		
07_VN	243	15-Aug-07		40	17W	504244	7973777	58	Bax			
07_VN	244	15-Aug-07		41	17W	504157	7973624	43	Snt	GF		
07_VN	245	15-Aug-07			17W	504207	7973783	58	Bax	Bps?		
07_VN	246	15-Aug-07		45	17W	508304	7969538		Bax			
07_VN	247	15-Aug-07		48	17W	508326	7969686	70	Rw	Ms		
07_VN	248	15-Aug-07		52	17W	522409	7947121	142	Bax		sorted stone circles	
07_VN	249	15-Aug-07		50	17W	508306	7969820	80			NEW? Equisetum assn?	
07_VN	250	15-Aug-07		54	17W	522415	7947239	160	Bax	Snt	boulder with local effect	
07_VN	251	15-Aug-07		55	17W	527138	7932281	173	Snt	DSr	revegetating road	
07_VN	252	15-Aug-07		58	17W	527338	7932301	189	Ms	Rw/Snt	small streams: Epilobium arcticum	
07_VN	253	16-Aug-07		60	17W	528048	7926102	173	Bax	GF	soil pit - show sand wedge in fissure	
07_VN	254	16-Aug-07		62	17W	528179	7926117	165	SB		profile of a ravine, different zones	
07_VN	255	16-Aug-07		63	17W	528302	7926279	151	HTc	avens		
07_VN	256	16-Aug-07		65	17W	528311	7926266	144	Rss	GF		
07_VN	257	16-Aug-07		67	17W	538471	7930688	226	Bax	HT	sorted circles & stripes; soil pit	
07_VN	258	16-Aug-07		68	17W	538486	7920737	224	Snt	Rw		
07_VN	258A	16-Aug-07		69	17W	538089	7920761	217	Ms			

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07_VN	259	16-Aug-07		71	17W	534671	7920397	266	Bax	HTc	soil pit	
07_VN	260	16-Aug-07		73	17W	534746	7920441	273	Snt	DSsolif	soil pit	
07_VS	263	17-Aug-07		75	17W	598543	7816990	60	Tss?	GF		
07_VS	264	17-Aug-07		78	17W	598541	7816991	63	L veneer		soil pit	
07_VS	265	17-Aug-07		79	17W	598722	7816752	59	S-Mwm?		hummocks, transitory stream	
07_VS	266	17-Aug-07		80	17W	598706	7816900	61	HTr		soil pit, cryoturbation	
07_VS	267	17-Aug-07		82	17W	598506	7819920	67	HT b+c	GF	soil pit; underfit stream	
07_VS	268	17-Aug-07		85	17W	598515	7819916	73	HTb	GF	island in stream. THICK vegetation.	
07_VS	269	17-Aug-06		87	17W	574906	7903790	180	Snt	Rw	soil pit	
07_VS	270	18-Aug-06		88	17W	574940	7903788	177	LRb	GF		
07_VS	271	18-Aug-07		89	17W	606509	7847267	62	HTb	LRb	talus/fragmental slope, soil pit	
07_VS	272	18-Aug-07		91	17W	606502	7847130	51	HT mixed	LRb	soil pit, talus slope	
07_VS	273	18-Aug-07		92	17W	606563	7847103	32	Snt	HT	soil pit, no S. rich.	
07_VS	274	18-Aug-07		94	17W	606911	7847756	49	HT mixed	avens		
07_VS	275	18-Aug-07		95	17W	606816	7847928	61	HTr			
07_VS	275A	18-Aug-07		96	17W	606906	7847625	49	Rw	Rss	boulders beneath, side of river	
07_VS	276	18-Aug-07		97	17W	606581	7851184	164	HT b+l			
07_VS	277	18-Aug-07		98	17W	606555	7851192	165	Rw	Snt	boulders beneath, near river channel	
07_VS	278	18-Aug-07		100	17W	606556	7851251	163	HTr	Bax	little soil, all boulders and cobbles	
07_VS	279	18-Aug-07		101	17W	606616	7851173	164	St	HTb	all boulders under veg.	
07_V	280	14-Aug-07		31	17W	563730	7916561	582	Bps		east of Deposit 1; soil pit	
07_V	281	14-Aug-07		33	17W	563620	7915743	627	Bps		soil pit, stripes on slope, cryoturb	
07_V	282	14-Aug-07		34	17W	563717	7915697	625	SB	Bps?	Deposit 1, scree, shelter	
07_V	283	14-Aug-07		35	17W	563506	7915284	640	Luzula		NEW?	
07_V	284	14-Aug-07		36	17W	563781	7913411	286	Hierochloe/will	SB	NEW? soil pit, alluvium/wind?	
07_V	285	14-Aug-07		37	17W	563914	7913502	313	Bax	HTc	slumpy	
07_VS	286	18-Aug-07		102	17W	606629	7851147	165	LRb		boulders at side of floodplain	

Vegetation Plots, 2007				UTM coordinates are in 1983 datum, North American								
Prefix	Veg plot #	Date	Location	Waypoint # PB GPS	Zone	UTM Eastings	Northings	Altitude meters	Veg Code 1	Veg Code 2	NOTES	Wildlife or archaeology
07_VS	287	18-Aug-07		104	17W	605751	7857116	193	Lichen veneer		NEW; lichen layer on sand; soil pit	
07_VS	288	18-Aug-07		105	17W	605698	7857084	208	Snt	HT + empetrum	alluvial channels	
07_VS	289	18-Aug-07		106	17W	605615	7857165	216	Bax		stony hillside	
07_VS	290	19-Aug-07		107	17W	592656	7802244	4	Marine		NEW: reddish grass, Matricaria, etc.	
07_VS	291	19-Aug-07		110	17W	592857	7802442	7	HTc	Ms	old beach, below ice-push rdg, soil pit	
07_VS	292	19-Aug-07		113	17W	592852	7802595	10	Bax	Lichen veneer	isostatic rebound beach, soil pit	
07_VS	293	19-Aug-07		116	17W	592922	7802657	9	Rw	Snt	above lake, rocks pushing up	
07_VS	294	19-Aug-07		117	17W	592844	7802713	15	HTc	Bax	soil pit, small mounds pushing up	
07_VS	295	19-Aug-07		119	17W	594263	7800965	19	HT mixed	Bax	ice-push ridge, face of ridge	
07_VS	295A	19-Aug-07		120	17W	594318	7800932	18	Rw	HT + Ms	soil pit, alluvial channels, active, steps	
07_VS	296	19-Aug-07		122	17W	594402	7800814	11	Bax	SB	odd, mixture, below ice-push ridge	
07_VS	297	19-Aug-07		123	17W	598561	7822133	48	HTb	Snt	soil pit, alluvial fan, colluvium	
07_VS	298	19-Aug-07		124	17W	598570	7822107	58	HTb	Ms	soil pit? Alluvial fan, wet	
07_VS	299	19-Aug-07		125	17W	598714	7822168	84	SB		alluvial fan up against cliff, diverse	
07_VS	300	19-Aug-07		126	17W	598647	7822109	69	HT mixed		soil pit, colluvial, till, no cryoturb	
07_VS	301	19-Aug-07		128	17W	598538	7822090	51	Rw		damp alluvial meadow, Rw with S. arctica	
07_VS	302	19-Aug-07		129	17W	598562	7822052	55	grass/sedge	GF, DSt	NEW? caribou trail, many sedges, not wet	
07_VS	303	19-Aug-07		130	17W	598535	7822036	50	LRb	GF	Hierochloe only	
07_V	303A	22-Aug-07		131	17W	562925	7912685	230	HTc	Bax	bouldery slope	
07_V	304	22-Aug-07		133	17W	562739	7912501	227	HTr	ECs	lee slope	
07_V	305	22-Aug-07		134	17W	561729	7913180	205	Bax	Snt	dolostone boulders frost-cracking	
07_V	306	22-Aug-07		136	17W	561080	7913480	196	Bax	GF		
07_V	307	22-Aug-07		137	17W	560978	7913180	189	Bax	GF	cobble pavement	
07_V	308	22-Aug-07		138	17W	560792	7913306	186	HTr	GF	near Sheardown Lake	

VEGETATION BASELINE STUDY REPORT
2008 VEGETATION PLOTS

Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VS001	06-Aug-08	1	2	7799488	596235	Near proposed airstrip, nr arch. Sites 226, 227		Sedges, cottongrass, moss hummocks, standing water	Snt			
08-VS002	06-Aug-08	1	3	7799352	595998	Near proposed airstrip, 200 m from sea		Fox den, showing signs of recent use (today!) Grasses and forbs on knoll.	DSd			
08-VS003	06-Aug-08	1	4	7799812	595630	Near proposed airstrip, open valley at N end		Dryas and xeric sedges with Racomitrium moss on gentle slope	Ba			
08-VS004	07-Aug-08	1	13	7801437	594536	Edge of pond, below rock outcrop		Thin mat of heather, Labrador tea, Cetraria on bedrock	HT	DSi	Near cache on bedrock outcrop	
08-VS005	07-Aug-08	1	15	7801524	594382	In prop rail line, nr drill hole SRA2008-07		Mixture of heaths and sedges on gentle slope	HT	Snt		
08-VS006	07-Aug-08	1	17	7801776	594480	In prop rail line, nr drill hole SRA2008-04		Sedgy area w hummocks colonized by heaths, lots of Carex atrofusca, C. misandra, C. aquatilis	Snt	HT		
08-VS007	7 Aug. 08	1	19	7801871	594603	Near drill site RMS2008-05 on slope of polished bedrock hill to N of train turnaround		Thin mat of heather, least willow, mosses, woodrush, and Salix arctica on polished bedrock slope with drainage. Snowbank area	SB			

VEGETATION BASELINE STUDY REPORT
2008 VEGETATION PLOTS

Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VS008	07-Aug-08	1	22	7802180	594355	Hillside below rounded rocky hill		Lush, wet slope below rocky hill, much S. richardsonii, avens on hummocks, sedges, grasses, mastodon flower, and arctic fireweed				
08-VS009	07-Aug-08	1	23	7802372	593984	Grassy hillside above chain of lakes		Thick growth of Poa and Hierochloe on slope	Gs			
08-VS010	07-Aug-08	1	26	7803103	593859	Near Walrus Bay, at end of chain of lakes		Riparian willow assn on boulders	Rw			
08-VP01	07-Aug-08	1	27	7801096	594680	Area of train turn around, against rocky outcrop, possible snowbank	a. Oxytropis maydelliana	Thin cover of heather, blueberry, ledum on gravel and hummocks	HT mixed			
							b. Cassiope tetragona					
							c. Vaccinium uliginosum					
08-VP02	07-Aug-08	1	20	7802282	594562	Area of train turnaround, near meat cache on hillside	a. Anthoxanthum alpina (?)	Grass clumps in and around cache	DSi		Cache on end of small ridge	
							b. Salix arctica					
08-VP03	l7 Aug 08	1	25	7802643	593965	Steep hillside above road (?) nr. larger lake near the sea	a. Cassiope tetragona	Thick growth of heather, Racomitrium lanuginosum, and arctic willow on slope	SB?			
							b. Salix arctica					
							c. Oxytropis maydelliana					

VEGETATION BASELINE STUDY REPORT
2008 VEGETATION PLOTS

Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VP04	07-Aug-08	1	28	7803313	593628	Hillside to west of lake connection to Walrus Bay	a. Poa sp.	Possible old fox den, grassy knob on top of ice-push ridge	DSd	DSi	Talu, small fish cache, other storage cache	
							b. Salix arctica					
08-VP05	08-Aug-08	1	30	7800455	594001	Steensby, port island, ridge on N side facing camp	a. Salix arctica	Thin mat of avens, prickly saxifrage, arctic willow on gravel, adjacent to small tent ring and cache.	Bax		Small circle of stones on rock	
							b. Oxytropis maydelliana					
08-VP06	08-Aug-08	1	39	7800144	594172	Steensby, port island, S side, opposite camp, on flat area on seaward edge of small pond	a. Salix arctica	Thick growth of grasses and sedges with arctic willow and mosses along edge of pond.	Snt	G		
							b. Unknown small grass					
08-VP07	08-Aug-08	1	45	7799611	593707	Steensby, port island, S side, inshore from separate island	a. Dryas integrifolia	Thin mat of avens, alpine milkvetch and reticulated willow on gravel below outcrop	Ba		Talu nearby	
							b. Astragalus alpina					
08-VS011	08-Aug-08	1	32	7800294	594154	Steensby, port island, across from camp, where bridge will hook to island		Isolated clumps of Carex nardina, arctic willow, and avens on gravel/cobble surface	Ba	LR gravel		

VEGETATION BASELINE STUDY REPORT
2008 VEGETATION PLOTS

Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VS012	08-Aug-08	1	34	7800200	594075	Steensby, port island, to S of possible bridge on gentle cobble slope, old ice-push ridges		Thin mat of avens, prickly saxifrage, and arctic willow on old cobble beach. Caribou bones	Ba			
08-VS013	08-Aug-08	1	35	7800347	594049	Steensby, port island, between 2 ridges, facing camp, ice push ridge with grass on top		Minor snowbank assn, with plants growing in lee of small ridge. Many burrows, possibly lemmings,some appear active.	SB	DSd	Very active burrow system, possibly lemmings, or maybe weasel?	
08-VS014	08-Aug-08	1	37	7800162	593911	Steensby, port island, SE side by small pond		Thin mat of avens on gravel between boulders	Bax			
08-VS015	08-Aug-08	1	40	7800310	593895	Steensby, port island, wide glaciofluvial terrace in centre of island across from camp		Thin mat of avens and reticulated willow on dry gravel slope	Bax		Broken egg, brown, speckled, poss shorebird.	
08-VS016	08-Aug-08	1	44	7799784	593662	Steensby, port island, by pond to S of proposed 2009 "laydown" area		Even growth of grasses, sedges, and arctic willows on moss at pond edge	Snt	G		
08-VS017	08-Aug-08	1	47	7799919	593580	Steensby, port island, by pond in centre of island		Diverse vegetation on small hummocks, biological crust with reticulated willow, avens, arctic willow			Red-throated loon nesting on pond	

VEGETATION BASELINE STUDY REPORT
2008 VEGETATION PLOTS

Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VS018	08-Aug-08	1	49	7799833	593557	Steensby, port island, centre of island on dry ridge		Patchy vegetation on cobbles and boulders with avens, blackish oxytrope and biological crust.	Ba			
08-VP08	09-Aug-08	1	51	7798413	592911	Steensby, port island, far end of island above dock area	a. Salix arctica	Biological crust on soil, with scattered plants, including arctic willow, least willow, avens, moss campion, and purple saxifrage.	Ba		Small caches. Flock of 8 sandpipers, semi-palmated plover, lemming sign	
							b. Saxifraga oppositifolia					
08-VP09	09-Aug-08	1	53	7798616	593098	Steensby, port island, far end of island, by weather station	a. Salix arctica	Mat of avens, Racomitrium, lichens, and small sedges in small depression in bedrock outcrop. Some Hierochloe, some blackish crazyweed, dwarf fireweed.	Ba		Small stone circle, maybe a hearth? Fresh lemming sign, semi-palmated plovers.	
							b. Carex scirpoidea (prob.)					
08-VP10	09-Aug-08	1	58	7800077	593344	Steensby, port island, N side of island near laydown area, by low bedrock ridge	a.Cetraria nivalis	Lush growth of heather, avens, and Cetraria lichen	HTc		Possible tool-making site. Good lemming sign, snow bunting, semi-palmated plovers	
							b. Cassiope tetragona					

VEGETATION BASELINE STUDY REPORT
2008 VEGETATION PLOTS

Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VS019	09-Aug-08	1	55	7799841	593471	Steensby, port island, middle of island.		Gravel and bedrock, with thin mats of avens, and Racomitrium, arctic willow and purple saxifrage, also clumps of blackish oxytrope.	Ba			
08-VS020	09-Aug-08	1	57	7799892	593456	Steensby, port island, N side, laydown area		Heather association with avens, peas, Poa, in sheltered area below bedrock hillside	HTc		Nesting red-throated loon, brood of long-tailed ducks, snow geese, snow buntings.	
08-VS021	09-Aug-08	1	60	7800215	593384	Steensby, port island, N side, peninsula		Mat of avens, arctic willow, reticulated willow, alpine milkvetch, on gravel shelf on peninsula	Ba	Dsi	Tent ring, caches or taluit nearby. Good lemming sign here..	
08-VS022	10-Aug-08	1	61	7802282	596041	Rail route, near proposed rail yard, small ridge to N of yard		Mats of blueberry on cobbles and between boulders, with clumps of Hierochloe	HTb	LRb	"New" inukshuk and taluit	
08-VS023	10-Aug-08	1	63	7803282	596083	Rail route, near proposed rail yard, on caribou trails along side of valley		Snowbank area, sparse vegetation, rocks above are bare, so snow stays long. Low veg, heather, least willow, mosses, woodrushes.	SB			

VEGETATION BASELINE STUDY REPORT
2008 VEGETATION PLOTS

Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VP11	10-Aug-08	1	65	7803373	596102	Rail route, ridge below proposed rail yard, near "new" inukshuk and taluit	a. Empetrum nigrum	Moss mounds with a diverse variety of plants on drainage slope, including blueberry, heather, arctic willow, woodrush, and least willow	HT	SB		
							b. Vaccinium uliginosum					
							c. Cassiope tetragona					
08-VP12	10-Aug-08	1	66	7803221	595365	Rail route, N side of prop rail yard, on small ridge above lake.	a. Vaccinium uliginosum	Blueberry, heather, arctic willow, Hierochloe, yellow oxytrope, Racomitrium, and Cetraria on rocky ridge.	HTb+c		Small talu nearby	
							b. Oxytropis maydelliana					
08-VP13	10-Aug-08	1	67	7802746	595392	Rail route, S side of prop rail yard, on solifluction slope below ridge	a. Vaccinium uliginosum	Diverse mat of blueberry, Aulicomium moss, heather, and arctic willow on shelf above sedge association	HTb+c		Herring gulls with young in lake to E of site, defending young	
							b. Salix arctica					
08-VP14	11-Aug-08	1	75	7802375	593908	Infrastructure area, slope to N of admin building, against rocky hillside facing building site	a. Vaccinium uliginosum	Thin vegetation on slope with depressions and frost boils, with heather, blueberry, arctic willow, avens, Hierochloe, and woodrushes.	HTb+c		Nearby, possible talu, inuksuit	
							b. Hierochloe sp.					
							c. Salix arctica					

VEGETATION BASELINE STUDY REPORT
2008 VEGETATION PLOTS

Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VP15	11-Aug-08	1	78	7801978	593743	Infrastructure area, on bedrock ledges in small drainage seep above small (temporary?) pond	a. Vaccinium uliginosum	Relatively even growth of grasases and some sedgers in drainage swale. Thick blueberry along sides, some heather.	HTb	Gs	Brood of 8 rock ptarmigan in area above this site -- young are flying, but family is still together.	
							b. Salix arctica					
08-VP16	11-Aug-08	1	80	7801880	594384	Rounded bedrock hill above major junction of tracks and roads.	a. Cassiope tetragona	Edge of a snowbank association -- lots of heather, Oxyria digyna, moss; some Hierochloe and Alopecurus. Sedge association below.	SB	HTc	Well-defined caribou trail nearby.	
							b. Oxyria digyna					
08-VP17	11-Aug-08	1	82	7801219	594417	Seaward from small lake where rail circle starts; where stream flows through solifluction ridge.	a. Salix arctica	Riparian willow assn plus sedge assn on boulder and turf ridge that partially dams a small stream below a bedrock ridge. Much blueberry, sedges, Richardson's willow, arctic willow, and Salix reticulata.	Rw	Snt		
							b. Vaccinium uliginosum					
08-VS024	11-Aug-08	1	70	7802094	593952	On site of proposed generator building, on top of hill.		Thin mat of Carex nardina, avens, forbs, and heaths including heather and blueberry.	Bax	HTb+c		

VEGETATION BASELINE STUDY REPORT
2008 VEGETATION PLOTS

Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VS025	11-Aug-08	1	72	7802176	593957	N end of building ridge, on small shelf on N slope		Thin mat of heather, arctic willow, with some moss, lots of Hierochloe and some Cetraria	HTc			
08-VP18	13-Aug-08	2	27	7800705	594850	Steensby, hillside above 2008 camp, close to site where cars will be dumped	a. Vaccinium uliginosum	Mat of blueberry with scattered arctic willow, Hierochloe, mosses.	HTb			
							b. Salix arctica					
08-VP19	13-Aug-08	2	30	7806571	598925	At end of alignment of stones on rocks extending across valley to E of rail route	a. Vaccinium uliginosum	Embedded boulders, and thick mat of blueberry, heather, arctic willow on mounds and sedges in low areas. Some Labrador tea, Hierochloe, and woodrush.	HTb+c			
							b. Oxytropis maydelliana					
08-VP20	13-Aug-08	2	30	7806588	599167	At edge of "island lake", above small beach opposite colony of nesting gulls.	a. Vaccinium uliginosum	Gravelly glacial rebound beach with thin mat of blueberry, heather in depressions, avens, arctic willow, and dwarf fireweed, with Rhododendron in the high spots.	HTb+c	Bax	Colony of nesting gulls on cliff about 200 m away; sandhill crane feathers, duck feathers, snow goose and Canada goose feathers.	
							b. Dryas integrifolia					

VEGETATION BASELINE STUDY REPORT
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Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VP21	13-Aug-08	2	32	7806539	598599	At rail alignment, W side of rocky ridge, in general area of another alignment of stones.	a. Salix arctica	Small depression at edge of gravelly ridge, adjacent to boulder field, heather and racomitrium moss, with Hierochloe, blueberry, etc.	HTc			
							b. Racomitrium lanuginosum					
							c. Vaccinium uliginosum					
08-VP22	14-Aug-08	2	34	7913702	561034	Infrastructure area, to SE of proposed admin building site, on lower hillside.	a. Carex scirpoidea	Slope below previous snowbank, in downwind area from infrastructure bldg site, or from Deposit 1. Mat of avens, sedges, arctic and net-veined willow.	Bax		Glaucous gull, flying around and sitting on slope.	Colluvial till, sandy, acidic (pH 6 or so, few carbonates); below snowpatch, which adds moisture throughout the season, much buried organic material.
Soils 01							b. Salix arctica					

VEGETATION BASELINE STUDY REPORT
2008 VEGETATION PLOTS

Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VP23	14-Aug-08	2	37	7913246	561203	Infrastructure area, sandstone slab hillside to S of current laydown area between rail and crusher area	a. Carex rupestris	Shattered sandstone slabs arranged to form almost a pavement, plus glacial erratics. Xeric sedges, Richardson's willow, avens, arctic willow, and yellow oxytrope on gentle slope.	Bax	Ws		Terrace, cobbles and frost-heaved coarse fragments, ice-contact glacio-fluvial, turbated, no obvious patterned ground, mud-boil like features; likely a lot of heaving in fall.
Soils 02							b. Salix arctica					
							c. Dryas integrifolia					
08-VP24	14-Aug-08	2	41	7913199	560818	Infrastructure area, near crusher and loading area, between crusher and shore of Sheardown Lake.	a. Cassiope tetragona	Possible late-lying snowbank, but not enough to warrant designation as such. Heather and Cetraria with some avens, small sedges, and yellow oxytrope.	HTc		Glaucous gulls nesting on islands in Sheardown. Lemming sign. Parts of a seal skull and bones found near plot. How did a seal skeleton get to Sheardown Lake?	Pit on small bench, till, ice-contact, cobbly, "skeletal", fragmental, spaces filled with fines
Soils 03							b. Cetraria nivalis					

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Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-V026	14-Aug-08	2	??	7913697	560908	Infrastructure area, on small knob to SE of proposed site of admin building, overlooking pond. Contains 2 "bird stones".		Patches of Saxifraga tricuspidata, curly sedge, mats of avens, some Carex scirpoidea on very dry, exposed knoll with bird stone. Vegetation concentrated around stone.	Bax	DSbs	Raptor pellets with lemming skull and bones around bird stone.	
08-V027	14-Aug-08	2	35	7913687	560918	Infrastructure area, edge of pond just S of site of proposed admin building.		Thick growth of sedges and scattered Richardson's willow on mossy ridge at edge of lake.	Ms	Snt + Rw	Lemming activity in area.	
08-V028	14-Aug-08	2	39	7913188	561226	Infrastructure area, at edge of train siding where cars may be loaded.		Carpet of moss, somewhat mounded, with Carex membranacea and C. aquatilis, arctic cotton, reticulated willow, Richardson's willow and arctic willow.	Snt	Ms		
08-V029	14-Aug-08	2	40	7912960	561186	Infrastructure area in rail turn on siding to loader.		Closely spaced Richardson's willows on biological crust with stranded black algae, possibly previously flooded, much thrift. Willow shrubland?	Ws			

VEGETATION BASELINE STUDY REPORT
2008 VEGETATION PLOTS

Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VS030	18-Aug-08	2	59	7841069	608066	Cockburn Lake, small stream on E side, N of crossing.		Thick growth of Richardson's willow along small stream which cascades down a steep talus slope. Under the willows, blueberry, Oxyria digyna, sedges, large-flowered wintergreen, reticulated willow, woodrush, and more.	Rw			
08-VP25	15-Aug-08	2	42	7913123	562873	Deposit #1, near proposed location of secondary crusher, near drill hole MSI-2008-28. Selected a location for plot, toward the hill.	a. Salix richardsonii	Thick mat of sedges, cottongrass, arctic willow, and reticulated willow plus scattered Richardson's willows, some yellow oxytrope and blueberry. Beautiful little pond and stream flowing down from above.	Snt	Rw		
No soil pit							b. Eriophorum angustifolium					
							c. Salix arctica					
08-VP26	15-Aug-08	2	44	7913125	562701	Deposit #1, nr proposed loc of secondary crusher, plot located to west on terrace.	a. Racomitrium lanuginosum	Scattered plants of Carex misandra, heather in depressions, clumps of avens, blueberry on rocks, and some arctic and reticulated willow, also yellow oxytrope.	HTc+b	SB		Colluviated till, sandy/bouldery, seepage, seep and overflow, not much soil.
Soils 04							b. Carex misandra					
							c. Vaccinium uliginosum					

VEGETATION BASELINE STUDY REPORT
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Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VP27	15-Aug-08	2	45	7912843	562921	Deposit #1, SW of prop admin building site, hopefully on slope in front of building	a. Dryas integrifolia	Avens and xeric sedges between many large boulders, almost a boulder field.	Bax	LRb		borrow pit, glacio-fluvial or sandy till, turf and boulder surface, brunisol, alluviated, well-drained, but small wetlands in the area
Soils 05							b. Salix arctica					
							c. Racomitrium lanuginosum					
08-VP28	15-Aug-08	2	46	7912938	563177	Deposit #1, nr drill hole MSI-2008-23, on hillside below crushers, hopefully.	a. Cassiope tetragona	Thick carpet of heather, moss, and lichens between large bedrock outcrops so may have some snow effect.	HTr			
No soil pit							b. Oxytropis maydelliana					
							c. Racomitrium lanuginosum					
08-VP29	15-Aug-08	2	47	7911980	562417	Mary River, rail bridge crossing, N side of river, W side of where tracks approach.	a. Cassiope tetragona	Small depression in morainal ridge to W of rail crossing, about 100 m from bridge. Thick growth of heather, grey moss, avens, curly sedge, and arctic willow.	HTr	Bax		till or outwash, lateral or end moraine fragments, flat-topped, turbated
Soils 06							b. Racomitrium lanuginosum					

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Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VP30	15-Aug-08	2	48	7912100	562537	Mary River, rail bridge crossing, N side of river, E side of where tracks approach.	a. Carex membranacea	Thick growth of sedges in small basin surrounded by morainal hills. Currently flooded. Carex aquatilis, C. membranacea, arctic willow, and Tofieldia coccinea.	Snt			
No soil pit							b. Salix arctica					
08-VP31	16-Aug-08	2	49	7916699	563229	Deposit 1, beyond deposit at N edge of planned waste rock stockpile, top of small hill, next to cairn. Near drill hole MWD-2008-01	a. Alopecurus alpina	Scattered clumps of plants on very unstable and saturated soil, including purple saxifrage, Oxyria digyna, Saxifraga caespitosa, Saxifraga tricuspidata, Racomitrium moss, poppies, Cerastium alpinum, Poa, and other small grasses, a few small mosses. Great diversity, few individuals.	Bps			till area, soft, supersaturated; on hillock or small rise, no patterned ground here, but nearby, little organic matter in the soil, whole slope creeping, very stony, temperature at 20 cm is only + 1.8 C
Soils 07							b. Salix arctica					
							c. Racomitrium lanuginosum					

Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VP32	16-Aug-08	2	50	7915176	561901	Deposit 1, beyond deposit at W edge of planned waste rock storage area abt 100 m downslope from drill site MWD 2008-05	a. Eriophorum angustifolium	Small sedge meadow in open slope with many boulders/embedded boulders. Mostly cottongrass, arctic willow, Carex aquatilis, and C. misandra.	Snt			saturated where plot is located, colluviated till with seepage, poorly drained, parts severely eroded by seepage, water table at 25 cm, no soil development
Soils 08							b. Salix arctica					
							c. Carex misandra					
08-VP33	16-Aug-08	2	51	7914358	561447	Deposit 1, beyond SW edge o f planned waste rock area, at SW corner of affected area, near drill site MWD 2008-08. Sandstone boulders foliating.	a. Carex nardina	Continuous dry turf between boulders, with curly sedge, Carex nardina and avens dominating. Also, reticulated willow and Carex scirpoidea.				colluviated till slope, sandstone fragments, fresh mud boils due to seepage, possibly old boils or circles, with mineral soil at surface in centre but 5-10 cm of organic soil at side, some cryoturbation
Soils 09							b. Salix arctica					
							c. Dryas integrifolia					

VEGETATION BASELINE STUDY REPORT
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Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VP34	17-Aug-08	2	52	7818335	598254	Cockburn Lake area, south end, in glaciofluvial plain, near drill hole BH4 2008-160. Approx KM 125	a. Vaccinium uliginosum	Level terrace between 2 small rivers, at lakeward end of bedrock ridge with morainal or outwash material all around. Base of cobbles with mats of blueberry, moss (Racomitrium), avens, large-pflowered wintergreen, and Empetrum. Some Hierochloe and Salix arctica.	HT b+m		4 sandhill cranes took off, lots of lemming sign, lots of cast caribou antlers. Near wolf trap.	
No soil pit							b. Salix arctica					
							c. Empetrum nigrum					
08-VP35	17-Aug-08	2	53	7799937	595605	Steensby Inlet, ridge to N of proposed airstrip ridge.	a. Salix arctica	Series of steps, cracks and niches in rocky bedrock ridge, which support a diverse flora, including: heather and Racomitrium, sedges in low areas, blueberry on rocks, mosses/lichens on dry faces, etc.	Mixed		Gull, pipits passing	Small shelf on plucked bedrock surface, steep incline, much seepage through site and on rock faces, somewhat aeolian, fine soil deposited by wind from valley below, mixed with rock fragments from above, soil relatively warm.
Soils 10							b. Empetrum nigrum					
							c. Vaccinium uliginosum					

VEGETATION BASELINE STUDY REPORT
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Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VP36 Soils 11	17-Aug-08	2	54	7799937	595605	Steensby Inlet, valley to E of airstrip ridge, at W edge of valley above water lake.	a. Salix arctica	Diverse vegetation in valley running alongside the proposed airstrip ridge, in valley running NW/SE to water lake. Hummocks are heaths and moss over boulders or maybe ice-cored mounds, and part of plot is simply tundra over boulders.	HTb+c	Snt	Roughleg hawk across valley, or at least it sounds like a roughleg. Lemming runs, burrows, scats. Goose egg opened and eaten, in the entrance to a lemming hole.	Valley between 2 outcrops, seepage area, hummocky - stones, soil and moss hummocks, stone at side of soil pit affects permafrost layer; permafrost at shallow depth under moss hummocks, but drops off steeply outside hummock footprint
							b. Empetrum nigrum					
							c. Vaccinium uliginosum					
08-VP37 Soils 12	18-Aug-08	2	58	7840884	608101	Cockburn Lake crossing, on E side, just N of crossing.	a. Vaccinium uliginosum	Lush, diverse plant association on slope with boulders, above small pond, below talus slope. Blueberry, avens, and arctic and reticulated willow are dominant. Heather in depressions, Oxyria in sheltered places under rocks, Racomitrium moss and Salix reticulata. Some elements of snowbank assn.	HTb+c	SB	Deeply worn caribou trail, fresh hare scats, loon passing in flight.	fluvial terrace below talus slope
							b. Salix arctica					
							c.Oxyria digyna					

VEGETATION BASELINE STUDY REPORT
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Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VP38	18-Aug-08	2	60	7817561	598522	Cockburn Lake, S end, where rail turns inland.	a. Salix richardsonii	This represents a plant association that is RARE on Baffin Island; the riparian shoreline shrub. Tallest willows yet seen on this project form a fringe along the shore of a small pond. Richardson's willow, with understory of large-flowered wintergreen, blueberry around outside.	Rss	SB	This association should be preserved. Located about 40 m from the wolf trap. Preserving both should be high priority.	Soil pit about 70 m away, on glaciofluvial surface, on glaciofluvial in vegetated area.
Soils 13							b. Vaccinium uliginosum					
							c. Salix arctica					
08-VP39	19-Aug-08	2	61	7800850	595164	Steensby port area, in rail turnaround to E of existing camp.	a.Vaccinium uliginosum	Valley is a mixture of shattered bedrock and sedge meadow, with a few drier spots. On moss mats, blueberry, heather, reticulated willow, arctic willow. Clumps of Hierochloe, small mats of avens, and Racomitrium moss close to the bedrock outcrops.	HTb+c	HTr	4 ravens, flock of 20 Canada geese, 4 pipits	Till area in talus-covered bedrock outcrops, some wind-blown material. Till surface may have been previously washed. Above wet moss-turf hummock area. Fragmental.
Soils 14							b. Salix arctica					

VEGETATION BASELINE STUDY REPORT
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Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VP40	19-Aug-08	2	62	7801019	595408	Steensby rail turnaround, E side of valley, on terrace to NW of rail	a. Salix arctica	Small slump area below small bedrock cliff, above sedge wetland. Mounds surrounded by sedges and grasses, generally appear to be "grassy". Mounds bear reticulated willow, Carex aquatilis, and Pedicularis capitata with Arctagrostis, blueberry, and Sudetan lousewort.	Gs	SB	Much lemming activity	Complex slump and solifluction about 50 m from rock face. Bedrock face with soil and veg. cover. Bouldered snout lobe below. Dormant circles and nets. Soil stratified, fine sand and silt. Bottom of pit is rock, likely acting as the permafrost table, there is an organic layer over the rock surface. Cryoturbation.
Soils 15							b. Vaccinium uliginosum					
08-VP41	19-Aug-08	2	64	7800326	595268	Steensby, along rail alignment, near place rail circles after cars are dumped, to W of rail.	a. Vaccinium uliginosum	Glacial rebound beach. Even turf of Carex rupestris, Carex scirpoidea, and Carex misandra with avens, reticulated willow, blueberry, and some arctic willow.	Bax			Glacial rebound area, sharp fragments, cobbles, coarse sand and fine gravel, layer of organic material over gravel.
Soils 16							b. Carex rupestris					
							c. Salix arctica					

VEGETATION BASELINE STUDY REPORT
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Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
	19-Aug-08	2	65	7800441	595366	Steensby, along rail alignment, where rail circles, in small valley to E of rail	a. Cassiope tetragona	Mats of heather and avens, turf of Carex rupestris, Carex misandra, and C. scirpoidea.	HTb		ptarmigan feather	
08-VP42							b. Carex misandra					
No soil pit							c. Vaccinium uliginosum					
08-VP43	21-Aug-08	2	66	7799113	597216	Steensby, near proposed airstrip, S side of strip	a. Salix arctica	Hummocks colonized by heaths, with sedges between hummocks. Blueberry, crowberry, heather, Labrador tea, Carex membranacea and cottongrass.	HT mixed	Snt		
							b. Empetrum nigrum					
08-VP44	21-Aug-08	2	67	7799260	597141	Steensby, near proposed airstrip, S side of strip	a. Cassiope tetragona	Terrace on side of bedrock ridge, small mounds colonized by heather, Labrador tea, blueberry, amidst flat embedded boulders.	HT mixed		2 ravens, pipits, flock of young snow buntings (at least 15 birds), feeding in area	
							b. Vaccinium uliginosum					
08-VP45	21-Aug-08	2	68	7803163	592950	Steensby, Ikpikitujua, nr freight dock infrastructure	a. Cassiope tetragona	Mats of heather and avens on bouldery slope with scattered arctic willows and Hierochloe, some Cetraria, curly sedge, Salix reticulata, alpine milkvetch.	HTc	Bax	Snow geese (7 plus 2 blue form), feeding below ridge, flew off as we landed.	
							b. Salix arctica					

VEGETATION BASELINE STUDY REPORT
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Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VP46	21-Aug-08	2	69	7803082	592797	Steensby, Ikpikitujua, nr road to freight docks	a. Vaccinium uliginosum	Boulders pushing up under soil, mounds and embedded boulders. Mats of blueberry, avens, heather in depressions, scattered arctic willows, Salix reticulata, Carex membranacea, C. nardina, Carex scirpoidea..	HTb+c		Raven, and pipits	
							b. Salix arctica					
08-VP47	21-Aug-08	2	70	7802797	592544	Steensby, Ikpikitujua, nr freight docks	a. Salix arctica	Bouldery slope with some boulders pushing up thru slope. Heather in depressions, mats of avens, scattered arctic willows, moss around stones.	HTc	Bax	Probable golden plovers, juveniles, four birds flying around, saw two times.	
							b. Dryas integrifolia					
08-VP48	22-Aug-08	2	71	7811934	601081	Rectangular lake at Km 135, north of rocky ridge to N of lake, on valley floor	a. Salix arctica	Cottongrass tussocks colonized by heaths, including heather, Labrador tea, blueberry. Lots of Sphagnum moss, heather in depressions between tussocks.	St	HTb+c	Pacific loons, pair, on lake to N, calling and interacting. Goose feeding damage to sedge tussocks.	
							b. Vaccinium uliginosum					
08-VP49	22-Aug-08	2	72	7812032	600828	Rectangular lake at Km 135, N of rocky ridge, W of prev. plot.	a. Carex membranacea	Tussock association with heaths -- heather, Labrador tea, moss between tussocks with least willow, forming mats, Lab tea in moss	St	HTb+c	Sandhill cranes (3), across the GF plain, raven, goose feeding damage.	
							b. Eriophorum vaginatum					

VEGETATION BASELINE STUDY REPORT
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Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VS031	22-Aug-08	2	73	7811850	601010	Rectangular lake at Km 135, on rocky ridge, meat cache.		Stone cache with caribou bones still present, though overgrown by moss. Lots of Poa and Hierochloe in and around the stones. Stellaria and arctic willow, heather below cache.	DSc		Caribou bones in cache. Pipits moving through.	
08-VP50	22-Aug-08	2	74	7799477	596315	S side of airstrip	a. Cassiope tetragona	Bedrock ridge descending in steps to wetland. Thin mat of heather, Racomitrium, lichens, and small amts of avens on bedrock. Least willow in protected areas.			Tent rings nearby	
							b. Cetraria nivalis		HTr	LRr		
							c. Vaccinium uliginosum					
08-VP51	22-Aug-08	2	75	7799936	596346	Steensby, NE side of airstrip, opposite first lake.	a. Salix arctica	Slope below bedrock ridge, lots of boulders and solifluction in area. Old cottongrass tussocks, mounds covered with heather, Empetrum, Labrador tea or Sphagnum/blueberry. Salix richardsonii and sedges, esp Carex misandra, 1n channels between mounds.	HT mixed	St	Roughlegged hawk, nesting, on opposite cliff, three young.	
							b. Vaccinium uliginosum					

VEGETATION BASELINE STUDY REPORT
2008 VEGETATION PLOTS

Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VP52	23-Aug-08	2	76	7821010	598102	Cockburn Lake, where rail turns inland, passing between rock knob and cliff, on the lakeward side of the curve, between rail and lakeshore.	a. Vaccinium uliginosum	Heath tundra on gentle slope with small frost boils. Blueberry, heather, large-flowered wintergreen, arctic willow, avens, and some Hierochloe. Racomitrium in low areas and around boulders.	HTc+b	HTr		
							b. Salix arctica					
08-VP53	23-Aug-08	2	77	7847289	606606	N end of upper Cockburn Lake where the Cockburn River flows into small separate lake, downstream from the confluence, toward rocky slope but still in floodplain.	a. Salix arctica	Currently a wetland with active stream flowing through rocks and hummocks. Nnot likely a permanent stream -- rocks under water have lichens on them. Mounds with sedges and heaths, densely covered. Some mounds appear to be of tussock origin, others of boulder origin.	Snt	HT mixed	Last year, this area was heavily affected by goose feeding, tussock sedges pulled apart, etc. This year, no evidence of feeding; just scats.	
							b. Vaccinium uliginosum					
08-VP54	23-Aug-08	2	78	7861001	603142	Upper valley, before rail starts the decline into Cockburn valley, on gradual E-facing slope. Much water flowing through here at present, due to heavy rains. Snow cover 40%.	a. Eriophorum vaginatum	Cottongrass meadow on gentle slope, with heath-covered moss mounds, lots of arctic willow, heather, and least willow. Mounds are tufts of Eriphorum vaginatum, and between mounds, Carex aquatilis and C. membranacea.	Snt		Lemming, small, spotted as we landed, running away. Pipits, 10-15 feeding in area, flying as flock. Heard semi-palmated plovers but did not see them.	
							b. Salix arctica					

VEGETATION BASELINE STUDY REPORT
2008 VEGETATION PLOTS

Plot #	Date	Unit	Wpt	Coordinates		Located	Species sampled	Notes re plant association	Codes		Notes	Soils data from Hugo Veldhuis
				northing	easting		For plant tissue analysis		1	2	Wildlife	Only for plots with soil pits.
08-VP55	24-Aug-08	2	79	7900119	585513	First valley S of Mary River, at Km 25, just S of the end of the "Trench", S side of small river.	a. Salix arctica	Embedded boulders, gentle slope above river valley with frost boils and some solifluction. Relatively thick mat of avens and Racomitrium with heather in depressions, scattered arctic willoes, Hierochloe and Luzula confusa.	Ba	HTr	Snowing hard, wet snow.	
							b. Racomitrium lanuginosum					
08-VP56	24-Aug-08	2	80	7899967	586397	Same as above #55 but about 150 m W.	a. Salix arctica	Thin mat of avens, some blueberry, arctic willows, capitate lousewort, and some woolly lousewort.	Ba	HTb	Snowing harder, gave up and went home.	
							b. Dryas integrifolia					

	Permanent monitoring plot
	Of special interest

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT
BASELINE STATIONS FOR METALS IN SOIL AND VEGETATION

Print Dec/29/10 11:54:33

Plot # (1)	Original Sample Date	Unit	Coordinates		Located	Species Sampled for Plant Tissue Analysis	Notes Regarding Plant Association	Codes		Notes
			Northing	Easting				1	2	Esp. Wildlife
08-VP01	07-Aug-08	1	7801096	594680	Steensby Inlet	a. Oxytropis maydelliana b. Cassiope tetragona c. Vaccinium uliginosum	Thin cover of heather, blueberry, ledum on gravel and hummocks	HTmixed		
08-VP02	07-Aug-08	1	7802282	594562	Steensby Inlet	a. Hierochloe alpina b. Salix arctica	Grass clumps in and around cache	DSi		Cache on end of small ridge
08-VP03	I7 Aug 08	1	7802643	593965	Steensby Inlet-Ikipikitjua	a. Cassiope tetragona b. Salix arctica c. Oxytropis maydelliana	Thick growth of heather, Racomitrium lanuginosum, and arctic willow on slope	SB		
08-VP04	07-Aug-08	1	7803313	593628	Steensby Inlet-Ikipikitjua	a. Poa sp. b. Salix arctica	Possible old fox den, grassy knob on top of ice-push ridge	DSd		Talu, small fish cache, other storage cache
08-VP05	08-Aug-08	1	7800455	594001	Steensby Inlet-Ikipikitjua	a. Salix arctica b. Oxytropis maydelliana	Thin mat of avens, prickly saxifrage, arctic willow on gravel, adjacent to small tent ring and cache.	Bax		Small circle of stones on rock
08-VP06	08-Aug-08	1	7800144	594172	Steensby Inlet	a. Salix arctica b. Unknown small grass	Thick growth of grasses and sedges with arctic willow and mosses along edge of pond.	Snt	G	
08-VP07	08-Aug-08	1	7799611	593707	Steensby Inlet	a. Dryas integrifolia b. Astragalus alpina	Thin mat of avens, alpine milkvetch and reticulated willow on gravel below outcrop	Ba		Talu nearby
08-VP08	09-Aug-08	1	7798413	592911	Steensby Inlet	a. Salix arctica b. Saxifraga oppositifolia	Biological crust on soil, with scattered plants, including arctic willow, least willow, avens, moss campion, and purple saxifrage.	Ba		Small caches. Flock of 8 sandpipers, semi-palmated plover, lemming sign
08-VP09	09-Aug-08	1	7798616	593098	Steensby Inlet	a. Salix arctica b. Carex scirpoidea (prob.)	Mat of avens, Racomitrium, lichens, and small sedges in small depression in bedrock outcrop. Some Hierochloe, some blackish crazyweed, dwarf fireweed.	Ba		Small stone circle, maybe a hearth?? Fresh lemming sign, semi-palmated plovers.
08-VP10	09-Aug-08	1	7800077	593344	Steensby Inlet	a.Cetraria nivalis b. Cassiope tetragona	Lush growth of heather, avens, and Cetraria lichen	HTc		Possible tool-making site. Good lemming sign, snow bunting, semi-palmated plovers
08-VP11	10-Aug-08	1	7803373	596102	Steensby Inlet	a. Empetrum nigrum b. Vaccinium uliginosum c. Cassiope tetragona	Moss mounds with a diverse variety of plants on drainage slope, including blueberry, heather, arctic willow, woodrush, and least willow	HT	SB	
08-VP12	10-Aug-08	1	7803221	595365	Railway	a. Vaccinium uliginosum b. Oxytropis maydelliana	Blueberry, heather, arctic willow, Hierochloe, yellow oxytrope, Racomitrium, and Cetraria on rocky ridge.	HTb+c		Small talu on lg rock on end of ridge, old
08-VP13	10-Aug-08	1	7802746	595392	Steensby Inlet	a. Vaccinium uliginosum b. Salix arctica	Diverse mat of blueberry, Aulicomium moss, heather, and arctic willow on shelf above sedge association	HTb+c		Herring gulls with young in lake to E of site, defending young
08-VP14	11-Aug-08	1	7802375	593908	Mine Site	a. Vaccinium uliginosum b. Hierochloe sp. c. Salix arctica	Thin vegetation on slope with depressions and frost boils, with heather, blueberry, arctic willow, avens, Hierochloe, and woodrushes.	HTb+c		Nearby, possible talu, inuksuit
08-VP15	11-Aug-08	1	7801978	593743	Steesnby Inlet	a. Vaccinium uliginosum b. Salix arctica	Relatively even growth of grasases and some sedgers in drainage swale. Thick blueberry along sides, some heather.	HTb	Gs	Brood of 8 rock ptarmigan in area above this site -- young are flying, but family is still together.
08-VP16	11-Aug-08	1	7801880	594384	Steesnby Inlet	a. Cassiope tetragona b. Oxyria digyna	Edge of a snowbank association -- lots of heather, Oxyria digyna, moss; some Hierochloe and Alopecurus. Sedge association below.	SB	HTc	Well-defined caribou trail nearby.
08-VP17	11-Aug-08	1	7801219	594417	Steesnby Inlet	a. Salix arctica b. Vaccinium uliginosum	Riparian willow assn plus sedge assn on boulder and turf ridge that partially dams a small stream below a bedrock ridge. Much blueberry, sedges, Richardson's willow, arctic willow, and Salix reticulata.	Rw	Snt	
08-VP18	13-Aug-08	2	7800705	594850	Steesnby Inlet	a. Vaccinium uliginosum b. Salix arctica	Mat of blueberry with scattered arctic willow, Hierochloe, mosses.	HTb		
08-VP19	13-Aug-08	2	7806571	598925	Near Steesnby Inlet	a. Vaccinium uliginosum b. Oxytropis maydelliana	Embedded boulders, and thick mat of blueberry, heather, arctic willow on mounds and sedges in low areas. Some Labrador tea, Hierochloe, and woodrush.	HTb+c		
08-VP20	13-Aug-08	2	7806588	599167	Near Steesnby Inlet	a. Vaccinium uliginosum b. Dryas integrifolia	Gravelly glacial rebound beach with thin mat of blueberry, heather in depressions, avens, arctic willow, and dwarf fireweed, with Rhododendronoin the high spots.	HTb+c	Bax	Colony of nesting gulls on cliff about 200 m away; sandhill crane feathers, duck feathers, snow goose and Canada goose feathers.
08-VP21	13-Aug-08	2	7806539	598599	Near Steesnby Inlet	a. Salix arctica b. Racomitrium lanuginosum c. Vaccinium uliginosum	Small depression at edge of gravelly ridge, adjacent to boulder field, heather and racomitrium moss, with Hierochloe, blueberry, etc.	HTc		
08-VP22 Soil pit 01	14-Aug-08	2	7913702	561034	Milne Inlet	a. Carex scirpoidea b. Salix arctica	Slope below previous snowbank, in downwind area from infrastructure bldg site, or from Deposit 1. Mat of avens, sedges, arctic and net-veined willow.	Bax		Glaucous gull, flying around and sitting on slope.
08-VP23 Soil pit 02	14-Aug-08	2	7913246	561203	Milne Inlet	a. Carex rupestris b. Salix arctica c. Dryas integrifolia	Shattered sandstone slabs arranged to form almost a pavement, plus glacial erratics. Xeric sedges, Richardson's willow, avens, arctic willow, and yellow oxytrope on gentle slope.	Bax	Ws	

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT
BASELINE STATIONS FOR METALS IN SOIL AND VEGETATION

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Plot # (1)	Original Sample Date	Unit	Coordinates		Located	Species Sampled for Plant Tissue Analysis	Notes Regarding Plant Association	Codes		Notes
			Northing	Easting				1	2	Esp. Wildlife
08-VP24 Soil pit 03	14-Aug-08	2	7913199	560818	Milne Inlet	a. Cassiope tetragona b. Flaviocetraria nivalis	Possible late-lying snowbank, but not enough to warrant designation as such. Heather and Cetraria with some avens, small sedges, and yellow oxytrope.	HTc		Glaucous gulls flying around, nesting on islands in Sheardown. Lemming sign. Parts of a seal skull and bones found near plot. How did a seal skeleton get to Sheardown Lake?
08-VP25 No soil pit	15-Aug-08	2	7913123	562873	Deposit No. 1	a. Salix richardsonii b. Eriophorum angustifolium c. Salix arctica	Thick mat of sedges, cottongrass, arctic willow, and reticulated willow plus scattered Richardson's willows, some yellow oxytrope and blueberry. Beautiful little pond and stream flowing down from above.	Snt	Rw	
08-VP26 Soil pit 04	15-Aug-08	2	7913125	562701	Deposit No. 1	a. Racomitrium lanuginosum b. Carex fuliginosa ssp. misandra c. Vaccinium uliginosum	Scattered plants of Carex misandra, heather in depressions, clumps of avens, blueberry on rocks, and some arctic and reticulated willow, also yellow oxytrope.	HTc+b	SB	
08-VP27 Soil pit 05	15-Aug-08	2	7912843	562921	Deposit No. 1	a. Dryas integrifolia b. Salix arctica c. Racomitrum lanuginosum	Avens and xeric sedges between many large boulders, almost a boulder field.	Bax	LRb	
08-VP28 No soil pit	15-Aug-08	2	7912938	563177	Deposit No. 1	a. Cassiope tetragona b. Oxytropis maydelliana c. Racomitrium lanuginosum	Thick carpet of heather, moss, and lichens between large bedrock outcrops so may have some snow effect.	HTr		
08-VP29 Soil pit 06	15-Aug-08	2	7911980	562417	Mary River Rail Crossing	a. Cassiope tetragona b. Racomitrium lanuginosum	Small depression in morainal ridge to W of rail crossing, about 100 m from bridge. Thick growth of heather, grey moss, avens, curly sedge, and arctic willow.	HTr	Bax	
08-VP30 No soil pit	15-Aug-08	2	7912100	562537	Mary River Rail Crossing	a. Carex membranacea b. Salix arctica	Thick growth of sedges in small basin surrounded by morainal hills. Currently flooded. Carex aquatilis, C. membranacea, arctic willow, and Tofieldia coccinea.	Snt		
08-VP31 Soil pit 07	16-Aug-08	2	7916699	563229	Deposit No. 1	a. Alopecurus alpina b. Salix arctica c. Racomitrium lanuginosum	Scattered clumps of plants on very unstable and saturated soil, including purple saxifrage, Oxyria digyna, Saxifraga caespitosa, Saxifraga tricuspidata, Racomitrium moss, poppies, Cerastium alpinum, Poa, and other small grasses, a few small mosses. Great diversity, few individuals.	Bps		
08-VP32 Soil pit 08	16-Aug-08	2	7915176	561901	Deposit No. 1	a. Eriophorum angustifolium b. Salix arctica c. Carex fuliginosa ssp. misandra	Small sedge meadow in open slope with many boulders/embedded boulders. Mostly cottongrass, arctic willow, Carex aquatilis, and C. misandra.	Snt		
08-VP33 Soil pit 09	16-Aug-08	2	7914358	561447	Deposit No. 1	a. Carex nardina b. Salix arctica c. Dryas integrifolia	Continuous dry turf between boulders, with curly sedge, Carex nardina and avens dominating. Also, reticulated willow and Carex scirpoidea.	Bax		
08-VP34 No soil pit	17-Aug-08	2	7818335	598254	Cockburn Lake Area	a. Vaccinium uliginosum b. Salix arctica c. Empetrum nigrum	Level terrace between 2 small rivers, at lakeward end of bedrock ridge with morainal or outwash material all around. Base of cobbles with mats of blueberry, moss (Racomitrium), avens, large-pflowered wintergreen, and Empetrum. Some Hierochloe and Salix arctica.	HT b+m		4 sandhill cranes took off, lots of lemming sign, lots of cast caribou antlers. Near wolf trap.
08-VP35 Soil pit 10	17-Aug-08	2	7799937	595605	Steensby Inlet Near Airstrip	a. Salix arctica b. Empetrum nigrum c. Vaccinium uliginosum	Series of steps, cracks and niches in rocky bedrock ridge, which support a diverse flora, including: heather and Racomitrium, sedges in low areas, blueberry on rocks, mosses/lichens on dry faces, etc.	Mixed		Gull, pipits passing
08-VP36 Soil pit 11	17-Aug-08	2	7799937	595605	Steensby Inlet Near Airstrip	a. Salix arctica b. Empetrum nigrum c. Vaccinium uliginosum	Diverse vegetation in valley running alongside the proposed airstrip ridge, in valley running NW/SE to water lake. Hummocks are heaths and moss over boulders or maybe ice-cored mounds, and part of plot is simply tundra over boulders.	HTb+c	Snt	Roughleg hawk across valley. Lemming runs, burrows, scats. Goose egg opened and eaten, in the entrance to a lemming hole.
08-VP37 Soil pit 12	18-Aug-08	2	7840884	608101	Cockburn Lake	a. Vaccinium uliginosum b. Salix arctica c. Oxyria digyna	Lush, diverse plant association on slope with boulders, above small pond, below talus slope. Blueberry, avens, and arctic and reticulated willow are dominant. Heather in depressions, Oxyria in sheltered places under rocks, Racomitrium moss and Salix reticulata. Some elements of snowbank assn.	HTb+c	SB	Deeply worn caribou trail, fresh hare scats, loon passing in flight.

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			Northing	Easting				1	2	Esp. Wildlife
08-VP38 Soil pit 13	18-Aug-08	2	7817561	598522	Steensby Inlet	a. Salix richardsonii b. Vaccinium uliginosum c. Salix arctica	This represents a plant association that is RARE on Baffin Island; the riparian shoreline shrub. Tallest willows yet seen on this project form a fringe along the shore of a small pond. Richardson's willow, with understory of large-flowered wintergreen, blueberry around outside.	Rss	SB	This association should be preserved. A similar association is one of the tourism attractions in Katannilik Park near Kimmirut. Located about 40 m from the wolf trap. Preserving both should be high priority.
08-VP39 Soil pit 14	19-Aug-08	2	7800850	595164	Steensby Inlet	a.Vaccinium uliginosum b. Salix arctica	Valley is a mixture of shattered bedrock and sedge meadow, with a few drier spots. On moss mats, blueberry, heather, reticulated willow, arctic willow. Clumps of Hierochloe, small mats of avens, and Racomitrium moss close to the bedrock outcrops.	HTb+c	HTr	4 ravens, flock of 20 Canada geese, 4 pipits
08-VP40 Soil pit 15	19-Aug-08	2	7801019	595408	Steensby Inlet	a. Salix arctica b. Vaccinium uliginosum	Small slump area below small bedrock cliff, above sedge wetland. Mounds surrounded by sedges and grasses, generally appear to be "grassy". Mounds bear reticulated willow, Carex aquatilis, and Pedicularis capitata with Arctagrostis, blueberry, and Sudetan lousewort.	Gs	SB	Much lemming activity
08-VP41 Soil pit 16	19-Aug-08	2	7800326	595268	Steensby Inlet	a. Vaccinium uliginosum b. Carex rupestris c. Salix arctica	Glacial rebound beach. Even turf of Carex rupestris, Carex scirpoidea, and Carex misandra with avens, reticulated willow, blueberry, and some arctic willow.	Bax		
08-VP42 No soil pit	19-Aug-08	2	7800441	595366	Steensby Inlet	a. Cassiope tetragona b. Carex fuliginosa ssp. misandra c. Vaccinium uliginosum	Mats of heather and avens, turf of Carex rupestris, Carex misandra, and C. scirpoidea.	HTb		ptarmigan feather
08-VP43	21-Aug-08	2	7799113	597216	Steensby Inlet Near Airstrip	a. Salix arctica b. Empetrum nigrum	Hummocks colonized by heaths, with sedges between hummocks. Blueberry, crowberry, heather, Labrador tea, Carex membranacea and cottongrass.	HTmixed	Snt	
08-VP44	21-Aug-08	2	7799260	597141	Steensby Inlet Near Airstrip	a. Cassiope tetragona b. Vaccinium uliginosum	Terrace on side of bedrock ridge, small mounds colonized by heather, Labrador tea, blueberry, amidst flat embedded boulders.	HTmixed		2 ravens, pipits, flock of young snow buntings (at least 15 birds), feeding in area
08-VP45	21-Aug-08	2	7803163	592950	Steensby Inlet-Ikipikitjua	a. Cassiope tetragona b. Salix arctica	Mats of heather and avens on bouldery slope with scattered arctic willows and Hierochloe, some Cetraria, curly sedge, Salix reticulata, alpine milkvetch.	HTc	Bax	Snow geese (7 plus 2 blue form), feeding below ridge, flew off as we landed.
08-VP46	21-Aug-08	2	7803082	592797	Steensby Inlet-Ikipikitjua	a. Vaccinium uliginosum b. Salix arctica	Boulders pushing up under soil, mounds and embedded boulders. Mats of blueberry, avens, heather in depressions, scattered arctic willows, Salix reticulata, Carex membranacea, C. nardina, Carex scirpoidea..	HTb+c		Raven, and pipits
08-VP47	21-Aug-08	2	7802797	592544	Steensby Inlet-Ikipikitjua	a. Salix arctica b. Dryas integrifolia	Bouldery slope with some boulders pushing up thru slope. Heather in depressions, mats of avens, scattered arctic willows, moss around stones.	HTc	Bax	Probable golden plovers, juveniles, four birds flying around, saw two times.
08-VP48	22-Aug-08	2	7811934	601081	Near Steesnby Inlet	a. Salix arctica b. Vaccinium uliginosum	Cottongrass tussocks colonized by heaths, including heather, Labrador tea, blueberry. Lots of Sphagnum moss, heather in depressions between tussocks.	St	HTb+c	Pacific loons, pair, on lake to N, calling and interacting. Feeding damage to sedge tussocks by goose feeding.
08-VP49	22-Aug-08	2	7812032	600828	Near Steesnby Inlet	a. Carex membranacea b. Eriophorum vaginatum	Tussock association with heaths -- heather, Labrador tea, moss between tussocks with least willow, forming mats, Lab tea in moss	St	HTb+c	Sandhill cranes (3), across the GF plain, raven, goose feeding damage.
08-VP50	22-Aug-08	2	7799477	596315	Steensby Inlet Near Airstrip	a. Cassiope tetragona b. Flaviocetraria nivalis c. Vaccinium uliginosum	Bedrock ridge descending in steps to wetland. Thin mat of heather, Racomitrium, lichens, and small amts of avens on bedrock. Least willow in protexted areas.	HTr	LRr	Tent rings nearby
08-VP51	22-Aug-08	2	7799936	596346	Steensby Inlet Near Airstrip	a. Salix arctica b. Vaccinium uliginosum	Slope below bedrock ridge, lots of boulders and solifluction in area. Old cottongrass tussocks, mounds covered with heather, Empetrum, Labrador tea or Sphagnum/blueberry. Salix richardsonii and sedges, esp Carex misandra, 1n channels between mounds.	HTmixed	St	Roughlegged hawk, nesting, on opposite cliff, three young.
08-VP52	23-Aug-08	2	7821010	598102	Cockburn Lake	a. Vaccinium uliginosum b. Salix arctica	Heath tundra on gentle slope with small frost boils. Blueberry, heather, large-flowered wintergreen, arctic willow, avens, and some Hierochloe. Racomitrium in low areas and around boulders.	HTc+b	HTr	

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			Northing	Easting				1	2	Esp. Wildlife
08-VP53	23-Aug-08	2	7847289	606606	Cockburn Lake	a. Salix arctica b. Vaccinium uliginosum	Currently a wetland with active stream flowing through rocks and hummocks. Nnot likely a permanent stream -- rocks under water have lichens on them. Mounds with sedges and heaths, densely covered. Some mounds appear to be of tussock origin, others of boulder origin.	Snt	HT mixed	Last year, this area was heavily affected by goose feeding, tussock sedges pulled apart, etc. This year, no evidence of feeding; just scats.
08-VP54	23-Aug-08	2	7861001	603142	Valley West of Cockburn Lake	a. Eriophorum vaginatum b. Salix arctica	Cottongrass meadow on gentle slope, with heath-covered moss mounds, lots of arctic willow, heather, and least willow. Mounds are tufts of Eriphorum vaginatum, and between mounds, Carex aquatilis and C. membranacea.	Snt		Lemming, small, spotted as we landed, running away. Pipits, 10-15 feeding in area, flying as flock. Heard semi-palmated plovers but did not see them.
08-VP55	24-Aug-08	2	7900119	585513	Valley South of Mary River Rail Crossing	a. Salix arctica b. Racomitrium lanuginosum	Embedded boulders, gentle slope above river valley with frost boils and some solifluction. Relatively thick mat of avens and Racomitrium with heather in depressions, scattered arctic willoes, Hierochloe and Luzula confusa.	Ba	HTr	Snowing hard, wet snow.
08-VP56	24-Aug-08	2	7899967	586397	Valley South of Mary River Rail Crossing	a. Salix arctica b. Dryas integrifolia	Thin mat of avens, some blueberry, arctic willows, capitate lousewort, and some woolly lousewort.	Ba	HTb	Snowing harder, gave up and went home.

NOTES:

1. SURFACE SOIL SAMPLES WERE COLLECTED FOR CHEMICAL ANALYSIS AT ALL THESE VEGETATION MONITORING PLOTS. PLOT NUMBERS WITH "SOIL PIT" NUMBERS ARE THOSE WITH ADDITIONAL SOIL PITS EXCAVATED FOR EVALUATION BY HUGO VELDHUIS, THE PROJECT TEAM SOIL SCIENTIST.

APPENDIX C

SAMPLE OF PLANT DATABASE

- Sample Entry from the Mary River Project Vegetation Plot Database, hosted by Outcrop Ltd.
- Access at: **http://npd.outcrop.com/vegetation.asp?code=Baffinland+Iron+Mines%2C+Mary+River+Project**

Vegetation Baseline Data, Plot Information

Project Code: Baffinland Iron Mines, Mary River Project

Plot #: 07-VS101

Date (yy/mm/dd): 07/08/07

Team: PB, PQ

Location: South rail route, approx. Km 135, south of Cockburn Lake, in narrow ist

Coordinates:

UTM Zone:	Lat./North:	Long./East.:	Elevation:
17W	7809857	600046	73 m

Photos:

Card:	Photo #'s:
3	9 - 12

Airphoto #:	Photo roll:	Frame #:	Scan #:

Plot represents: Non-tussock sedge association at base of small cliff.

Assn.Codes:

#1 S Mod1. nt #2 M Mod2. cb TWA Code:

Mapping Code: S

Slope: level % Aspect:

Moisture: high Nutrients:

Terrain:

- ☐ Beach
- ☐ Terrace
- ☐ Plateau
- ☐ Valley Bottom
- ☑ Slope
- ☐ Delta
- ☐ Alluv Fan
- Flood Plain

Microtopography:

- ☐ Hummyocky
- ☐ Frost boils
- ☐ Solifluct
- ☐ Circles
- ☐ Bould strm
- ☐ Polygon
- ☐ Frost fiss
- Flat

- [ ] Flood Plain
- [ ] RidgeCrest
- [x] Cliff
- [x] Stream
- [ ] Flat
- [ ] Br. Outcrop
- [ ] Boulders
- [ ] Bould field
- [ ] Shattered br.

Substrate %:

Organics:	Rocks:	Mineral soil:	Bedrock:	Water:
95	0	0	bedrock	5

% of surf covered:

Dist betw stones:

Type of stones:

% Sand:

% Gravel:

% Standing: 0

% Flowing: 5

Soil Notes: Small seep at base of bedrock cliff, soil saturated.

Vegetation Notes: Thick growth of sedges, cottongrass and assorted grasses on small terrace below cliff, below small pool. Adjacent to snowbank association.

Cover %:

Tree:	Shrub:	Herb:	Moss/lichen:
	10	70	15

Trees/erect shrubs :	Legumes & buttercups :	Lichens :	Mosses :	Rock lichens :
		cetrniva .1 thamsubu .1 dactarct .1	Sphagnum sp. 15 (red, under veg.) Asst'd moss 10	

Dwarf shrubs:	Sedges:	Cottongr:	Rushes:	Ferns, horsetails, clubmosses:
saliarct 10 ledupalu 5 saliherb 2 vacculig 10 casstetr 2	careaqua 10 carememb 20 carebige 20 (C. bigelowii)	erioangu 2 eriovagi 5		

Forbs:	Mustards:	Saxifrages:	Composite:	Other: (fungi, etc.):

polyvivi .2				

Wildlife Notes:

Scats: goose
Caribou skull found nearby, large bull, antlers recently shed.

Note Item	Note Description	Sighting/Heard	Scats	Dens/Burrows	Runs/Trails	Nests	Other
		☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	

Archaeology Notes:

APPENDIX D

SOIL STUDY SUMMARY REPORT

- Executive summary of report on the soils studies completed in 2007
  (full report is a stand-alone document)

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

SOIL CLASSIFICATION PROJECT

Climate and Soil Development

The processes of soil formation in the project area are for a large part controlled by low soil temperatures, low precipitation, and, to a lesser extent, by the presence of a permafrost table near the surface. Biological and chemical processes are generally slowed or completely stopped by low temperatures. On the other hand, physical processes may be stronger as a result of freeze-thaw cycles in spring and fall.

Permafrost and Soil Classification

The Mary River Project area lies in the Northern Arctic Ecozone, and encompasses part of the Borden Peninsula Plateau, Melville Peninsula Plateau, and Baffin Island Uplands Ecoregions, as defined in the Ecological Land Classification for Canada (ELCWG). The cold climate has resulted in the formation of permafrost, which underlies the whole ecozone, and extends to several hundred metres below the surface. The depth to the permafrost table, usually referred to as the active layer or thaw layer, varies considerably, and is dependent on factors such as soil material, drainage, aspect, and vegetative cover.

Due to the variation in permafrost conditions not all soils within this area can be classified as permanently frozen soils (Cryosols) as defined in The Canadian System of Soil Classification (CSWG, 1998), even though the whole project area is underlain by permafrost. In the Canadian system, Cryosols are defined as soils that must have permafrost within 100 or 200 cm of the soil surface, depending on the degree of cryoturbation in the soil profile. Thus, for example, soils that have developed on well-drained sandy materials often are not strongly cryoturbated, and have a seasonal thaw layer extending well below 100 cm depth. These soils are not classified as Cryosolic soil, but are classified as Brunisolic soils, which are soils that show weak B horizon development.

Soil Parent Materials

The soils have developed on a variety of parent materials, which have largely been mapped by the Geological Survey of Canada (GSC) as sandy and gravelly materials with significant large coarse fragment content. These sandy materials vary from glaciofluvial deposits, sediments deposited in pro-glacial lakes, to areas of sandy till. These materials are generally found as the dominant materials in valleys and as plains. In low-lying areas, where water remains at the surface or close to the surface, a thin (15-30 cm) fibric peat, which is derived for a large part from sedge roots, overlies mostly sandy materials, with or without large, coarse fragments at the surface.

Medium textured materials (loam, sandy loam), which usually contain significant amounts of gravel and large coarse fragments, are found on many valley slopes as till and colluviated till. These materials are also found as valley floors in the form of ground, lateral and end morains. In addition, extensive areas of the project south of Mary River Camp consist of thin bouldery and blocky till overlying non-carbonate bedrock (boulder fields), frost-shattered bedrock (felsenmeer), and areas of frost-heaved cobbles, stones and boulders.

Wind action has winnowed sand in many areas creating an armoured surface of gravels and cobbles (desert pavement). Wind has also deposited the sand as eolian veneers in other areas. Most of the eolian deposition is in the form of a thin cap, although deep deposition occurs on some lee slopes. The eolian sediments frequently have thin organic bands within the matrix, which mark former surfaces. Because these sediments usually consist of fine and very fine sand, permafrost is closer to the surface than in coarser sand deposits. Other sediments found in the project area include alluvial deposits along rivers and streams. These deposits range from stratified sand to gravels and boulders with varying amounts of finer materials.

North of camp the underlying bedrock consists of carbonate bedrock, which contributes coarse flagstones to the surface and soil matrix. The till in this area is calcareous, and generally has a finer texture than the non-calcareous till south of camp.

Where veneers of coarse fragments make up most of the surface and soil matrix, and finer soil materials are generally lacking, e.g. talus, scree, and upper parts of alluvial fans, the soils are classified as non-soils, although they will support pockets of vegetation in crevices and hollows.

Coarse sandy, gravely, and bouldery marine deposits are found close to the coast as relic marine beaches, foreshore materials, and as push ridges. Clayey marine deposits are also locally found inland.

Fine- to medium-textured soil materials are generally cryoturbated, and the soil surface exhibits varying types of patterned ground, while sandy deposits are characterized by weakly to strongly defined polygonal patterns.

Soil Classification and Distribution

The interactions between climate, soil materials, topography and the relative short time period that pedological processes have been active has resulted in soils which have only weak soil horizon formation. There is, with some exceptions, also a general lack of organic matter accumulation within the profile.

Soil Studies

The objective of the soil classification is to provide soil information to the vegetation project. The aim is to establish linkages between soils, vegetation and surficial materials. This information is required to allow extrapolation of data to areas not investigated, and map distribution of wildlife habitat in the project area.

Data 2007

Forty-five soils were investigated. The profiles of a number of soils were sampled, and samples were taken from selected soil horizons for other soils. Seventy-eight samples were taken. Fifty samples were analyzed for chemical and physical parameters.

APPENDIX E1

VEGETATION CLASSIFICATION SYSTEM

- Classification system for vegetation, to contribute to Ecological Land Classification System

APPENDIX E1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT

VEGETATION CLASSIFICATION SYSTEM

SECTION 1.0 – INTRODUCTION AND DEFINITIONS

In order to be able to create an ecological land classification structure for the Mary River study area, it is necessary to understand the many plant associations that make up the vegetation of the area. In creating names for these, systems that have already been established for other projects in the eastern arctic were consulted, but the system developed for the Mary River Project includes additional associations. Each area studied has its own characteristics, and each has plant associations that may differ from those found even less than a hundred kilometres away.

In naming these associations, the use of scientific plant names in the name of the association has been avoided, unless the scientific name is in common usage. The Latinised names are simply too difficult to remember, as they usually mean nothing to non-botanists. It is also impossible to translate these into Inuktitut. A combination of general terms (gravel beaches, sedge associations, heath tundra, lichen-rock community on boulder field) were used, as well as terms that were used in other projects, as far as they apply. As in each project of this sort, there are some associations here that have not appeared in other projects so far studied.

In 2006, the main concentration was on the proposed north road and rail route, and on the area around Deposit #1, the proposed mine infrastructure area and Mary River Camp, and the port site at Milne Inlet. The 2007 work and report included information on the south rail route and port, and on part of the proposed south access road route. In addition, soils information on both routes was added. In 2008, gaps were addressed, additional soil studies were done, and permanent monitoring plots were established and data collected for each.

It is important to realize that the terminology used to label these associations is artificial – it is terminology created by man. It means nothing to the plants, and probably means little to Nunamiut (“people of the land”), as plant communities are not a way in which they view their land. However, knowing how much of an area is occupied by sedge associations or by lichen-rock associations is important to a mining company that will need to develop a remediation or reclamation plan for their site. So, there needs to be a set of terminology that works for the particular area being studied, and for the various audiences that will need to use it.

In this system, the term “**plant community**” has been used for general categories such as “coastal communities” or “wetlands” or “heath tundra”. These are usually large enough to be mappable. The term “**plant association**” has been used for subgroups, which in most cases are too small to map.

In some cases, terrain features create landforms that are easily visible from the air or on a good air photo, but which may include many different plant communities or associations. In some cases, it is convenient to group these into “**complexes**”, such as an “esker complex”, “glacio-fluvial/glacial outwash complex” or “canyon complex”.

Widely accepted common names have been used for the plants listed in this report. However, to make this document useful over a wider geographical area, it is also necessary to use the

scientific names of the plants. To keep it as short as possible, the scientific name is usually used the first time a plant appears in this document, and the common name used thereafter, unless there is a possibility of confusion, in which case the scientific name (or both common and scientific name) are used. Some plants, however, have no common names, in which case it has been necessary to use only the scientific name. Scientific names, common names, and recent synonyms appear in the plant species list (Appendix F).

A traditional knowledge component to the baseline work was started in the summer of 2007, with work with elders in Pond Inlet. The 2007 results are compiled into a separate report.

Where there is a list of several species in the same genus, the genus name is used first, and only the initial for that genus is used in the rest of the list (example: "*Salix herbacea*, *S. reticulata*, and *S. arctica"*).

All scientific names in the text are italicized, a common practice in the literature.

Scientific names (Latinized names given to an organism by specialists in that field) are valuable in that they permit recognition of a particular species on an international basis, by botanists and interested others around the world. However, they are not perfect.

Even the scientific names present a problem in that the system is constantly changing as specialists revise genera, resulting in changes to the taxonomy. Scientific names have been checked as of the spring of 2010, and changes noted in the text and in the species list. "Old" or "former" names, at least those used in the last 10 years are listed in the species list as "synonyms", appreviated "syn." Current taxonomy has been checked using the three most reliable databases, the International Taxonomic Information System (ITIS) (2010), the USDA PLANTS database (2010), and the online version of the Flora of the Arctic Archipelago (accessed online, June 2010). Even so, due to lags in updates of these databases, the information is not always the same, hence the retention of synonyms.

There have been a number of very recent changes to taxonomy of several grasses, for example, moving of the genus *Hierochloe* to *Anthoxanthum* and changes of *Alopecurus alpinus* to *Alopecurus magellanicus* (Consaul, L., personal communication, 2007). These have been modified to fit the taxonomy used in the new *Flora of the Canadian Arctic Archipelago* (Aiken, et.al. 2007).

As is described in the main report text under "Methods", the *Vascular Plants of the Continental Northwest Territories* (Porsild and Cody, 1980) was used as the main source of taxonomic information but much of the taxonomy is outdated. Nicholas Polunin's excellent *Botany of the Canadian Eastern Arctic, Part III, Vegetation and Ecology* covers the general area under consideration and was of great value in developing the classification system (Polunin, 1948). The vegetation classification system developed for Sirmilik National Park (Duclos, Levesque, et. al., 2006), was reviewed, as well as the earlier vegetation work done for this park when it was still known as North Baffin National Park (Zoltai, McCormick, and Scotter, 1983), and the baseline work done for Nanisivik Mine, located near Arctic Bay.

Identification was aided by the use of the online *Flora of the Canadian Arctic Archipelago* (various authors, principally Aiken, Dallwitz, Consaul, McJannet, et. al. (1999 onwards), Argus, McJannet and Dallwitz (Salicaceae, 1999 onwards), Gillett, Consaul, Aiken, and Dallwitz (Fabaceae, 1999 onwards), and Scott, Aiken, Boles, and Dallwitz (Ranunculaceae, 1999 onwards). We also used the CD-ROM version of this important work (Aiken, Dallwitz, et. al., 2007). Pertinent parts and photos were printed out and used to assist identification in the field.

Photo and mapping codes have been developed to facilitate identification of these units. These are usually a one- to two-letter code, with main groups being identified with capital letters, and sub-groups being assigned lower case “modifiers”, such as “S” for “sedge community” and “Snt” meaning “non-tussock sedge association”. These codes follow the name of each unit. They are used to identify photos and as a kind of shorthand on the data sheets.

Photos referenced in this report are included in **Appendix E2.** Plot numbers are coded by the year, and then the route, therefore: “07_VN045” means 2007, Vegetation, North route, Plot #45. Monitoring plots are identified by “VP” and a three digit number.

The local restrictive elements for plant associations include the amount of moisture available to plants, the chemical environment in which they live and substrate on which they occur, exposure to wind and desiccation, and particle size and texture of the soils. A separate account of soils information obtained during the summer of 2007 has been prepared, and an executive summary of this work is included as Appendix D of the Vegetation Baseline Study Report.

PHOTO 1. Glaciofluvial landscape along north road and rail route. (Cover)

SECTION 2.0 - WETLANDS

2.1 SEDGE COMMUNITY S

PHOTO 2. Sedge community in stream valley, aerial.

This plant community consists of predominantly *Carex* sedges and/or cottongrasses (*Eriophorum* sp.) and some grasses (*Arctagrostis latifolia* and *Calamagrostis purpurascens*), located in areas with varying amounts of moisture, usually in basins or in areas where water drains down from one lake to another. Water depth usually does not exceed 15 cm except in areas with emergent vegetation.

Under the Circumpolar Arctic Vegetation Map system, the sedge associations in this part of the Arctic all fit into the vegetation unit called "W1. Sedge/grass, moss wetland". On the CAV map, this unit is widespread south of the lake called Angajurjualuk and Nina Bang Lake. (*Arctic Geobotanical Atlas*, 2007)" In reference to the dominants in this unit, the CAVM website states: "Sedges, grasses, mosses, and forbs. Grasses are more important in Subzone B wetlands than in Subzone C. Elevated microsites have moist graminoid, prostrate dwarf shrub, forb, and moss tundra species (see also Unit G2)." (Subzone C is the bioclimate subzone for northern Baffin Island.) This community falls into Olthof's "Wet Sedge" or "Wetlands" classification groups (Olthof, 2008)

In the sedge community, a shallow peaty layer (10 - 30 cm) is characteristic, largely composed of weakly decomposed roots, over a variety of parent materials, which in the project area are usually coarse sand or small gravels. This layer is usually saturated, and in the case of non-tussock associations, with a slow flow of water or standing water. Depth to permafrost is governed by the depth of the organic layer and moisture conditions, and is therefore quite variable under these communities.

2.1.1 Emergent Association Se

PHOTO 3. Plot 06_VN008

An emergent association occurs in standing water at the edges of ponds, bays, edges of slow streams, where current is slow to nonexistent. Vegetation is rooted in water to about 30 cm depth.

The vegetation usually consists of sedges (*Carex aquatilis)*, cottongrass (*Eriophorum angustifolium)*, and the grasses *Dupontia fisherii*, and *Arctagrostis latifolia* in the shallower areas. The rather odd semaphore grass with floating leaves, *Pleuropogon sabineii,* occurs in standing water or slow areas of small streams.

2.1.2 Non-tussock Sedge Association Snt

PHOTO 4. Plot 06_VN011

This association usually occurs in the centre of depressions or in the centre of a drainage swale. It usually receives a slow, but reliable flow of water throughout the growing season, and there may be standing water in some areas, especially if there is solifluction or a downward creep of the soil, forming small ridges or terraces which act as small dams. Usually there are few or no boulders, or the boulders are buried in peaty soil. The soil is usually saturated throughout the growing season.

Non-tussock Carex sedges, cottongrasses, and some grasses dominate this association. These include *Carex aquatilis, C. fuliginosa* ssp. *misandra, C. membranacea, Eriophorum angustifolium, Arctagrostis latifolia, Dupontia fisherii, Eriophorum scheuchzerii, Calamagrostis pupurescens,* and *Juncus biglumis*. Herbaceous non-grassy plants include Sudetan lousewort (*Pedicularis sudetica)* and yellow marsh saxifrage (*Saxifraga hirculus*). There may be varying amounts of moss, especially if there are solifluction ridges, but almost no lichens at all; it is simply too wet.

In places, these associations are mixed with moss associations, especially on lake shores. See "Mossy Shorelines".

In some sedge associations, especially those in glaciofluvial terraces, such as those near the Mary River Camp, in the stream valley just to the west of camp, an unusually diverse association has developed. This is a mixture of mosses and sedges along with a variety of other plants, including the mastodon plant (*Tephroseris palustris congesta*) and *Saxifraga foliolosa*. This association may be very small or linear, along the edge of the water, or on solifluction ridges.

2.1.3 Tussock Association St

PHOTO 5. Plot 05_VS097

At the edge of a drainage, where the water supply during the growing season is less reliable, non-tussock sedges are replaced by those that form tussocks (tight clumps of leaves with flowering stems among them). This association blends into the non-tussock association toward the centre of the drainage, and into either hummocks or heath tundra at the edges. This association was encountered at the side of a non-tussock sedge association near Cockburn Lake toward Steensby Inlet, but otherwise there is very little of this association on the areas studied for this project. However, it is common across the North. In Olthof's classification system, this is called "Tussock Graminoid Tundra" (Olthof, 2008).

Tussocks of *Eriophorum vaginatum* may be colonized by mosses and heath tundra species. Between the tussocks, non-tussock sedges may form a dense stand or can be sparsely distributed in a moss carpet.

The difference between the vegetation *on* the tussocks and that *between* the tussocks is distinct. On the drier microhabitat in the tops of the tussocks, there are species much more characteristic of dry tundra areas, like mountain avens (*Dryas integrifolia*), blueberry (*Vaccinium uliginosum*), and curly sedge (*Carex rupestris*). The areas between the tussocks is occupied by a wetland type flora, including sedges, rushes, Sudetan lousewort, and some mosses.

2.1.4 Sedge-moss Wet Meadow S-Mwm

PHOTO 6. Aerial view of ponds and Sedge-moss wet meadow
PHOTO 7. Plot 05_VN017
PHOTO 8. Plot 06_VS291 Hummock
PHOTO 9. Plot 06_VS291 *Koenigia islandica*

The Sedge-moss wet meadow association occurs on patterned ground, which generally is located in flat areas in valley bottoms. Much water remains on the land here, often as standing water in polygons surrounded by raised ridges, called low-centre polygons. It can also occur in small depressions, or below gravel terraces where streams exit the gravel.

The mossy ridges are about 12 – 20 cm in height, and do not appear to be ice-cored near the surface. They are long moss mounds composed of a mixture of mosses including *Spaghnum* and *Aulacomnium*. Many rooted plants grow in the moss, including *Carex aquatilis,* the woodrush

*Luzula arctica (*formerly *Luzula nivalis)*, net-veined willow (*Salix reticulata*), least willow (*S. herbacea*), and sometimes Richardson's willow (*S. richardsonii)*. Several forbs are common here including Sudetan lousewort (*Pedicularis sudetica*) and yellow marsh saxifrage (*Saxifraga hirculus*). Blueberry (*Vaccinium uliginosum*) occasionally occurs on the sides and tops of the mounds.

The centres of the polygons, if not filled with standing water, are flat and sparsely vegetated, likely due to the fact that the soil is constantly saturated during the growing season. Non-tussock sedges grow here, including *Carex aquatilis* and *Carex fuliginosa* ssp. *misandra*. In the centres, in the drier spots, there is a greenish brown moss which lies flat to the ground, forming a thin cover. It is not cushiony, just a film. Other areas are often covered by a black "biological crust", usually a combination of algae and cyanobacteria.

Another form of this plant association occurs on hummocky wetland. Here mounds, possibly of tussock origin, are scattered through an area where water flows across the land in small channels. The hummock mounds are about 30 - 40 cm high, probably originating as tussocks of *Eriophorum vaginatum*, but now surrounded by mosses, and topped with grasses (*Arctagrostis latifolia*) and sedges (*Carex scirpoidea* and others). Blueberries and arctic willow (*Salix arctica*) grow abundantly on the sides of the mounds; mosses and slowly-flowing water fill the areas between mounds. Here, one of the few annual plants to be found in the Arctic, the tiny *Koenigia islandica,* was found.

2.2 MOSS COMMUNITIES M

There are a number of plant associations in which moss is clearly the dominant plant form, and in which the moss affects the microhabitat, mostly by retaining water, much like a sponge. In addition, the moss insulates the ground, and the active layer under moss ridges is often quite shallow. The top of the permafrost layer is closer to the surface where this insulation occurs – sometimes as shallow as 60 cm in August. These associations are usually small, often too small to be mappable, but are clearly different. Many species of vascular plants are associated with these communities, growing in the moss or surrounded by moss.

Because most of the moss associations are associated with or part of larger sedge communities, the soil generally is not different under the moss ridges or mounds, but reflects the general nature of the soils for the sedge community. In this area, these soils usually contain a peaty organic element over various parent materials, mostly coarse sands or fine gravels. Depth to permafrost is variable, and largely controlled by the insulating quality of the moss layer.

2.2.1 Mossy shorelines Ms

PHOTO 10. Plot 06_V230, shoreline moss association in foreground
PHOTO 11. Plot 06_VN258
PHOTO 12. Plot 06_V045, moss association with mastodon flower
PHOTO 13. Mastodon flower, *Tephroseris palustris* ssp. *congesta*
PHOTO 14. Golden saxifrage, *Chrysosplenium tetrandrum*
PHOTO 15. *Saxifraga cespitosa*
PHOTO 16. *Saxifraga foliolosa*

This association occurs along the shores of lakes, ponds, streams, or rivers, and is often associated with solifluction. This association is usually narrow, following the shoreline (Photo 10), and may grade into a sedge association. The moss carpet and mounds is composed of a great variety of mosses, including *Sphagnum, Drepanocladus*, and *Aulacomnium*.

The willows *Salix arctica* and *S. reticulata* are almost always present in these moss associations. *Salix richardsonii* and/or *S. herbacea* may occur in small numbers. *Carex aquatilis, C. membranacea, Alopecurus alpinus, Luzula arctica,* and *Poa* sp. are often present as well. In the wetter places, semaphore grass (*Pleuropogon sabinei*) may occur, and in drier spots, alpine holygrass (*Anthoxanthum monticola*). Forbs include mountain sorrel (*Oxyria digyna*), bistort (*Persicaria vivipara*), red bladder campion (*Silene uralensis* ssp. *arctica*) and Sudetan lousewort (*Pedicularis sudetica*). In the wetter associations, yellow marsh saxifrage (*Saxifraga hirculus*) and *Saxifraga foliolosa* can be common.

An unusually diverse example of this association occurs in the stream valley just to the west of the Mary River Camp (Photo 12, Plot 06-V045). This stream flows down through the glaciofluvial plain and is wide here, with many sedges and solifluction ridges. There is a thick stand of mastodon flower, rooted in thick moss, including a red *Bryum*. Also in this stand of moss are a number of grasses: *Calamagrostis purpurascens, Alopecurus magellanicus, Arctagrostis latifolia,* and *Pleuropogon sabinei*. In addition, there is a diverse group of plants including red bladder campion (*SIlene uralensis* ssp. *arctica*), star chickweed (*Stellaria longipes*), golden saxifrage (*Chrysosplenium tetrandrum*), bulblet saxifrage (*Saxifraga cernua*), *Saxifraga foliolosa*, yellow marsh saxifrage (*Saxifraga hirculus*), *Ranunculus hyperboreus*, and several small mustards (*Draba* sp.).

2.2.2 Mossy Cliff Bases Mcb

PHOTO 17. Plot 06_VN115, *Eutrema edwardsii* in moss substrate.
PHOTO 18. Plot 07_VN252, moss association in calcareous area below cliffs.
PHOTO 19. Plot 07_VN252, *Epilobium arcticum* in moss.

Mossy cliff base associations are not necessarily located along shorelines, but at the bases of cliffs or in areas near cliffs. Water flows down the face of the cliff and through crevices and collects at the base. Due to the reliable source of moisture, a moss association often develops here.

These are usually quite small, unmappable, and may also include elements of the snowbank association, as the same areas often retain snow long into the summer.

These moss associations are usually not as mounded as those at the edges of lakes or ponds, but are carpets of several species of moss. Arctic willow, least willow (*Salix herbacea*), large-flowered wintergreen (*Pyrola grandiflora*), *Stellaria longipes*, and *Eutrema edwardsii* often grow in the moss.

One of these moss associations occurs in plots 07_VN80 and 07_VN252 on the north road route. These plots are located downslope from the road near Km 56, where the road curves near a limestone cliff (Photo 18). In this moss association, a number of vascular plants occur, including *Salix reticulata* and *S. richardsonii*, *Carex aquatilis*, *C. membranacea*, and *C. fuliginosa* ssp. *misandra.* Yellow marsh saxifrage *(Saxifraga hirculus*), red bladder campion, and several Drabas also occur here, growing in the stream channel or in carpets of several different mosses including a red *Bryum.*

Also occurring here is the small arctic fireweed (*Epilobium arcticum*) (Photo 19). According to Porsild and Cody (1980), the arctic fireweed is rare. However, the range maps in Porsild and Cody (1980) reveal that it has been collected in Greenland and in the arctic archipelago, as well as around Hudson Bay. In McJannet, Argus, and Cody (1995), *Epilobium arcticum* was considered for rare status and rejected due to the fact that it is of widespread distribution across the Arctic. This species does not appear in any of the other publications on rare plants, nor is it on the COSEWIC or SARA lists. A return visit to the site was made in order to check further for

additional plants. More than eighty plants were found on the slope below the road. During the work in 2008 in the port infrastructure area near Steensby Inlet, we found another of these associations, again with about 80 plants of *Epilobium arcticum* (Plot 08-VS008).

2.3 WILLOW COMMUNITIES W or R

Richardson's willow (*Salix richardsonii*) is the dominant species in two different types of willow associations. These are so different that two different codes have been used to refer to these. Willow shrublands (coded "W"), occur on flat land near lakes and usually do not include any sort of channel. Riparian willow associations occur in stream channels or at the edges of ponds where their roots can easily access water throughout the growing season.

2.3.1 Willow shrublands Wsh

PHOTO 20. Plot 07_VS123, example of willow shrubland, near pond

Adjacent to many lakes, level areas support an association that seems intermediate between wetlands and riparian associations. There is no obvious flow of water, but the supply of water seems to be reliable throughout the summer. This allows the development of a rather open shrubland in which the Richardson's willow (*Salix richardsonii*) is dominant. The willow bushes average 20 – 40 cm in height and are rather evenly distributed through flat open swales between and around small lakes or ponds.

The understory in this association varies, likely due to the water supply. Sometimes aquatic sedges (*Carex aquatilis, C. membranacea*, and *C. bigelowii*) are the most common, and sometimes heath tundra species [including blueberry (*Vaccinium uliginosum*), heather (*Cassiope tetragona*), and, in the south, *Ledum palustre*] dominate.

Willow shrublands can be quite extensive, covering large areas of land, but for the most part, they are limited in size to parts of the watershed that accumulate water, but not so much that sedge associations can become established.

Based on experience in other parts of the arctic, the expectation was that the willow shrublands were important nesting areas for small birds. However, such appears not to be the case – in three summers of study, no bird nests were found in either the bushes or on the ground in any of these associations examined.

The soils in these associations are intermediate between the soils of the wetlands and those of the surrounding tills. They are moist to wet, but not saturated, and the cobble and boulder content is higher than in the sedge wetlands and less than on the surrounding hillsides. The permafrost table is commonly 100 cm (or deeper) from the surface.

2.3.2 Riparian willow association Rw

PHOTO 21. Plot 07_VS200, Richardson's willow, *Salix richardsonii*, female plant
PHOTO 22. Plot 06_VN240, riparian willow in edge of sand hills
PHOTO 23. Plot 06_V159, riparian willow in stream channel
PHOTO 24. Plot 05_V055, riparian willow on steep hillside stream
PHOTO 25. Plot 08-VS30, riparian willow on stream at Cockburn Lake crossing

The word "riparian" refers to streams or rivers and is used here to refer to plant associations that occur along the margins of streams or rivers. In the study area, these are invariably occupied by Richardson's willow, so fall under the general category of "Willow communities". Riparian

associations on the mainland of Nunavut are varied and diverse, but those in the north part of Baffin Island are relatively simple.

This association occurs along the edges of streams where they flow over the edges of terraces (Photo 22), or where the stream has downcut enough to meander slightly, forming a channel with a shoreline, and on small "islands" in the stream channel (Photo 23). A riparian association also occurs in patterned ground where the depressed margins of high-centred polygons act as drainage channels. There are excellent examples of this in the edge of the glaciofluvial terrace near the weather station at the Mary River Camp.

Along streams, the riparian willow association often occurs where the stream flows over boulders or where the substrate contains many boulders, as opposed to a flat valley bottom floored with sediments, which tends to support sedge associations. There is usually little soil, and the willows grow around and over the boulders and rocks. Depth to permafrost is commonly more than 100 cm.

The shrubby Richardson's willow (*Salix richardsonii*) (Photo 21) is dominant in these associations and is the most obvious plant. These may be as tall as 50 cm, but generally are about 30 cm, and may form a tight layer (Photos 22, Plot 06_VN240, and Photo 25, Plot 08-VS030). The ground cover under this willow "canopy" is affected by lack of sunlight, so few plants grow there. It is the only place where a distinct layer of leaf litter was found. White arctic heather (*Cassiope tetragona*), arctic willow (*Salix arctica*), and net-veined willow (*Salix reticulata*) occur under the Richardson's willow bushes, and show the effects of growing in the shade – they are taller and more spindly than when they grow in the open, exposed to the sun.

Mossy mounds in this association often are crowned by mountain avens or heather. Sedges such as *Carex aquatilis*, *Carex fuliginosa* ssp. *misandra* and *Eriophorum angustifolium* as well as yellow marsh saxifrage (*Saxifraga hirculus*) occur in the wet spots, along with Sudetan lousewort. Lichens are present, but sparse, and include *Flavocetraria nivalis*, worm lichen (*Thamnolia subuliformis*), and glove lichen (*Dactylina arctica*).

Due to the lack of tall shrubs (common on the mainland arctic) like dwarf birches and shrubby willows, the riparian associations in this area are not nearly as distinct nor as easy to see on air photos as those in the central barrenlands or in areas to the south where the shrubs are taller. The willow bushes are shorter and the grey colour of the leaves causes them to blend into the surrounding sedges.

2.3.3 Riparian Shoreline Shrub Rss

PHOTO 26. Plot 05_V051, small dry pond near old Mary River camp
PHOTO 27. Plot 08-VP38, willow shoreline shrub near Cockburn Lake
PHOTO 28. Plot 08-VP38, Charley Uttak near willows to show scale

The edges of some tundra ponds and lakes (and occasionally, streams) are quite steep, and sometimes support a very distinct willow association that has been termed "shoreline shrub". This type of association is quite common in the Lac de Gras area, but it is relatively rare in North Baffin.

Shoreline shrub occurs in some of the glaciofluvial complexes, at the edges of small ponds with steep or concave banks, where the pond or saturated soil below ensures a reliable source of water throughout the growing season. There is an excellent example of this association in a small almost dry pond near the old Mary River Camp (Photo 26, plot 05_V051). The soil immediately

beneath the willow bushes is quite dry, but roots penetrate down to soil at the base of the slope, where water ponds in the spring or during high rainfall.

Several other good examples of this association occur in the first long valley along the rail route south of where it crosses the Mary River. Another good example occurs about 3 km north of Mary River Camp (approx. Km 97 of the old tote road route), and at the edge of a small lake in the proposed borrow pit area on the north road route in the vicinity of Km 63.

Riparian shoreline shrub is characterized by relatively tall (up to 80 cm) Richardson's willow bushes that grow in a rough line along the top of a pond bank, trunks angled toward the water, or into the lee of the bank. Often, the tops of the willows are pruned flat by winter winds, so the row of bushes generally does not extend much above the top of the slope of the pond.

One of these riparian shoreline shrub associations is very unusual and has been recommended as the single example of a plant association that should be preserved if at all possible. In this association, the willows exceed 2.5 m in height, and the stand of willows extends for some 30 m along the edge of a small pond. An understory of blueberry (*Vaccinium uliginosum*) and large-flowered wintergreen (*Pyrola grandiflora*) covers the ground to the water's edge under these willows (Photos 27 and 28, plot 08-VP38). This stand of tall willows is located in a lateral moraine along cliffs at the edge of a glaciofluvial plain near the south end of Cockburn Lake. The willow trees are actually growing in the water of the pond, and are likely so large due to the protection accorded by the lateral moraine and the reliable water source. An illustrated memo (Burt, 2008) describes this association in detail.

Under these willows, the understory is quite varied, and in some cases, grades into a snowbank association as snow often accumulates in the lee of the banks. Net-veined willow and least willow may occur here, and white arctic heather is quite common, growing taller than out in the open. Mosses are present, but do not form a thick carpet. Lichens are present but not common. *Oxyria digyna* often occurs, with some abundance, as well as star chickweed (*Stellaria longipes*), *Pedicularis capitata*, alpine milkvetch (*Astragalus alpina)*, bistort (*Persicaria vivipara*) and *Potentilla hyparctica*. *Carex membranacea* and *C. scirpoidea* also occur here.

Because the riparian shoreline shrub association appears to be limited to glaciofluvial complexes, the soils are uniformly sandy, with varying amounts of gravel depending on the surrounding area. Depth to permafrost is usually greater than 100 cm.

SECTION 3.0 - UPLANDS

3.1 HEATH TUNDRA COMMUNITY HT

On North Baffin, heath tundra plant associations are located on dry to moist slopes and relatively sheltered banks. Since the prevailing winds in winter are from the southeast here, these sheltered areas tend to be on the northwest-facing slopes, or on the leeward slopes of eskers. These are complex and diverse, with shrubs, sedges, grasses, rushes, forbs, many lichens, bryophytes, and fungi.

The Circumpolar Arctic Vegetation Map (*Arctic Geobotanical Atlas*, 2007) shows a high percentage of Vegetation Units P1 (Prostrate dwarf-shrub, herb tundra) and P2 (Prostrate/hemiprostrate dwarf-shrub tundra) in the areas around and east of Philip's Creek, and to the east of Deposit #1. This community fits into Olthof's dry graminoid prostrate dwarf shrub tundra, characterized by upland or well-drained tundra with grasses and small shrubby heath plants like blueberry and arctic heather (Olthof, 2008).

In this area, there are two subgroups of the heath tundra community: one that occurs on drier sites or sunny slopes, and the other that occurs on moister slopes, where the snow remains a bit longer.

Heath tundra occurs on well-drained glacial tills, on colluviated tills, on glaciofluvial complexes, and may occur on surfaces that have been cryoturbated (like areas with sorted circles and nets), on solifluction lobes, and in the trenches associated with high centre polygons. For the most part, the soils are coarse loamy to sandy. Permafrost in loamy soils is usually within 100 cm from the surface, but in sandy soils this depth commonly exceeds 100 cm.

3.1.1 Blueberry heath association HTb

PHOTO 29. Plot 08-VP18, hillside near proposed ore car dumping facility, Steensby
PHOTO 30. Plot 06_VN181
PHOTO 31. Plot 06_VN181, Lapland rosebay, *Rhododendron lapponicum*
PHOTO 32. Plot 06_VN181, Blueberry fruits, *Vaccinium uliginosum*
PHOTO 33. Mouse-eared chickweed, *Cerastium alpinum*

The blueberry heath association consists of low to prostrate shrubs, often amidst embedded glacial erratic boulders, on relatively gentle (and well-drained) slopes or terraces on the sides of open valleys. Blueberry (*Vaccinium uliginosum*) and white arctic heather (*Cassiope tetragona*) are dominant, and there are scattered prostrate shrubs of arctic willow, mats of mountain avens, and (often) Lapland rosebay (*Rhododendron lapponicum*). *Luzula arctica, L. confusa, Carex rupestris*, *C. scirpoidea,* and *Kobresia myosuroides* are scattered throughout this association. Grasses include *Poa arctica,* and sometimes alpine holygrass (*Anthoxanthum monticola*). Yellow crazyweed (*Oxytropis maydelliana*), mouse-ear chickweed (*Cerastium alpinum*), bistort (*Persicaria vivipara*), false asphodel (both *Tofieldia coccinea* and *T. pusilla*), and several species of *Draba* are often found in this association. South of the Baffinland project, Labrador tea (*Ledum palustre*) is often common.

At times, blueberry is almost the only species in this association, forming uniform mats along the hillsides above Cockburn Lake and on many of the glaciofluvial terraces. In good blueberry years, the production of berries is amazing – large berries in huge quantities.

The heath tundra association has a rich lichen flora, including much *Flavocetraria nivalis*, hair lichens (*Alectoria nigrescens* and *Alectoria ochroleuca*), *Cladonia*, worm lichen

(*Thamnolis subuliformis*) and grey mealy lichen (*Stereocaulon tomentosum*). Glove lichen (*Dactylina arctica*) and *Peltigera* sp. are often found in this association.

3.1.2 *Cassiope* heath association HTc

PHOTO 34. Plot 08-VP24, *Cassiope* heath association near proposed bridge over the Mary River
PHOTO 35. White arctic heather, *Cassiope tetragona*

In some areas where there is sufficient shelter to ensure some snow cover into early July, a Cassiope-type heath tundra develops. Sometimes this is in a snowdrift in the lee of a ridge, and sometimes it is simply in a depression where a snowpatch seems to last a bit longer. The main point is that there is some amount of shelter to allow the snow to stay.

Usually, there is no blueberry in this association, and the number of species is fewer than in the heath tundra described above. Where the soil is not too wet, mountain avens occurs, along with *Salix arctica*. Generally, there are a higher percentage of lichens, and some *Salix reticulata*, which increases in areas where snow stays longer. The grasses *Alopecurus alpinus* and *Arctagrostis latifolia* occur here, as well as the woodrush (*Luzula confusa*) and a few sedges including the xeric sedge *Carex rupestris* and less xeric ones like *C. sciropoidea* and *C. fuliginosa* ssp. *misandra*. Yellow crazyweed is common, several saxifrages may be present, including purple mountain saxifrage (*Saxifraga oppositifolia*) and *Saxifraga nivalis*, and *Luzula arctica* may also occur, closer to long-lasting snowbanks. In the south, Labrador tea (*Ledum palustre*) is an important part of this association.

3.1.3 Mixed heath tundra HTm

PHOTO 36. Plot 07_VS020, mixed heath with *Ledum palustre*
PHOTO 37. Plot 07_VS201, mixed heath tundra on east side of Cockburn Lake

Intermediate to the two associations above is another heath tundra association, which may or may not include either heather or blueberry, or may include both. This association seems to occur where there is less protection than for either of the other two heath tundra associations, and, on the southern routes, sometimes includes Labrador tea (*Ledum palustre*). Usually, the soil is well drained, often sandy, and the species diversity is high. (*Salix arctica*) is usually quite common in this association.

3.1.4 Heather – dry moss association HTr

PHOTO 38. Plot 06_VN277, HTr on old road
PHOTO 39. Plot 06_V039, HTr association on esker slope
PHOTO 40. Plot 06_V263, HTr on gravel ridges
PHOTO 41. Plot 07_VS110, HTr
PHOTO 42. Plot 07_VS014, HTr with only *Racomitrium* on island

This association is a dry association, as opposed to the wetter “moss communities”. It can have varying percentages of heather vs. racomitrium moss, but fits better with the heath tundra associations. The heather-dry moss association occurs on flat or gently sloping ground, often on gravels, sometimes on sandy soil, and dry slopes or shoulders of ridges. This may be similar to the “*Cassiope tetragona* – *Luzula* ssp. Dwarf Shrubland” association described in the Sirmilik National Park vegetation report (Duclos, Levesque, et.al., 2006).

This association is usually composed of low mounds or carpets of the grey moss, *Racomitrium lanuginosum*, and clumps of white arctic heather (*Cassiope tetragona*), with varying amounts of

woodrushes, *Luzula confusa* and *L. arctica. Salix herbacea, S. arctica,* and sometimes small amounts of blueberry (*Vaccinium uliginosum*) often accompany the moss and heather. Alpine holygrass (*Anthoxanthum monticola)* and bluegrass (*Poa* sp.), are often present. There are a few lichens, but not many.

This association (Photo 40, Plot 06_VN263) was also found on some strange glacial melt landforms which appear to be snaky ridges interwoven with each other. These are apparently glacial melt or "dead ice" landforms which originated in the retreat phase of glaciation. The depressions in these landforms are rich in moss, heather, and *Luzula arctica*, and the ridges between the landforms support a population of blueberries, mountain avens, and yellow oxytrope.

The heath tundra with racomitrium moss association is common on the south routes, especially in areas where depressions cause snowbanks to remain for a while in summer. (Photo 41, Plot 07_VS110)

Another variation of this association occurs on islands and peninsulas in large lakes (especially in Angajurjualuk Lake). In this variation, there is only *Racomitrium lanuginosum* moss, and few other species (Photo 42, Plot 07_VS014). The grey-green moss forms a cushiony carpet over tens of square meters, occurs on sandy soil, and is well-drained and usually quite dry. During rains, of course, it absorbs water and likely holds it more efficiently than vascular plant tundra.

3.2 SNOWBANK COMMUNITY SB

3.2.1 Snowbank association SB

PHOTO 43. Plot 06_V147 SB on NW-facing slope, mammal trapping area
PHOTO 44. Plot 06_V147, fleabane, *Erigeron eriocephalus*
PHOTO 45. Plot 06_VN199 SB at Milne Inlet, N-facing slope
PHOTO 46. Plot 06_VN199, mountain sorrel, *Oxyria digyna*
PHOTO 47. Plot 06_VN347 SB in gorge with small icefield
PHOTO 48. Plot 08-VS013, SB on port island at Steensby, lemming activity
PHOTO 49. Plot 06_VN348, brooklet saxifrage, *Saxifraga rivularis*

Propelled by the prevailing southeast wind, snow drifts over any ridgelike irregularity in the surface of the land, and accumulates in the lee, creating a deep drift that remains long into the summer, sometimes until late August. This means that the growing season is much shorter than where the land is snow-free by late June. It also means that there is a reliable source of moisture from the melting snow, for much of the summer, affecting the area downslope from the drift. Diverse plant associations develops in these areas, also called "snowflush" associations by Porsild (1951) and "snow effect" by Polunin (1948).

There are a number of species that are found mostly in snowbank associations, and do not occur in dense growth patterns elsewhere, likely because they can tolerate the short growing season, but cannot compete with other plants out on the open tundra. These include the least willow (*Salix herbacea*), pygmy buttercup (*Ranunculus pygmaeus*), and the grey mealy lichen (*Stereocaulon tomentosum*).

Then, there are a number of species that do occur elsewhere but are frequently found in the snowbank associations, in densities greater than on the surrounding tundra. These include white arctic heather (*Cassiope tetragona*), mountain avens, *Carex fuliginosa* ssp. *misandra*, *Carex atrofusca. Alopecurus alpinus, Poa* sp., net-veined willow, *Luzula arctica*, *Oxyria digyna, Potentilla hyparctica*, large-flowered wintergreen (*Pyrola grandiflora*), and the sulphur buttercup (*Ranunculus sulphureus*).

Plants that are not as typical, but often present include dandelions (*Taraxacum* sp.), crowned lousewort (*Pedicularis capitata*), white bladder campion (*Silene involucrata*), *Saxifraga hirculus*, *Saxifraga nivalis, Minuartia* sp., *Potentilla vahliana*, bulblet saxifrage (*Saxifraga cernua*), pussytoes (*Antennaria* sp.), and fleabane (*Erigeron eriocephalus*). Lichens are not very common, but almost always include *Stereocaulon tomentosum, Thamnolia subuliformis*, glove lichen (*Dactylina arctica*), and sometimes *Cetraria tilesii*.

On the study area for this project, a variety of snowbank associations were found. Some are closely related to heath tundra (photo code SBh) in that there is a dense cover of *Cassiope tetragona, Salix reticulata*, and a high percentage of *Stereocaulon tomentosum* lichen, *Carex atrofusca*, and bluegrass (*Poa* sp.).

Or, there may be no heaths at all, but a rich combination of forbs (photo code SBf), including several composites, usually *Erigeron eriocephalus*, and dandelions (*Taraxacum officinale* and *T. phymatocarpum*), red bladder campion (*Silene uralensis ssp. arctica*), *Stellaria* sp., *Cerastium* sp., moss campion (*Silene acaulis*), and *Oxyria digyna*. These also usually have *Carex atrofusca* and *Poa* sp.

Snowbank associations are located where the terrain and prevailing winds cause a deep drift to develop, so are not associated with any particular soil type. Often there is considerable lemming activity associated with snowdrift associations, even in low lemming years (Photo 48).

3.3 MISCELLANEOUS

3.3.1 Shrub-sedge tundra Tss

PHOTO 50. Plot 06_VN259 On old road route to Milne Inlet
PHOTO 51. Plot 06_V243 Tss amidst boulders

This damp mixed tundra association occurs on gentle lower slopes and in open valleys. It is an intricate mixture of heaths and wetland species, and is often hummocky, due to frost action in the ground, or may show a considerable amount of frost scarring (frost boils, solifluction lobes, etc.). This association fits (more or less) into Olthof's Low shrub association, which consists of "moist erect low shrub <40 cm, forming more than 25% of the vegetated cover, consisting mainly of willow…remaining cover consists of graminoids and lichen, and may contain prostrate dwarf shrubs and bare soil".

The shrub component of this association is usually *Salix arctica*, growing in low bush form as well as prostrate. *Salix richardsonii* may also be present, but only as scattered plants. Dwarf shrubs include white arctic heather, blueberry, and mountain avens. Purple mountain saxifrage is almost always present, as well as several sedges, including *Carex membranacea* and *C. fuliginosa* ssp. *misandra*, cottongrasses (usually *Eriophorum angustifolium*), and grasses (*Arctagrostis latifolia* and *Anthoxanthum monticola*, sometimes *Poa* sp.). A variety of other species may be present, including yellow crazyweed, arctic lousewort (*Pedicularis langsdorffii* ssp. *arctica*), *Potentilla hyparctica*, *P. nivea*, and *Persicaria vivipara*.

Between the mounds and frost scars there are mosses, some cottongrasses (*Eriophorum scheuchzeri* or *E. vaginatum*), and wetland sedges (*Carex fuliginosa* ssp. *misandra, C. atrofusca, C. aquatilis*).

Some of the mounds may be of tussock origin, and may have remnants of the original cottongrass plant (usually *Eriophorum vaginatum*), or may be invaded by curly sedges (*Carex rupestris*), purple mountain saxifrage, net-veined willow, or least willow. There are few lichens in this association, and these are located only on the drier mounds.

3.3.2 Grassy slopes (Gsl)

PHOTO 52. 07_VS198, grassy hillside looking north
PHOTO 53. 07_VS198, fragrant shield fern, *Dryopteris fragrans*

Only one good example of a true "grass" association was found. This is located on a steep kame on the east side of Cockburn Lake, just south of the narrows where the proposed rail line will cross the lake. It is a steep hillside just north of the planned road ascent to the top of the Cockburn cliffs.

This association occurs on very well-drained soils and consists of several species of grass, with some forbs and low arctic willows growing under the grasses. Locally, it is quite exposed, but may derive some protection from the prevailing winter winds out of the southeast, due to the higher cliffs immediately to the southeast.

Grass associations are relatively rare in the study area, but this is a good example. Tufts of *Poa glauca* and *Carex rupestris* likely stabilize the soil on this hillside. The well-drained soil favours the development of xeric species like *Saxifraga tricuspidata* and *Potentilla vahliana*. Dwarf fireweed (*Epilobium latifolium*), star chickweed (*Stellaria longipes*), alpine milkvetch (*Astragalus alpina*), a small mustard (*Draba* sp.) and yellow crazyweed (*Oxytropis maydelliana*) are present in small numbers. The fragrant shield fern (*Dryopteris fragrans*) is also present, growing in the shelter of the erratic boulders (Photo 53).

3.3.3 Dry slope with forbs Fsl

PHOTO 54. Plot 07_V001, slope in valley to west of camp

This association occurs on well-drained slopes with sandy soil. It is mostly located on valley slopes in glaciofluvial terraces. It is usually rather small and not generally mappable.

Woody plants and grasses are uncommon to absent in this association, but it is generally quite diverse, with many species, none seeming to clearly dominate. Species include mouse-ear chickweed, mountain sorrel, *Papaver radicatum*, *Luzula confusa*, purple mountain saxifrage, prickly saxifrage, *Saxifraga cernua*, *Saxifraga cespitosa*, *Potentilla nivea*, and tufted pearlwort (*Sagina caespitosa*). There are a few small mosses, and the soil is often covered with a black biological crust, composed of cyanobacteria and blue-green algae.

Only a few examples of this association were found. Most were on lee slopes, so there may be some slight snowbank effect here.

3.4 LICHEN-ROCK COMMUNITY LR

There is much exposed rock in the area, ranging from glacially polished bedrock to frost-shattered bedrock, to scree slopes and boulder fields. Then there is the fractured bedrock of the iron deposits themselves, some shattered by weathering, but most probably shattered by blasting.

This community, has been called "Barrens", and fits into the Circumpolar Arctic Vegetation Map Vegetation Unit entitled "B1. Cryptogam, herb barren" (*Arctic Geobotanical Atlas*, 2007). The text describes it as "dry to wet barren landscapes with very sparse, very low-growing plant cover. Scattered herbs, lichens, mosses, and liverworts….in Subzone C on some coarse-grained, often calcareous sediments….single layer of plants where they occur." And, "vascular plant cover is generally very sparse, mainly scattered individual plants often in crevices between stones or

small cryoturbated polygons. Sedges, dwarf shrubs, and peaty mires are normally absent." Vegetation Unit B1 is geographically located in the uplands just to the west of Philip's Creek, and the north road route, and at higher elevations throughout the study area.

However, the lichen-rock plant community is not limited to B1, but occurs throughout the study area, wherever rock is exposed at the surface and colonized by lichens and small rooted plants.

Generally there is very little exposed soil in this community, but frost action sometimes brings soil to the surface within a boulder or felsenmeer area, or surface creep deposits soil material over boulders, slabs of rock, or bedrock outcrops. The fine earth fraction is usually coarse loamy, and is almost always cryoturbated. Depth to permafrost varies with depth, texture and coarse fragment content of materials.

3.4.1 Lichen-rock bedrock LRr

PHOTO 55. Plot 06_VN106, lichens and *Racomitrium* on acidic bedrock
PHOTO 56. Plot 07_VS227, lichen-rock on bedrock, south end of route
PHOTO 57. Plot 07_V131, crustose lichens on acidic bedrock
PHOTO 58. Plot 06_VN130, sandstone bedrock
PHOTO 59. Plot 07_V010, crustose lichens on calcareous bedrock

Usually, bedrock exposures do not provide much foothold for rooted plants. On glacially polished bedrock, the bare rock is about 60% covered with crustose lichens. The species and the coverage vary based on the chemical composition of the rock. Also, on sandstone and other weakly cemented sedimentary rocks, wind and water erosion is so rapid that lichens may not have time to become established. As a result, the rock may have lichens only in areas protected from weathering. On calcareous rocks, coverage is often less than 40%. Olthof (2008) refers to this in his classification as "Sparsely vegetated bedrock".

On acidic rocks like basalt and granite, a very characteristic lichen flora occurs: map lichen (*Rhizocarpon geographicum*), sunburst lichen (*Arctoparmelia centrifuga*), rock tripe (*Umbilicaria* sp.), bloodspot lichen (*Ophioparma lapponica*), orange and black *Tremolecia atrata*, and a black hair lichen (likely *Pseudephebe pubescens*). (Photos 55, 56, 57.)

On calcareous rocks (limestone, sandstone, some shales), other lichens occur, including the bright orange jewel lichen (*Xanthoria elegans*), the white *Rhizocarpon chioneum,* and sometimes (possibly) an unusual variation of sunburst lichen (*Arctoparmelia centrifuga*) which lacks usnic acid and is grey instead of yellow-green (Photo 59.)

Rooted plants usually become established on polished bedrock as a result of seeds falling into cracks or areas where lichen mats have become established over cracks. Root growth plus frost wedging enlarges the cracks; more debris accumulates in the cracks; the leaves, stems and roots of plants help trap more dust and debris; and the decomposition of any dead plant matter adds nutrients. Saxifrages are well-adapted to utilizing cracks in the rocks, so polished bedrock outcrops often support growths of prickly saxifrage (*Saxifraga tricuspidata*), purple mountain saxifrage (*S. oppositifolia*), and spring saxifrage (*Saxifraga nivalis*). In places, mats of vegetation become established on top of the bedrock, including mats of mountain avens (*Dryas integrifoli*a), blueberry (*Vaccinium uliginosum*), snow cinquefoil (*Potentilla nivea*) and arctic cinquefoil (*P. hyparctica*).

3.4.2 Lichen-rock on scree or talus slopes LRs

PHOTO 60. Scree slope near Plot 06_VN027
PHOTO 61. Plot 06_V224, scree slope on Deposit #1
PHOTO 62. Plot 06_V224 Mouse-ear chickweed, probably *Cerastium arcticum*

The terms “scree” and “talus” are used interchangeably.

Scree slopes develop where frost cracking has loosened material on a rock face. Water percolates into the cracks, expands with freezing, and gradually loosens chunks of rock. These slide down the face of the cliff and form a fan-shaped pile of stones. There are many examples of scree slopes in the project area, on all cliffs facing river valleys, and on most steep slopes. The most spectacular talus slopes in the study area are along the east side of Cockburn Lake just north of the proposed rail crossing.

Lichens already growing on the rock (before it falls from the cliff face) may be able to survive if their chunk of rock lands with the lichen surface toward the sun, but this is a very unstable surface, with rocks tumbling about as they move down the slope, and the orientation of the individual chunks changes constantly. Consequently, few lichens grow here.

In sheltered spots where the movement is not as rapid, mountain avens, arctic willow (*Salix arctica*), heather (*Cassiope tetragona*), woodrush (*Luzula confusa*), mouse-eared chickweed (*Cerastium alpinum* and *C. arcticum*) (Photo 62), and other plants may become established. As these rooted plants trap wind blown debris, other plants can gain a foothold, and mats of vegetation can develop.

3.4.3 Lichen rock on boulder fields LRb

PHOTO 63. Near Plot 08-VP37, Cockburn Lake, E side near proposed crossing
PHOTO 64. Plot 06_VN217, on calcareous boulders
PHOTO 65. Near plot 06_VN217 vegetation mat on calcareous boulders

Boulder fields, made up of ice- or water-rounded pebbles, cobbles, or boulders, occur frequently on both the north and south routes. These may be established by meltwater streams, or may be ice-laid, dropping out as morainal material as the ice sheet retreats. Esker crests often have a lichen-rock boulder field type of vegetation, sometimes due to the fact that smaller “fines” are removed by winds, leaving behind only the larger stones.

There is little rooted vegetation on most boulder fields, due to lack of soil. The rocks are about 30% covered with crustose lichens (map lichen, *Pseudephebe* sp., sunburst lichen, and more), with foliose lichens (*Cladonia* sp. and *Cladina* sp.) growing in sheltered areas amongst the boulders (Photo 63).

Perched mats of vegetation often develop on the boulder fields, and these usually include *Saxifraga tricuspidata, Potentilla nivea, Epilobium latifolium*, and others, sometimes in a moss base. Or, woody plants, usually small willows (*Salix arctica* and *S. richardsonii*), become established amidst the boulders (Photo 64).

Where the boulders are of sedimentary rock, limestone or sandstone, there may be few to no lichens on the boulders, due to the rapid weathering of the surface. Photo 65 shows the flakes weathering off the boulders.

3.4.4 Lichen-rock on felsenmeer LRf

PHOTO 66. Plot 06_VN178, limestone felsenmeer along north "tote" road
PHOTO 67. Plot 06_VN280, *Xanthoria elegans*
PHOTO 68. Felsenmeer and sedge associations from air, south rail route
PHOTO 69. Plot 07_VS117, acidic rock felsenmeer along proposed south rail route

"Felsenmeer" is frost-shattered rock. It is not rounded or ice- or water-worn, but sharp-edged chunks of rock, or flat sheets of sedimentary rock, splitting along sedimentary layers. It can be acidic or basic rock, but most felsenmeer in the area north of the proposed minesite is calcareous rock, limestone, sandstone, or shale. This limestone or sandstone rock has sharp edges, and is actively continuing to disintegrate into smaller particles. Because there is a lot of foothold for plants, the vegetation on felsenmeer tends to be richer than that on boulder fields.

Because sedimentary rock is softer than most igneous rock, it erodes more easily, creating smaller particles and more opportunity for roots to become established. It is generally more heavily vegetated than igneous or metamorphic felsenmeer. Vegetation mostly occurs as tufts of vegetation between rocks, or as mats of vegetation on top of the felsenmeer.

In a few areas, the sedimentary felsenmeer has also been tumbled in water or in the ice, so it more closely resembles a boulder field in that the rocks are both rounded and frost-shattered (Photo 66).

The lichen flora on felsenmeer reflects the acidic or basic nature of the rocks, with orange jewel lichen (*Xanthoria elegans*) (Photo 67) and white *Rhizocarpon chioneum* on sandstone and limestone, and the usual map lichen, sunburst lichen, rock tripe, and other black and grey crustose lichens on acidic rocks.

Along the proposed south rail route, the large dark areas of tumbled and shattered rock that occur in the area between Km 65 and Km 80 are, for the most part, not boulder fields of transported materials, but felsenmeer, material that has been-frost shattered from the underlying bedrock (Photo 68). This is evident when this area is seen from the air; in places, the structure of the bedrock can still be seen, although shattering has occurred and is continuing.

Rooted plants include mats of mountain avens and purple mountain saxifrage with scattered individual plants of *Salix arctica*, and small Drabas. Yellow arctic bladderpod (*Lesquerella arctica*) occurs here, sparsely, especially on the calcareous felsenmeer.

3.4.5 Lichen-rock iron deposits LRi

PHOTO 70. Plot 05_V010, crest of Deposit #1
PHOTO 71. Plot 05_V010, close-up
PHOTO 72. Plot 05_V011, Arctic poppy, *Papaver radicatum*
PHOTO 73. Iron outcrop with lichens, near Plot 05_V006

There are four large iron deposits in the area being studied; these are the reason for the development of the property. Due to time constraints, only Deposit #1 was visited, but the rest will be visited in 2008.

The deposits, especially Deposit #1, are large dark hills of heavy high grade iron ore, hematite, magnetite, specularite, banded iron formation, iron silicates and quartzite and greywacke. This is acid rock, and as such would fit into the Circumpolar Arctic Vegetation Map, Vegetation Units under "B3. Noncarbonate mountain complex" (*Arctic Geobotanical Atlas*, 2007). According to the

text description of this unit, this is usually a very dry tundra complex, and the vegetation changes with elevation, forming belts with vegetation that resembles biogeoclimatic subzones with similar climates. It is very complex, and Nuluugoak Mountain is not very large, so altitudinal bands are not being reconciled with latitudinal ones in this report.

The crest is highly fractured due not only to weathering, but also to blasting for samples. Fragments of rock bearing lichens were found on the crest of the mountain. These were mostly those species typical of acidic rocks -- map lichen (*Rhizocarpon geographicum*), rock tripe (*Umbilicaria* sp.), black hair lichen (*Alectoria nigrescens*), green hair lichen (*Alectoria ochroleuca*) and *Pseudephebe pubescens*. There were few rooted plants, but those included arctic poppies (*Papaver radicatum*), purple mountain saxifrage, *Cerastium arcticum*, *Saxifraga cernua*, and a few small plants of mountain sorrel (*Oxyria digyna)*.

The sides of the deposit are steep, fractured scree slopes, and the rocks are likely still moving, settling or creeping downhill. There are relatively few plants, including arctic willow, prickly saxifrage, purple mountain saxifrage, *Luzula arctica*, bluegrass (*Poa arctica*), *Cerastium arcticum*, and the grayish green racomitrium moss (*Racomitrium lanuginosum*).

There are places where carbonate limestones overlie or are adjacent to the iron deposit. These are highly frost-shattered, and reduced to scattered chunks or slabs. The plant association changes slightly on these; there are more plants, especially more mustards (*Draba* sp.), and grasses, like *Poa arctica* and *Calamagrostis purpurascens*.

In some places on the main iron deposits, the iron-rich rocks of the deposit have fractured and slid down over calcareous outcrops, producing a chemically confusing mix of substrates. Here, thin mats of mountain avens and purple mountain saxifrage cling to the steep slopes, and a variety of small plants are scattered over the gentler slopes, including curly sedge (*Carex rupestris*) and *Carex nardina, Salix arctica*, alpine milkvetch (*Astragalus alpina*), yellow crazyweed (*Oxytropis maydelliana*), and *Potentilla vahliana*.

3.4.6 Lichen Veneer **LRv**

PHOTO 74. Plot 07_VS287, lichen veneer
PHOTO 75. Plot 07_VS287, close-up of lichens
PHOTO 76. Plot 07_VS287, hair lichens (*Alectoria* sp.)

This interesting but very delicate association occurs on coarse sandy or gravelly sandy surfaces where fines have been removed by wind. The terrain is usually flat, and does not appear to be currently active in terms of wind erosion or cryoturbation, so a “veneer” of lichens has become established. Permafrost occurs at depths greater than 100 cm.

Lichens, including *Flavocetraria nivalis,* sunburst lichen *(Arctoparmelia centrifuga),* hair lichens (probably *Alectoria nigricans*), coral lichen (*Spaerophorus* sp.) and a grayish lichen that resembles sunburst lichen but may be a species of *Hypnogymnia*, are dominant.

There is little rooted vegetation, although close examination reveals some small plants, almost seedlings, scattered in the lichen. These may include mountain avens, arctic willow, or *Luzula confusa*.

3.5 BARRENS B

The descriptive term “barrens” has been used for plant associations that have more vegetation than the “lichen-rock” associations, yet are sparsely populated with plants. These associations fit into the Circumpolar Arctic Vegetation Map Vegetation Units B1 and P1 (*Arctic Geobotanical*

Atlas, 2007). Unit B1 is more completely described under “Lichen-Rock Communities” above. According to the text, “’Unit P1, Prostrate dwarf-shrub, herb tundra’ is dry tundra with patchy vegetation” in which “prostrate shrubs are dominant, with graminoids and forbs.” Vegetation Unit P1 is located in the area south-southeast of Milne Inlet, including the Philip’s Creek valley to the mountains forming the eastern side of the study area.

Olthof (2008) uses the term “Barren” as part of his “Non-vegetated” category. We have used it more as a term for lightly vegetated associations, referring to sparse vegetation on calcareous soil on the highlands to the west of the lower part of Philip’s Creek, and for the moist, sparsely-vegetated uplands to the northeast of Deposit #1.

3.5.1 Purple Mountain Saxifrage Barrens Bps

PHOTO 77. Plot 06_V249, purple saxifrage barrens to east of Deposit #1
PHOTO 78. Plot 06_V249, closeup
PHOTO 79. Plot 06_VS054, purple mountain saxifrage, *Saxifraga oppositifolia*
PHOTO 80. Plot 08-VP31, *Cerastium arcticum*, shoulder of Deposit 1
PHOTO 81. 05_V004, stream, sheet-flow
PHOTO 82. Purple saxifrage barrens below icecap

Where the land appears to have recently emerged from under ice, the purple mountain saxifrage barrens occupies much of the land. This association is common on the uplands to the east of Deposit #1, and in the upper Mary River valley (Photo 77).

The land slopes gently to the stream valleys, and is partly covered with flat rocks. Stream channels have not had enough time to form, so there is a sheet flow across the land rather than water flowing in distinct channels (Photo 81).

Vegetation does not form a ground cover here, but occurs in isolated tufts, mats, and individual plants. Purple mountain saxifrage (*Saxifraga oppositifolia*) (Photo 79) is common, as are poppies (mostly *Papaver radicatum*, which now also includes the former *Papaver cornwallisensis*). *Luzula arctica* is fairly common, growing in small clumps, and *Juncus biglumis* and small plants of bluegrass (*Poa* sp., most not blooming) and *Alopecurus alpinus* are scattered across the slope. There are a few plants of the arctic willow (*Salix arctica*). Small mustards (*Draba alpina*, *D. lactea*, *Braya glabellas* ssp*. pupurascens*), small sandworts (*Minuartia rubella*, *M. rossii*) and mouse-eared chickweed (*Cerastium arcticum* and possibly *C. alpinum*) (Photo 80) also occur here, scattered over the slopes. The saxifrage family is well represented, with *Saxifraga cespitosa*, *S. cernua*, and *Saxifraga nivalis* in abundance. There are only a few lichens, including the grey mealy lichen (*Stereocaulon tomentosum*) and Iceland moss lichen (*Flavocetraria nivalis)*.

Where there are incipient streams, there are few vascular plants. Mosses tend to delineate the watercourse, and form thick cushions where there is a reliable flow of water.

It seems that every time this plant association was visited it was raining or had recently rained, and the ground was saturated. This may be the usual state, or may be due to local rains, but the ground is so saturated with water that it is difficult to walk across the slopes. One must step on rocks to avoid sinking into the ground, and the soil seems relatively unstable. This, the limited flora, small size of the plants, lack of stream channels, and proximity to an existing icecap indicates that this land may have been under ice in the recent past. Some of the earlier topographical maps of this part of Baffin Island indicate that the icecap feeding the Mary River was considerably larger even 20 years ago. It would be interesting to examine other early aerial photographs of the icecaps in this area to see how close the ice was to Nuluugoak Mountain (Deposit #1).

The soil under this association is often saturated, and has a fine to coarse loamy texture. Owing to the large amounts of fines (very fine sand and silt) in these soils, they tend to be liquefied by agitation, which greatly reduces their bearing capacity. Permafrost is generally present at depths less than 100 cm from the surface.

3.5.2 Forb barrens Bf

PHOTO 83. Plot 07_V132, forb barrens on slopes of Deposit #1
PHOTO 84. Plot 07_V132, foxtail barley (*Alopecurus alpinus*)

On the upper slopes of Deposit #1, and on the open slopes to the east of the deposit, between the deposit and the small icecap, another "barrens" association occurs. Purple mountain saxifrage is absent from this association, but all the other species are usually present. It may be that the *Saxifraga oppositifolia* simply has not grown large enough to be apparent yet, or there may be some factor inhibiting its growth.

The foxtail barley grass (*Alopecurus alpinus*) is common here, and is joined by *Juncus biglumis*, scurvy grass (*Cochlearia groenlandica*, formerly *Cochlearia officinalis*), and small amounts of *Saxifraga cernua*, *S. rivularis*, *Cardamine bellidifolia*, *Papaver radicatum*, and mastodon flower (*Tephroseris palustris* ssp. *congesta,* formerly *Senecio congestus*).

The soil in this area is usually saturated; almost liquefied. Drainage of excess water is by sheet flow rather than via a defined drainage system. It is in all aspects similar to the purple saxifrage barrens, and is not distinguishable from them when mapping. It is possible that the substrate in the forb barrens is slightly less stable than that of the purple mountain saxifrage barrens. Permafrost is generally present at less than 100 cm depth.

3.5.3 Luzula association Bl

PHOTO 85. Plot 07_V136, *Luzula* association near Deposit #1
PHOTO 86. Plot 07_V283, close-up of *Luzula confusa* tufts
PHOTO 87. Plot 07_V137, *Draba corymbosa*

This association occurs high on the shoulder of Deposit #1 on a slope with much shattered bedrock, including but not limited to pieces of iron ore (Photo 85). There are many erratic boulders, some quite large. *Luzula confusa* is dominant, but *Luzula arctica* also occurs in lesser quantities. From a distance, this association looks like a grassy hillside, but closer examination reveals that what look like grasses are really woodrushes, causing the hillside to appear reddish tan in August (Photo 86). Other forbs are present, including arctic poppy (*Papaver radicatum*), mountain sorrel, mouse-ear chickweed (*Cerastium alpinum* and *C. arcticum*), alpine foxtail (*Alopecurus alpina*), and a small bluegrass (*Poa* sp.). A small saxifrage was common but could not be identified to species as it was not blooming. It is either *Saxifraga tenuis* or (more likely) *Saxifraga nivalis*, seedling plants. Bulblet saxifrage (*Saxifraga cernua*), *Saxifraga cespitosa*, and *S. foliolosa* are all present in small numbers, as are *Cardamine bellidifolia* and *Draba corymbosa (Photo 87)*. There are only a few lichens, but the grey mealy lichen (*Stereocaulon tomentosum*) is the most common. Mosses are also uncommon and quite small.

The soil in this area is sandy. Due to rainy weather, the general soil moisture condition is difficult to determine. The permafrost table is deeper than 100 cm.

3.5.4 Avens and xeric sedge association Bax

PHOTO 88. Plot 08-VP05, avens/xeric sedges on port island in Steensby Inlet
PHOTO 89. Mountain avens, *Dryas integrifolia* flower
PHOTO 90. Plot 06_VS099, *Dryas* seedhead
PHOTO 91. Plot 05_V063, on slopes of Deposit #1
PHOTO 92. Plot 06_VN023, patches in depressions, Milne Inlet
PHOTO 93. Xeric sedge, *Carex nardina*
PHOTO 94. Plot 06_VN201, Milne Inlet, marine glaciofluvial or marine terraces
PHOTO 95. Plot 07_VS060, avens association without xeric sedges (Ba)

This very common plant association usually occurs on rounded hills and ridges at lower elevations, in places that are exposed to the wind, but less severe conditions than the above purple mountain saxifrage association. The avens – xeric sedge association is common on all glaciofluvial landforms throughout the project, from the proposed port island (Photo 88, Plot 08-VP05) to the plains to the southeast of Cockburn Lake, areas around Ravn River and Angajurjualuk Lake, as well as the terraces in the first valley south of the Mary River. On the "Tote Road", it also occurs on the flat surfaces of the lacustrine and glaciofluvial terraces along Philip's Creek and around the Mary River Camp, and on the marine terraces at Milne Inlet. It also may occur on sandy banks of modern river terraces, such as along the Mary River, and Philip's Creek, and where the patterned ground of the lacustrine terraces extends over the low hills in the lower Philip's Creek area to the south of Milne Inlet. The surface is mostly covered with weathered sandstone pebbles, sand, or weathered limestone, sometimes in flat slabs of varying sizes.

This association fits into the Circumpolar Arctic Vegetation Map (*Arctic Biogeobotanical Atlas*, 2007) system in the "P1. Prostrate dwarf-shrub, herb tundra". This is dry tundra with patchy vegetation, and prostrate shrubs such as mountain avens (*Dryas integrifolia*) and *Salix arctica* are characteristic, and lichens and mosses are common. On nonacidic (calcareous) soils, *Dryas integrifolia* and *Salix arctica* are dominant, and on acidic soils, *Luzula* and *Salix arctica* dominate. It fits into the Olthof (2008) classification under the "Prostrate dwarf shrub" category, which is "generally dry >50% vegetated cover consisting of prostrate dwarf shrubs and may contain < 10% lichen and moss".

As can be seen from the photos, there is a lot of variability in this association, and it is the most common association sampled on this project. The main species include mountain avens (*Dryas integrifolia*), purple mountain saxifrage, and two xeric sedges, *Carex nardina* and curly sedge (*C. rupestris*). The ground is generally only about 10% – 60% covered with vegetation, although there are instances where the avens and sedges create a dry carpet. Usually there are small mats of mountain avens, scattered plants of the purple mountain saxifrage, and scattered tufts of the two sedges. Arctic willow (*Salix arctica*) is present and locally common in this association, usually small prostrate plants. Small cushions of moss campion (*Silene acaulis*) and blackish crazyweed (*Oxytropis nigrescens ssp. arctobia*, formerly *O. arctobia*) and small plants of yellow crazyweed (*Oxytropis maydelliana*) and *Saxifraga cespitosa* may occur.

The soils in this area are coarse to fine loamy, and have formed on calcareous glacial till. Consequently, there are usually few lichens, but those that occur include *Flavocetraria nivalis* and worm lichen (*Thamnolia subuliformis*). On acidic soils, *Luzula confusa* and *Salix arctica* often become intermingled with the avens – xeric sedge association.

At the port site at Milne Inlet, there are marine and glacial marine sediments deposited during postglacial times. At the eastern side of the port site, these sediments are deepwater silts, and exhibit quite a lot of frost scarring due to cryoturbation. The avens – xeric sedge association vegetation is sparse, growing in the depressions between frost boils, and consists of almost

entirely of *Dryas integrifolia* and *Salix arctica* with only a few small mosses, and a few scattered sedges. (See Photo 92, Plot 06_VN023.)

Marine beach sediments form most of the terraces at the port site on Milne Inlet; these are mostly gravel and sand from 1- 5 m thick. Much of the flat surface of these marine terraces is covered with the avens – xeric sedge association. Photo 94 illustrates the variation of associations at Milne Inlet, avens – xeric sedge barrens in front and middle distance, and sedge communities with some moss in between.

Where there is more protection from the winds, and thus more moisture retained, this plant association grades into a heath association, with varying amounts of white arctic heather, net-veined willow, and sometimes blueberry.

On the south rail route, a variation of the avens-xeric sedge association occurs on dry, sandy soil which is exposed to wind (Photo 95, Plot 07_VS060). The island intended to serve as part of the port site at Steensby Inlet offers good examples of this sub-association. In this variation, there are few to no xeric sedges, and crowberry (*Empetrum nigrum*) seems (in places) to replace the xeric sedges, although its growth habit is quite different.

In general, this subgroup consists of mats of mountain avens and mats of crowberry, with few other species. It may be that the element of exposure and wind (and in the coastal areas, perhaps salt) does not permit the xeric sedges to develop, whereas the mats of avens or crowberry, once established, can expand. For photo coding purposes, Ba (without the “x”) has been used to designate this association.

SECTION 4.0 – COASTAL COMMUNITIES

Based on the literature, there are a number of coastal plant associations to be expected in this general area, including sandy beaches, sandy backshore areas, salt marshes, and sand or silt flats, each with a fair amount of vegetation. During the 2005 and 2006 work, only sterile shores were found; and these had either bedrock or gravel beaches. However, in 2007, the studies were expanded to include parts of the Regional Study Area, and some of the expected associations were found in areas peripheral to the road or rail routes.

4.1 ROCKY SHORELINES CRS

PHOTO 96. Bedrock and scree shoreline at Milne Inlet.

These are bedrock exposures extending into the sea, with varying amounts of glacial polishing. There is a medium tidal range here, which means that the shoreline is exposed to sunlight and drying twice a day, and inundated in salt water twice a day. On the few areas examined, no rooted vegetation was found at all, only stranded small and large kelps, plus some dried marine algae.

Rocky shorelines occur at the eastern side of Milne Inlet, where the bedrock mountains reach the sea, and at the port site on Steensby Inlet.

4.2 GRAVEL SHORELINES Cgs

PHOTO 97. Whale skull and gravel terrace, Milne Inlet.
PHOTO 98. Gravel/sand shoreline at Milne Inlet, from terrace.

In some of the areas examined, gravel beaches extend into the sea, and the tide washes over these twice a day. Most gravel beaches were composed of pea gravel to fist-sized gravels, and supported absolutely no rooted vegetation. Stranded marine algae and kelps were commonly found.

At Milne Inlet, there is a sand and gravel beach at the present day sea level, washed by the tides. There is no rooted vegetation on this beach, but lots of vegetation on the top of the approximately 15 m bank which is about 25 m inshore from the present day tideline. (Photos 97 and 98.)

4.3 SANDY MARINE BACKSHORE Cs

PHOTO 99. Plot 07_VS026, Rowley River mouth, Steensby Inlet
PHOTO 100. Seabeach sandwort (*Honckenya peploides*), inflated seed capsules
PHOTO 101. Seaside bluebells (*Mertensia maritima*)

This association was expected but not found in 2006, but was found in 2007, in the mouth of the Rowley River, some 40 km to the east of the Steensby Inlet port site. It occurs in the flats at the river mouth, and includes coarse and fine sand. Some has been redistributed by wind and/or current into tiny dunes and water-sculpted ridges (Photo 99). This association may appear to occur on gravel, but closer examination reveals that wind has removed the “fines” from the top layer, and the plants are really growing in relatively fine sand. Some small examples of this association were also found on the island where the proposed port will be located, at Steensby Inlet.

There is little vegetation growing on the sand, and the predominant plants include mats of seabeach sandwort (*Honckenya peploides*) (Photo 100) and of seaside bluebells

(*Mertensia maritima*) (Photo 101). The seabeach sandwort produces inflated seed capsules that float, thus accomplishing their distribution via the marine currents. Occasionally, goose-grass (*Puccinellia* sp.) and scurvy-grass (*Cochlearia groenlandica*) will occur here. The tall blue-green beach rye (*Leymus mollis*) was expected, as it occurs around Hudson Bay and in Foxe Basin, but it was not found in the areas examined. According to the range maps in Porsild & Cody (1980), it occurs along both coasts, at Milne Inlet and Steensby Inlet.

4.3.1 Sandy marine backshore with snowbank association Cs-sb

PHOTO 102. Plot 06_VN199, marine terrace shore at Milne Inlet
PHOTO 103. Thrift, *Armeria maritima*
PHOTO 104. *Juncus biglumis*
PHOTO 105. *Potentilla pulchella*
PHOTO 106. *Saxifraga cernua* in backshore snowdrift association
PHOTO 107. Plot 06_VN347, *Saxifraga cernua* flower
PHOTO 108. Plot 07_VS033, at Rowley River, Steensby Inlet, zonation

At Milne Inlet, part of the beach is gravel and part is sand. Behind the actively washed shoreline, there is a flat area of beach at the base of the steep edge of the marine terrace.

At one spot below the airstrip, the edge of the terrace creates a sheltered area in which snow accumulates, and this supports a rich snowbank association (Photo 102, plot 06_VN199) with a combination of sedges, *Luzula arctica, Juncus biglumis*, and small plants of bluejoint grass (*Calamagrostis pupurascens)*, a few small arctic willows, and a variety of other plants, most flowering in August. These include mountain sorrel, star chickweed, thrift, white bladder campion (*Silene involucrata*), red bladder campion (*Silene uralensis* ssp. *arctica*), bistort, and mouse ear chickweed (*Cerastium alpinum*) and chrysanthemum (*Hulteniella integrifolium,* formerly *Chrysanthemum,* and then, *Leucanthemum integrifolia*). Two cinquefoils occur here, *Potentilla pulchella*, and *P. hyparctica*. A little farther to the west, a variety of saxifrages, with bulblet saxifrage (*Saxifraga cernua*) form a very visible “stand” of plants along the base of the marine terrace. Other saxifrages include the tufted alpine saxifrage (*Saxifraga cespitosa*), yellow marsh saxifrage, spring saxifrage (*Saxifraga nivalis*), purple mountain saxifrage, and prickly saxifrage. There are only a few lichens, and a dark biological crust covers the part of the ground where flooding occurs frequently.

Another example of this association was found at the Rowley River, east of the proposed port site at Steensby Inlet (Photo 108, Plot 07_VS033). This site is a shallow bank exhibiting zonation from a sandy ridge down to goose-grass flats, and likely holds snow until late in July as most plants were blooming when observed in August. Dwarf fireweed and alpine milkvetch rims the top of the “bank” on a convex profile. Immediately below this is a concave profile with mats of seabeach sandwort, mouse-eared chickweed, *Saxifraga rivularis*, *Carex scirpoidea*, and thrift (*Armeria maritima*). The profile flattens out, into a zone with goose-grass (*Puccinellia* sp.), a light green band of *Carex ursina,* and *Stellaria humifusa (Photo 111)* scattered about in the goose-grass.

4.3.2 Damp sand and silt flats Cf

PHOTO 109. Plot 07_VS027, sand/silt goose-grass association
PHOTO 110. Plot 07_VS027, goose-grass association close-up
PHOTO 111. Plot 07_VS027, *Stellaria humifusa*

Several marine associations are reported from the north end of Baffin Island (Polunin, 1948, and Duclos, Levesque, Gratton, and Bordelau, 2006), but these did not seem to be present in the local study area for this project.

During the summer of 2007, the assessment area was expanded and damp sand and silt flats were found at the mouth of the Rowley River (about 40 km east of the Steensby Inlet port site) and on a peninsula at the mouth of the Harder River (about 36 km to the northwest of the Steensby Inlet port site). These flats occur in the floodplain of the river, where the fresh water flows into the salt, and likely are flooded by storm tides (Photos 109 and 110, Plot 07_VS027).

The plant association on these flats consists of a mat of low goose-grass (*Puccinellia* sp.) with star chickweed (*Stellaria humifusa*) scattered through the mats. Small marine sedges (*Carex ursina,* or *C. maritima*) were expected on these flats, but were not found. *Carex ursina* was found in a similar association about .5 km upriver.

The presence of many fresh goose scats throughout the association, fresh goose tracks in wet sand in the area, and observation of flocks of snow geese leaving the flats area upon our approach indicates that this habitat is important to geese in the late summer.

This association was later found about 1 km west of the camp at the proposed port site at Steensby Inlet, near the old HTO camp. Its situation was similar except for the fact that it is located between the salt water and a small freshwater lake. In addition to the goose-grass and star chickweed, there was also a thick stand of the seaside chamomile (*Tripleurospermum maritimum* ssp. *phaeocephalum*, formerly *Matricaria ambigua*).

SECTION 5.0 - COMPLEXES

There are several distinct terrain "complexes" in the area of the Mary River Project or the routes to the coasts. These are landforms, and have within each multiple plant associations due to the topography. Each is unique and distinct, and each has a different value to wildlife, so have been presented as composites of associations. They are not generally mappable as individual plant associations, but *are* mappable as "complexes".

Plots in these complexes are assigned a main code that refers to the complex and a secondary code that refers to the plant association in the complex, for example a non-tussock sedge meadow within the valley/canyon complex would be assigned **VC** (valley/canyon complex) plus **Snt** (sedge community, non-tussock association).

5.1 VALLEY COMPLEX VC

PHOTO 112. Scree valley near Plot 06_VN028
PHOTO 113. Plot 06_VN028 valley complex, non-tussock sedge association

Along the north road and rail routes, especially on the slopes above the glaciofluvial terraces, there are a number of narrow valleys or sheer-walled canyons. Some of these are on the east side of the large Philip's Creek valley, adjacent to the bedrock ridges that form the large valley wall (Photo 112, Plot 06_VN028). Other good examples of this complex are to be found in the first valley along the proposed rail route just south of the Mary River. Here, the main valley is floored with a glaciofluvial complex, but on the east side, against a sheer ridge, there is a narrow valley behind a lateral moraine, forming a typical valley complex.

These steep-walled valleys likely originated as lateral moraines. The wall against the main bedrock mountain is usually sheer rock, with little vegetation, sometimes exhibiting glacial polish. The ridges were originally lateral moraines, and in places are covered with scree or talus. This unstable substrate usually has little vegetation, although there are sometimes mats of lichens, heath tundra, or avens associations.

Streams flow through the bottoms of the valleys. In places, the stream meanders, and the wetter spots are occupied by pools, sedges, or moss associations, while the drier spots bear heath tundra or even an avens-xeric sedge association. Where there are boulders in the valley floor, riparian willow associations may occur, and in lee slopes, snowbank associations.

These valley complexes offered some of the best "sign" of lemmings encountered in three low-lemming summers, especially along the edges of wetlands and below snowbanks. A number of what might be called "active" nests and fresh scat piles were found, as well as one dead lemming, plus lemming skulls in raptor pellets, but no lemmings were seen.

5.2 LIMESTONE/SANDSTONE "SLOT" CANYON COMPLEX SC

PHOTO 114. Limestone canyon with varied associations in bottom
PHOTO 115. Near Plot 06_VN169, canyon with sedges
PHOTO 116. Plot 06_VN169, avens-xeric sedge association on ledges
PHOTO 117. Near Plot 06_VN237, canyon near airstrip

Another form of "canyon complex" are limestone or sandstone "slot" canyons, are eroded into relatively soft limestone or sandstone along the old tote road route, and along Philip's Creek north of the Mary River Project (Photo 115, near Plot 06_VN169). There are others along the Mary River to the southwest of the project.

The “slot canyons” in sedimentary rock may have originated as meltwater channels eroded during the retreat of the Wisconsin/Laurentide Ice Sheet. They have vertical walls, ledges, slopes, and (usually) streams passing through the bottom of the canyon. The depth of the canyon varies, but is usually approximately 4-9 meters. The stream varies from a distinct channel through bedrock with small cascades to canyon-floor sedge meadows.

The larger slot canyons provide ideal nesting habitat for raptors, including peregrine falcons and rough-legged hawks. The canyon bottoms provide sheltered places for lemmings and occasional shelter for migrating caribou.

More erosion-resistant cap-rock on the rims of the small canyons usually is occupied by a lichen-rock calcareous bedrock association. Ledges on the canyon walls are occupied by heath tundra or an avens and xeric sedge association (Photo 116, Plot 06_VN169), depending on the amount of moisture on the ledge, the accumulation of snow and the exposure. The canyon floor usually has a combination of heath tundra and sedge associations, as well as moss associations along stream edges and at the cliff bases (Photo 115). Snowbank communities develop against north-or northwest-facing cliffs. Riparian willow associations occur where the stream flows over boulders or fractured rock.

5.3 ESKER (OR RIDGE) COMPLEX EC

PHOTO 118. Plot 06_VN013, view south along small esker
PHOTO 119. Plot 06_VN015, esker slope, snowbank association, lee of esker
PHOTO 120. Plot 06_VN015, blackish crazyweed, *Oxytropis nigrescens arctobia*
PHOTO 121. Plot 06_VN016, enriched crest of esker
PHOTO 122. Plot 06_VN016, esker crest, nutrient-enriched, close-up
PHOTO 123. Plot 07_VS181, esker crest, cobble

Eskers are sand, gravel and cobble ridges that originated as deposits from rivers issuing forth from the snouts of ice sheets or large glaciers, mostly during the retreat of the ice sheet or glacier. In the retreat phase of a continental ice sheet, meltwater from the top and sides of the ice sheet cuts channels into the ice and pours out of the front of the ice lobe, carrying much debris with it. This rock material ranges in size from large boulders to fine sand and rock flour, and the amount carried and deposited varies with the power of the current. As the bedrock is usually much harder than the ice, this stream erodes up into the ice, and deposits at the bottom of its channel. At certain velocities, this creates a sort of “streambed-in-reverse”, piled up across the land. If the water is too fast, all debris is carried away and out the front of the ice sheet to become outwash plain material. If it is too slow, the water just ponds and drops the debris in layers much like lacustrine deposits. If it is just right, an esker forms. As the ice sheet retreats, this former stream bottom is exposed as a meandering and branching ridge on the land.

The main difference between a lateral moraine and an esker is that the lateral moraine, being ice-laid, is not made up of stratified materials, but gravels, sands and rocks are all mixed up together. Lateral moraines are also usually located so close to bedrock mountain walls that weathering is impeded, and different plant communities have not had time to develop.

The materials in an esker are deposited by water (water-laid), so particles of the same size end up together (more or less). In a cross section of an esker it is usually possible to see layers of the same size particles. Some eskers are very large, some 10 to 20 meters high, and may extend for dozens of kilometers. Others are small, little more than a low pile of sand or cobbles on the land.

Drumlins are similar, but not elongated, and not as stratified. These are low, aligned hills created by the ice sheet overriding moraine deposits, and are not “sorted” or stratified, but are a mixture

of gravels, cobbles, sand, etc. Plant associations are similar on eskers and drumlins, and are more responsive to the exposure to wind and soil materials than to the how the landform is made.

There are a few eskers superimposed on glaciofluvial landforms in the Philip's Creek valley, and one relatively small esker along the previously proposed rail route (Photo 118, Plot 06_VN013). However, for vegetation analysis purposes, the vegetation on eskers can be very similar to that on drumlins or lateral moraines, etc., so all will be dealt with here.

Depending on their size, eskers (and related landforms) can be rather complex, with different types of crests, side branches, ponds and lakes surrounded by esker material. "Kettle" ponds likely originated as ice blocks trapped in the sediments. These ice blocks later melted and collapsed, filling with water and persisting as ponds. From the air, kettle ponds have a rather round shape, and are deep, showing up as dark water objects on aerial photos.

The soils on eskers are usually sandy to sandy-skeletal (gravel, cobbles), and are well to rapidly drained. Depth to permafrost is usually over 100 cm.

An esker interrupts the flow of the wind and causes snow to deposit in deep drifts on the downwind side or "lee side". These drifts persist long into the summer, and affect the vegetation drastically, creating a distinct snowbank association. Photo 118 (Plot 06_VN013) shows the dramatic difference between the windward and leeward sides of a small esker. The leeward side is to the right, and bears a snowbank association, shown in detail in Photo 119 (Plot 06_VN015), with *Oxytropis nigrescens* in bloom (Photo 120).

At the same time, the esker crest is exposed to the drying effects of the wind, plus all fine particles are removed, blown away in summer, leaving behind only those that are too heavy to be removed. Esker crest vegetation tends to be lichen-rock communities, except for certain areas which have been highly enriched by whitewash from birds or droppings of mammals (Photos 121 and 122), especially around perched boulders (called "bird stones") used by predators as lookout spots. (See "Disturbed sites, bird stones", 6.2.2.)

Lee slopes have a slightly different vegetation than windward slopes. The windward slopes may support an avens – xeric sedge association or a heath tundra association, while the leeward slopes are usually occupied by a heath tundra association, the *Cassiope* type, and the slopes of esker ponds may be occupied by a riparian shoreline shrub association, or, depending on their orientation, a snowbank association.

5.4 GLACIOFLUVIAL PLAIN COMPLEX GF

PHOTO 124. Glaciofluvial complex, Mary River Camp.
PHOTO 125. Glaciofluvial complex, north road route.
PHOTO 126. Near 06_VN017, gravel plains.
PHOTO 127. Plot 06_VN340, avens-xeric sedge association
PHOTO 128. Plot 06_VN341, mat of blueberries, *Vaccinium uliginosum*
PHOTO 129. Plot 06_VN 343, sedge associations in glaciofluvial terrace.
PHOTO 130. Kettle pond in glaciofluvial terrace, near south end of Cockburn Lake.
PHOTO 131. Low centre polygon ponds, solifluction ridges, sandy banks.
PHOTO 132. Marine terraces at Milne Inlet.
PHOTO 133. Plot 06_VN203, avens-xeric sedge association, marine terrace.

The glaciofluvial plains and terraces and related landforms are the single most obvious landform along the entire study corridor. These were produced at the end of the Laurentide Glaciation by sediment-laden water pouring from the face of the retreating ice. The material that the water carried was derived from four sources: directly from fluvioglacial erosion of bedrock, from

previously deposited materials, from material held in and then released by melting glacial ice, and from materials at the edge of the glacier (Sugden and John, 1976)

Much of this water pooled in depressions, dropping most sediments, then overflowed or cut through whatever landform stopped its flow. In other places, the water slowed and meandered, dropping sediments in stream channels. Huge blocks of glacial ice, some carrying large amounts of rocks and sediments, floated on the pooled waters, dropping their loads as they melted. Still others became stranded, and the waters flowed around them, filling everything except where the iceberg rested. These ended up as kettle ponds in the terraces. Where tributary streams flowed in, alluvial fans were created as these streams dropped their loads. In other places, streams cut many interwoven channels in the deposits, creating deposits that slant toward whatever was “downstream” at the time.

The end result, today, are many deposits that look similar – flattish terraces in an open valley, mounded outwash hills, snaking eskers, rounded ponds that may be quite deep, alluvial fans overlying the terraces or pushing out into valley lakes, and modern rivers creating multiple shallow channels (“braided streams”).

Around the Mary River Camp (Photo 124), around the confluence of the Mary River with the stream that flows by Nuluugoak Mountain, in the flatlands between the Mary River Camp and Deposit #1, and along almost all of the road route to Milne Inlet, there are flattish terraces between bedrock hills (Photos 125 and 126, general photos of glaciofluvial plains). In places, there are braided floodplains, and alluvial fans. In others there are intertwined ridges and mounds characteristic of material laid down under a deteriorating ice surface. This is gravel and sand which was deposited behind, at, and in front of the ice margin. Much of it is patterned ground with frost fissures forming polygon shapes on the land. In places, limestone or sandstone bedrock is exposed mostly as frost-shattered felsenmeer, weathering in flat slabs, or shaped by erosion by wind or water.

Kettle ponds are common in some areas of the glaciofluvial complexes. These were established by stranded chunks of glacial ice which melted after the surrounding deposits were laid down, leaving a depression that filled with water, creating a pond (Photo 130). The vegetation that surrounds these ponds is controlled by the amount of water that is available to the plants and by the exposure to wind. The edges of the ponds are usually quite sterile, sandy beaches with little vegetation. There is very little emergent vegetation, because the ponds are too deep, with steep drop-offs. The slopes from the glaciofluvial plain down to the pond itself can be vegetated, and the type of vegetation here depends on whether the slope is a lee slope (facing northwest) or a windward slope (facing southeast). The lee slopes bear a snowbank association, and the windward slopes usually are occupied by mixed heath tundra or a dry forb association with *Potentilla nivea*, and sometimes pussytoes (*Antennaria* sp.).

On the glaciofluvial landforms, due to coarse soils and rapid drainage, little organic material is found on the surface, except in places where sedge associations have developed. In these locations, the sedge associations are either shallow basins or fans, or low-centre polygons with raised moss ridges at the margins (Photo 131). In places where there is high moisture in the soil, there is considerable frost scarring -- frost boils or solifluction ridges (Photo 134).

The modern river channel is lined with sandbars and sandy beaches, some of which are high and stable enough to develop a sparse or scattered plant cover.

At Milne Inlet, there are wide flat terraces, likely marine deposits exposed by isostatic rebound (rising of the land after being depressed by the weight of the ice sheet). Streams of varying sizes have cut channels through the terraces, some meandering and some establishing distinct alluvial

fans with multiple channels. The relief provided by these stream channels and their small floodplains allows a variety of plant associations to develop (Photo 132).

The glaciofluvial plains are complicated in that many factors control the landforms that develop. The vegetation on these landforms responds to several factors:

- Substrate – chemical composition, particle size, and type of underlying soil, outwash, till, or bedrock
- Amount of moisture that remains on the land during the growing season
- Exposure to erosion by wind or water
- Snow accumulation and duration during the summer
- Stability of the surface

The avens–xeric sedge association is the most common plant association on the glaciofluvial terrain, and is typically sparse, with scattered small mats or tufts of plants, prostrate or established between boulders and cobbles. Mountain avens is dominant, sometimes forming sizable mats, and xeric sedges, both curly sedge (*Carex rupestris*) and *Carex nardina*, are scattered between and amidst the mats, as are small grasses (mainly *Anthoxanthum monticola)*, and *Kobresia myosuroides* and woodrushes, *Luzula confusa* and *Luzula arctica* (on wetter sites). Small plants of the purple mountain saxifrage, and the peas, *Astragalus alpina* and *Oxytropis maydelliana*, are common.

This association also occupies the gravel and sandbars of the modern river, where mats of dwarf fireweed (*Epilobium latifolium*, now known as *Chamerion latifolium*), prostrate arctic willow, and cushion plants of the moss campion (*Silene acaulis*) as well as tufts of the pink thrift (*Armeria maritima*) and the small chrysanthemum (*Hulteniella integrifolium*), and, occasionally, woolly lousewort (*Pedicularis lanata* ssp *lanata*).

The marine terraces of the glaciofluvial complexes at Milne Inlet are similar to the inland terraces, just different in origin. These consist of a flat plain above the floodplain of Philip's Creek, with some small wetlands (sedge association, non-tussock), and a couple small creeks cutting through the floodplain. The marine terraces end abruptly above a modern beach, which is mostly gravel with some sand (Photo 132). Faint vegetation patterns (visible from the air) outline low isostatic rebound beaches.

In the non-tussock sedge associations here, a variety of sedges dominate, including *Carex fuliginosa* ssp. *misandra, Carex nardina* (drier areas), and about five other species, all growing in distinct clumps, but not forming tussocks. Also, there is *Luzula arctica* and the small, prostrate horsetail, *Equisetum variegatum*, along with small mats of net-veined willow and prostrate *Salix arctica*. Clumps of thrift, yellow marsh saxifrage, and purple mountain saxifrage, plus the small chrysanthemum and a few mountain sorrel and bistort plants complete the picture. A dark biological crust, which is a combination of algae, cyanobacteria, and very small lichens, covers open areas of the ground, which are probably seasonally flooded.

Most of the dry areas of the marine terraces are occupied by an avens - xeric sedge association (Photo 133), mostly a thin mat of vegetation with varying ground cover and percentages of *Dryas integrifolia* and *Carex rupestris*. In some areas, the blackish crazyweed (*Oxytropis nigrescens*) is present, along with *O. maydelliana, Persicaria vivipara, and woolly lousewort (Pedicularis lanata)*. Lichens and mosses are uncommon, although a biological crust may cover parts of the soil.

The avens-xeric sedge association often occurs on high-centred polygons in large areas of patterned ground. The domed shape of these polygons concentrates water at the edges of the polygon, as it drains into the frost fissures which border the polygons. Contraction of the soil in

these areas in winter forms cracks which fill with water in the spring. This water flows into underlying ice wedges, freezes, expands, and causes the fissure to widen (French, 1976). Because there is consistently more moisture in the fissures, the plant association occupying the fissure is quite different from that on the domed centre of the polygon. Occasionally, small ponds develop. On the glaciofluvial terraces on this study area, the fissures are usually occupied by a heath tundra association with much arctic heather, net-veined willow, racomitrium moss, sedges (*Carex fuliginosa* ssp. *misandra* and *C. membranacea*), and some *Salix arctica*. Deeper and wetter cracks may even support a riparian willow or sedge association.

5.5 MEGA-POLYGONS MP

PHOTO 134. Mega-polygons, subdivided, south proposed rail route

This complex is of somewhat mysterious origin, and covers huge areas of land. From the air, this landform looks domed and resembles a faint honeycomb. Fissures border flat to slightly convex areas, and hundreds upon hundreds of these polygons extend over large areas of uplands. It is located mostly on what is identified on the surficial geology maps for the area as “till veneer”. The term “mega-polygon” is adopted directly from the Geological Survey of Canada map 4950 (Little and Holme, 2006), and is explained as “area exhibits a hexagonal polygon network where polygon diameter ranges from 20 to 50 m.”

High-centre polygons can form in two different ways. Sometimes, freezing and thawing in a surface under dry conditions results in cracks forming much as they do in drying mud. In the springtime, freezing/thawing may allow water to flow into these cracks, where it forms an ice wedge. Over many years, this ice wedge may crack during spring freeze-thaw cycles, allowing more water to flow in and become part of the wedge, forcing the surface “plates” farther apart. Then, if these ice wedges are actively melting, the fissures may develop into shallow troughs that surround the cells (Rains, 2002). The melting ice wedges cause collapse of the surface over the wedge, and subsequent erosion rounds the contours of the polygon and in part fills in the trough. Water runs off the top of the polygon and collects in the trough, adding moisture to the system there.

This mega-polygon complex is occupied by several plant associations. The centres of the polygons are raised, slightly domed, and drier than the troughs. The centres are occupied by a heath tundra or avens association (depending on the local amount of moisture, snow level in winter, and exposure). Mountain avens is an important part of this association, as is arctic heather and blueberry, with mixed low willows, including *Salix arctica* and *S. reticulata*. The troughs between polygons provide a moist environment and are occupied by a sedge association, or an association more typical of the sedge-moss wet meadow association, but on a small scale. *Salix arctica, S. richardsonii, S. reticulata*, and even *S. herbacea* occur here, sometimes almost filling the trough. Mosses ranging from *Racomitrium* to *Sphagnum* form a substrate, or, in areas with sufficient moisture, sedges may occupy the trough.

In depressions or valleys in the mega-polygons, sedge associations are present. These are typical, a low percentage of tussock sedge association with *Eriophorum vaginatum* tussocks, and a high percentage of non-tussock sedge association, with aquatic sedges like *Carex aquatilis* and C. *membranacea*, plus non-tussock forming cottongrasses like *Eriophorum angustifolium* and *E. schwechzerii*.

The soils of these mega-polygon areas tend to be sandy to sandy-skeletal, often with a high percentage of gravel. In the small wetlands in the polygon complex, the soils are sandy, with an organic surface component.

Wildlife observations for this project have shown that caribou selectively use the high centre polygon areas in the springtime as the snow is thinner over these structures and disappears from them early, due to blowing and evaporation. This exposes the plants and the caribou do not have to dig as deeply to get at them.

5.6 CALCAREOUS TILL UPLANDS CT

PHOTO 135. Plot 07_VN069, upland near Milne Inlet
PHOTO 136. Plot 07_VN071, snow-flush area in calcareous till
PHOTO 137. Plot 07_VN071, lemming scats

The calcareous till uplands are located to the west of the road corridor, near the southwest corner of Milne Inlet (Photo 135). Under the Circumpolar Arctic Vegetation Map system, the calcareous till uplands in this part of the arctic fit into the vegetation unit called “B1. Cryptogam, herb barren”. On the CAV map, this unit is widespread to the west of Philip’s Creek, and forms the uplands to the west of the old tote road (*Arctic Geobotanical Atlas*, 2007). The CAVM website states: “Dry herb barrens composed of few scattered vascular plants….vascular plant cover is generally very sparse (< 2%), mainly scattered individual plants often in crevices between stones or small (< 50 cm diameter) cryoturbated polygons. Sedges, dwarf shrubs and peaty mires are normally absent.” “The most common vascular plants are cushion forbs, graminoids, lichens, mosses, liverworts, and cyanobacteria (biological crusts).”

On these uplands, the most common plant associations are forb or purple saxifrage barrens, avens associations and snowbank associations, which are fairly common, forming dark patches or streaks on the land, and composed mostly of mosses and biological crusts with a bit of heather (Photo 136). Generally, the vegetation is very sparse, located in the depressions between the small polygons, with scattered low prostrate arctic willows, mountain avens, curly sedge, and arctic poppies (*Papaver radicatum*). There may be a few small mustards, *Draba* sp., arctic bladderpod (*Lesquerella arctica*) and a few plants of purple mountain saxifrage. There are virtually no lichens, but small mosses do occur where there is sufficient moisture.

Where larger rocks provide some enhancement of the soil moisture due to runoff, mustards cluster in the cracks, along with mats of purple mountain saxifrage.

In the rare small wetland areas, there are a few sedges, including *Carex aquatilis* and *C. fuliginosa* ssp. *misandra*, plus *C. membranacea*. *Juncus biglumis* is present, as is *Salix arctica,* and in places, red bladder campion *(Silene uralensis* ssp. *arctica).*

Strangely enough, a small sedge area in the calcareous till uplands was where some of the very few signs of lemming activity were found, including fresh scats, well-trodden runs, and small cuttings of sedges (Photo 137).

5.7 COCKBURN LAKE CLIFF COMPLEX CLC

PHOTO 138. Cockburn Lake, aerial view of east side, proposed rail crossing, from south
PHOTO 139. View south along cliffs near Plot 07_VS299
PHOTO 140. Plot 07_VS203, cliff ledges
PHOTO 141. Alluvial fan near Plot 07_VS297
PHOTO 142. Plot 07_VS204, heath tundra on boulder field

In the Cockburn Lake area, the proposed rail route follows the lakeshore in a very restricted corridor, on the west side of the northern portion of the lake, crossing over to the east side and running along the base of high cliffs. The plant associations on the cliffs and slopes above the shore were examined closely, because there will be considerable disturbance in this area. The

area forms a complex typical of cliffs in the area. It is a mosaic of different substrates and habitats, sheer cliff faces, narrow ledges, tumbled scree without any vegetation, partially stabilized scree with mats of vegetation, small valleys with sedge and avens associations perched on the slopes, and a lower terrace along the lakeshore, which includes sedge communities, alluvial fans, flat terraces with avens associations, riparian associations along streams, and small outwash hills. The diverse substrates result in very different and distinct plant associations, some covering only a few square meters.

The sheer cliff faces support little plant life, but the ledges offer a better foothold (Photo 140), and a number of species grow there, including arctic willow, heather, avens, woodrushes, *Saxifraga tricuspidata*, and *S. foliolosa.* Dry ridge shoulders or till slopes support avens associations, some with curly sedge and some without. Unstable talus slopes are occupied mostly by crustose lichens, but in places where the scree is more stabilized, mats of *Racomitrium lanuginosum* moss and lichens with blueberry, heather, and alpine holygrass cling to the slopes.

Heath tundra associations are common, especially *Cassiope* heath tundra on the moist, more sheltered slopes, and blueberry heath tundra on the open slopes, especially where there is frost scarring. In 2007, the steep slopes of the east side of Cockburn Lake offered an incredibly rich blueberry crop, with huge berries.

Where streams flow off the uplands above the cliffs, small sedge meadows and narrow riparian willow associations slow the flow of water. Richardson's willow borders the streams where there are many boulders. Alluvial fans spread out at the base of the cliffs, mostly vegetated with sedges, narrow lines of riparian willow, and heath tundra in the dry areas (Photo 141).

At the foot of the cliffs, there is a terrace above the lakeshore. This varies in width from a less than a meter to a hundred meters or more. Some is colluvium, water-borne materials eroded off the uplands, but much is covered with heath tundra. Moraine ridges are crowned with lichen-rock associations on cobble crests (Photo 142), and thick riparian willow covers the ground in areas with abundant water and boulders.

SECTION 6.0 – DISTURBED SITES DS

Disturbance of plant communities takes approximately three forms:

- Breaking of the plant cover on the soil due to physical disturbance
- Addition (or removal) of moisture (and environmental water-borne nutrients) to the system
- Addition of new nutrients in a form that can be utilized by plants

All of these result in changes on a scale commensurate with the size of the area disturbed or the amount of nutrients added or removed.

Gathering as much information on the species that colonize disturbed sites is very important, as these species may ultimately be utilized to colonize areas where the vegetation is disturbed by mining and related activities.

Some disturbances are caused by natural processes, some by animals, and some by man. These have all been included under "Section 6.0 – Disturbed Sites", rather than attempting to separate artificial from natural disturbances, as the effects on plant communities are similar.

6.1 GEOLOGIC PROCESSES (CAUSES)

A number of geological processes like mass wastage, permafrost-related changes like solifluction or frost boil development change the composition of the vegetation in limited areas. These are generally not mappable, but are worth noting because the species that come in on the disturbed areas may have value in reclamation of sites disturbed by activities related to the development of the Mary River Project.

6.1.1 Solifluction DSsol

PHOTO 143. Solifluction slope from air
PHOTO 144. Plot 06_VN018, small solifluction lobe
PHOTO 145. Plot 06_VN018, yellow mountain saxifrage, *Saxifraga aizoides*.
PHOTO 146. Plot 06_VN018, red bladder campion, *Silene uralensis* ssp. *arctica*.
PHOTO 147. Plot 06_VS285, solifluction lobe.

Solifluction or gellifluction is the downslope movement of the active layer. This can occur on a larger scale where a whole slope is affected (Photo 143), or on a small scale where frost boils occur on a slope (Photo 144).

On a small scale, solifluction results in an upslope area where there are few or no plants, and a downslope lobe where plants are concentrated due to being pushed together as the moving soil collides with soil already in place.

Large scale solifluction can produce an undulating ridge roughly following the contours of the land across a slope. This ridge may be a few inches high or more than a meter high. Upslope, water may temporarily pool, and a sedge association may develop. At the face of the lobe, there is more water available, plus the plants are crowded together due to soil movement. Some solifluction lobes can easily be seen from the air. Depending on the amount of moisture available, some lobes are marked by the presence of willows (*Salix arctica, S. richardsonii, S. reticulata*, and/or *S. herbacea*), growing out of the face of the lobe. The lobe may be rich in boulders, also being pushed downslope by the pressure of the active layer above. It is often quite sedgy or grassy, due to the very active particle movement, which allows these to become established. Common sedges include *Carex scirpoidea, C. aquatilis,* and *C. fuliginosa* ssp. *misandra*, and

grasses include *Anthoxanthum monticola* and *Poa arctica*, as well as the woodrushes (both *Luzula confusa* and *L. arctica*).

A species which is apparently a new record for north Baffin was found in Plot 06_VN018 (and many other plots). This is the yellow mountain saxifrage, *Saxifraga aizoides* (Photo 145). In fact, *S. aizoides* is abundant along the north road corridor and on the infrastructure area for this project. It's not being listed for north Baffin is simply a reflection of the fact that the flora of North Baffin is still incompletely known.

Solifluction lobes are often inhabited by a diverse group of plants: blueberry, Lapland rosebay (*Rhododendron lapponicum*), mountain sorrel (*Oxyria digyna*), *Cerastium alpinum, Stellaria longipes*, the buttercups *Ranunculus nivalis* and *R. pedatifidus*, *Eutrema edwardsii*, *Pedicularis capitata*, and at least two legumes, *Astragalus alpina* and *Oxytropis maydelliana*. Red bladder campion often occurs in wet areas associated with the lobe (Photo 146). Lichens are uncommon in the lobe, and mosses are not common on the face of the lobe, but may be common below it.

Below the lobe face there is often a band of mountain avens, then heather (*Cassiope tetragona*) and often a mossy band as well. If the lobe is tall enough, a snowbank association may be present below the lobe. An example of a larger solifluction lobe is to be found in Plot 06_VS285 (Photo 147).

6.1.2 Landslides and thaw slumps DSls

PHOTO 148. Plot 06_V234, landslide profile
PHOTO 149. Plot 06_V234, landslide from above
PHOTO 150. Plot 06_V234, landslide from below
PHOTO 151. Plot 06_V234, Star chickweed, *Stellaria longipes*
PHOTO 152. Plot 06_VN276, grassy succession on slide from road
PHOTO 153. Aerial view of slide in south route near Ravn River

Landslides and other forms of mass movement of material are fairly common in the study area. Most obvious are rock slides on steep slopes. These involve large quantities of material that slip from a steep slope or vertical face, producing fan-shaped talus slopes, often overriding the tundra at the base of the steep part of the mountain. These are slowly reclaimed by vegetation, but the plant communities remain in the category of "lichen-rock" for many decades.

Some are smaller, called "thaw slumps" (Hamblin, 1975). These are masses of the active layer sliding downhill in a single event, not slowly as in solifluction. These create small areas that undergo swift successional changes, in the process supporting a diverse group of plants that disappear after several decades as the surrounding vegetation again claims the land.

Human activities can certainly cause slumps and landslides. Removing weight from the foot of a slope (such as by the building of a road), or adding weight to the top of a slope (building pads, or a road in this position) can cause the relatively unstable active layer to slide downhill.

Several landslide areas were found, but one, near the Mary River falls, is a textbook example (Plot 06_VN234). It is only about 30 m in length, and occurs on a tundra slope. There is a classic slip face with little vegetation remaining and, at the toe of the slide, a debris flow mound which overlies vegetated tundra, and a trail of rocks down the rest of the slope. The mound at the toe of the slide is made up of chunks of vegetated tundra which have moved as units, and bare areas where new sand/gravel was exposed. See Photos 148 - 150, all 06_VN234.

Much of the vegetation on this landslide is vegetation that likely occupied this slope prior to slippage, it is a mixture of *Dryas integrifolia*, *Salix arctica, S. reticulata,* and mosses. Then, there is vegetation that has likely grown since the slide occurred, mostly in tufts on bare areas. This includes star chickweed (*Stellaria longipes*) (Photo 151), *Poa arctica*, *Luzula arctica*, bistort (*Persicaria vivipara*), yellow crazyweed (*Oxytropis maydelliana*), small *Woodsia* ferns, and a small amount of large-flowered wintergreen (*Pyrola grandiflora*).

In other areas, landslides acquire a different vegetation, likely due to local seed sources. A landslide (Photos 152 and 153), Plot 06-VN276) on the old road to Milne Inlet, northeast of "Camp Lake" offers a thick growth of grasses, including *Anthoxanthum monticola*, *Poa arctica*, and *Arctagrostis latifolia*, as well as the woodrushes *Luzula confusa* and *L. arctica*. The lush grasses delineate the slide area; on either side, there is much willow and blueberry, and relatively sparse grasses. However, under the grasses is a variety of woody plants and sedges, likely pre-dating the slide and carried down the hill by the mass movement. These include *Salix arctica* and *S. arctophila*, and the dwarf shrubs, *Vaccinium uliginosum*, *Cassiope tetragona*, and *Dryas integrifolia*. There are also a variety of forbs: *Oxyria digyna, Persicaria vivipara, Cerastium alpinum, Silene involucrata, Stellaria longipes*, arctic poppy (*Papaver radicatum*), *Armeria maritima, Pedicularis capitata, and Oxytropis maydelliana*. Mosses are common under the vegetation, likely also pre-dating the slide.

6.2 ANIMAL-CAUSED

Some "disturbed sites" are caused by animals, either by digging in the soil, wearing away the plant cover (caribou trails in areas where there are many caribou), or by deposition of nutrients.

6.2.1 Den Sites DSd

PHOTO 154. Plot 08-VS013, lemming burrow, active, island in Steensby Inlet
PHOTO 155. Plot 05_VN002, lemming burrows, old
PHOTO 156. Plot 08-VS002, active burrow of arctic fox, Steensby Inlet

Sites of animal burrows or dens are usually good examples of disturbed sites, because the inhabitants are constantly remodeling the burrow or creating new entrances nearby.

Baffin Island lacks the industrious arctic ground squirrel or "sik sik" that creates many thousands of burrows throughout the mainland arctic. Lemmings, short-tailed weasels, arctic foxes, tundra wolves, and the occasional polar bear are the only animals that construct dens in this part of the Arctic.

Burrows are generally similar in terms of the reaction of the plant communities, but vary in the amount of vegetation surrounding the disturbed soil. Often, the sites of dens or burrows of animals larger than lemmings are conspicuously marked with a dense growth of grasses, including *Arctagrostis latifolia*, and *Calamagrostis purpurascens*. Pussy-toes (*Antennaria friesiana*, formerly *A. eckmaniana*), *Stellaria longipes*, brooklet saxifrage (*Saxifraga rivularis*), and fleabane (*Erigeron uniflorus* ssp. *eriocephalus*) are also conspicuous on burrow systems.

Burrowing activity by lemmings can bring underlying material, such as sand, to the surface, covering the vegetation below the burrow. This sand fan offers new areas for plant colonization (Photo 154, 08-VS013). Otherwise the only sign of lemming burrows or runs are the trails through the vegetation, or holes in the peat or moss, or into a sandy bank.

Once a burrow is abandoned, erosion tends to fill in the hole and level the piles of loose sand or soil. Mosses may grow on the soil around the burrow (Photo155). It undergoes a fairly rapid transition back to its former plant association, changing dramatically over about 4–12 years.

Few active lemming burrows were found, likely because 2005 – 2007 were all low lemming years. Active lemming burrows (Photo 154) usually show recent digging, plus small grass leaf "cuttings" (bits of grass about 3 mm in length), nests of interwoven grasses, or nearby "lemming latrines" where many lemmings deposit their feces.

One active arctic fox burrow was found near Steensby Inlet (Photo 156), and a plot was done around the entrance (Plot 08-VS002). This was likely a den site in use over many years. There was abundant recent digging activity, and thick willows in the entrance of the burrow.

6.2.2 Raptor Perches or "Bird Stones" DSbs

PHOTO 157. Plot 06_VN122, "bird stone" on top of esker.
PHOTO 158. Plot 06_VN122, raptor pellet with lemming bones
PHOTO 159. Near Plot 07_VS019A, "bird stone" with surrounding grasses
PHOTO 160. Plot 06_VS086, "bird stone" with vegetation
PHOTO 161. Plot 06_V139, "manuring effect" on top of ridge

Raptors and predators often use stones on the tops of ridges as lookout sites, places to feed, or, in the case of mammals, as places to mark their territories. The animal activity, including deposition of "whitewash" from birds, remains of meals, pellets from raptors like rough-legged hawks or peregrine falcons, and urine and feces from passing foxes all contribute nutrients to the area around the stone (Photos 157 and 158). In his excellent book on the vegetation of the eastern Arctic, Polunin (1948) calls these "bird stones".

Plants quickly take advantage of these nutritional riches, and a lush "garden" grows up around the stone (Photo 159). On small or narrow ridges, there is even a "manuring" effect where nutrients from the deposits around the rock wash down the sides of the ridge, enriching the soil and enabling more plants to become established there (Photo 161).

In our studies many "bird stones" were found on esker crests, on ridges, above cliffs, and out on barren rebound strandlines, anywhere a predator could look out over its hunting area. Most have a lot of prickly saxifrage (*Saxifraga tricuspidata*), mountain avens, bluegrass (*Poa arctica*), star chickweed, bistort (*Persicaria vivipara*), and *Cerastium alpinum* or *C. arcticum*. Lichens are few in these areas, due to the fact that the stone and surroundings are usually exposed to the winds, but include *Flavocetraria nivalis*, worm lichen (*Thamnolia subuliformis*), and hair lichen (*Alectoria* sp.).

6.2.3 Snowy Owl Nest Mounds DSo

PHOTO 162. Plot 07_VS177, nest mound near Ravn River
PHOTO 163. Plot 07_VS177, pellets at nest mound

Scattered widely over the tundra are low mounds crowned with grasses and forbs. These may include a few rocks, but for the most part are distinguished from "bird stones" by lacking rocks; there are few with perching stones. These may be old nest mounds of snowy owls. (Photo 162, Plot 07_VS177.)

These are commonly cushions of mosses and grasses, places where the owls scrape out a shallow bowl in which the female lays the eggs, incubates, and raises the young owls. Nutrients deposited by the decaying mosses, plus nutrients added by the defecations of the incubating bird and the nestlings, create an enriched area around the nest.

Snowy owls undergo population fluctuations in sync with lemming population fluctuations. Since the last three years have been low lemming years, there are relatively few snowy owls in the area at present, so no recently built nests were found in the course of the study. Owl pellets with the bones of prey animals like lemmings can almost always be found at the edges of recently used mounds (Photo 163). The whitewash from generations of incubating owls has enriched the area on and around the mound, which results in a varied flora.

Snowy owl nest mounds are usually on the tops of esker hills or ridges, and are visible from long distances because of their crowns of tall grasses. These are generally a mixture of alpine holygrass (*Anthoxanthum monticola*), *Arctagrostis latifolia*, and *Poa* sp. A variety of dwarf shrubs, including arctic willow, mountain avens, and heather grow around the mound. Snow cinquefoil (*Potentilla nivea*), mustards (*Draba* sp., sometimes *Cardamine bellidifolia*, and prickly saxifrage add to the diversity. Star chickweed (*Stellaria longipes*), which often grows in the nutritionally-enriched areas around dens, and mouse-eared chickweed (*Cerastium alpinum*) are almost always present.

6.2.4 Bird Nesting Sites DSn

PHOTO 164. Peregrine falcon nest site with three young.
PHOTO 165. Peregrine nest site with orange jewel lichen.
PHOTO 166. Jewel lichen, *Xanthoria elegans*
PHOTO 167. Plot 07_VS225, sandhill crane nest

Raptor, jaeger, or gull nesting sites are also enriched sites. By spending more time in the area, the birds enrich the vegetation by their feces, adding calcium, nitrogen compounds, and other nutrients. These sites vary, the nests of ravens and raptors are usually on cliff faces (Photos 164 and 165), while those of gulls are on steep slopes of islands, some cliff faces, and some on the tops of peninsulas or islands. There are differences in the amount of nutrients supplied, depending on the species and the location and substrate under the nest.

Traditional raptor nesting sites on cliff ledges usually are marked by conspicuous growths of the orange lichen, *Xanthoria elegans* (Photo 166), as well as cushions of racomitrium moss, clumps of *Potentilla nivea, Poa arctica*, and *Anthoxanthum monticola*. Heather (*Cassiope tetragona*) is often present, as well as tufts of *Draba glabella* and other mustards, *Stellaria longipes*, white bladder campion (*Silene involucrata*), pussytoes (*Antennaria friesiana*) and *Carex marina* (formerly *C. amblorhyncha*).

A rich plant association often develops around gull nests; the incubating gull typically defecates from the nest, enriching the surrounding area. Mosses, clumps of *Potentilla*, grasses such as *Poa* sp., *Arctagrostis*, and *Calamagrostis*, *Draba glabella*, brooklet saxifrage (*Saxifraga rivularis*) and scurvy grass (*Cochlearia groenlandica*) plus dandelions (*Taraxacum officinale* and *T. hyparcticum*) often develop around gull nests, to the extent that the nest is sometimes surrounded by lush vegetation.

Sandhill crane nest sites are usually located in lowlands, often wetland areas or on slopes overlooking the wetland (Photo 167, Plot 07_VS225). Crane nests vary a great deal in construction; there may be little more than a scrape on the ground, or nesting material may be added to make a mound in which the bird lays one to two white eggs. The area around a crane nest is also slightly enriched, due to fecal deposits by the incubating bird.

6.2.5 Goose Feeding Damage DSgoose

PHOTO 168. Plot 07_VS273, goose feeding damage in sedges, upper Cockburn Lake

Snow geese are a significant part of the wildlife of the project area, breeding and rearing their young throughout the area south of the mine site. On their breeding grounds, the snow geese feed on the roots and leaves of grasses, sedges, and other plants. Where there is no darkness in summer, these geese feed 24 hours a day, pulling many plants up, and exposing the roots. **"**Increasing populations, coupled with its primary foraging strategy of grubbing, is causing serious damage to its breeding and, in some areas, wintering habitats." (Mowbray, Cooke, and Ganter, 2000)

Throughout the southern part of the study area, there is plenty of evidence of damage caused by geese. Many areas with torn up tussock sedges, pieces pulled out and dropped (Photo 168, Plot 07_VS273), trampled and muddy edges of ponds, many with the vegetation cropped short or even pulled out, plus large quantities of goose scats attest to considerable pressure on the vegetation by geese.

The snow goose population in eastern North America is higher than at any time in the recorded history of the species, and biologists are concerned that a population of this size may not be sustainable. However, damage to the wetland environment around the Mary River Project will continue to occur, and probably will expand, unless external factors act to limit the snow goose population.

6.2.6 Caribou Trails DSt

PHOTO 169. Plot 07_VS302, caribou trail along shore of Cockburn Lake

In areas where there is heavy caribou traffic, trails are worn into the tundra, sometimes deeply incised into the land. Along these trails, there is addition of nutrients due to the quantity of feces deposited by migrating animals.

In this study area, we found caribou trails, but no areas with the sheer number of trails that are found in the Diavik Diamond Mine or Tahera's Jericho Diamond Mine areas or in the areas traversed by the Qamanuriaq herd near Rankin Inlet. There simply do not seem to be similar numbers of caribou passing through.

Migrating caribou affect the plant communities by wearing away the plants in multiple trails along the edges of lakes or through various landforms. In places, the plants and most of the soil is worn away, and bare rock is exposed. In others, the plant cover is simply removed due to abrasion from many feet.

Along heavily-used caribou trails, there are areas where the vegetation is significantly higher and lusher than where there is no trail. This is particularly true of sedge areas, where the sedges along the trails are taller or greener than those away from the trails. This is due to the deposition of nutrients from the feces of the caribou.

Even deeply-worn caribou trails, if not used for several years, will begin to change. The vegetation regenerates, growing in from the sides of the trail, or the lichens colonize the worn spots. For example, there are trails in the Meliadine Gold Project property near Rankin Inlet that are worn deeply into the tundra, yet now covered by lichens, or in sedge areas, full of young sedges, yet still recognizable as trails. These trails indicate former heavy use by caribou, but no use in recent years, corresponding almost exactly to the change in caribou migration in the 1950s that caused widespread starvations throughout the Keewatin (Burt, 1999).

On the Mary River Project, we found incised caribou trails along the northeastern side of the Tariujaq Arm of Steensby Inlet, southeast of Nina Bang Lake, and in the area around Cockburn Lake. In all cases, these trails showed little recent growth of lichens or vascular plants in the trails, so the conclusion can be drawn that these trails are in relatively recent use.

6.3 Human-Caused

Disturbances caused by human activities typically take two forms. First, there are disturbances that remove the plant cover on the land, and then there are those that enrich the soil. We found examples of those that remove plant cover from the land, but few of those that enrich. The greywater outflow from a camp creating an enriched sedge meadow is a good example of an "enriched site", but the one from the Mary River Camp goes into a highly porous glaciofluvial system, so does not hold water close to the surface and does not create a noticeably enriched sedge area.

Because human-caused disturbances of plant cover on the land are usually of considerable size, what happens to these areas naturally can teach us a lot regarding natural revegetation. Some or much of this information can be applied to reclamation.

6.3.1 Old Road Systems, Airstrips DSr

PHOTO 170. Building "tote road", 1960s (from Jones & Lonn, 1970)
PHOTO 171. Old "tote road" to Milne Inlet, aerial
PHOTO 172. Mary River Camp and airstrip, aerial
PHOTO 173. Plot 06_VN055 Old airstrip on north road route
PHOTO 174. Plot 06_VN055 Fleabane, *Erigeron uniflorus* ssp. *eriocephalus*
PHOTO 175. Plot 06_VN259 Sedge association on old road.
PHOTO 176. Plot 06_VN269 Heather-dry moss association on old road
PHOTO 177. Plot 06_VN269 Crowberry, *Empetrum nigrum,* mat
PHOTO 178. *Antennaria* association on old road
PHOTO 179. Near Plot 06_VN269A Detail of *Antennaria* association
PHOTO 180. Near Plot 06_VN250 Old road with bloom of prickly saxifrage
PHOTO 181. *Saxifraga hieracifolia* plant for size
PHOTO 182. *Saxifraga hieracifolia* flowers

There are a number of old road systems on the project, some of which are in current use or being maintained. However the "tote road" system, established in the mid-1960s, extends from the Mary River Camp to the coast at Milne Inlet (see Photo 170 and 171). Parts of this road have not been used since about the early 1980s, so it is a good laboratory for natural revegetation. Photos of the construction of this road, and of the original development of the Mary River property in *Pathfinders of the North* are of value in establishing a starting time for the alterations to the landscape (Jones and Lonn, 1970).

Three airstrips have been established in the past for this project. One, at the Mary River Camp (Photo 172), is in regular use, and has been maintained, so shows little revegetation, but another airstrip approximately 40 km northwest of camp has not been regularly used, so is partially revegetated. (Photo 173, Plot 06_VN055.)

Several plots were established on the airstrips and on the old road system, and the vegetation that has become established on the road was found to have little in common through the length of the road, but is related to adjacent road-side vegetation near the plots.
Information obtained from these plots will be very useful should there be a need for the development of a reclamation plan for the roads and infrastructure areas of this project. These

plots reveal two things: first, which species tend to come in first on a devegetated area, and, second, which species seem to prevail over a long period of time. Knowing which species are predominant in natural revegetation will indicate which native plant species could possibly be used for reclamation.

The old inland airstrip is constructed on sand, so revegetation is slow, due to the fact that sand is relatively unstable due to wind erosion. However, the berms along the sides are well-vegetated with many small scattered mosses, least willow, heather in the depressions, a few small grasses, (not blooming but probably *Poa* sp.), a few sedges (*Carex fuliginosa* ssp*. misandra*), and woodrush (*Luzula arctica*). Cushion plants of moss campion (*Silene acaulis*) are common, and there are a few plants of fleabane (*Erigeron uniflorus* ssp. *eriocephalus*). A black biological crust covers about 30% of the ground, and is composed of algae and small rushes.

In sedge associations (Photo 175, Plot 06_VN259) along the road, high percentages of *Carex aquatilis* and about three additional *Carex* species, including *C. fuliginosa* ssp. *misandra* were found. In addition, there are a number of small shrubs, mostly *Salix richardsonii*, and prostrate *S. arctica, S. arctophila* and *S. reticulata*, so this association would fit into the shrub-sedge tundra classification. *Equisetum arvense*, *Luzula confusa*, and *Luzula arctica* are present. Grasses are not common, but included *Poa arctica* and another unidentified grass. *Pedicularis capitata* and a few lichens (*Flavocetraria nivalis, Stereocaulon tomentosum,* and *Thamnolia subuliformis*) were also present.

Heath tundra associations along the road vary considerably based mostly on the amount of shelter or moisture, but one association that was studied in detail is in the road itself (Photo 176, 06_VN269). It consists of mats of heather and cushions of racomitrium moss, clumps of *Luzula confusa*, smaller amounts of *L. arctica, Anthoxanthum monticola*, and a small amount of the shining clubmoss (*Huperzia selago*). There is a well-developed lichen cover on the ground, including *Flavocetraria nivalis, Cetraria ericetorum, Vulpicida tilesii, Cladina mitis, Stereocaulon tomentosum*, and *Dactylina arctica*.

In this plot there were several mats of crowberry (*Empetrum nigrum*), most growing in the road itself, and one large mat off to the east side, close to the old tote road, all within about 25 m of each other (Photo 177, 06_VN269). It is interesting in that this is the *only* place that crowberry was encountered north of the Mary River Camp (there is a considerable amount of *Empetrum nigrum* on the south road and rail routes). There was nothing observably different about this place, so it *may* be that the crowberries were brought in via Inuit who were traveling north through this corridor, who happened to be carrying the berries with them for food.

Another area of this road, where the road rises from the lakeshore to run over a series of low sandy hills, is occupied by an odd association in which pussy-toes (*Antennaria friesiana*) is dominant, almost forming a carpet on the road surface (Photos 178 and 179). There are low mosses and xeric sedges (*Carex rupestris*), and a few patches of white arctic heather, but by far the most common plant is the *Antennaria*.

An extremely interesting stretch of the old “tote road” occurs to the south of the round lake and tundra pond area about 20 km north of the Mary River Camp. Here, the road descends a gentle slope into the flatlands around the lake (Photo 180). A rich and diverse vegetation has developed along this slope, associated with the roadbase. A snowbank probably remains here into late July, so this area was in bloom when studied in August. Prickly saxifrage, arctic poppies, *Saxifraga nivalis*, and Sudetan lousewort were all in bloom, but the most striking was the large number of plants of *Saxifraga hieracifolia* in bloom on the road surface (Photos 181 and 182). This showy saxifrage is not common elsewhere, but was abundant here.

Fortunately, we were able to study this stretch of road prior to its development as the Milne Inlet transport route for bulk sample ore. It was useful to be able to see a disturbed site to which we could assign an actual date range for disturbances.

6.3.2 Sampling Sites DSs

PHOTO 183. Plot 06_VN175+177
PHOTO 184. Plot 06_VN175 solifluction
PHOTO 185. Plot 06_VN177 mound
PHOTO 186. Plot 06_VN177 *Draba alpina*
PHOTO 187. Plot 06_VN177 *Salix arctica*

There are a number of old sampling sites in the area to the southwest of camp, along the north road route (and some new ones along the proposed rail route) that show disturbance of the ground. These are usually pits, dug to sample the underlying material for suitability as a road building material. Sometimes the material is replaced; but often it was not entirely replaced and the pit shows a shallow scrape and adjacent pile of soil and gravel or sand.

Plants take advantage of the increased moisture that pools in the shallow scrape, and of the nutrients exposed by the excavation and disturbance of the soil. The vegetation on these sites is different from that adjacent.

One of these sampling pit sites was found in the vicinity of the small gorge and waterfall on Philips' Creek (Photo 183, Plots 06_VN175 + 177). Here, there is a distinct pit with a small amount of standing water in the bottom, and sedges (*Carex aquatilis*) growing on the slopes above and in the water. The sides show small scale solifluction, mud slippage (Photo 184), and there is a limited amount of filamentous algae in the pool at the bottom. The mound deposited when the sample was taken provides a much drier habitat (Photo 185), so is occupied by low mats of *Saxifraga tricuspidata, Draba alpina* (Photo 186), and *Oxytropis nigrescens* ssp. *arctobia*, as well as prostrate *Salix arctica* (Photo 187). The mound is undergoing plant succession and in future years will be occupied by grasses, and later by vegetation similar to that around it.

6.3.3 Old Inuit Camps DSi

PHOTO 188. Tent ring, heath tundra *Cassiope* association
PHOTO 189. Small hearth, heath tundra *Cassiope* association
PHOTO 190. Old camp at Milne Inlet

Old Inuit camp sites are found all along the line of the old road; it appears that the route from Milne Inlet inland and down to Steensby Inlet has been a traditional travel route for Inuit. Along the way, there are archaeological sites, most often a simple tent ring (Photo 188) or small hearth of arranged stones (Photo 189).

Work on other projects has shown that the old campsites show the effects of increased nutrients on the vegetation, but this effect only lasts for about two to three decades. The exact duration of this effect on the vegetation is not known yet for north Baffin.

When people camp, they are usually accompanied by dogs, and the combined fecal material from people and dogs can significantly enrich the area, even if the people do not stay long. Also, in the past, almost all the paraphernalia carried along was biodegradable, or too precious to lose. Old skins and detritus from preparation of meat and clothing would be left behind, and in decaying, would enrich the soil. This enriched nutrient effect lasts only a few years.

While the nutrients are available, plants, including grasses (*Poa, Arctagrostis, Calamagrostis*, and, at the coast, *Leymus mollis*), mustards, star chickweed (*Stellaria longipes*) and mouse-ear chickweed (*Cerastium alpinum*) and fireweed (*Chamerion latifolium*) grow up around the camp, forming a lush stand. These remain until the excess nutrients are used up, and then are replaced by the normal vegetation for the area. As a result, there is a period of "greening" of the site, which fades away within a few years.

All of the sites examined (with the exception of two sites at Milne Inlet, probably still being used occasionally) were past this "bloom" stage. The vegetation was almost as it would have been without human use of the site, except for minor effects due to snow accumulation around the stones.

These sites will be further described in the archaeological work for this project, so are not identified by plot number in this report.

6.3.4 Inuit Caches and Carcasses DSc

PHOTO 191. Plot 06_VN209 Old storage cache with caribou bones
PHOTO 192. Plot 06_VN209 Tufted grasses and sedges at cache
PHOTO 193. Plot 06_VN203 Whale vertebra with enriched vegetation
PHOTO 194. Whale bone showing snowdrift effect, Milne Inlet
PHOTO 195. Caribou antler and alpine holygrass, *Anthoxanthum monticola*

When hunting, Inuit often store caribou carcasses in stone "caches" on the land. These are simply stone containers which are built in advance and later used to store meat, or consist of stones stacked around a carcass to protect it from foxes, ravens, and gulls. Usually the caribou pieces are stored there during fall hunts, and left to be picked up later by snowmobile, after snow covers the land. These caches are often marked by placing the antlers of the caribou on top of the stones, which makes them easier to spot when covered by snow. Occasionally, a cache used for storage is forgotten and the meat inside decays or is fed upon by scavengers. The vegetation responds to the nutrient enrichment by becoming more diverse, and taller or greener.

One of these caches was found near the gorge and waterfall on Phillip's Creek, located on a ridge crest in a heath tundra area studded with glacial erratic boulders (Photos 191 and 192, 06_VN209). This cache had been made by placing stones in a semicircle against a larger rock, then stacking stones over the pieces of caribou stored in the cache. It had been opened, perhaps by a wolf or bear, and the bones were scattered about. Some decay had likely taken place, as the area was rich in grasses (*Poa* sp.), *Carex rupestris*, and several other sedges, including *C. nardina, C. fuliginosa* ssp. *misandra, C. scirpoidea*, and a lush growth of a tussock-forming cottongrass that was not blooming, likely *Eriophorum vaginatum*. Also present: *Oxyria digyna, bistort (Persicaria vivipara), Silene acaulis*, *Saxifraga oppositifolia,* woolly lousewort (*Pedicularis lanata*) and chrysanthemum (*Hulteniella integrifolium*). The heath tundra in the area is complex, with arctic heather (*Cassiope tetragona*) and blueberry (*Vaccinium uliginosum*), both *Salix arctic*a and *S. richardsonii*, plus *Salix reticulata* and is rich in lichens, including *Flavocetraria nivalis, C. tilesii, Stereocaulon tomentosum*, and *Thamnolia subuliformis*.

Sometimes, the presence of the nutrients that are derived from the decay of an animal will cause a denser vegetation to develop around the source of nutrients, such as around a whale vertebra in an old camp at Milne Inlet (Photo 193, 06_VN203). In some cases, the size of the animal remains also interrupts the flow of the wind, causing a snowdrift to develop, providing additional moisture in that particular small area. The addition of nutrients and possibly the snowdrift effect can be seen around a large piece of whale bone on the terraces at Milne Inlet (Photo 194). A lush growth of *Saxifraga tricuspidata* surrounds this piece of bone, likely left there by people who had

been camping nearby. Another example of this is an old antler with a lush growth of alpine holygrass, *Anthoxanthum monticola,* Photo 195.

The examples used in the categories and descriptions above are taken from the north road and at that time proposed rail route, the infrastructure area for the proposed mine, and from the south proposed rail and road routes. It is important to realize that, as more studies are done on additional sites such as the proposed hydro site, alternate port sites, or major changes to the routes, this classification may need to be expanded or modified.

SECTION 7.0 – LITERATURE CITED

Aiken, S.G., M.J. Dallwitz, L.L. Consaul, C.L. McJannet, L.J. Gillespie, R.L. Boles, G.W. Argus, J.M. Gillett, P.J. Scott, R. Elven, M.C. LeBlanc, A.K. Brysting and H. Solstad (1999 onwards). *Flora of the Canadian Arctic Archipelago: Descriptions, Illustrations, Identification, and Information Retrieval.* Version: 29th April 2003. http://www.mun.ca/biology/delta/arcticf/'.

Aiken, S.G., M.J. Dallwitz, L.L. Consaul, C.L. McJannet, R.L. Boles, G.W. Argus, J.M. Gillett, P.J. Scott, R. Elven, M.C. LeBlanc, L.J. Gillespie, A.K. Brysting, H. Solstad, and J.G. Harris. 2007. *Flora of the Canadian Arctic Archipelago*: *Descriptions, Illustrations, Identification, and Information Retrieval.* CD-ROM published by National Research Council Canada and Canadian Museum of Nature, Ottawa, ON.

Aiken, S.G., L.L. Consaul, and M.J. Dallwitz. 1995 onwards. *Poaceae of the Canadian Arctic Archipelago*: Descriptions, Illustrations, Identification, and Information Retrieval. Version: 10th December 2001. http://www.mun.ca/biology/delta/arcticf/'.

Arctic Geobotanical Atlas. 2007. Alaska Geobotany Centre.
bsite: www.arcticatlas.org (accessed 20 Feb. 2007). Institute of Arctic Biology, University of Alaska Fairbanks, Alaska.

Argus, G.W., C.L. McJannet and M.J. Dallwitz (1999 onwards). '*Salicaceae of the Canadian Arctic Archipelago*: Descriptions, Illustrations, Identification, and Information Retrieval.' Version: 2nd November 2000. http://http://www.mun.ca/biology/delta/arcticf/.

Burt, Page M. 2008. Unusual willow thicket along proposed rail alignment south of Cockburn Lake. Knight Piésold Memo, File NB102-181/11-A.01, Sept. 26, 2008.

Burt, Page M. 2002. *Vegetation Baseline Studies Report, 2002. Meadowbank Gold Project, Cumberland Resources.* Outcrop Nunavut, Iqaluit, NU and Yellowknife, NT

Burt, Page M. 1999. *Final Report, 1998 Vegetation Baseline Studies, WMC International Ltd., Meliadine West Gold Project.* Prepared for WMC International Ltd. by Outcrop Nunavut, Rankin Inlet.

Consaul, L. 2007. Upcoming changes in taxonomy regarding *Hierochloe* and *Alopecurus*. Personal communication by email, November, 2007. (See notes in species list.)

Duclos, I., Lévesque, E., Gratton, D. and Bordelau, P.A. 2006. *Vegetation mapping of Bylot Island and Sirmilik National Park: Final report.* Unpublished report, Parks Canada, Iqaluit, Nunavut. 101pp.

Environment Canada. 2007. *Ecological Land Classification System.* A National Ecological Framework for Canada. State of the Environment Infobase. Accessed March 10, 2007 at http://www.ec.gc.ca/soer-ree/English/Framework/default.cfm

French, H.M. 1976. *The Periglacial Environment.* Longman, New York & London.

Gillett, J.M., L.L. Consaul, S.G. Aiken and M.J. Dallwitz (1999 onwards). '*Fabaceae of the Canadian Arctic Archipelago:* Descriptions, Illustrations, Identification, and Information Retrieval.' Version: 15th November 2000. http://http://www.mun.ca/biology/delta/arcticf/.

Jones, L.F. and G. Lonn. 1970. *Pathfinders of the North.* Pitt Publishing Co., Ltd., Toronto, ON. (Especially Chapter entitled “Baffin Bonanza”, authored by Murray Watts. Photos of the Mary River area in this book are of historic interest for this project.)

Miller, G.H., Briner, J.P., Frechette, B., and A.S. Dyke. 2003. *Holocene glaciation and climate history of Baffin Island, Arctic Canada*. Paper No. 55-9 presented at Warm Times, Cold Times: Holocene Climate Variability in the North Atlantic Region. Geological Society of America, XVI INQUA Congress, Session No. 55. July 28, 2003.

Mowbray, T. B., Cooke, F., and B. Ganter. 2000 . Snow Goose (Chen caerulescens), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/514

Olthof, I., Latifovic, R. and Pouliot, D., 2008. Circa-2000 Northern Land Cover of Canada. Earth Sciences Sector, Canada Centre for Remote Sensing, Natural Resources Canada, Ottawa.

Polunin, N. 1948. *Botany of the Canadian Eastern Arctic. Part III. Vegetation and Ecology.* Bulletin 104, Biological Series No. 32. National Museum of Canada, Ottawa.

Porsild, A.E. 1951. *Plant life in the Arctic.* Canadian Geographic Journal. Reprint, 1951. National Museum of Canada. Ottawa, ON.

Porsild, A.E. 1980. *Vascular Plants of the Continental Northwest Territories*. National Museum of Canada, Ottawa, ON.

Porsild, A.E. 1957. *Illustrated flora of the Canadian Arctic Archipelago*. National Museum of Natural Sciences, National Museums of Canada. Bulletin No. 146. Ottawa, Ontario, Canada.

Sugden, D.E. and B.S. John. 1976. *Glaciers and Landscape*. Edward Arnold, division of Hodder & Stoughton, London.

Scott, P.J., Aiken, S.G., Boles, R.L., and Dallwitz, M.J. (1999 onwards). ‘*Ranunculaceae of the Canadian Arctic Archipelago*: Descriptions, Illustrations, Identification, and Information Retrieval.’ Version: 6th November 2000. http://www.mun.ca/biology/delta/arcticf/.

Zoltai, S.C., McCormick, K.J. and Scotter, G.W. 1983. *A natural resource survey of Bylot Island and adjacent Baffin Island, Northwest Territories.* Parks Canada, Ottawa, Ontario, Canada.

APPENDIX E2

VEGETATION CLASSIFICATION SYSTEM PHOTOS

- Photos of examples of different plant communities and associations, to be used in conjunction with Appendix E1, Vegetation Classification System.

Photo 1. Aerial view of glaciofluvial terraces along north road route.

Photo 2. Aerial view of a stream with patterned ground and sedge associations.

Photo 3. Emergent sedge association, Plot 06_VN008.

Photo 4. Non-tussock sedge association, Plot 06_VN011.

Photo 5. Tussock sedge association, Plot 06_VS097.

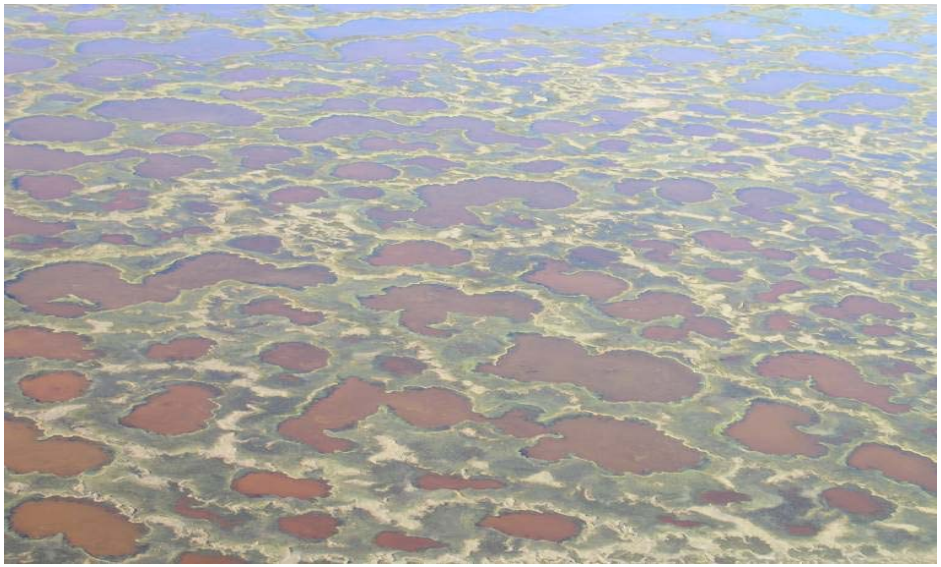

Photo 6. Aerial view of tundra ponds, Sedge-moss wet meadow association between ponds.

Photo 7. Sedge-moss wet meadow association, Plot 05_VN017.

Photo 8. Sedge-moss wet meadow association, typical hummock, Plot 06_VS291.

Photo 9. One of the few arctic annuals, *Koenigia islandica* plants, Plot 06_VS291.

Photo 10. Slope of Deposit #1, showing mossy shoreline association along small stream, Plot 06_V230.

Photo 11. Mossy shoreline association, Plot 06_VN258.

Photo 12. Moss association in valley to west of camp, with mastodon flower, Plot 06_V045.

Photo 13. Mastodon flower, *Senecio congestus* .

Photo 14. Golden saxifrage, *Chrysosplenium tetrandrum* .
Plot 06_V045

Photo 15. *Saxifraga caespitosa* in moss association,
Plot 06_V045.

Photo 16. *Saxifraga foliolosa* in moss association,
Plot 06_V045.

Photo 17. Mossy cliff base with *Eutrema edwardsii* , Plot 06_VN115

Photo 18. Moss association in calcareous area below cliffs, Plot 07_VN252

Photo 19. *Epilobium arcticum* in moss, Plot 07_VN252.

Photo 20. Willow shrubland near pond, Plot 07_VS123. Bushes are *Salix richardsonii* .

Photo 21. Richardson's willow, *Salix richardsonii* , indicator plant, riparian willow association, Plot 07_VS200.

Photo 22. Riparian willow association on sand slope in glaciofluvial complex, Plot 06_VN240.

Photo 23. Riparian willow association in small stream, Plot 06_V159.

Photo 24. Riparian willow association along steep stream near Deposit #1, Plot 05_V055.

Photo 25. Riparian willow association along east side of Cockburn Lake near proposed rail crossing, Plot 08-VS030.

Photo 26. Riparian shoreline shrub association near old Mary River Camp, Plot 05_V051.

Photo 27. Riparian shoreline shrub association at edge of small pond, with unusually tall Richardson's willows. Plot 08-VP38.

Photo 28. Riparian shoreline shrub with Charley Uttak to show height of the willows, Plot 08-VP38.

Photo 29. Heath tundra with blueberry, hillside near proposed ore car dumping facility at Steensby Inlet, Plot 08-VP18.

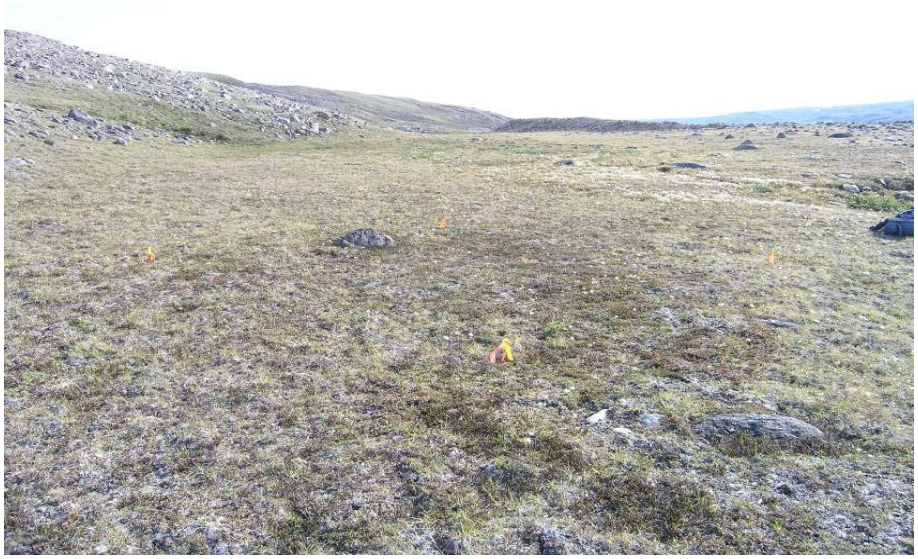

Photo 30. Blueberry heath association, sheltered slope, Plot 06_VN181.

Photo 31. Lapland rosebay, *Rhododendron lapponicum* , in blueberry mixed heath tundra, Plot 06_VN181.

Photo 32. Blueberry fruits, *Vaccinium uliginosum* , Plot VS_279.

Photo 33. Mouse-ear chickweed, *Cerastium alpinum* , in mixed heath association, Plot 06_VN014.

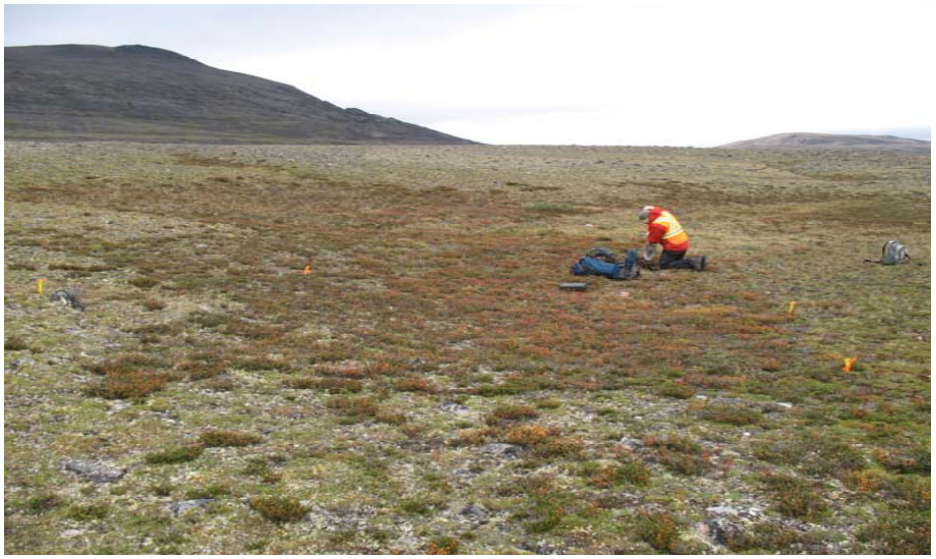

Photo 34. Heath tundra with *Cassiope tetragona* , glaciofluvial plains near proposed rail crossing over the Mary River, Plot 08-VP24.

Photo 35. White arctic heather, *Cassiope tetragona* .

Photo 36. Mixed heath tundra with *Ledum palustre* , on proposed south route, Plot 07_VS020.

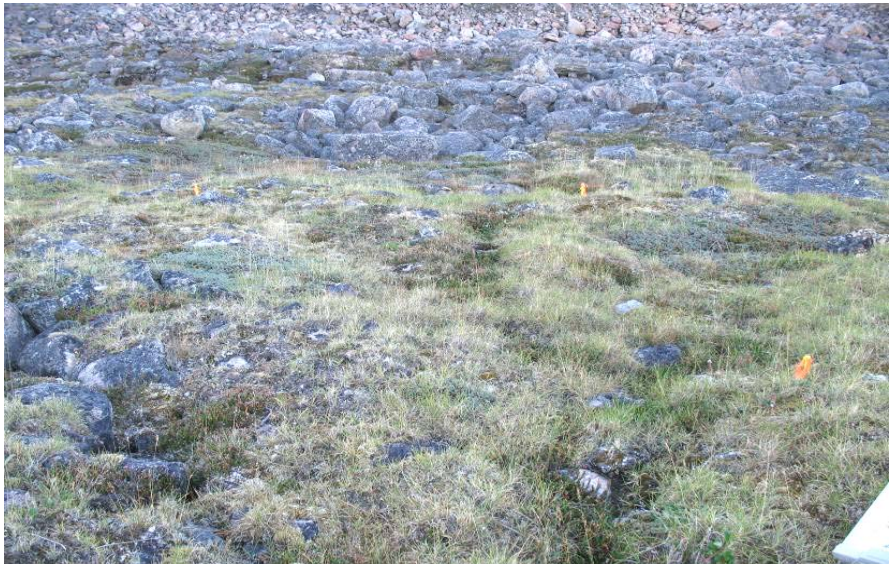

Photo 37. Mixed heath tundra on east side of Cockburn Lake, Plot 07_VS201.

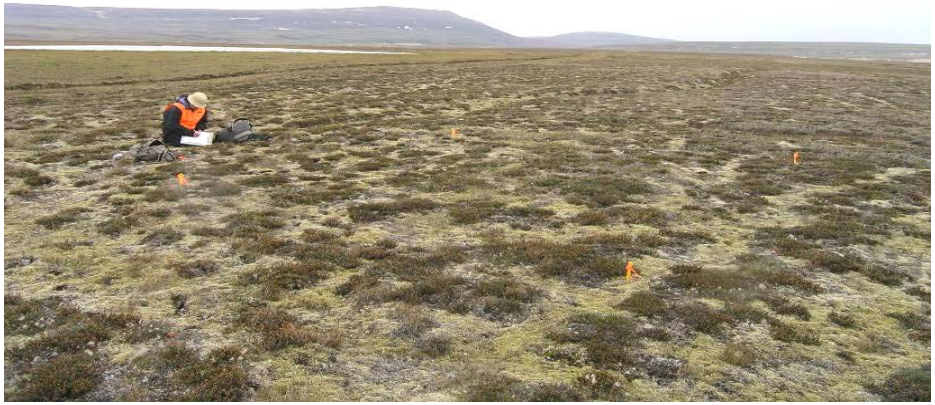

Photo 38. Heather-dry moss association on sandy flats, Plot 06_VN277.

Photo 39. Heather-dry moss association on small ridge near Mary River, Plot 06_V039.

Photo 40. Heather-dry moss association with *Racomitrium lanuginosum* moss in small depression in stagnant ice landform, Plot 06_V263.

Photo 41. Heather-dry moss association on bouldery slope, Plot 07_VS110.

Photo 42. Heather-dry moss association with only *Racomitrium* , on island, Plot 07_VS014.

Photo 43. Snowbank association on NW-facing slope below Deposit #1, Plot 06_V147.

Photo 44. Fleabane, *Erigeron humilis* , one of the indicators of snowbank associations, Plot 06_V147.

Photo 45. Snowbank association on marine terrace at Milne Inlet, Plot 06_VN199.

Photo 46. Mountain sorrel, *Oxyria digyna* , in snowbank association, Plot 06_VN199.

Photo 47. Snowbank association below snow/icefield in valley to NE of Mary River Camp, Plot 06_VN347.

Photo 48. Small snowbank association in lee of bank on proposed port island in Steensby Inlet, across from Steensby Camp, Plot 08-VS013.

Photo 49. Brooklet saxifrage, *Saxifraga rivularis* in snowbank association, Plot 06_VN348.

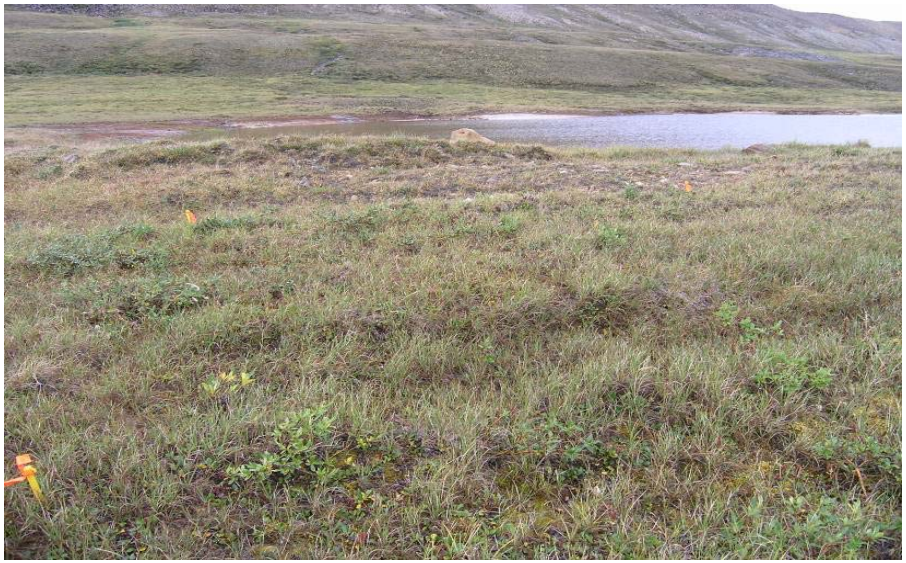

Photo 50. Shrub-sedge tundra association on old “tote road” north of Mary River Camp, Plot 06_VN259.

Photo 51. Shrub-sedge tundra with *Salix richardsonii* amidst scattered boulders, Plot 06_V243.

Photo 52. Grassy hillside on east side of Cockburn Lake, looking north, Plot 07_VS198.

Photo 53. Fragrant shield fern, *Dryopteris fragrans* , in shelter of rock, Plot 07_VS198.

Photo 54. Dry slope with forbs, in valley to west of Mary River Camp, Plot 07_V001.

Photo 55. Exposed bedrock, Lichen-rock bedrock association in north rail route, Plot 06_VN106. Note mats of *Racomitrium lanuginosum* moss.

Photo 56. Lichen-rock association on bedrock, south end of south route. Plot 07_VS227.

Photo 57. Map lichen, *Rhizocarpon geographicum* , and rock tripe on acidic bedrock, Plot 07_V131.

Photo 58. Lichen-rock bedrock, sandstone ledges, slot canyon complex, Plot 06_VN130.

Photo 59. Crustose lichens (including sunburst lichen) on calcareous bedrock, Plot 07_V010.

Photo 60. Lichen-rock scree slope association, Canyon complex, near north rail route, Plot 06_VN027 area.

Photo 61. Lichen-rock scree slope association with mats of vegetation, on slopes of Deposit #1, Plot 06_V224.

Photo 62. Arctic mouse-ear chickweed, likely *Cerastium arcticum* , Plot 06_V224.

Photo 63. Lichen-rock boulder field association on west-facing slope of Cockburn Lake near proposed rail crossing, near Plot 08-VP37.

Photo 64. Lichen-rock boulder field showing vegetation in mats or between boulders, Plot 06_VN217.

Photo 65. Close-up of vegetation mat in Lichen-rock boulder field, Plot 06_VN217.

Photo 66. Lichen rock felsenmeer, limestone and sandstone frost-shattered fragments, north road route, Plot 06_VN178.

Photo 67. Jewel lichen, *Xanthoria elegans* , grows on calcareous rocks, Plot 06_VN280.

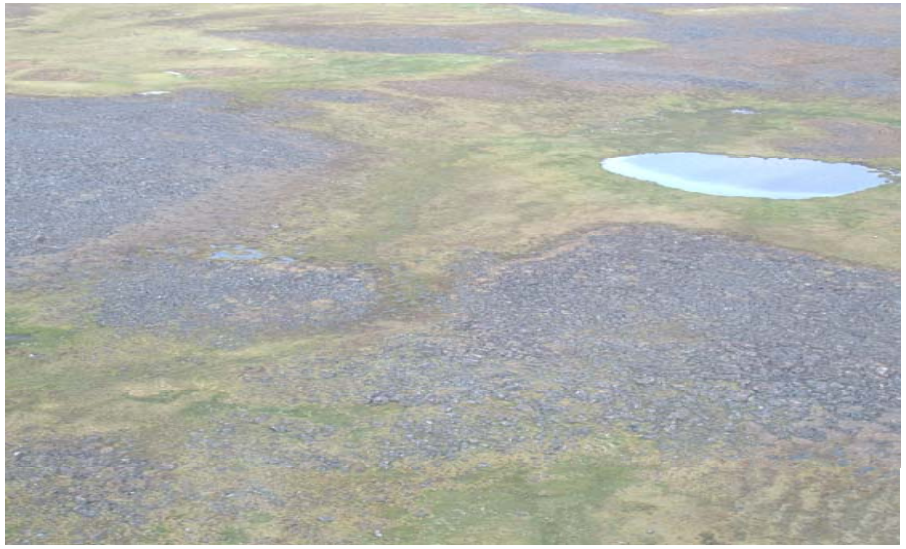

Photo 68. Large felsenmeer and sedge associations, from the air. Dark gray part is the felsenmeer, green is sedges.

Photo 69. Acidic rock felsenmeer along proposed south rail route, Plot 07_VS117.

Photo 70. Lichen-rock iron deposit association. Top of Deposit #1, showing fragmented rock, Plot 05_V010.

Photo 71 Lichen-rock iron deposit association. Crest of Deposit #1, Plot 05_ V010.

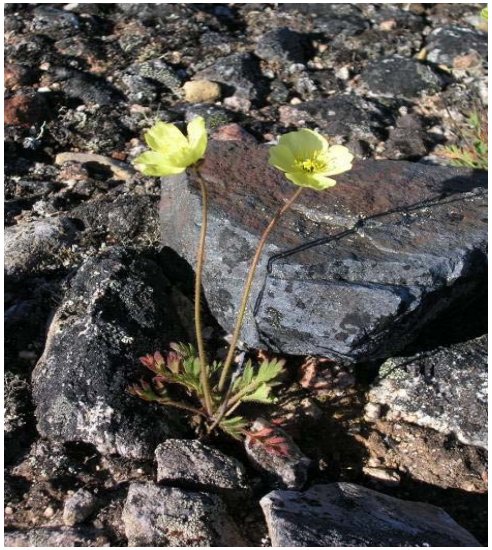

Photo 72. Arctic poppy, *Papaver radicatum* , on iron deposit, Plot 05_V011.

Photo 73. Lichen-rock iron association on iron-rich bedrock outcrop, near Plot 05_V006.

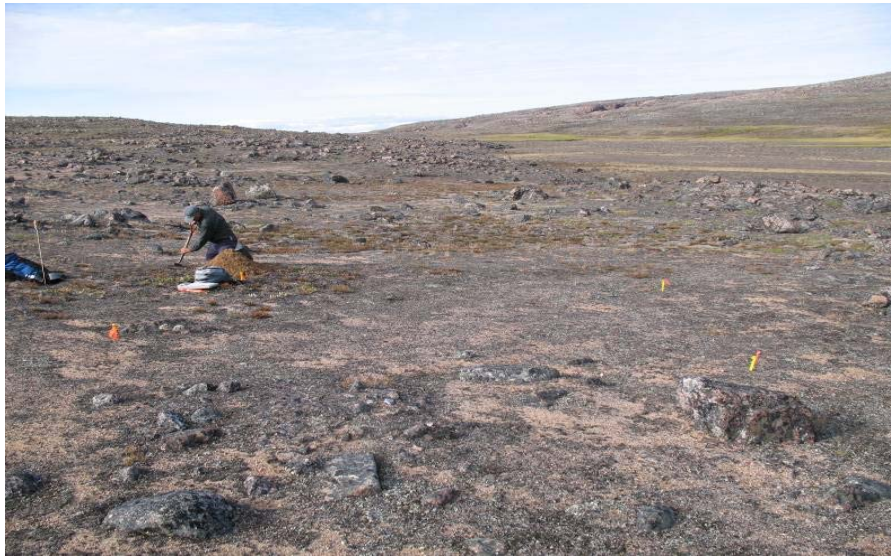

Photo 74. Lichen veneer on glaciofluvial terrace, proposed south route, Plot 07_VS287.

Photo 75. Lichen veneer, close-up of lichen flora, Plot 07_VS287.

Photo 76. Lichen veneer, hair lichens (*Alectoria ochroleuca*), Plot 07_VS287.

Photo 77. Purple saxifrage barrens association on slopes to the east of Deposit #1, Plot 06_V249.

Photo 78. Purple saxifrage barrens, close-up, Plot 06_V249.

Photo 79. Purple mountain saxifrage, *Saxifraga oppositifolia* . Plot 06_V054.

Photo 80. Cerastium arcticum plant with flowers in purple saxifrage barrens on shoulder of Deposit 1, Plot 08-VP31.

Photo 81. Sheet flow of water across slope, purple saxifrage barrens, Plot 05_V004.

Photo 82. View to the east, toward small icecap or glacier at headwaters of the Mary River, showing barren rocky hillsides.

Photo 83. Forb barrens on slopes of Deposit #1, Plot 07_V132.

Photo 84. Foxtail barley (*Alopecurus magellanicus*), Plot 07_V132.

Photo 85. *Luzula* association on shoulder of Deposit #1, Plot 07_V136.

Photo 86. *Luzula confusa* tufts on hillside, Plot 07-V283.

Photo 87. *Draba corymbosa* in *Luzula* association, Plot 07_V137.

Photo 88. Avens – xeric sedge association on ridge on proposed port island in Steensby Inlet, note Steensby Camp in background, Plot 08-VP05.

Photo 89. Mountain avens, *Dryas integrifolia* , flower.

Photo 90. Mountain avens, *Dryas integrifolia* seedhead. Plot 06_VS099.

Photo 91. Avens-xeric sedge association on slopes of Deposit #1, Plot 05_V063.

Photo 92. Avens-xeric sedge association on marine terraces at Milne Inlet, Plot 06_VN023.

Photo 93. *Carex nardina* , one of two small xeric sedges characteristic of the avens-xeric sedge association.

Photo 94. Marine terraces at Milne Inlet, alternating avens-xeric sedge association and sedge meadows. Plot_06_VN201.

Photo 95. Avens association without xeric sedges, Steensby Inlet, proposed port site island, Plot 07_VS060.

Photo 96. Coastal associations, rocky and gravelly (landslide) shores at Milne Inlet.

Photo 97. Sand and gravel beach at Milne Inlet, bowhead whale skull with edge of marine terrace in background.

Photo 98. Sand/gravel beach at Milne Inlet, from top of marine terrace, showing vertebrae of whale and skull down on beach.

Photo 99. Sandy marine backshore at mouth of Rowley River, Steensby Inlet, Plot 07_VS026.

Photo 100. Seabeach sandwort (*Honckenya peploides*), inflated seed capsules, Plot 07_VS026.

Photo 101. Seaside bluebells (*Mertensia maritima*), Plot 07_VS026. Rowley River, Plot 07-VS026

Photo 102. Marine backshore association with snowbank, Milne Inlet, Plot 06_VN199.

Photo 103. Flower of thrift, *Armeria maritima* , part of the snowbank association, Plot 06_VN199.

Photo 104. Seedhead of *Juncus biglumis* . Plot 06_VN199.

Photo 105. Flower of Potentilla *pulchella gracicaulis* , snowbank association, Milne Inlet, Plot 06_VN199.

Photo 106. Slope base at Milne Inlet, snowbank association with *Saxifraga cernua* , near Plot 06_VN199.

Photo 107. Flower of *Saxifraga cernua* . Plot 06_VN347.

Photo 108. Zonation in marine backshore at Rowley River, Plot 07_VS033.

Photo 109. Sand/silt, goose grass association, mouth of Rowley River, Plot 07_VS027.

Photo 110. Goose grass association, close-up, Plot 07_VS027.

Photo 111. Star chickweed, *Stellaria humifusa* , Plot 07_VS027.

Photo 112. Valley complex, sedge meadow and stream in bottom, scree slopes, Plot 06_VN028.

Photo 113. Non-tussock sedge association in valley complex, Plot 06_VN028.

Photo 114. Limestone "slot" canyon with varied associations in bottom.

Photo 115. Canyon with sedge association, near Plot 06_VN169.

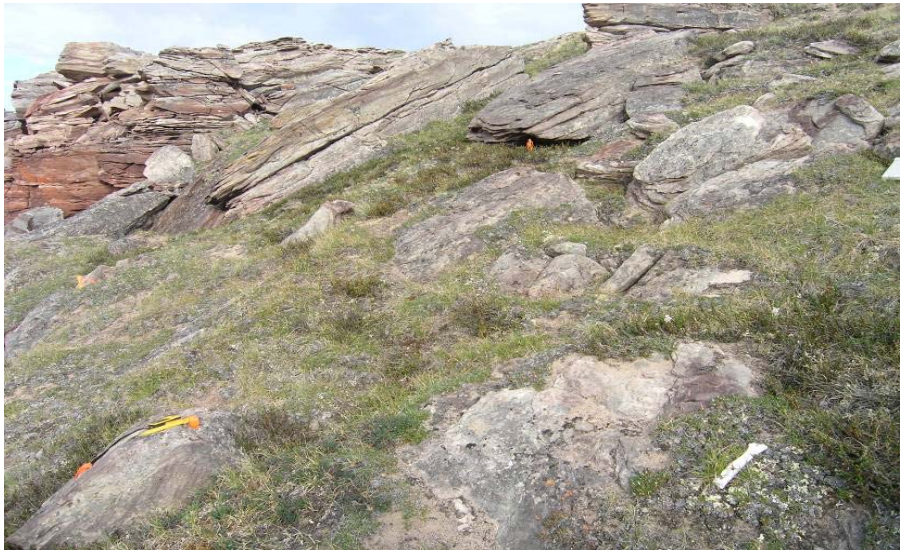

Photo 116. Avens - xeric sedge association on ledges, Plot 06_VN169.

Photo 117. Canyon near airstrip, near Plot 06_VN237.

Photo 118. Esker complex, view south along small esker, Plot 06_VN013.

Photo 119. Esker lee slope, snowbank association, Plot 06_VN015.

Photo 120. Blackish crazyweed, *Oxytropis nigrescens* , Plot 06_VN015.

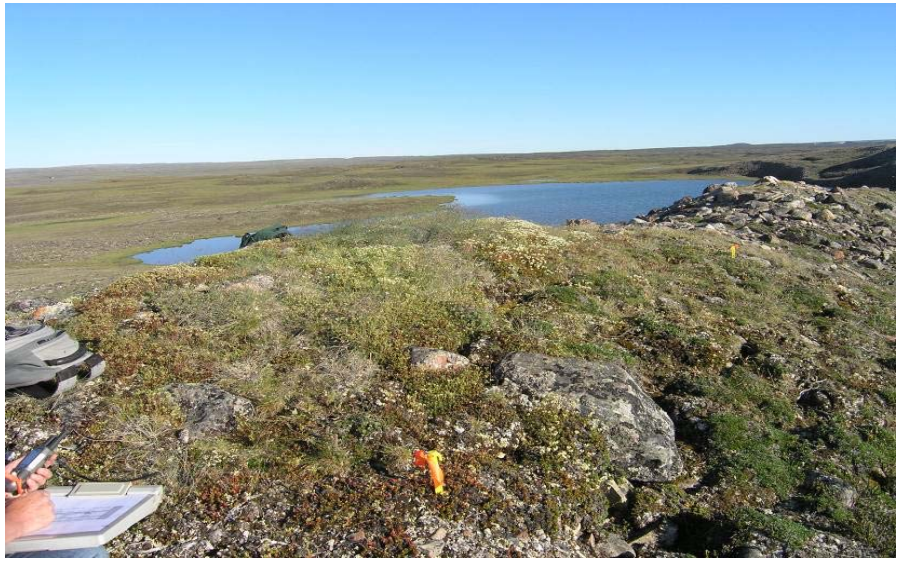

Photo 121. Crest of esker, enriched due to animal use, Plot 06_VN016.

Photo 122. Crest of esker, close-up of nutrient-enriched area, Rich bloom of *Saxifraga tricuspidata.* Plot 06_VN016.

Photo 123. Esker crest, cobble crest, Plot 07-VS181.

Photo 124. Glaciofluvial complex, aerial view of terraces at Mary River Camp.

Photo 125. Aerial view of glaciofluvial complex along north road route, note caribou trails in foreground.

Photo 126. Gravel terraces in glaciofluvial complex, avens-xeric sedge association, near Plot 06_VN017.

Photo 127. Avens-xeric sedge association above pond in glaciofluvial complex north of Mary River Camp, along road route, Plot 06_VN340.

Photo 128. Mats of blueberry, *Vaccinium uliginosum* on glaciofluvial complex, Plot 06_VN341.

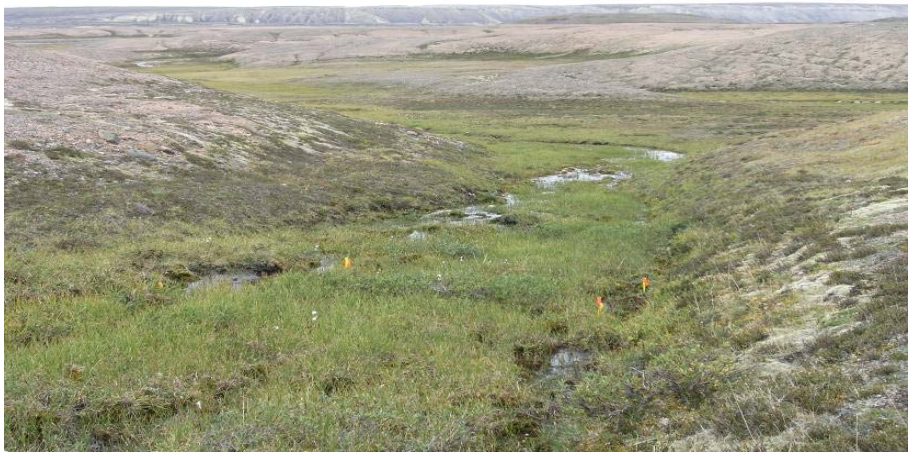

Photo 129. Glaciofluvial complex, sedge association in valley in complex, Plot 06_VN343.

Photo 130. Glaciofluvial plains with kettle ponds, near south end of Cockburn Lake.

Photo 131. Aerial view, mixture of associations in tundra ponds area, sandy river beaches plus sedge-moss wet meadow around ponds.

Photo 132. Aerial view, Glaciofluvial terraces, marine terraces at Milne Inlet.

Photo 133. Glaciofluvial complex, marine terraces at Milne Inlet, top of terrace near Philip's Creek, Plot 06_VN203.

Photo 134. Mega-polygons, subdivided, south proposed rail route.

Photo 135. Calcareous till uplands near Milne Inlet, Plot 07_VN069.

Photo 136. Snow-flush area in calcareous till, Plot 07_VN071.

Photo 137. Lemming scats in snow-flush area, Plot 07_VN071.

Photo 138. Cockburn Cliffs complex, aerial view of east side of Cockburn Lake from just south of the proposed rail crossing.

Photo 139. Cockburn cliffs, view south, near Plot 07_VS299.

Photo 140. Cockburn cliff ledges, Plot 07_VS203.

Photo 141. Cockburn cliffs, alluvial fan, near Plot 07_VS297.

Photo 142. Cockburn cliff area, heath tundra on boulder field, Plot 07_VS204.

Photo 143. Solifluction slope from air.

Photo 144. Small frost scar, solifluction lobe or “step” in glaciofluvial complex, Plot 06_VN018.

Photo 145. Yellow mountain saxifrage, *Saxifraga aizoides*. Plot 06_VN018.

Photo 146. Red bladder campion, Melandrium apetalum, in frost scar, Plot 06_VN018.

Photo 147. Profile of solifluction lobe, Plot 06_VS285.

Photo 148. Disturbed site, landslide near Mary River falls, profile of slide slope, Plot 06_V234.

Photo 149. Slide area from top of slope, Plot 06_V234.

Photo 150. Slide area from bottom of slide, Plot 06_V234.

Photo 151. Star chickweed, *Stellaria longipes* (formerly *S. monantha*) on slide debris, 06_V234.

Photo 152. Landslide from edge of road, old “tote road” north of Mary River Camp, Plot 06_VN276, note grasses on slide area.

Photo 153. Aerial view of slide near Ravn River.

Photo 154. Disturbed site, den site. Active lemming burrow with sand fan from digging. Plot 08-VS013.

Photo 155. Old lemming burrows in glaciofluvial complex, edges of holes covered with mosses, likely not active, Plot 05_VN002.

Photo 156. Disturbed site, den site. Active burrow of arctic fox near Steensby Inlet, showing digging activity and willows in entrance, Plot 08-VS002.

Photo 157. “Bird stone” on top of esker, Plot 06_VN122.

Photo 158. Raptor pellet in manured area by “bird stone”, Plot 06_VN122, on esker.

Photo 159. "Bird stone" with surrounding grasses, near Plot 07_VS019A, small hill in felsenmeer.

Photo 160. “Bird stone” on slope above proposed port site at Steensby Inlet, showing manuring effect, Plot 06_VS086.

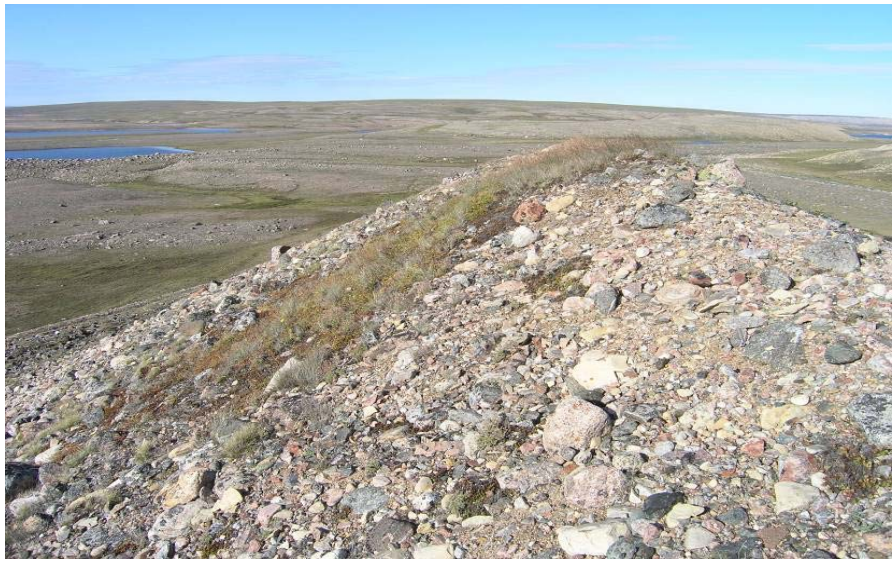

Photo 161. Manuring effects from raptor perch on top of esker ridge near train turnaround, infrastructure area, Plot 06_V139.

Photo 162. Possible snowy owl nest mound near Ravn River crossing, Plot 07_VS177.

Photo 163. Raptor pellets at nest mound near Ravn River, Plot 07_VS177.

Photo 164. Disturbed site, peregrine nest area in slot canyon complex, near Plot 06_VN261.

Photo 165. Old gyrfalcon nest being used by peregrines. Note orange lichen near nest due to added nutrients.

Photo 166. Jewel lichen, *Xanthoria elegans* , typically growing around bird nest sites.

Photo 167. Sandhill crane nest, Plot 07_VS225.

Photo 168. Snow goose feeding damage in sedges, upper Cockburn Lake, Plot 07_VS273.

Photo 169. Disturbed site, incised caribou trail in glaciofluvial area, alluvium, along east side of Cockburn Lake, Plot 07_VS302.

Photo 170. Building “tote road” in 1960s, historic photo.

Photo 171. Disturbed site, roads, aerial view of old “tote road” to Milne Inlet.

Photo 172. Disturbed site, aerial view of Mary River Camp and airstrip, on glaciofluvial complex.

Photo 173. Disturbed site, old road north of Mary River Camp, avens-xeric sedge association in road, Plot 06_VN055.

Photo 174. Fleabane, *Erigeron unifloris eriocephalus* in sandy area on old road. Plot 06_VN055.

Photo 175. Disturbed site, old "tote road" naturally revegetated with sedges, Plot 06_V259.

Photo 176. Disturbed site, old road, revegetated with heather-dry moss association, Plot 06_VN269.

Photo 177. Crowberry, *Empetrum nigrum* , on old “tote road”, possible accidental introduction? Plot 06_VN269.

Photo 178. Unusual revegetation along old “tote road”, mixed *Antennaria* association on sand, near Plot 06_VN269A.

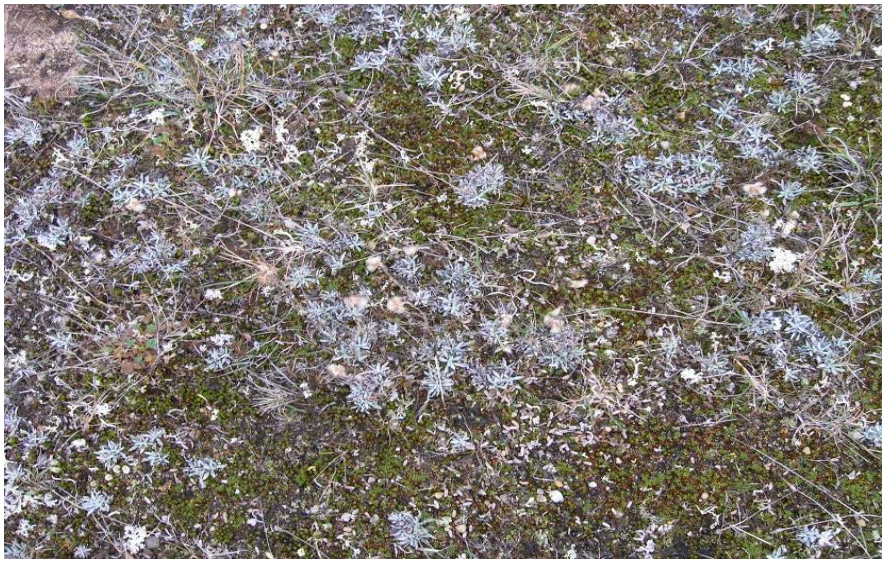

Photo 179. Closeup of pussytoes on old road, *Antennaria fresiana.*

Photo 180. Old “tote road” descending gentle slope, snowbank associations, much *Saxifraga tricuspidata* in bloom.

Photo 181. *Saxifraga hieracifolia* in old road, tall plants.

Photo 182. Flower of *Saxifraga hieracifolia* .

Photo 183. Disturbed site, mineral or fill sampling, Plots 06_VN175 and 06_VN177.

Photo 184. Small scale solifluction on disturbed site, crater, Plot 06_VN175.

Photo 185. Disturbed site, sampling, mound from excavated material, Plot 06_VN177.

Photo 186. "Pioneer plant" on disturbed site, mound, yellow draba, *Draba alpina* , Plot 06_VN177.

Photo 187. Arctic willow, *Salix arctica* , on mound of sampling site, Plot 06_VN177.

Photo 188. Disturbed site, old Inuit campsite, tent ring.

Photo 189. Small hearth in old camp site.

Photo 190. Old Inuit camp near Milne Inlet.

Photo 191. Disturbed site, old storage cache on upland above Philip's Creek falls. Plot 06_VN209.

Photo 192. Closeup view of storage cache including growth of grasses and sedges due to decaying organic material. Plot 06_VN209.

Photo 193. Disturbed site, enriched, whale vertebra in old Inuit camp at Milne Inlet. Plot 06_VN203.

Photo 194. Disturbed site, enrichment plus snowbank effect, part of whale skull at Milne Inlet, near airstrip.

Photo 195. Disturbed site, enriched area. Holygrass, *Hierochloe alpina* , growing around old antler, possibly enriched by decay of carcass.

APPENDIX F

PLANT SPECIES LIST

Family	Scientific name	Code	Common name	Habitat	Notes
Ferns	**Polypodiaceae**				
X	Cystopteris fragilis	cystfrag	Fragile fern	damp rocky slopes	
X	Dryopteris fragrans	dryofrag	Fragrant shield fern	non-calcareous rocks, cliffs and screes	
X	Woodsia glabella	woodglab	woodsia	uncommon, moist calcareous slopes, crevices	
Horsetails	**Equisetaceae**				
X	Equisetum arvense	equiarve	common horsetail	damp areas, stream or banks	
X	Equisetum variegatum	equivari	variegated horsetail	wet alluvial sand and clay, sometimes in moss	
Club-moss	**Lycopodiaceae**				
X	Huperzia selago	hupesela	mountain club-moss	turfy and mossy tundra	iviik, iviksugat
	Syn: Lycopodium selago	lycosela			
Grasses	**Poaceae (Formerly: Graminae)**				
	Agropyron violaceum	agroviol	violet wheatgrass	well-drained calcareous sand or clay	
X	Alopecurus magellanicus	alopmage	foxtail	wet tundra, lakeshores, brooks mostly seacoast, nitrophilous	
	Syn: Alopecurus alpinus	alopalpi		hillsides, disturbed areas	Revision per: Flora of the Canadian Arctic Archipelago (FCAA)
X	Anthoxanthum arcticum	antharct	arctic holygrass	in sphagnum, wet tundra, not littoral but coastal lowland	
	Syn:Hierochloe pauciflora	hierpauc			Revision per: FCAA
X	Anthoxanthum monticola	anthmont	alpine holygrass	dry tundra, rocky places, acidic rocks	
	Syn: Hierochloe alpina	hieralpi			Revision per: FCAA
X	Arctagrostis latifolia	arctlati	wideleaf polargrass	damp turfy tundra	
X	Calamagrostis purpurascens	calapupu	purple reed bentgrass	well-drained calcareous sand or stony areas	slight range extension
X	Deschampsia brevifolia	descbrev	tufted hairgrass	hummocky, frost-heaved turfy areas	
	Syn: D. caespitosa	descpumi			
X	Dupontia fisheri	dupofish	Fisher's tundragrass	wet meadows, littoral, brackish	
X	Festuca baffinensis	festbaff	Baffin fescue	moist disturbed soils, frost cracks, floodplains; organic, moist, or nitrophilous environment, often on old campsites	Bylot paper (1982), rec. from Sirmilik NP
X	Festuca brachyphylla	festbrac	alpine fescue	sandy, gravelly, rocky	
	Festuca hyperborea	festhype	boreal fescue	damp sites, imperfectly drained areas, river terraces. Sometimes abundant on old campsites.	prob., lacked flowers, likely to occur
X	Festuca rubra	festrubr	ravine fescue, red fescue	sandy, silty areas, including dunes	
X	Festuca rubra ssp. rubra	festrubr	red fescue	calcareous, sandy sites; good possibility as a soil stabilizer	taxonomic uncertainty
	Hordeum jubatum		foxtail barley	not found, but likely to be introduced, via aircraft	
X	Leymus mollis	leymmoll	American dunegrass	beaches, dunes, halophyte	
	Syn: Elymus arenarius ssp. mollis		beach rye grass		
X	Phippsia algida	phipalgi	icegrass	wet clays, lakeshores, snowbanks	
X	Pleuropogon sabinei	pleusabi	semaphore grass	shallows, small sheltered ponds	
	Poa abbreviata	poaabbr	northern bluegrass	calciphile, dry tundra, owl perches	
	Poa alpina	poaalpin	alpine bluegrass	snowbanks, calcareous soils, usually southern arctic	Sirmilik list

Family	Scientific name	Code	Common name	Habitat	Notes
X	Poa arctica	poaarct	arctic bluegrass	not too moist tundra, lake shores and brooks	
X	Poa arctica ssp. caespitans		arctic bluegrass	hummocks, owl perches, colluvial slopes	
X	Poa glauca	poaglau	white bluegrass	open, sandy, gravelly spots	
X	Poa pratensis	poaprat	Kentucky bluegrass	moist, well-drained disturbed sites, human habitation, below bird cliffs, polygons, tundra, rich meadows, variety of sites	Added by L. Consaul
X	Poa pratensis ssp. alpigena		Kentucky bluegrass	same as P. pratensis	
	Syn: Poa alpigena	poaalpig			Sirmilik list
X	Poa pratensis ssp. colpodea		Kentucky bluegrass	same as P. pratensis	
X	Puccinellia phryganodes	puccphry	creeping alkaligrass	littoral, arctic islands & coast	
X	Puccinellia tenella ssp. langeana	pucctene	alkaligrass	littoral, islands; arctic Quebec	
X	Puccinellia vahliana	puccvahl	Vahl's alkaligrass	littoral	
X	Trisetum spicatum	trisspic	spike trisetum	rocky, gravelly spots	
Sedges	**Cyperaceae**				iviit
X	Carex aquatilis	careaqua	water sedge	wet tundra, shallow ponds, emergent	
X	Carex aquatilis ssp. stans	careaqua	water sedge	wet tundra, shallow ponds, often emergent	
X	Carex atrofusca	careatro	darkbrown sedge	drooping female flowers, wet places, snowbanks	
X	Carex bigelowii	carebige	Bigelow's sedge	small in dry spots, larger in wet	
X	Carex bigelowii ssp. bigelowii		Bigelow's sedge	high, dry ledges and ridges, rebound beaches, often with Empetrum and Arctous	
X	Carex bigelowii bigelowii ssp. lugens		Bigelow's sedge	marshes, river terraces, tundra (shrubby or marshy); imperfectly drained; silt, till; peat (older deposits), or with high organic content. Range mostly western, low arctic.	major range extension
X	Carex capillaris ssp. capillaris	carecapi	hair sedge	moist pond margins	
X	Carex capillaris ssp. fuscidula	carecapifu	hair sedge	pond margins, streams, tundra slopes, sometimes in drier habitats, with avens, dwarf fireweed, and yellow crazyweed	Per Dr. Jeff Saarela, some taxonomic questions
X	Carex chordorrhiza	carechor	creeping sedge	imperfectly drained moist areas,edges of ponds (often with Hippurus vulgaris and Ranunculus pallasii), beaches, stream margins, sea shores,	major range extension
X	Carex fuliginosa ssp. misandra	carefuli	short-leaved sedge	variety of habitats, xeric, dry turfy places, rocky spots, river terraces, pond margins, hummocks, lower beach plains	
	Formerly: C. misandra	caremisa			Revision per: Jeff Saarela
X	Carex glacialis	careglac	glacier sedge	calcareous sandy, gravelly places	slight range extension
X	Carex glareosa	careglar	lesser saltmarsh sedge	seashore plant, flat tussocks, seabird nesting sites	minor range extension
X	Carex holostoma	careholo	arctic marsh sedge	hummocks, pond margins, seepage slopes, river terraces, mostly acidic soils	major range extension
X	Carex marina	caremarin	sea sedge	seashores, silty areas or flats	
X	Carex marina ssp. marina		sea sedge	seashore plant, halophyte	
	Syn: Carex amblyorhyncha	careambl			
	Carex maritima	caremari	curved sedge	mostly littoral, sandy, gravelly, sometimes inland	

Family	Scientific name	Code	Common name	Habitat	Notes
X	Carex membranacea	carememb	fragile sedge	wide variety of habitats, from moist sedge meadows to xeric, turfy places, dry tundra, often dominant in open, moist habitats with well-developed peat layer	
X	Carex nardina	carenard	spike sedge	xeric, calcareous sands, gravels, dry slopes	
X	Carex norvegica	carenorv	Norway sedge	stream margins, tundra slopes, dry terraces, mostly acidic soils, often with C. membranacea, Luzula arctica, and Carex capillaris. On drier sites, with Cladonia lichens or grasses.	major range extension
X	Carex rariflora	carerari	looseflower alpine sedge	wet peaty spots, wet moss by brooks and ponds	slight range extension
X	Carex rupestris	carerupe	curly sedge, rock sedge	xeric, dry turfy places, rocky ledges, often with Dryas	
X	Carex saxatilis	caresaxa	rock sedge	shallow water, acid tundra ponds, lakeshores	
X	Carex scirpoidea	carescir	northern singlespike sedge	xeric, dry turfy places, calcareous soil	
	Carex subspathacea	caresubs	Hoppner's sedge	seacoast, wet clay on beaches	
X	Carex supina	caresupi	weak arctic sedge	xeric, non-calcareous, dry, rocky, sandy	slight range extension
X	Carex ursina	careursi	bear sedge	littoral, seashores, inundated at high tide	
X	Eriophorum angustifolium	erioangu	tall cottongrass	shallows, non-tussock	
X	Eriophorum angustifolium ssp. triste		tall cottongrass	non-tussock	
X	Eriophorum callitrix	eriocall	arctic cottongrass	calcareous, turfy, tussock-forming	
X	Eriophorum russeolum	erioruss	red cottongrass	mud, shallow ponds, non-tussock	
X	Eriophorum scheuchzerii	eriosche	white cottongrass	wet meadows, shallows, non-tussock	
X	Eriophorum vaginatum	eriovagi	sheathed cottongrass	peaty soils, tussock-forming	
	Eriophorum vaginatum ssp. spissum		sheathed cottongrass	tussock-forming	Bylot paper
X	Kobresia myosuroides	kobrmyos	Bellardi bog sedge	calciphile, dry ridges	
X	Kobresia simpliciuscula	kobrsimp	simple bog sedge	wide variety of habitats, damp calcareous gravels, seepage slopes, dry calcareous rock or tundra, often with avens, in dry sites	
X	K. simpliciuscula ssp. subholarctica			variety of habitats, see above	Per Dr. Jeff Saarela, may be recent revision, 2008?

Family	Scientific name	Code	Common name	Habitat	Notes
Rushes	**Juncaceae**				
X	Juncus arcticus	juncarct	arctic rush	wet sand/clay shores, lakes/rivers, sometimes strand flats	slight range extension
X	Juncus biglumis	juncbigl	twoflowered rush	wet sand or clay	slight range extension
X	Juncus castaneus	junccast	chestnut sedge	wet sand or clay lakeshores	
X	Juncus triglumis	juncalbe	northern white rush	calcareous clay or sand, pond edges	
	Syn: Juncus triglumis ssp. albescens, and Juncus albescens			several species combined.	Revision per: FCAA
X	Luzula confusa	luzuconf	northern woodrush	xeric, dry turfy places, rocky slopes and ledges	
X	Luzula nivalis	luzuarct	arctic woodrush	heath and damp tundra, snowbanks	
	Some authors: L. arctica				Taxonomic problem
Lilies	**Nartheciaceae (Formerly: Liliaceae)**				
X	Tofieldia coccinea	toficocc	red false asphodel	calcareous soils, often dry sites	slight range extension
X	T. pusilla	tofipusi	white false asphodel	moist calcareous turfy places	moderate range extension
Willows	**Salicaceae**				
X	Salix arctica	saliarct	arctic willow	Extremely variable in form and habitat, highly used by Inuit	uqaujait/leaves
				Inuktitut name for bud = "like a dog"	qimminguaq
				willow fluff (carrying seeds)	siputiksaq, suputit
				wick (for qulliq)	iparaq
				pubescent ("furry") branch	uqpigaq
X	Salix arctophila	saliarctop	northern willow	wet mossy tundra, prost., lvs dk grn, veins rt angle frm midrib	
X	Salix calcicola	salicalc	woolly willow	shrub, calcareous rocky, gravelly places	(poss. hybrid, per Argus)
	Syn: S. lanata ssp. calcicola			lvs. ovate, wide, mid-south Baffin	range extension
X	Salix herbacea	saliherb	least willow	snowbank indicator species, tiny	minor range extension
X	Salix reticulata	salireti	net-veined willow, net-leaf willow, netted willow	moist tundra, beaches, stream banks, frost polygons, snowbeds, often on calcareous soils, usually in places well-protected by snow cover	atungaujaq
X	Salix richardsonii	salirich	Richardson's willow	well-watered sandy, gravelly places, terraces, silty river beds, drumlin fields, gravel ridges, cliff ledges, and snow beds.	avaaliqiat; minor range extension
	Syn: S. lanata ssp. richardsonii			shrubby, new branches pubescent, lvs. felty	

Family	Scientific name	Code	Common name	Habitat	Notes
Smartweed	**Polygonaceae**				
X	Koenigia islandica	koenigia	koenigia, island purslane	wet moss or springs, wet sand or silt; annual, very small, simple	range extension
X	Oxyria digyna	oxyrdigy	mountain sorrel; sweetleaf	snowbanks, cool moist ravines, below bird cliffs, etc.	
X	Persicaria vivipara	polyvivi	alpine bistort	turfy, rocky, moist grassy areas, animal dens	tuglak, tuglaup nakanga
	Syn: Polygonum viviparum, Bistorta vivipara				Revisions per: FCAA sapangaralannguat, root: uqpigait
Pinks	**Caryophyllaceae**				
	Arenaria humifusa	arenhumi	sandworts	moist calcareous gravels, crevices	
X	Cerastium alpinum	cerasalpi	mouse-eared chickweed	rocky, sandy, gravelly, also bird cliffs and animal dens	
X	Cerastium arcticum var. arcticum	ceraarct	mouse-eared chickweed	hummocks, snow patches, terraces, solifluction slopes, moderately well drained areas, acidic soils	difficult taxonomic problem
X	Cerastium beeringianum	cerabeer	Bering chickweed	rocky, sandy, gravelly, tends to be "western"	range extension
?	Cerastium regelii	cerarege	Regel's chickweed	hummocks, snow patches, pond margins, terraces, lake shores, tundra	Bylot paper
X	Honckenya peploides	honcpepl	seabeach sandwort	sandy or gravelly beaches, Rowley River flats	minor range extension
	Minuartia biflora	minubifl	mountain stitchwort	calcareous grassy slopes and herbmats with snow cover	Igloolik
?	Minuartia rossii	minuross	Ross' sandwort	not too dry, turfy, gravelly, sandy calcareous	unsure of identification
X	Minuartia rubella	minurube	reddish sandwort	dry, sandy, gravelly places, exposed	
	Minuartia stricta	minustric	bog stitchwort	wet places, tundra	
X	Sagina caespitosa	sagicaes	tufted pearlwort	recorded frm. mid-south Baffin, seepage slopes	range extension
X	Sagina nivalis	saginiva	snow pearlwort	moist sand or gravel by lakeshores, wet clay, disturbed sites	
	Syn: S. intermedia	sagiinter			
X	Silene acaulis	sileacau	moss campion	well-drained gravelly or turfy	
X	Silene involucrata	sileinvo	arctic campion, white bladder campion	along streams, river terraces, slopes, cliffs	
	Syn: Melandrium affine			not too dry, stony, gravelly, animal dens	
	Silene sorensensis	silesore	three-flowered campion	trailing, glabrous, 1-4 fl/stem, wet, lakeshores, snowbeds	
	Syn: Melandrium triflorum				Bylot paper: Greenland?
X	Silene uralensis ssp. arctica	sileural	red bladder campion	moist areas, seepage slopes, lakeshores	minor range extension
	Syn: Melandrium apetalum				
X	Stellaria humifusa	stelhumi	seashore chickweed	salt flats, seashores, Steensby, Rowley River flats	
X	Stellaria longipes	stelllong	long-stalked starwort	Varies, but often around den sites, and bird nests.	Major revision has placed many species into this genus.
	Syn: Stellaria crassipes, S. edwardsii, S. laeta, S. monantha			S. monantha was "blue-green chickweed"	

Family	Scientific name	Code	Common name	Habitat	Notes
Buttercups	**Ranunculaceae**				
	Ranunculus aquatilis	ranuaqua	white water-buttercup	shallow ponds	
X	Ranunculus hyperboreus	ranuhype	arctic crowfoot, arctic buttercup	shallow fresh or brackish water, among sedges/grasses	
?	Ranunculus lapponicus	ranulapp	Lapland buttercup, s. Baffin	damp moss under willows, sphagnum bogs	
X	Ranunculus nivalis	ranuniva	snow buttercup	wet moss, by brooks, often snowbanks	minor range extension
X	Ranunculus pedatifidus	ranupeda	surefoot buttercup	calcareous gravelly, sandy or grassy spots	
X	Ranunculus pygmaeus	ranupygm	pygmy buttercup	snowbank communities, moist areas	
?	Ranunculus sabinei	ranusabi	Sabine's buttercup	snow patches, marshes, wet slopes	unsure of identification
X	Ranunculus sulphureus	ranusulp	sulfur buttercup	moist gravelly tundra, wet meadows, snow patches	
Poppies	**Papaveraceae**				
X	Papaver radicatum ssp. radicatum	paparadi	arctic poppy	wet calcareous gravelly spots, greenish-yellow	iguttait niqingit
X	Papaver radicatum ssp. polare		Cornwallis' poppy	high areas recently freed from ice, wet, poorly drained	Knotty taxonomic problem.
	Syn: P. cornwallisensis			pale yellow, pinkish yellow, often white in this area	
Mustards	**Brassicaceae (Formerly: Cruciferae)**				
	Arabidopsis arenicola	arabaren	rock-cress	calcareous sand/gravel, lake shores or river banks	
	Syn: Arabis arenicola				
X	Braya glabella ssp. purpurascens	braypupu	purple braya	calcareous clay and gravel	
	Syn: Braya purpurascens				
X	Cardamine bellidifolia	cardbell	bitter cress	wet mossy places, shady crevices	
X	Cardamine pratensis	cardprat	cuckoo flower	sedge meadows	
X	Cochlearia groenlandica	cochgroe	scurvygrass	rocky islands, peninsulas, near bird nest sites	
	Syn: C. officinalis	cochoffi		Revision per: Flora of the Canadian Arctic Archipelago	
	Descurainia sophioides	descsoph	tansy-mustard	not so far found, but a likely invader, disturbed sites	
X	Draba alpina	drabalpi	alpine draba	snowbeds, moist tundra, clay in wet gravelly barrens, yellow	
	Draba arctica	drabarct	arctic draba	dry, rocks, sand, silt; milky white flowers	
	Draba cinerea	drabcine	greyleaf whitlowgrass	calcareous rocky barrens and sunny cliffs; flowers white; densely tufted, ash grey lvs.	
X	Draba corymbosa	drabcory	flattop whitlowgrass	dry calcareous barrens, rocky places, rosette of villous lvs., fl. pale yellow, cream	
	Draba fladnizensis	drabflad	arctic draba, Austrian draba	gravelly slopes, similar to D. lactea, but fl. pure white	
X	Draba glabella	drabglab	smooth whitlowgrass	rocky grassy situations, strongly nitrophilous, nest/den sites, flowers white	
X	Draba lactea	drablact	milky draba	not too dry turfy places, snowbanks, fl. creamy white	
	Draba nivalis	drabniva	snow draba, yellow draba	dry, rocky gravelly places, fl. white; should be present	
	Draba oblongata	draboblo	Canadian arctic draba	moist areas, calcareous, snow patches, gravels	
	Draba subcapitata	drabsubc	Ellesmereland whitlowgrass	calciphile, dry, gravelly tundra	

Family	Scientific name	Code	Common name	Habitat	Notes
	Erysimum pallasii	eryspall	Pallas' wallflower	calciphile, bird islands; flowers magenta to pink	
X	Eutrema edwardsii	eutredwa	Edward's mock wallflower	calcareous soils, nitrophilous, not too dry turfy tundra, flowers white, leaves clammy, glabrous	
X	Lesquerella arctica	lesqarct	Arctic bladderpod	dry rocky places, calcareous cliffs; flowers yellow, leaves in rosette, mealy grey	
Saxifrages	**Saxifragaceae**				
X	Chrysosplenium tetrandrum	chrytetr	golden saxifrage	shady, enriched soil, densites, old camps	
X	Saxifraga aizoides	saxiaizoi	yellow mountain saxifrage	edges of lakes or ponds, damp areas, calcareous	Major range extension
X	Saxifraga cernua	saxicern	nodding, bulblet saxifrage	moist ledges, moss or wet sand by brooks or lakeshores, red bulbils on stem, single white terminal flower	
X	Saxifraga cespitosa	saxicaes	tufted alpine saxifrage	rocky, gravelly situations; flowers white	
X	Saxifraga foliolosa	saxifoli	leafystem saxifrage	mossy, springy places, lakeshores, brooks, wet tundra; pinkish white flowers, bulblets in loose corymb	
X	Saxifraga hieracifolia	saxihier	stiffstem saxifrage, hawkweed-leaf saxifrage	uncommon, moist turfy calcareous habitats, flowers greenish purple	Taxonomic problems
	Syn: Micranthes hieracifolia	micrhier		was found in large quantities along old tote road	Revision per: CFAA
X	Saxifraga hirculus	saxihirc	yellow marsh saxifrage	sedge meadows	
X	Saxifraga hyperborea		arctic saxifrage	streams, seashores, calcareous soils	
X	Saxifraga nivalis	saxiniva	spring saxifrage	dry rocky slopes, ledges	Taxonomic problems
	Syn: Micranthes nivalis	micrniva	spring saxifrage		Revision per: CFAA
X	Saxifraga oppositifolia	saxioppo	purple mtn. saxifrage	moist calcareous gravels, wet cliffs.	aupilattunnguat
X	Saxifraga paniculata	saxipani	white mtn. saxifrage	calcareous rocks, easily confused w/S. rivularis	Slight range extension
	Syn: S. aizoon	saxiaizo			
	Saxifraga platysepala	saxiplat	spider plant	long radiating stolons, flowers yellow	Sirmilik
	Syn: S. flagellaris	saxiflag			
X	Saxifraga rivularis	saxirivu	brooklet saxifrage	wet gravelly mossy places, nitrophilous, bird nesting areas; flowers white, leaves light green	
X ?	Saxifraga tenuis	saxitenu	Ottertail Pass saxifrage	wet gravelly places, mossy places, brooks, lakeshores; rusty hairs on undersides of lvs., very small	unsure of identification
	Syn: Micranthes tenuis	micrtenu			Revision per: CFAA, taxonomic problems
X	Saxifraga tricuspidata	saxitric	prickly saxifrage	dry rocky gravelly spots.	kakillaqnait

Family	Scientific name	Code	Common name	Habitat	Notes
Roses	**Rosaceae**				
X	Dryas integrifolia	dryainte	mountain avens	rocky, gravelly spots, exposed ridges	malikkaat
X	Potentilla chamissonis			rocky, gravelly, calcareous slopes, similar to P. nivea	Taxonomic problems currently being worked out.
	Some authors consider this Potentilla hookeriana ssp. chamissonis				
X	Potentilla hyparctica	potehypa	arctic cinquefoil	rocky places, ravines, talus slopes; petals pale yellow	Taxonomic problems currently being worked out.
	Some authors consider this Potentilla nana				
	Potentilla nivea	potenive	snow cinquefoil	rocky sunny spots, animal burrows, cliffs, mid-south Baffin; flowers yellow, similar to P. chamissonis	
X	Potentilla pulchella var. gracicaul	potepulc	finely-divided leaves	sandy, gravelly dry spots, strandflats, yellow fl.	Milne Inlet
	Potentilla rubricaulis	poterubr	red-stemmed cinquefoil	cushionlike mats, 5 leaflets	
X	Potentilla vahliana	potevahl	Vahl's cinquefoil	dense cushions, calciphile, bright yellow fl.	
Peas	**Fabaceae (Formerly: Leguminosae)**				
X	Astragalus alpinus	astralpi	alpine milkvetch	flowers delicate blue	
	Oxytropis arctica	oxytarct	arctic crazyweed	flowers magenta w/white blaze	
X	Oxytropis maydelliana	oxytmayd	yellow crazyweed	dry tundra, many places; flowers pale yellow	airaup; airaup kangia/stem
X	Oxytropis nigrescens	oxytnigr	blackish crazyweed	dry exposed ridges; grey, silky foliage, cushion; flowers blue, seed pods w/black hairs	Some disagreement as to taxonomic status.
	Syn: O. arctobia	oxytnigr			
Crowberry	**Empetraceae**				
X	Empetrum nigrum	empenigr	crowberry; black berry	Dry sandy areas, spreading patches, all south of the Mary River, only one example on the north routes	range extension
Eve. primrose	**Onagraceae**				
X	Epilobium arcticum	epilarct	arctic willowherb	wet clay on tundra barrens, stems dk grn or purple, tall, flowers pinkish, small, inconspicuous	
	Chamerion angustifolium	comaangu	tall fireweed	south Baffin; if it appears in LSA, will have been brought in	expect this to appear
	Syn: Epilobium angustifolium				
X	Chamerion latifolium	comalati	dwarf fireweed, river beauty, broad-leaved willowherb	dry gravels, sandbars in rivers, dry slopes, flowers pink, large	
	Syn: Epilobium latifolium	epillati			
Water milfoil	**Haloragaceae**				
	Hippuris vulgaris	hippvulg	mare's tail	emergent in edges of ponds, bays of lakes	

Family	Scientific name	Code	Common name	Habitat	Notes
Wintergreen	**Pyrolaceae**				
X	Pyrola grandiflora	pyrogran	large-flowered wintergreen	shady areas under willows, sunny slopes, showy white flowers, red stems	
Heaths	**Ericaceae**				
	Arctous alpina	arctalpi	black bearberry	acid, rocky to gravelly, mid-south Baffin	
	Syn: Arctostaphylos alpina			Revised to genus Arctous, fruit juicy rather than mealy.	
X	Cassiope tetragona	casstetr	arctic heather	tundra, snowbank edges	qijuktaat
X	Ledum palustre	ledupalu	Labrador tea	shrub moss-lichen heath, ledges	qittiqsuut
	Syn: L. decumbens and L. palustre decumbens				minor range extension
X	Rhododendron lapponicum	rhodlapp	Lapland rosebay	dry rocky tundra,stony slopes	
X	Vaccinium uliginosum	vacculig	blueberry	acid soil; common on Cockburn cliffs/slopes, and on glaciofluvial plains near Cockburn Lake	
Diapensia	**Diapensiaceae**				
X	Diapensia lapponica	diaplapp	pincushion plant	exposed ridges, mid-south Baffin; flowers white, showy	minor range extension
Primrose	**Primulaceae**				
	Androsace septentrionalis	andrsept	fairy candelabra	disturbed sites, sandy, dry sites; flowers small, white, in panicles	minor range extension
Leadwort	**Plumbaginaceae**				
X	Armeria maritima	armemari	thrift, sea pink	gravelly tundra, floodplains, lake shores; pink fl. in tight head	immuk
	Possibly revised to: A. scabra (some authors)				Revised per: FCAA
Borage	**Boraginaceae**				
X	Mertensia maritima	mertmari	seaside bluebells	gravels or sands, by seashore	
Snapdragon	**Scrophulariaceae**				
?	Pedicularis albolabiata	pedialbo		wetlands, pond and stream margins	Revision per: FCAA
	Syn: P. sudetica ssp. albolabiata			ITIS and PLANTS databases use this.	
X	Pedicularis langsdorffii ssp. arctica	pediarct	arctic lousewort	moist tundra barrens	
	Syn: Pedicularis arctica				
X	Pedicularis capitata	pedicapi	capitate lousewort	gravelly, calcareous tundra or heath	
	Pedicularis flammea	pediflam	flame-tipped lousewort	moist calcareous tundra, snowbeds	
X	Pedicularis hirsuta	pedihirs	hairy lousewort (pink)	stony sandy tundra, riverbanks	
X	Pedicularis lanata	pedilana	woolly lousewort	moist stony tundra	ugjungnaq
X	Pedicularis sudetica	pedisude	Sudetan lousewort	wetlands, edges of ponds, marshes	ugjunnat
	Pedicularis sudetica ssp. alba		white sudetan lousewort	Likely not a valid taxon, prob. colour variation	Taxonomy under revision.

Family	Scientific name	Code	Common name	Habitat	Notes
Harebells	**Campanulaceae**				
?	Campanula rotundifolia	camprotu	round-leafed bluebell	rocky, gravelly turfy places	
X	C. uniflora	campunif	harebell	calcareous cliffs and gravelly screes	
Composite	**Asteraceae (formerly: Compositae)**				
X	Antennaria friesiana	antefrie	pussytoes	rocky lichen-covered slopes; only one in area	
	Syn: A. eckmaniana	anteedkm			
	Antennaria monocephala ssp. angustata		pygmy pussytoes	moist solifluction slopes, disturbed, unstable areas	
	Syn: A. angustata				
	Arnica angustifolia	arniangu	alpine arnica	dry sandy gravelly slopes, animal dens, bird cliffs	
	Syn: Arnica alpina	arnialpi			
	Crepis nana	crepnana	dwarf hawksbeard	rosette, dry calcareous screes or slopes	
	Some authors: Askellia nana			Taxonomy not worked out.	Revision per: FCAA
	Erigeron compositus	erigcomp	cutleaf daisy	(Sirmilik list)	
X	Erigeron humilis	erighumi	fleabane	below snowbank associations, damp slopes; mossy, grassy places, non-calcareous areas, nitrophilous	
X	Erigeron uniflorus ssp. eriocephalus	erigunif	fleabane	in moist, grassy places, often in herbmats below snowbanks, also well-drained sand and silt, in calcareous soils, among boulders, etc.	Major range extension
X	Hulteniella integrifolia	hultinte	entire-leafed daisy	stony calcareous barrens; white ray fl., yellow disk fl.	
	Syn: Leucanthemum integrifolium, Chrysanthemum integrifolium	leucinte chrvinte			
X	Taraxacum hyparcticum	tarahypa	leaf petiole longer than blade	calciphile, bird nesting spots, dens	
	Taraxacum hyperboreum	tarahype	dandelion; mid-south Baffin	moist places, seashores	
X	Taraxacum officinale	taraoffi	narrow-leafed dandelion	moist, mineral soils seashores, den sites, bird cliffs, etc.	
	Syn: T. lacerum	taralace			
X	Taraxacum phymatocarpum	taraphym	dwarf species, lemon yellow	stony, gravelly mineral soil	
	NOTE: Now includes: T. hyparcticum, T. arcticum, T. pumilum and more at present.				
X	Tephroseris palustris congesta	tephpalu	mastodon flower	seashores, salt marshes, wetlands	
	Syn: Senecio congestus	senecong	marsh ragwort		Revision per: FCAA
X	Tripleurospermum maritimum ssp. phaeocephalum	tripmari	seashore chamomile	moist sandy seashores, salt marshes, halophyte	
	Syn: Matricaria ambigua	matrambi			

NOTES:

X = Encountered in	**study area**	Added based on Argus IDs
		Added based on Consaul IDs
		Added based on Saarela IDs

APPENDIX G

TRADITIONAL KNOWLEDGE STUDIES REPORT

- Report on Inuit Qaujimajatuqangit regarding plants, Pond Inlet elders.

BAFFINLAND
MARY RIVER PROJECT

APPENDIX G

VEGETATION
2007 BASELINE STUDY REPORT

TRADITIONAL KNOWLEDGE, PLANTS
Summary Report for Pond Inlet Trip 2007

August 24 – 25, 2007
Elders: Elisapee Ootoova, Theresa Mucktar, Ham Kadloo
Interpreter: Sarahme Akoomalik
Facilitators: Shelly Elverum, Page Burt

In an early summer meeting with the Piksiksik Working Group, three elders with extensive Inuit Qaujimajatuqangit regarding plant use were chosen by the working group to participate in traditional knowledge studies in August. The participating elders included Elisapee Ootoova, Theresa Mucktar, and Ham Kadloo. Page Burt and Shelly Elverum designed the study, and Sarahme Akoomalik interpreted and assisted.

Interviews were done on the land near Water Lake, at the "old dump" site to the east of town, and along the roads. Plants were collected and brought indoors for discussion when the weather worsened. The conversations were taped, and written notes were made regarding the uses of plants. Sarahme ensured that each specimen taken for discussion purposes was labeled with the name in Inuktitut and Page added the English common names and the scientific names.

Page reported to the elders on the vegetation baseline work being done for the Mary River Project, exhibiting the maps of plot locations and discussing the extent of the information being obtained on the land. The elders deeply appreciated the fact that so much had been done in real contact with the land.

The elders participated with evident enthusiasm, and it was apparent that they were willing to do additional work, but the weather was deteriorating swiftly.

Elder's IQ group: Elisapee Ootoova, Sarahme Akoomalik, Theresa Maktar, Shelly Elverum, Ham Kadloo, Page Burt.

Elisapee and Theresa discussing use of willow fluff for first aid.

The following were the general questions, asked with plant in hand.

1) What do you call this plant?
2) What part(s) do you use?
3) At what time of year?
4) Is it used at any other time of year?
5) If appropriate: How is it collected? (are any tools used; if so, what are these called?)
6) How is it prepared for use?
7) Is there another name for the part of the plant you use?
8) Can you share some stories about the use of this plant?

Other questions were used to pursue interesting lines of enquiry.

The following summaries have been sent back to the translator for checking as to accuracy, and corrections will be made as received.

ALPINE FOXTAIL

Local name for plant: ᑭᓕᖅᓇᐃ ᓇᑲᖏᑦ
Roman Orthography: **kilirnait nakangit**; leaves = **kilirnait**
Scientific name: *Alopecurus alpinus*
English common name: Alpine foxtail
Plant family: Graminae

This grass is very common around Pond Inlet, growing commonly throughout the community. Our discussion of this plant was lots of fun….

Ham said that the name for this grass indicates that the leaves are sharp enough to cut. Theresa and Elisapee showed us how to make whistles out of the stems of this grass by pulling the stem out of the grass leaf sheath, and then flattening the end slightly. They say these are used by people who don't know how to whistle with two fingers stuck in their mouths. They demonstrated, with considerable success.

ARCTIC COTTON

Local name for plant: General, arctic cotton: ᑲᖏᒍᐅᐃᑦ
Multiple-flowered cottongrass: ᐳᐊᓗᖏᒍᐊᑦ
Roman orthography: General, cottongrass: **kanguujait** Multiple-flowered: **pualunnguat**
Scientific name: *Eriophorum* sp. (several species)
English common name: Arctic cotton; cottongrass

Cottongrass was and is used for the wick in the *qulliq*, the soapstone lamp. The elders stated that this is the preferred material for the wick, and willow fluff is used when no cottongrass is available. They demonstrated picking the plant and pulling the silky strands off, then pinching and pulling the seeds away from the strands. In real use, the heads are picked and allowed to dry, the seeds are removed, and the resulting fluff is stored in small fabric bags. When setting up the *qulliq*, the fat is worked into the wick, and the wick is arranged along the side of the lamp, and pushed into a thin line. One end is lit, and the flame teased out along the wick with a wooden "tender" made of willow.

Wick for qulliq, Inuktitut: ᐃᐸᕋᖅ Roman orthography: **iparaq**.

ARCTIC WILLOW

Local name for plant: ᐅᖃᐅᓕᑦ/ᐅᖃᐅᓕᐃᑦ
Roman orthography: **uqaujat** Many plants: **uqaujait**
Scientific name: *Salix arctica*
English common name: Arctic willow
Plant family: Salicaceae

According to the elders, this plant is used for many purposes. They eat the leaves, early in the springtime, as they stated, “once the hairs have fallen off”. They use the fluff which surrounds the seeds. The wood is used for firewood, and for tools and other items.

Leaves: Inuktitut: ᐅᖃᐅᓕᑦ/ᐅᖃᐅᓕᐃᑦ Roman orthography: **uqaujaq** (plural: **uqaujait**).
The leaves are eaten, usually raw. They seem to be eaten before they harden, as they become bitter at that time. The term for leaves of this plant is similar to the word for “tongue”.

Branch: Inuktitut: ᐅᖏᐱᒃ Roman orthography: **uqpigaq**
I asked about whether people here ate the cambium layer of the willow, as they do in the Kitikmeot, but apparently they do not eat it here. It makes sense that they are eaten in the west but not here – there are taller willow species in the west, ones that extend above the snow, and would be available in spring. The willows in this area do not extend above the snow.

Bud: Inuktitut: ᖁᒪᒥᓐᔪᐊᒃ Roman orthography: **qimminguaq** (refers to “like a dog”, referring to the furry nature of the leaf buds in springtime).
They were specific: the buds of the willow are not eaten by people but are eaten by ptarmigan.

Willow fluff: the fibers bearing the seeds. Inuktitut: ᓯᐳᑎᑲᒃ Roman orthography: **siputiksaq**.

The willow fluff is used in several ways:

1) Clean fluff is used as a bandage – it absorbs moisture and will not stick to a wound. Can be used on the umbilical cord for a baby to cause the cord to dry up.
2) Less clean fluff or fluff mixed with little bits of moss (rolled in the hands) can be used in place of the fibers of the flowers of the arctic cotton to make the wick in the qulliq.
3) Willow fluff mixed with bits of moss can be eaten to reduce heartburn.
4) Even less clean fluff can be used as tinder.

Wick for qulliq, Inuktitut: ᐃᐸᖏᒃ Roman orthography: **iparaq**.
The use of willow fluff for wicks was not preferred. They prefer to use the flower heads of the arctic cotton, but if they could not get arctic cotton, the willow fluff was occasionally used.

RICHARDSON’S WILLOW

Local name for plant: ᐊᔪᓪᓚᖏᐊᑦ
Roman Orthography: **avaalaqiat**
Scientific name: *Salix richardsonii*
English common name: Richardson’s willow
Plant family: Salicaeae

The elders said that they eat the leaves of this willow, likely early in the season before they harden.

This is the tallest willow in the area, so likely there was use made of the wood of this plant, either as driftwood or directly. They used willow for qayaq ribs, and it was likely this species. However, even for qayaq ribs, this material would need to be spliced.

NET-VEINED WILLOW

Local name for plant: ᐊᑐᓚᐅᕆᖅ/ᐊᑐᓚᐅᕆᐃᑦ/ᐊᑐᓚᐅᕈᒃ
Roman Orthography: **atungaujaq** (plural: **atungaujait**; two: **atungaujaak**)
Scientific name: *Salix reticulata*
English common name: Net-veined willow
Plant family: Salicaceae

This willow was picked and shown to us as an example of the willows they *do not* eat.

BISTORT

Local name for plant: ᑐᖅᓕᖅ
Roman Orthography: **tuqlak**
Scientific name: *Polygonum viviparum*
English common name: Bistort
Plant family: Polygonaceae

The elders said that the root of this plant is eaten – the plant is pulled up, “bark” scraped off the root, and the inner part eaten. It can be eaten raw or cooked.

I asked about the seeds, since they are eaten by the Inupiat in Alaska, but they only said that, “When we were kids, we ate them.” No recognition of the use of seeds as food in general.

Stem: Inuktitut: ᑐᖅᓕᐅᕐ ᓇᒃᖏᑲ Roman orthography: **tuqlaup nakanga**. (This may be a general term for “stem” of a plant, and not particularly associated with this plant. Not sure.)

MOUNTAIN SORREL

Local name for plant: ᖃᓄᐊᓕ/ᖃᓄᐊᓖᑦ
Roman Orthography: **qunguliq/qunguliit**
Scientific name: *Oxyria digyna*
English common name: Mountain sorrel, sweetleaf (western arctic)
Plant family: Polygonaceae

According to the elders, the leaves of *Oxyria digyna* are eaten fresh, and also can be cooked (boiled) in which case the pulp is eaten and the juice is considered a refreshing drink.

The stems are eaten when young (before the seeds form), and can be chewed and spit out later, getting the taste and refreshment, and discarding the pulp. The stems are also cooked, sometimes with meat, and the pulpy bits discarded.

This is one of several plants that are sought out by men who are out on the land, caribou hunting.

LARGE-FLOWERED WINTERGREEN

Local name for plant: Unknown at present.

Scientific name: *Pyrola grandiflora*
English common name: Large-flowered wintergreen
Plant family: Pyrolaceae

This was one of the first plants shown to us by the elders. The leaves are used to make a “tea”. They are first fried a bit in fat, and then can be soaked in water and boiled, to make a liquid that is consumed hot.

The frying procedure makes sense, as the surface of the large-flowered wintergreen leaves is waxy, an adaptation for conserving moisture. Frying would remove this wax, allowing the leaf to absorb water.

According to the elders, these were among the plants that were often eaten by the men while out on the land, caribou hunting.

YELLOW CRAZYWEED

Local name for plant: ᐊᐃᖏᖅ
Roman Orthography: **airaq**
Scientific name: *Oxytropis maydelliana*
English common name: Yellow oxytrope
Plant family: Fabaceae (Leguminosae**)**

According to the elders, this pea is collected for its edible roots. The roots are cleaned and peeled (bark removed), and can be eaten raw or cooked, though there seemed to be a slight preference for using them in the cooked form. Ham said, “When you cook them they taste like potatoes. Very good.”

Theresa and Elisapee both cracked open the seed pods and poured the seeds out, looking at and tasting them, but did not talk much about it. I got the impression that they don’t really eat the seeds, that they were just exploring.

The name listed above may not be the actual name for this plant – “airaq” is a name for “root”, and “**airup kangia**” ᐊᐃᖏᐅᐸ ᑲᖏᒋᐊ is a name for “stem”.

WOOLLY LOUSEWORT

Local name for plant: Unknown at present.

Scientific name: *Pedicularis lanata*
English common name: **Woolly lousewort**
Plant family: Scrophulariaceae

Ham picked one of these and spoke of eating the roots of this plant when he was young, plus eating it when out hunting for caribou, especially when a group of men had to walk long distances. He spoke of getting very hungry, and that the men would start looking for plants, anything to eat off the ground.

PURPLE MOUNTAIN SAXIFRAGE

Local name for plant: ᐊᐅᐱᓪᓕᖅᓄᓇᒃ/ᐊᐅᐱᓪᓕᖅᓄᓇᒃ
Roman Orthography: **aupilattunnguat**
Scientific name: *Saxifraga oppositifolia*
English common name: Purple mountain saxifrage
Plant family: Saxifragaceae

The elders determined that there are about seven plants that are used to make tea. This is one of the species used. Purple mountain saxifrage leaves and flowers are boiled and the resulting liquid is drunk as a tea.

The flowers are also picked and eaten as a sweet, and can be combined with fat or seal oil to preserve them and are eaten this way as well.

Elisapee said that there are three plants that look about the same – and it is not clear whether these are three species of saxifrage (possibly *Saxifraga caespitosa, Saxifraga tricuspidata*, and *Saxifraga oppositifolia*) or whether this is three general growth forms of the *Saxifraga oppositifolia* (mat with short flower stalks, cushion, or mat with long flower stalks). They said that all are used to make tea, and the flowers are eaten.

We spoke of the scenes in the film *Atanarjuat* that involved this plant. They agreed that the women in the movie were seeking it out as a sweet, but did not have any knowledge of its use as a method of contraception (which is inferred in the script for the movie, but not made clear). They did not know of any plants that could be used for contraception at all, nor of any that could be used to encourage pregnancy.

PRICKLY SAXIFRAGE

Local name for plant: ᑲᑭᓪᓚᖃᐃᑦ
Roman Orthography: **kakillaqnait**
Scientific name*: Saxifraga tricuspidata*
English common name: Prickly saxifrage
Plant family: Saxifragaceae

The prickly saxifrage flowers are eaten as a sweet and can be used along with the leaves to make a tea.

This plant is sometimes collected in large quantities and is put into a pen where puppies are kept. The leaves are quite prickly and are used to toughen the feet of puppies so that they can run on the sharp sea ice.

Plants used for tea: Prickly saxifrage, purple mountain saxifrage, Labrador tea, large-flowered wintergreen (fried, then used), mountain sorrel, dwarf fireweed, and blueberry.

WHITE ARCTIC HEATHER

Local name for plant: ᖃᕐᔪᒃᑕᐩ
Roman Orthography: **qijuktaat**
Scientific name: *Cassiope tetragona*
English common name: White arctic heather
Plant family: Ericaceae

All agreed that this was/is a very valuable plant in this culture. The foliage and stems are the part that is used.

The heather plants are pulled up along with whatever moss sticks to them, and are piled up and used as a mattress. These were used on the sleeping platform in the snow houses, and the sleeping skins placed on top of the plants. Heather seems to be used preferentially as the heather does not collect moisture as badly as do the mosses, so the mattress can be used longer.

Heather is also used as firewood, especially while traveling. Large quantities are collected and piled up. The women usually do this, and then work with the collected plants, removing as much of the soil as possible so that there is no interference with burning.

In the past, small baskets of gut were filled with willow fluff or dry lichen material. Sparks made by hitting two flint or chert rocks together were allowed to drop into the dry tinder, and the small basket was picked up and held close to the face. The person starting the fire blew gently into the tinder until the spark caught in the fibrous material and began to burn. Once a small fire was started, a tuft was picked up and used to light the larger fire.

LABRADOR TEA

Local name for plant: ᖃᑎᖅᓱᑦ
Roman Orthography: **qittiqsuut**
Scientific name: *Ledum palustre* ssp. *decumbens*
English common name: Labrador tea
Plant family: Ericaceae

The elders reacted to this plant with exclamations of delight at the smell of the plant: “Ummmm!” They make tea out of the leaves of this plant. It was not clear whether they dry them or not. I think they just steep the fresh leaves. It is not used medicinally, but just as a drink.

The Dene, however, do use this as a medicine, as well as a tea. The plant contains the chemical called ledol, which slows the heart rate in humans. It needs to be used with extreme caution and knowledge of the effects.

BLUEBERRY

Local name for plant: ᑭᔪᑕᖏᕆᓪᓗᐃᑦ
Roman Orthography: **kigutangirnait**
Scientific name: *Vaccinium uliginosum*
English common name: Blueberry, bilberry
Plant family: Ericaceae

The berries of this plant are a prized delicacy across the entire Arctic and are even more highly prized here where there are no cranberries, cloudberries, or bearberries. People go out and avidly pick berries in August. In the old days, and occasionally today, they would be preserved in seal oil or fat.

BLACKBERRY, CROWBERRY

Local name for plant: ᐸᐅᖏᓚᐃᑦ
Roman Orthography: **paungait**
Scientific name: *Empetrum nigrum*
English common name: crowberry or (across the Arctic) blackberry
Plant family: Empetraceae

The berries of this plant are eaten fresh and are preserved in seal oil and eaten as a mixture. They are prized but not as much as in the Keewatin or Kitikmeot regions, likely because they are not as common.

GREY MOSS

Local name for plant: ᐅᖅᓯᒃ
Roman Orthography: **Uqjuk**
Scientific name: *Racomitrium lanuginosum*
English common name: grey moss, grey-green moss
Plant family:

The elders said this moss is used by hunters when they are out on the land, in the construction of a sleeping shelter.

The shelter itself is a ring of rocks, piled up to about waist height, relatively small, and usually without a doorway. Once the wall is built, they collect the moss and pile it on the bottom of the shelter, and then put the sleeping skins on it. It is not considered as good or as permanent as using heather, because it absorbs water and can make the sleeping skins wet. However they spoke of it fondly.

Usually, a shelter of this sort is not really a house, but is used when traveling or out hunting. It is temporary and used to shelter against bad weather. Sometimes a “green” caribou skin is draped across the top to retain body heat and protect against wind.

CUSHION MOSS

Local name for plant: ᐅᖃᓪᓗᐊᑦ
Roman Orthography: **urjuit**
Scientific name:
English common name: Cushion moss
Plant family:

The elders mentioned this at the water lake but could not find any examples of it. However they found some at the old dump site. It is a thick cushion moss that tends to grow at the edges of wet areas or on mounds in sedge associations.

This is the moss that is used to treat pinworm infestations. These tiny worms emerge from the anus and cause intense itching. According to the elders, men and boys are most often affected. This moss is separated into a piece about the size of one's little finger and twisted slightly, then inserted into the anus and pulled out. It removes the pinworms; they catch in the moss and are brought out.

Cushion moss is also used to make a small torch. It is pulled apart and made into a cylinder about 7 x 12 cm, and is soaked in the fat in a qulliq, absorbing the fat. It is then lit and created a flame that keeps burning as long as there is fat to burn. This would be used in the winter to provide a little light if someone wanted to go outside and work in the darkness.

PUFFBALLS

Local name for plant: ᓴᓲᒃᓱᖅ/ᓴᓲᒃᓱᐊᑦ
Roman Orthography: **pujuksaq/pujuksait**
Scientific name:
English common name: puffball mushroom
Plant family:

The white puffballs seen on the tundra in July and August turn brown as the spores develop inside. Once they are brown and dry, they can be harvested and have two uses. One use is as a tinder; when dry, this moss can be used to assist in starting fires. The other use is as an antiseptic for wounds – the dry spores are put on a wound to dry it up and help it heal.

We asked if any mushrooms were collected and eaten. The elders were all in agreement that they did not eat them and did not know of others in this area that did eat them.

DRIFTWOOD

Inuktitut: ᑎᔾᕆᖅᑎᕐᑐᑦ Roman orthography: **tijjaqattirtut**
Wood found along the beaches.
No specific species, just "found" wood. According to the elders, it is used to make the tender for the qulliq, and for firewood.
Fire tender for qulliq: Inuktitut: ᑕᖅᓄᑦ Roman orthography: **taqqut**.

LICHENS

Inuktitut: ᓂᖅᓇᖅ (plural: ᓂᖅᓇᐃᑦ)
Roman Orthography: **niqnaq** (plural: **niqnait**)
No particular species here, just a general term. None are used for any purpose, but they were all very aware that the caribou eat the *Cetraria nivalis*.

All agreed that they do eat the rumen contents of the caribou, but all said they don't eat much of it. Rumen contents: Inuktitut: ᓂᕈᒃᑲᑦ Roman orthography: **nirukkat**

SEAWEEDS

Due to deteriorating weather, we did not have a chance to go down to the beach, so discussed the use of marine algae without the benefit of having the plants in hand. I sketched three types, and Ham suggested (and drew) another.

The long fronds of the larger marine kelp they do not eat, nor know of any use for it. They do have a name for it: Inuktitut: ᖿᕈᖅᑯᐊᑦ Roman orthography: **qiquat**

The shorter kelps which are frequently washed ashore still attached to rocks are called ᐃᖏᑯᑦ (Inuktitut) or "**iquutiit**" (Roman orthography.) and these serve as snacks as people work on the beach.

The inflated bladders on one species are called ᓄᕿᐃᑦ (Inuktitut) or "**nuvait**" (Roman orthography) which means "slimy" as they certainly are slimy. Ham mentioned that these small kelps could be dipped into seal soup. They turn bright green in the hot water and add flavour to the soup.

They mentioned another marine alga that I have not seen, a long frond with side fringes off the central ramis. Ham said they discard the side fringes and eat the central strand. This is called "**kuanniit**". Inuktitut: ᑯᐊᓐᓂᑦ

Elisapee Ootoova told a story about the use of kelp being mixed with blood and seal bits in times of hunger, when they were short of dog food. They collected seaweed and made a mixture, which was then offered to the dogs, who ate it gladly and survived. Ham mentioned that this is a personal family story and that it is not widely used as a method of feeding dogs.

SMOKING MATERIALS

The elders were in agreement that to their knowledge no smoking was done prior to the coming of the outsiders, especially the whalers, who introduced the use of tobacco. After that, people did smoke tobacco. In some parts of the Arctic, tobacco substitutes were used when people ran out of tobacco, but these elders did not know of any substitutes. They said, "They just stopped smoking until they got more tobacco."

MISCELLANEOUS PLANT NAMES (no use indicated for these):

Red bladder campion (*Melandrium apetalum*): Inuktitut: ᐳᐊᓗᖏᒍᐊᑦ; Roman orthography: **pualunnguat**

Carex sedges (*Carex* sp.): Inuktitut: ᐃᐃᑦ Roman orthography: **iviit**

Sudetan lousewort (*Pedicularis sudetica*): Inuktitut: ᐅᓴᓇᓇᑦ Roman orthography: **ugjunnat**

Arctic poppy (*Papaver radicatum*): Inuktitut: ᐃᔪᑦᑕᐃᑦ ᓂᖏᖅᑭᑦ, Roman orthography: **iguttait niqingit**

Thrift (*Armeria maritima*): Inuktitut: ᐃᒪᒃ, Roman orthography: **immuk** According to the elders, this plant is called a "carnation" by children because of its resemblance to a Carnation Evaporated Milk can, and the Inuktitut name refers to "milk".

DIGRESSIONS:

Ptarmigan:

Ptarmigan eat the leaves of the mountain avens (*Dryas integrifolia*) as well as the buds of the willows. They produce two kinds of anak (feces): one kind that is full of fibrous matter like the central vein of the Dryas leaves, and slightly curved, and one kind that is softer and "wet". In the winter, the women collect this second type of scats and mix it with ground up meat and fat to make a food that is portable and easy to digest. It can be digested without making any stomach sounds, and is eaten by men who are going seal hunting. They have to spend hours standing on the sea ice, and any noises will betray their presence to the seals, so not making any internal sounds is important.

Hare scats:

The elders were looking for the right kind of ptarmigan scats but did not find them. However they brought back some hare scats. Theresa and Elisapee ground these up in their hands, and showed us how they could be used to stop bleeding in major wounds. The powder could be put on the wound, and then a bandage (sometimes a lemming skin) was put over it to hold it in place.

Filming elders demonstrating uses of plants, "old dump" area, Pond Inlet.

Elisapee and Theresa discussing use of willows, Pond Inlet.

APPENDIX H

BACKGROUND METAL CONCENTRATIONS IN PLANT TISSUE AND SOIL

- Data on soil and plant tissue analysis for concentrations of specific metals

TABLE H.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT
BACKGROUND METAL CONCENTRATIONS IN SELECT VEGETATION SPECIES

Parameter	Units	MDL	Oxytropis maydelliana (yellow crazyweed)	Cassiope tetragona (white arctic heather)												Vaccinium uliginosum (blueberry)			
			08-VP01 A	08-VP01 B	08-VP03A	08-VP10B	08-VP11C	08-VP16A	08-VP24A	08-VP28A	08-VP29A	08-VP42A	08-VP44A	08-VP45A	08-VP50A	08-VP01 C	08-VP11B	08-VP12A	08-VP13A
General Information			Steensby Inlet	Steensby Inlet	Steensby Inlet	Steensby Inlet Port Island	Steensby Inlet	Steensby Inlet	Mine Infrastructure	Deposit No. 1	Mary River Rail Crossing	Mine Infrastructure	Steensby Inlet Airstrip	Steensby Inlet - Ikpiktujua	Steensby Inlet Airstrip	Steensby Inlet	Steensby Inlet	Steensby Inlet	Steensby Inlet
Date Sampled			07-AUG-08	07-AUG-08	07-AUG-08	09-AUG-08	10-AUG-08	11-AUG-08	14-AUG-08	15-AUG-08	15-AUG-08	19-AUG-08	21-AUG-08	21-AUG-08	22-AUG-08	07-AUG-08	10-AUG-08	10-AUG-08	10-AUG-08
Anions and Nutrients																			
Chloride (Cl)	mg/kg	1	2240	352	240	242	359	447	193	217	205	143	327	419	169	260	154	125	149
Total Kjeldahl Nitrogen	%	0.02	2.95	0.79	0.77	0.77	0.77	0.80	0.93	0.81	0.99	0.86	0.73	0.90	0.73	1.12	1.23	1.00	1.03
Metals																			
Aluminum (Al)	mg/kg	10	100	280	220	550	160	340	690	1710	1440	230	410	360	660	1530	80	90	310
Antimony (Sb)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.34	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic (As)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Barium (Ba)	mg/kg	0.1	32.8	25.4	20.8	20.0	28.2	18.7	18.1	44.1	39.4	15.2	36.2	18.4	27.8	92.5	51.8	80.4	46.2
Beryllium (Be)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium (Cd)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	0.23	0.59	0.11	0.16
Calcium (Ca)	mg/kg	20	10200	5350	4650	5630	4480	4310	7620	5460	8380	4780	5440	5490	3840	5060	4730	4430	4320
Chromium (Cr)	mg/kg	0.2	3.9	1.8	2.0	1.7	1.7	2.9	14.2	8.9	10.1	0.6	2.2	1.5	2.7	13.1	0.5	0.7	3.0
Cobalt (Co)	mg/kg	0.1	0.3	0.2	0.3	0.2	0.2	0.3	0.4	0.8	0.7	0.5	0.6	0.2	0.2	0.4	0.2	0.1	0.3
Copper (Cu)	mg/kg	0.1	2.6	3.2	4.6	5.6	3.9	5.2	4.4	6.1	6.6	6.5	5.1	4.5	3.5	7.2	6.7	6.0	6.7
Iron (Fe)	mg/kg	5	109	201	168	278	101	260	1060	1650	1410	188	425	230	434	475	35	36	140
Lead (Pb)	mg/kg	0.02	0.11	0.79	0.26	0.81	0.17	0.44	0.63	2.75	1.09	0.62	0.75	0.39	0.79	0.92	0.05	0.06	0.25
Magnesium (Mg)	mg/kg	5	3250	732	1370	984	806	890	2000	2400	2170	1150	739	941	783	1040	1420	1420	1130
Manganese (Mn)	mg/kg	0.5	50.0	268	137	86.3	468	155	74.2	278	151	130	216	235	193	771	464	345	272
Mercury (Hg)	mg/kg	0.02	0.03	0.06	0.05	0.16	0.03	0.04	0.11	0.06	0.07	0.03	0.07	0.05	0.06	0.09	0.03	0.03	0.03
Molybdenum (Mo)	mg/kg	0.05	0.65	0.07	0.07	0.38	0.09	0.20	0.72	11.8	0.37	0.07	0.11	0.07	0.07	0.21	0.10	0.16	0.23
Nickel (Ni)	mg/kg	0.1	3.2	1.2	1.8	1.0	1.0	2.1	7.2	6.0	7.8	1.6	1.8	0.9	1.5	7.4	1.1	1.0	2.8
Phosphorus (P)	mg/kg	20	2270	810	670	560	1000	800	930	620	850	500	620	810	630	820	1160	1150	940
Potassium (K)	mg/kg	20	8920	2830	2100	1650	3160	3220	2630	3450	2990	1530	1790	2090	2270	4720	3450	3300	3270
Selenium (Se)	mg/kg	0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver (Ag)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium (Na)	mg/kg	20	30	120	110	160	<20	160	190	440	530	90	220	330	340	510	<20	<20	<20
Strontium (Sr)	mg/kg	0.1	32.1	12.3	11.9	17.7	13.5	12.1	5.3	6.7	8.1	15.9	16.2	18.1	11.7	17.6	12.1	9.6	10.6
Sulfur (S)	mg/kg	100	1700	800	700	700	700	800	900	700	900	700	700	800	600	1200	1200	1100	1200
Thallium (Tl)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tin (Sn)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	0.4	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium (Ti)	mg/kg	2	2	12	13	25	7	15	32	84	74	9	14	22	31	40	<2	<2	8
Vanadium (V)	mg/kg	0.1	<0.1	0.3	0.3	0.6	0.2	0.3	1.0	2.1	2.1	0.3	0.4	0.4	0.8	0.7	<0.1	<0.1	0.2
Zinc (Zn)	mg/kg	0.5	17.5	18.6	23.2	17.6	16.9	17.1	15.0	22.9	14.8	13.5	22.1	25.3	16.9	56.0	55.8	63.3	60.2

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TABLE H.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT
BACKGROUND METAL CONCENTRATIONS IN SELECT VEGETATION SPECIES

Parameter	Units	MDL	Vaccinium uliginosum (blueberry)																	
			08-VP14A	08-VP15A	08-VP17B	08-VP18A	08-VP19A	08-VP20A	08-VP21C	08-VP26C	08-VP34A	08-VP37A	08-VP38B	08-VP39A	08-VP40B	08-VP41A	08-VP42C	08-VP44B	08-VP46A	08-VP48B
General Information			Steensby Inlet	Steensby Inlet	Steensby Inlet	Steensby Inlet	Near Steensby Inlet	Near Steensby Inlet	Near Steensby Inlet	Deposit No. 1	Cockburn Lake	Cockburn Lake	Cockburn Lake	Steensby Inlet	Steensby Inlet	Steensby Inlet	Steensby Inlet	Steensby Inlet Airstrip	Steensby Inlet - Ikpiktujua	Near Steensby Inlet
Date Sampled		N/A	10-AUG-08	11-Aug-08	11-AUG-08	13-AUG-08	13-AUG-08	13-AUG-08	13-AUG-08	15-AUG-08	17-AUG-08	18-AUG-08	18-AUG-08	19-AUG-08	19-AUG-08	19-AUG-08	19-AUG-08	21-AUG-08	21-AUG-08	22-AUG-08
Anions and Nutrients																				
Chloride (Cl)	mg/kg	1	133	153	162	180	193	173	274	84	80	158	132	113	194	150	163	287	473	135
Total Kjeldahl Nitrogen	%	0.02	1.13	1.22	1.12	1.14	1.18	0.97	1.11	1.20	1.18	1.15	1.13	1.32	1.27	1.13	1.17	0.84	1.00	0.92
Metals																				
Aluminum (Al)	mg/kg	10	230	70	90	100	220	240	110	450	60	80	400	100	100	90	240	340	70	190
Antimony (Sb)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic (As)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Barium (Ba)	mg/kg	0.1	82.1	55.3	58.9	71.2	88.5	46.7	81.2	103	72.0	46.5	98.4	75.6	73.9	31.0	61.4	18.0	33.1	45.2
Beryllium (Be)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium (Cd)	mg/kg	0.05	0.17	0.15	0.17	0.21	0.39	0.16	0.13	1.40	0.22	0.85	0.25	0.40	0.27	0.44	0.73	<0.05	0.29	0.10
Calcium (Ca)	mg/kg	20	4780	6060	6350	4920	5270	6720	5930	5880	4070	5700	6730	5540	5040	3780	5340	5540	5520	4230
Chromium (Cr)	mg/kg	0.2	1.5	0.5	1.1	0.7	1.4	5.0	0.9	5.5	1.3	3.3	4.5	0.4	0.5	1.3	1.3	1.6	0.8	1.6
Cobalt (Co)	mg/kg	0.1	0.2	0.2	0.6	0.2	0.3	0.2	0.2	0.4	<0.1	0.2	0.2	0.1	0.2	0.1	0.4	0.2	0.2	0.3
Copper (Cu)	mg/kg	0.1	5.4	7.1	7.4	7.4	7.2	8.8	7.0	11.8	7.9	8.7	6.8	6.9	6.7	10.4	9.3	4.4	6.1	5.1
Iron (Fe)	mg/kg	5	187	38	83	65	110	100	51	404	42	70	539	56	46	66	155	214	49	100
Lead (Pb)	mg/kg	0.02	0.18	0.05	0.14	0.12	0.18	0.19	0.06	0.50	0.03	0.06	0.26	0.06	0.04	0.13	0.24	0.36	0.08	0.16
Magnesium (Mg)	mg/kg	5	1430	1470	1760	1140	1170	1350	1320	1600	920	1370	1770	1440	1800	1310	1300	955	1710	883
Manganese (Mn)	mg/kg	0.5	463	380	483	937	788	303	696	215	776	294	478	534	490	265	471	238	528	1080
Mercury (Hg)	mg/kg	0.02	0.05	0.04	0.04	0.09	0.06	0.04	0.03	0.07	<0.02	0.05	0.03	<0.02	0.03	0.04	0.02	0.05	0.03	0.05
Molybdenum (Mo)	mg/kg	0.05	0.12	0.15	0.17	0.68	0.14	0.24	0.22	2.76	0.21	0.50	0.15	0.16	0.13	0.16	0.15	0.06	0.12	0.31
Nickel (Ni)	mg/kg	0.1	1.3	2.3	1.3	1.0	1.7	2.7	1.5	6.4	2.2	4.0	3.0	3.6	1.2	2.3	4.3	0.9	0.8	1.2
Phosphorus (P)	mg/kg	20	870	830	880	960	850	830	1740	940	990	1080	1290	800	1160	680	700	840	1070	830
Potassium (K)	mg/kg	20	2450	3690	2550	2960	2620	3410	4000	3630	4800	5400	4790	3090	4710	2600	3120	2100	2260	2710
Selenium (Se)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver (Ag)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium (Na)	mg/kg	20	<20	<20	60	<20	70	150	<20	80	<20	<20	190	<20	90	110	130	380	310	110
Strontium (Sr)	mg/kg	0.1	8.2	7.6	15.4	4.8	13.0	11.7	10.2	5.8	7.6	7.3	15.5	9.9	12.2	7.3	14.7	17.7	8.7	8.2
Sulfur (S)	mg/kg	100	1000	1600	1400	1200	1400	1200	1400	1300	1300	1500	1500	1300	1300	1200	1300	800	1200	1000
Thallium (Tl)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tin (Sn)	mg/kg	0.1	<0.1	0.1	<0.1	0.1	0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium (Ti)	mg/kg	2	9	<2	3	3	6	5	<2	19	<2	2	20	3	2	3	5	15	3	6
Vanadium (V)	mg/kg	0.1	0.3	<0.1	<0.1	<0.1	0.2	0.1	<0.1	0.7	<0.1	<0.1	0.8	<0.1	<0.1	0.1	0.2	0.3	<0.1	0.1
Zinc (Zn)	mg/kg	0.5	68.8	41.7	47.7	59.1	69.9	76.2	47.5	40.3	58.2	60.4	78.6	61.3	50.6	61.1	32.3	24.5	71.9	55.2

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TABLE H.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT
BACKGROUND METAL CONCENTRATIONS IN SELECT VEGETATION SPECIES

Parameter	Units	MDL	Vaccinium uliginosum (blueberry)												Anthoxanthum monticola (alpine holygrass, was Hierochloe alpina)	Salix arctica (arctic willow)			
			08-VP50C	08-VP51B	08-VP52A	08-VP53B	08-VP01 C	08-VP11B	08-VP12A	08-VP13A	08-VP18A	08-VP37A	08-VP38C	08-VP39A	08-VP02A	08-VP02B	08-VP03C	08-VP04B	08-VP05A
General Information			Steensby Inlet Airstrip	Steensby Inlet Airstrip	Cockburn Lake	Cockburn Lake	Steensby Inlet	Steensby Inlet	Steensby Inlet	Steensby Inlet	Steensby Inlet	Cockburn Lake	Cockburn Lake	Steensby Inlet	Steensby Inlet	Steensby Inlet	Steensby Inlet	Steensby Inlet - Ikpiktujua	Steensby Inlet Port Island
Date Sampled		N/A	22-AUG-08	23-AUG-08	23-AUG-08	23-AUG-08	-	-	-	-	-	-	-	-	07-AUG-08	07-AUG-08	07-AUG-08	07-AUG-08	08-AUG-08
Anions and Nutrients																			
Chloride (Cl)	mg/kg	1	189	378	205	104	182	170	158	151	202	329	150	203	1380	1230	791	1010	873
Total Kjeldahl Nitrogen	%	0.02	1.15	1.15	1.30	1.30	0.99	1.35	0.94	0.99	0.76	0.94	1.09	0.72	0.95	1.60	1.36	1.44	1.53
Metals																			
Aluminum (Al)	mg/kg	10	190	50	620	70	450	50	100	110	100	70	190	110	400	20	40	10	30
Antimony (Sb)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic (As)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Barium (Ba)	mg/kg	0.1	49.6	59.8	68.1	43.4	16.4	26.6	11.8	12.7	8.7	11.6	45.3	11.1	25.0	6.4	13.0	3.7	5.0
Beryllium (Be)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium (Cd)	mg/kg	0.05	0.19	0.47	0.31	0.31	0.07	0.41	<0.05	0.05	<0.05	0.22	0.33	0.08	<0.05	0.22	0.32	0.20	0.10
Calcium (Ca)	mg/kg	20	5010	5710	3900	5120	1290	2470	1110	1220	940	1180	4410	850	2800	8700	6130	8400	9530
Chromium (Cr)	mg/kg	0.2	2.1	1.0	5.5	1.1	6.4	0.5	0.5	1.2	1.0	0.9	3.9	0.8	4.9	2.4	3.8	1.5	1.4
Cobalt (Co)	mg/kg	0.1	0.3	0.2	0.3	0.2	0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	0.2	0.9	2.7	0.5	0.5
Copper (Cu)	mg/kg	0.1	9.1	6.5	7.6	8.3	5.0	10.1	3.8	4.9	5.3	4.5	7.4	4.3	2.4	5.2	7.5	4.2	5.8
Iron (Fe)	mg/kg	5	122	55	432	58	179	41	23	52	25	30	129	16	243	52	56	31	48
Lead (Pb)	mg/kg	0.02	0.18	0.07	0.36	0.07	0.16	<0.02	<0.02	0.06	<0.02	<0.02	0.20	<0.02	0.33	0.04	0.05	0.02	0.04
Magnesium (Mg)	mg/kg	5	1010	1370	2570	1140	651	1230	653	598	558	534	1140	511	649	3040	3970	3130	3010
Manganese (Mn)	mg/kg	0.5	365	933	227	497	154	235	63.8	97.4	75.6	42.5	255	79.7	97.7	53.3	103	23.3	28.8
Mercury (Hg)	mg/kg	0.02	0.05	0.03	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	0.05	0.03	0.09	0.03	0.03	0.02	0.02
Molybdenum (Mo)	mg/kg	0.05	0.14	0.09	1.51	0.45	0.14	0.18	0.22	0.17	0.77	0.65	0.17	0.23	0.94	0.46	0.12	0.62	0.34
Nickel (Ni)	mg/kg	0.1	2.9	1.5	5.1	2.0	3.6	1.2	0.9	1.2	0.9	2.0	7.2	1.4	2.7	2.1	5.2	1.7	1.4
Phosphorus (P)	mg/kg	20	750	810	1290	660	1360	2200	1520	1550	1150	1230	720	900	970	1780	1080	1280	1740
Potassium (K)	mg/kg	20	2540	2960	4290	2190	6970	9770	6520	6150	6280	5570	3350	5870	5130	-	8580	9480	11700
Selenium (Se)	mg/kg	0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2
Silver (Ag)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium (Na)	mg/kg	20	80	190	290	<20	120	<20	<20	<20	<20	<20	60	<20	190	<20	<20	<20	<20
Strontium (Sr)	mg/kg	0.1	8.9	10.9	18.4	12.2	4.1	5.5	1.8	2.4	1.4	1.7	6.4	1.5	10.3	20.1	30.4	15.3	16.8
Sulfur (S)	mg/kg	100	1200	1600	1300	1400	1000	1600	800	900	700	900	1100	700	700	1500	1100	1400	1300
Thallium (Tl)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tin (Sn)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium (Ti)	mg/kg	2	7	<2	39	2	7	<2	<2	3	<2	<2	7	<2	18	<2	2	<2	<2
Vanadium (V)	mg/kg	0.1	0.2	<0.1	0.7	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.4	<0.1	<0.1	<0.1	<0.1
Zinc (Zn)	mg/kg	0.5	57.0	57.2	51.4	56.2	19.9	37.2	16.9	18.2	19.5	17.8	33.5	15.9	23.7	102	195	77.1	86.6

TABLE H.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT
BACKGROUND METAL CONCENTRATIONS IN SELECT VEGETATION SPECIES

Parameter	Units	MDL	Salix arctica (arctic willow)																	
			08-VP06A	08-VP08A	08-VP09A	08-VP13B	08-VP14C	08-VP15B	08-VP17A	08-VP18B	08-VP21A	08-VP22B	08-VP23B	08-VP25C	08-VP27B	08-VP30B	08-VP31B	08-VP32B	08-VP33B	08-VP34B
General Information			Steensby Inlet Port Island	Steensby Inlet Port Island	Steensby Inlet Port Island	Steensby Inlet	Steesby Inlet	Steensby Inlet	Steensby Inlet	Steensby Inlet	Near Steensby Inlet	Mine Infrastructure	Mine Infrastructure	Deposit No. 1	Deposit No. 1	Mary River Rail Crossing	Deposit No. 1	Deposit No. 1	Deposit No. 1	Cockburn Lake
Date Sampled		N/A	08-AUG-08	09-AUG-08	09-AUG-08	10-AUG-08	10-AUG-08	11-AUG-08	11-AUG-08	13-AUG-08	13-AUG-08	14-AUG-08	14-AUG-08	15-AUG-08	15-AUG-08	15-AUG-08	16-AUG-08	16-AUG-08	16-AUG-08	17-AUG-08
Anions and Nutrients																				
Chloride (Cl)	mg/kg	1	2290	862	900	1030	1090	857	1260	772	897	855	944	752	760	818	620	810	994	730
Total Kjeldahl Nitrogen	%	0.02	1.20	1.53	1.45	1.66	1.46	1.57	1.85	1.25	1.44	1.30	1.65	1.54	1.74	1.29	2.13	1.84	1.75	1.50
Metals																				
Aluminum (Al)	mg/kg	10	<10	220	40	30	20	30	50	40	30	130	260	340	410	80	450	130	150	70
Antimony (Sb)	mg/kg	0.05	<0.05	0.88	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	0.08	0.10	0.08	0.09	<0.05
Arsenic (As)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Barium (Ba)	mg/kg	0.1	5.2	6.8	7.1	14.4	14.8	14.8	8.6	11.7	16.6	4.4	5.3	10.9	17.5	8.2	5.6	8.8	6.2	30.4
Beryllium (Be)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium (Cd)	mg/kg	0.05	<0.05	0.36	0.43	0.22	0.26	0.87	0.23	0.40	0.31	0.77	0.63	16.6	3.63	1.65	0.19	0.56	0.24	0.44
Calcium (Ca)	mg/kg	20	3060	8000	6040	7390	9100	7690	9910	9730	11300	11900	13300	11600	13600	12100	5550	11000	12800	8500
Chromium (Cr)	mg/kg	0.2	0.8	3.6	2.5	1.4	0.7	1.3	1.1	1.1	1.4	3.4	4.2	3.5	3.7	3.9	19.6	2.4	2.9	0.6
Cobalt (Co)	mg/kg	0.1	<0.1	0.6	0.8	2.2	1.8	2.5	0.6	2.6	3.0	0.6	0.6	2.1	0.7	0.5	0.6	0.5	0.3	2.6
Copper (Cu)	mg/kg	0.1	1.9	6.9	5.6	4.6	4.4	6.8	6.0	4.7	5.2	4.3	4.9	8.0	7.0	4.0	6.5	4.5	5.2	7.9
Iron (Fe)	mg/kg	5	58	84	55	40	44	49	83	50	41	178	284	330	448	106	384	172	154	54
Lead (Pb)	mg/kg	0.02	0.03	0.17	0.09	0.08	0.04	0.06	0.06	0.06	0.04	0.14	0.18	0.62	0.61	0.08	0.25	0.13	0.15	0.08
Magnesium (Mg)	mg/kg	5	713	2710	2830	3450	4440	3060	3490	4200	4310	5180	6030	4080	6240	5350	2860	4760	5970	3820
Manganese (Mn)	mg/kg	0.5	73.1	32.6	68.3	41.1	144	165	69.7	156	89.6	96.8	97.1	219	58.7	85.6	49.9	53.2	37.9	133
Mercury (Hg)	mg/kg	0.02	0.04	<0.02	<0.02	0.03	0.07	0.02	0.02	0.05	0.02	0.05	0.03	<0.02	0.04	0.03	0.03	0.04	0.02	<0.02
Molybdenum (Mo)	mg/kg	0.05	1.74	0.37	0.58	0.19	0.23	0.14	0.24	1.75	0.52	0.94	0.49	1.70	9.76	1.18	0.27	0.68	0.24	0.41
Nickel (Ni)	mg/kg	0.1	0.5	3.2	3.5	1.8	1.2	2.7	2.1	1.7	2.2	5.2	7.0	9.3	5.0	13.0	10.2	4.3	2.2	4.5
Phosphorus (P)	mg/kg	20	840	1150	1030	1260	1390	1250	1050	1290	1580	1090	1350	1200	1650	940	2940	1570	1480	1090
Potassium (K)	mg/kg	20	9300	10800	8770	8620	7910	9700	10300	8780	13100	6330	7200	7930	8360	5680	12500	8610	8540	9740
Selenium (Se)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver (Ag)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium (Na)	mg/kg	20	380	120	<20	<20	<20	60	90	40	<20	110	130	100	140	<20	150	70	150	<20
Strontium (Sr)	mg/kg	0.1	11.1	15.4	18.0	31.6	19.2	29.1	25.1	24.6	40.0	5.4	5.9	7.0	7.2	5.7	3.7	5.3	6.0	41.0
Sulfur (S)	mg/kg	100	1900	1600	1300	1300	1600	1600	2100	2000	2300	1700	1700	1900	1500	1600	1200	1900	1900	1300
Thallium (Tl)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tin (Sn)	mg/kg	0.1	0.1	0.4	<0.1	<0.1	<0.1	0.1	0.1	0.1	<0.1	<0.1	<0.1	0.1	0.2	<0.1	0.1	0.1	0.1	<0.1
Titanium (Ti)	mg/kg	2	<2	6	3	<2	<2	<2	<2	<2	<2	5	9	15	21	4	17	7	7	2
Vanadium (V)	mg/kg	0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.3	0.7	0.7	0.2	0.6	0.2	0.3	<0.1
Zinc (Zn)	mg/kg	0.5	13.8	94.0	98.2	147	126	393	171	178	131	79.4	62.6	359	113	94.7	59.3	90.9	48.5	139

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TABLE H.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT
BACKGROUND METAL CONCENTRATIONS IN SELECT VEGETATION SPECIES

Parameter	Units	MDL	Salix arctica (arctic willow)																	
			08-VP35A	08-VP36A	08-VP37B	08-VP38C	08-VP39B	08-VP40A	08-VP41C	08-VP43A	08-VP45B	08-VP46B	08-VP47A	08-VP48A	08-VP51A	08-VP52B	08-VP53A	08-VP54B	08-VP55A	08-VP56A
General Information			Steensby Inlet Airstrip	Steensby Inlet Airstrip	Cockburn Lake	Cockburn Lake	Steensby Inlet	Steensby Inlet	Steensby Inlet	Steensby Inlet Airstrip	Steensby Inlet - Ikpiktujua	Steensby Inlet - Ikpiktujua	Steensby Inlet - Ikpiktujua	Near Steensby Inlet	Steensby Inlet Airstrip	Cockburn Lake	Cockburn Lake	Valley N of Cockburn Lake	Valley S of Mary River Rail Crossing	Valley S of Mary River Rail Crossing
Date Sampled		N/A	17-AUG-08	17-AUG-08	18-AUG-08	18-AUG-08	19-AUG-08	19-AUG-08	19-AUG-08	21-AUG-08	21-AUG-08	21-AUG-08	21-AUG-08	22-AUG-08	23-AUG-08	23-AUG-08	23-AUG-08	23-AUG-08	24-AUG-08	24-AUG-08
Anions and Nutrients																				
Chloride (Cl)	mg/kg	1	840	180	1140	298	808	628	617	779	1240	1360	1410	468	481	980	485	571	743	787
Total Kjeldahl Nitrogen	%	0.02	1.64	1.26	1.45	1.79	1.31	1.60	1.29	1.57	1.02	1.24	1.00	1.26	1.29	1.16	1.32	1.39	1.14	1.19
Metals																				
Aluminum (Al)	mg/kg	10	60	90	30	20	70	30	20	30	40	120	30	40	210	550	50	20	30	240
Antimony (Sb)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic (As)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Barium (Ba)	mg/kg	0.1	16.1	36.8	15.8	30.2	14.2	17.1	5.8	12.3	6.1	7.7	4.8	39.8	17.3	16.0	41.5	29.0	11.6	14.4
Beryllium (Be)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium (Cd)	mg/kg	0.05	1.90	0.46	0.86	0.67	0.98	0.21	0.90	0.52	0.51	0.40	0.30	0.66	1.81	0.31	1.12	0.89	0.47	0.58
Calcium (Ca)	mg/kg	20	6960	4590	10300	8090	10900	7050	6320	6120	12900	9120	18500	6900	7150	7070	9700	7120	8990	10100
Chromium (Cr)	mg/kg	0.2	0.5	0.9	1.9	1.0	1.0	0.8	1.1	0.8	1.2	1.3	3.8	0.9	3.9	9.2	1.0	1.3	1.2	6.0
Cobalt (Co)	mg/kg	0.1	5.5	0.1	2.1	1.4	1.1	1.4	0.7	2.4	1.0	0.8	0.3	3.4	2.7	1.1	4.9	0.8	0.6	0.6
Copper (Cu)	mg/kg	0.1	7.1	6.4	5.1	5.7	5.2	4.9	5.7	6.3	3.9	3.7	3.7	4.0	5.6	5.2	5.4	5.4	4.5	5.0
Iron (Fe)	mg/kg	5	61	69	51	40	87	44	33	43	49	89	52	51	200	415	260	39	40	153
Lead (Pb)	mg/kg	0.02	1.11	0.08	0.13	0.05	0.04	0.03	0.04	0.04	0.08	0.06	0.04	0.05	0.13	0.32	0.10	0.02	0.04	0.15
Magnesium (Mg)	mg/kg	5	5600	1480	3520	3580	5460	4330	3020	2890	2810	3010	2540	3170	3720	6070	2350	2180	3710	3740
Manganese (Mn)	mg/kg	0.5	121	542	110	215	129	101	103	220	80.4	58.4	36.0	392	241	57.8	255	424	168	108
Mercury (Hg)	mg/kg	0.02	<0.02	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	0.02	<0.02	0.03
Molybdenum (Mo)	mg/kg	0.05	0.76	0.10	0.56	0.31	0.18	0.11	0.23	0.12	0.16	0.18	0.35	0.22	0.25	1.40	0.61	<0.05	0.19	0.46
Nickel (Ni)	mg/kg	0.1	23.9	1.5	4.8	2.9	2.0	1.7	1.2	1.3	1.2	1.3	2.6	1.9	2.9	8.5	2.9	1.0	0.9	4.0
Phosphorus (P)	mg/kg	20	1300	800	1190	1560	1120	1700	890	840	1080	1060	1720	1060	870	1630	900	880	950	1170
Potassium (K)	mg/kg	20	12600	3310	14700	9250	8130	9540	7060	6710	6420	5540	7170	5670	5450	8170	5290	3650	5310	6630
Selenium (Se)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2
Silver (Ag)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium (Na)	mg/kg	20	30	<20	<20	<20	40	<20	80	130	230	480	400	20	250	260	<20	<20	<20	100
Strontium (Sr)	mg/kg	0.1	28.2	7.4	28.9	44.9	39.6	30.0	19.7	28.1	46.3	22.8	59.2	36.4	39.2	48.4	44.9	42.3	13.2	15.0
Sulfur (S)	mg/kg	100	2000	1400	1800	1900	1200	1500	1000	1400	1100	1300	1600	1100	1400	1200	1300	1000	1400	1500
Thallium (Tl)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tin (Sn)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium (Ti)	mg/kg	2	2	4	2	<2	4	<2	<2	<2	3	8	<2	<2	9	36	2	<2	<2	11
Vanadium (V)	mg/kg	0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.2	0.7	<0.1	<0.1	<0.1	0.2
Zinc (Zn)	mg/kg	0.5	165	49.1	130	337	198	91.9	237	270	310	130	96.5	331	310	95.7	188	410	84.7	95.9

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TABLE H.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT
BACKGROUND METAL CONCENTRATIONS IN SELECT VEGETATION SPECIES

Parameter	Units	MDL	Oxytropis maydelliana (yellow crazyweed)					Poa sp. (bluegrass)	Unknown small grass	Dryas integrifolia (mountain avens)							Astragalus alpina (alpine milkvetch)	Saxifraga oppositifolia (purple mtn. saxifrage)
			08-VP03B	08-VP05B	08-VP12B	08-VP19B	08-VP28B	08-VP04A	08-VP06B	08-VP07A	08-VP20B	08-VP23C	08-VP27A	08-VP33C	08-VP47B	08-VP56B	08-VP07	08-VP08B
General Information			Steensby Inlet	Steensby Inlet Port Island	Steensby Inlet	Near Steensby Inlet	Deposit No. 1	Steensby Inlet - Ikpiktujua	Steensby Inlet Port Island	Steensby Inlet Port Island	Near Steensby Inlet	Mine Infrastructure	Deposit No. 1	Deposit No. 1	Steensby Inlet - Ikpiktujua	Valley S of Mary River Rail Crossing	Steensby Inlet Port Island	Steensby Inlet Port Island
Date Sampled		N/A	07-AUG-08	08-AUG-08	10-AUG-08	13-AUG-08	15-AUG-08	07-AUG-08	08-AUG-08	08-AUG-08	13-AUG-08	14-Aug-08	15-Aug-08	16-Aug-08	21-Aug-08	24-Aug-08	08-AUG-08	09-AUG-08
Anions and Nutrients																		
Chloride (Cl)	mg/kg	1	1900	3190	2280	3670	1030	1670	1000	226	153	390	168	119	258	316	3160	705
Total Kjeldahl Nitrogen	%	0.02	2.82	2.78	2.82	2.90	2.33	0.76	1.77	1.08	0.91	1.10	1.04	1.12	0.85	1.30	3.43	0.99
Metals																		
Aluminum (Al)	mg/kg	10	190	120	70	100	4300	40	10	460	1160	4460	1690	1800	360	990	1450	6300
Antimony (Sb)	mg/kg	0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.14	<0.05	<0.05	<0.05	<0.05
Arsenic (As)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Barium (Ba)	mg/kg	0.1	27.1	21.7	20.4	45.8	111	7.8	2.4	21.5	30.1	62.4	41.3	33.9	11.6	33.1	45.4	142
Beryllium (Be)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium (Cd)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	0.15	<0.05	0.17	<0.05	<0.05	0.07	0.10	<0.05	<0.05	<0.05	<0.05	0.10
Calcium (Ca)	mg/kg	20	8400	10100	10900	11800	7610	3170	9610	15400	19800	5850	17700	19300	25400	14400	14200	15600
Chromium (Cr)	mg/kg	0.2	3.0	1.5	1.0	1.0	26.8	3.0	0.6	4.0	5.1	51.2	14.1	17.8	1.4	6.8	30.6	28.7
Cobalt (Co)	mg/kg	0.1	0.3	0.4	0.3	0.3	1.2	0.1	0.5	0.4	0.4	1.6	0.9	0.7	0.3	0.4	0.9	2.3
Copper (Cu)	mg/kg	0.1	4.3	4.3	3.4	3.0	4.9	2.0	5.6	4.0	3.9	6.5	5.7	4.5	2.5	4.4	6.8	9.3
Iron (Fe)	mg/kg	5	147	121	85	110	3310	58	33	196	377	2990	1570	1330	189	493	721	1970
Lead (Pb)	mg/kg	0.02	0.16	0.14	0.08	0.12	3.30	0.07	0.02	0.43	0.71	2.50	2.10	1.24	0.51	0.72	0.78	3.78
Magnesium (Mg)	mg/kg	5	3620	4450	3290	3790	5900	835	2560	1800	1160	2280	2740	2680	889	1990	5420	3240
Manganese (Mn)	mg/kg	0.5	21.6	33.7	23.3	41.0	67.7	16.2	46.4	29.3	46.5	230	55.3	36.7	18.5	59.3	44.0	46.9
Mercury (Hg)	mg/kg	0.02	0.03	0.03	0.03	0.04	0.05	0.04	0.03	0.04	0.07	0.04	0.10	0.08	0.07	0.08	0.03	0.07
Molybdenum (Mo)	mg/kg	0.05	0.31	0.41	0.82	0.49	49.6	1.30	0.56	0.28	0.13	1.09	6.33	0.23	0.06	0.20	0.50	1.60
Nickel (Ni)	mg/kg	0.1	3.2	1.9	1.5	1.7	15.5	1.8	0.8	3.3	3.5	24.0	10.6	8.7	1.2	3.8	15.7	18.4
Phosphorus (P)	mg/kg	20	2140	2560	2640	2480	1560	820	1340	780	540	840	770	810	560	930	2390	1010
Potassium (K)	mg/kg	20	9410	11100	13100	11200	9430	5480	10800	2770	2560	5750	2590	3030	1120	2200	13400	6760
Selenium (Se)	mg/kg	0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2
Silver (Ag)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium (Na)	mg/kg	20	60	70	<20	70	660	90	60	230	470	980	420	590	290	390	730	3040
Strontium (Sr)	mg/kg	0.1	37.9	24.9	32.7	43.8	13.2	7.1	30.4	41.6	36.3	16.8	12.3	16.4	59.9	26.7	31.2	92.3
Sulfur (S)	mg/kg	100	1300	1400	1400	2100	1300	700	2200	800	700	1100	700	800	600	900	1900	1700
Thallium (Tl)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	0.08
Tin (Sn)	mg/kg	0.1	<0.1	0.1	<0.1	0.1	0.6	<0.1	0.1	0.1	0.1	0.2	0.4	0.1	<0.1	<0.1	0.1	0.2
Titanium (Ti)	mg/kg	2	7	5	<2	4	132	3	<2	11	36	175	76	58	14	37	50	121
Vanadium (V)	mg/kg	0.1	0.2	0.2	<0.1	<0.1	2.9	<0.1	<0.1	0.4	0.7	4.3	2.1	1.7	0.3	0.9	1.1	2.3
Zinc (Zn)	mg/kg	0.5	16.9	20.5	22.7	18.5	15.5	17.3	102	23.6	35.8	15.5	29.0	24.1	19.2	37.0	16.8	28.3

I:\1\02\00181\25\A\Report\Report 11, Rev. 0 - EIS Volume 6 - Terrestrial Environment\3 - Client Review Complete\App 6C\Appendix H\[Table H1.xls]Table H1

TABLE H.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT
BACKGROUND METAL CONCENTRATIONS IN SELECT VEGETATION SPECIES

Parameter	Units	MDL	Carex scirpoidea		Flaviocetraria nivalis (iceland moss lichen, formerly Cetraria nivalis)		Empetrum nigrum (crowberry)	Anthoxanthum monticola (alpine holygrass, formerly Hierochloe alpina)	Oxyria digyna (mountain sorrel)		Racomitrium lanuginosum (grey cushion moss)							Salix richardsonii (Richardson's willow)
			08-VP09B	08-VP22A	08-VP10A	08-VP24B	08-VP11A	08-VP14B	08-VP16B	08-VP37C	08-VP21B	08-VP26A	08-VP27C	08-VP28C	08-VP29B	08-VP31C	08-VP55B	08-VP25A
General Information			Steensby Inlet Port Island	Mine Infrastructure	Steensby Inlet Port Island		Mine Infrastructure	Steensby Inlet	Steensby Inlet	Cockburn Lake	Near Steensby Inlet	Deposit No. 1	Deposit No. 1	Deposit No. 1	Mary River Rail Crossing	Deposit No. 1	Valley S of Mary River Rail Crossing	Deposit No. 1
Date Sampled		N/A	09-Aug-08	14-Aug-08	09-Aug-08	14-Aug-08	10-AUG-08	10-AUG-08	11-Aug-08	18-Aug-08	13-Aug-08	15-Aug-08	15-Aug-08	15-Aug-08	15-Aug-08	16-Aug-08	24-Aug-08	15-AUG-08
Anions and Nutrients																		
Chloride (Cl)	mg/kg	1	1570	314	408	316	690	1620	4270	4000	83	81	91	89	73	77	82	2600
Total Kjeldahl Nitrogen	%	0.02	0.79	0.94	0.57	0.59	0.91	0.56	-	-	0.34	0.42	0.51	0.37	0.40	0.19	0.56	2.02
Metals																		
Aluminum (Al)	mg/kg	10	400	770	350	1600	30	40	1100	1740	4370	7080	6020	7440	5740	12600	1420	230
Antimony (Sb)	mg/kg	0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.06	0.08	0.06	0.10	0.09	<0.05	<0.05
Arsenic (As)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.4	0.4	0.3	0.2	0.4	<0.2	<0.2
Barium (Ba)	mg/kg	0.1	27.7	24.1	9.3	27.8	27.0	13.1	56.4	40.1	86.1	58.6	76.8	84.8	76.7	117	28.1	11.4
Beryllium (Be)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2
Cadmium (Cd)	mg/kg	0.05	0.05	<0.05	<0.05	0.09	<0.05	<0.05	<0.05	0.09	<0.05	0.24	1.99	0.21	0.07	<0.05	<0.05	6.28
Calcium (Ca)	mg/kg	20	2990	8580	12100	15300	3250	1260	17400	22000	2600	4960	5380	3490	6000	4540	3950	13500
Chromium (Cr)	mg/kg	0.2	28.7	36.0	1.9	23.4	0.4	2.2	2.1	2.5	25.3	15.2	83.4	25.6	58.7	183	19.5	2.1
Cobalt (Co)	mg/kg	0.1	0.5	0.7	0.2	0.7	0.2	<0.1	1.4	2.2	0.8	2.7	2.3	1.4	1.6	4.1	0.5	1.1
Copper (Cu)	mg/kg	0.1	4.2	4.2	1.7	2.6	4.6	2.3	4.4	4.0	2.9	26.9	16.3	6.3	2.6	4.9	2.4	7.1
Iron (Fe)	mg/kg	5	506	1490	165	1170	25	53	181	126	2100	6890	3940	5100	4610	7060	859	203
Lead (Pb)	mg/kg	0.02	0.67	0.85	0.74	1.74	0.03	0.08	0.37	1.62	3.03	5.85	8.54	10.6	4.47	5.12	1.38	0.33
Magnesium (Mg)	mg/kg	5	1340	2610	1350	1710	1290	512	6580	10100	899	4120	2750	2800	2460	2880	1310	5190
Manganese (Mn)	mg/kg	0.5	114	63.9	15.5	32.8	585	223	77.7	45.0	57.4	100	86.0	63.5	74.0	128	36.6	51.2
Mercury (Hg)	mg/kg	0.02	0.03	0.08	0.08	0.09	0.04	0.04	0.03	0.03	0.13	0.15	0.22	0.14	0.17	0.04	0.12	0.03
Molybdenum (Mo)	mg/kg	0.05	0.72	2.60	0.19	0.31	0.09	0.41	2.19	1.84	0.55	3.12	4.33	11.9	0.90	2.06	0.35	1.98
Nickel (Ni)	mg/kg	0.1	16.0	18.0	1.2	11.4	1.5	1.7	4.5	9.8	14.3	10.6	44.3	13.8	27.7	99.9	8.6	14.3
Phosphorus (P)	mg/kg	20	440	750	500	550	890	540	2870	2220	390	170	430	230	280	270	410	1090
Potassium (K)	mg/kg	20	6070	5630	1410	2710	3390	5480	37300	33600	3530	2940	3140	3070	3780	7540	1290	10200
Selenium (Se)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	0.2	<0.2	0.2	<0.2	<0.2	<0.2
Silver (Ag)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium (Na)	mg/kg	20	260	320	480	610	<20	110	970	540	1980	1330	1370	1250	2030	4220	510	140
Strontium (Sr)	mg/kg	0.1	19.0	6.9	33.5	11.3	9.5	3.3	47.9	52.3	37.1	18.4	18.4	17.6	26.9	46.3	14.1	7.8
Sulfur (S)	mg/kg	100	900	1000	600	400	1100	600	2000	1800	500	500	700	400	400	200	500	2600
Thallium (Tl)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	0.06	0.08	0.06	0.11	<0.05	<0.05
Tin (Sn)	mg/kg	0.1	0.1	0.2	<0.1	0.1	<0.1	0.1	0.1	<0.1	0.2	0.6	0.7	0.6	0.3	0.5	<0.1	0.2
Titanium (Ti)	mg/kg	2	24	33	13	43	2	<2	5	4	130	343	191	248	238	375	55	7
Vanadium (V)	mg/kg	0.1	0.7	1.1	0.3	1.3	<0.1	<0.1	0.2	0.2	2.2	9.3	4.6	5.0	5.5	7.9	1.3	0.3
Zinc (Zn)	mg/kg	0.5	17.8	23.7	19.6	17.1	15.1	17.2	18.1	31.4	11.7	16.1	37.4	16.4	10.7	10.2	12.6	371

TABLE H.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT
BACKGROUND METAL CONCENTRATIONS IN SELECT VEGETATION SPECIES

Parameter	Units	MDL	Salix richardsonii (Richardson's willow)	Eriophorum angustifolium (mutiple-flowered cottongrass)		Carex fuliginosa ssp. misandra (formerly Carex misandra)		Carex membranacea		Alopecurus magellanicus (was Alopecurus alpina)	Carex nardina	Empetrum nigrum (crowberry)						Carex rupestris (curly sedge)
			08-VP38A	08-VP25B	08-VP32A	08-VP26B	08-VP42B	08-VP30A	08-VP49A	08-VP31A	08-VP33A	08-VP11A	08-VP34C	08-VP34	08-VP35B	08-VP36B	08-VP43B	08-VP23A
General Information			Cockburn Lake	Deposit No. 1	Deposit No. 1	Deposit No. 1	Steensby Inlet	Mary River Rail Crossing	Near Steensby Inlet	Deposit No. 1	Deposit No. 1	Steensby Inlet	Cockburn Lake	Cockburn Lake	Steensby Inlet Airstrip	Steensby Inlet Airstrip	Steensby Inlet Airstrip	Mine Infrastructure
Date Sampled		N/A	18-AUG-08	15-Aug-08	16-AUG-08	15-Aug-08	19-Aug-08	15-Aug-08	22-AUG-08	15-AUG-08	16-AUG-08	-	17-AUG-08		17-AUG-08	17-AUG-08	21-AUG-08	14-Aug-08
Anions and Nutrients																		
Chloride (Cl)	mg/kg	1	1230	2020	1130	292	634	352	1060	3330	813	669	380	680	690	1140	204	149
Total Kjeldahl Nitrogen	%	0.02	1.83	1.24	1.05	0.90	0.98	0.94	1.67	1.04	1.55	0.63	0.87	0.56	0.79	1.37	0.73	0.84
Metals																		
Aluminum (Al)	mg/kg	10	45	530	590	2450	3780	680	20	6830	200	<10	50	140	1190	140	130	490
Antimony (Sb)	mg/kg	0.05	<0.05	<0.05	0.10	<0.05	<0.05	0.09	<0.05	0.15	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Arsenic (As)	mg/kg	0.2	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Barium (Ba)	mg/kg	0.1	23.6	22.1	16.8	36.3	78.3	49.1	25.9	87.7	30.9	5.2	24.6	2.9	32.4	8.6	27.2	48.1
Beryllium (Be)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium (Cd)	mg/kg	0.05	0.46	0.15	0.05	0.51	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.41	<0.05	<0.05
Calcium (Ca)	mg/kg	20	10700	3090	4360	5210	6010	6020	1690	3920	4950	460	4530	510	4820	7400	4200	19200
Chromium (Cr)	mg/kg	0.2	0.6	3.7	11.3	32.6	27.9	18.9	1.5	157	6.7	0.8	0.3	0.3	7.9	5.5	0.9	31.7
Cobalt (Co)	mg/kg	0.1	2.0	1.2	0.3	2.2	1.8	0.5	<0.1	2.9	0.2	<0.1	0.1	<0.1	0.8	1.2	0.3	2.1
Copper (Cu)	mg/kg	0.1	5.4	16.2	3.3	52.2	11.2	3.4	4.6	6.2	3.8	4.9	4.8	5.0	5.7	4.6	5.6	4.8
Iron (Fe)	mg/kg	5	45	794	690	3220	1570	819	264	4810	387	17	36	12	2010	158	123	3360
Lead (Pb)	mg/kg	0.02	0.04	0.65	0.51	3.09	2.07	0.53	0.03	3.03	0.37	<0.02	0.06	<0.02	1.01	0.22	0.25	2.05
Magnesium (Mg)	mg/kg	5	3750	1760	1740	2620	1830	2110	2100	2680	1860	530	1130	384	1610	4860	894	3880
Manganese (Mn)	mg/kg	0.5	87.5	239	187	164	89.2	402	190	164	13.3	79.4	291	22.9	247	70.7	1330	73.2
Mercury (Hg)	mg/kg	0.02	0.02	0.03	0.03	0.05	0.04	0.04	0.02	0.04	0.07	<0.02	<0.02	0.03	0.03	<0.02	0.05	0.08
Molybdenum (Mo)	mg/kg	0.05	0.28	8.21	1.26	12.7	1.19	2.34	1.25	1.89	0.30	0.06	0.34	0.13	0.19	0.36	0.18	0.45
Nickel (Ni)	mg/kg	0.1	3.4	5.0	6.1	19.1	16.2	9.9	1.9	84.2	3.2	0.7	3.7	1.0	12.9	4.3	1.1	18.8
Phosphorus (P)	mg/kg	20	1700	1960	1310	430	590	880	1310	1630	1110	1000	510	510	550	1190	500	430
Potassium (K)	mg/kg	20	15300	17300	12000	3850	5050	8330	12500	16700	6270	7180	2970	7450	4100	11900	1700	3560
Selenium (Se)	mg/kg	0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver (Ag)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium (Na)	mg/kg	20	<20	200	280	440	1200	250	70	1660	100	<20	20	<20	260	100	110	1110
Strontium (Sr)	mg/kg	0.1	44.0	3.3	4.7	12.8	39.3	6.0	8.2	22.8	4.1	2.2	5.9	0.9	6.6	23.3	7.7	21.6
Sulfur (S)	mg/kg	100	1800	1700	1400	1000	1000	1000	1400	800	1500	700	1000	600	900	1500	900	600
Thallium (Tl)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tin (Sn)	mg/kg	0.1	<0.1	0.2	0.1	0.3	<0.1	0.1	<0.1	0.4	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2
Titanium (Ti)	mg/kg	2	<2	33	26	138	72	40	<2	212	10	<2	2	<2	86	9	5	116
Vanadium (V)	mg/kg	0.1	<0.1	1.6	0.8	4.6	2.2	1.1	<0.1	5.3	0.4	<0.1	<0.1	<0.1	3.2	0.3	0.2	3.5
Zinc (Zn)	mg/kg	0.5	188	39.6	25.3	22.7	15.5	33.6	44.8	15.5	20.0	8.2	15.6	7.9	16.0	64.8	30.2	20.8

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TABLE H.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT
BACKGROUND METAL CONCENTRATIONS IN SELECT VEGETATION SPECIES

Parameter	Units	MDL	Carex rupestris (curly sedge)	Eriophorum vaginatum (sheathed cottongrass)		Flaviocetraria nivalis (Iceland moss lichen, formerly Cetraria nivalis)
			08-VP41B	08-VP49B	08-VP54A	08-VP50B
General Information			Steensby Inlet	Near Steensby Inlet	Valley N of Cockburn Lake	Steensby Inlet Airstrip
Date Sampled		N/A	19-AUG-08	22-AUG-08	23-AUG-08	22-AUG-08
Anions and Nutrients						
Chloride (Cl)	mg/kg	1	552	459	725	313
Total Kjeldahl Nitrogen	%	0.02	0.64	1.16	1.20	0.49
Metals						
Aluminum (Al)	mg/kg	10	100	160	20	950
Antimony (Sb)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05
Arsenic (As)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Barium (Ba)	mg/kg	0.1	21.8	23.0	23.2	26.2
Beryllium (Be)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Cadmium (Cd)	mg/kg	0.05	0.06	<0.05	<0.05	0.10
Calcium (Ca)	mg/kg	20	3320	2020	3080	4810
Chromium (Cr)	mg/kg	0.2	1.5	3.6	1.1	8.1
Cobalt (Co)	mg/kg	0.1	0.1	0.2	0.1	0.4
Copper (Cu)	mg/kg	0.1	6.6	3.4	2.5	1.7
Iron (Fe)	mg/kg	5	86	285	341	488
Lead (Pb)	mg/kg	0.02	0.28	0.27	0.05	1.67
Magnesium (Mg)	mg/kg	5	957	923	1110	749
Manganese (Mn)	mg/kg	0.5	216	209	401	79.2
Mercury (Hg)	mg/kg	0.02	0.03	0.04	0.04	0.09
Molybdenum (Mo)	mg/kg	0.05	0.73	6.34	1.39	0.13
Nickel (Ni)	mg/kg	0.1	1.2	2.1	0.7	3.8
Phosphorus (P)	mg/kg	20	330	880	1230	490
Potassium (K)	mg/kg	20	2980	4800	4920	1700
Selenium (Se)	mg/kg	0.2	<0.2	<0.2	0.2	<0.2
Silver (Ag)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Sodium (Na)	mg/kg	20	180	100	210	770
Strontium (Sr)	mg/kg	0.1	13.0	9.3	11.2	17.2
Sulfur (S)	mg/kg	100	800	1000	1100	500
Thallium (Tl)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05
Tin (Sn)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Titanium (Ti)	mg/kg	2	4	8	<2	35
Vanadium (V)	mg/kg	0.1	0.2	0.2	<0.1	0.8
Zinc (Zn)	mg/kg	0.5	20.7	44.7	28.5	21.7

TABLE H2

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT
BACKGROUND METAL CONCENTRATIONS IN SOIL

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Parameter	08-VP01	08-VP02	08-VP03	08-VP04	08-VP05	08-VP06	08-VP07	08-VP08	08-VP09	08-VP10	08-VP11	08-VP12	08-VP13
	07-AUG-08	07-AUG-08	07-AUG-08	07-Aug-08	08-AUG-08	08-AUG-08	08-AUG-08	09-AUG-08	09-AUG-08	09-AUG-08	10-AUG-08	10-AUG-08	10-AUG-08
	L677944-1	L677944-2	L677944-3	L677944-4	L677944-5	L677944-6	L677944-7	L677944-8	L677944-9	L677944-10	L677944-11	L677944-12	L677944-13
General location of plot	Steensby Inlet	Steensby Inlet	Steensby Inlet	Steensby Inlet, Ikpikitujua	Steensby Inlet, port island	Steensby Inlet, port island	Steensby Inlet, port island	Steensby Inlet, port island	Steensby Inlet, port island	Steensby Inlet, port island	Steensby Inlet	Steensby Inlet	Steensby Inlet
Leachable Anions & Nutrients													
Total Kjeldahl Nitrogen	0.10	0.08	1.42	1.90	0.90	2.05	0.18	0.12	0.12	0.18	0.14	0.06	0.09
Metals													
Aluminum (Al)	1810	4200	3530	480	960	430	2510	2740	1680	3650	1650	4840	7250
Arsenic (As)	0.2	0.6	1.2	0.4	0.1	12.6	0.3	0.5	0.2	0.6	0.3	0.8	1.5
Barium (Ba)	4.3	33.2	29.3	37.7	15.3	33.9	10.9	8.6	9.9	13.2	7.9	38.9	62.6
Beryllium (Be)	<0.2	0.2	0.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	0.2	0.3
Bismuth (Bi)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (B)	<2	4	6	25	8	41	3	4	<2	7	<2	3	6
Cadmium (Cd)	<0.1	<0.1	0.1	0.2	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Calcium (Ca)	800	3500	4200	33300	9000	28400	2400	1500	1000	5800	1400	3000	4200
Chromium (Cr)	4.1	9.8	5.1	0.9	2.1	3.9	5.5	10.7	10.6	7.8	4.5	12.3	16.8
Cobalt (Co)	1.3	3.8	4.8	0.8	1.4	2.8	2.6	2.7	1.4	3.5	1.3	5.0	6.5
Copper (Cu)	2.4	8.3	41.3	13.0	5.1	62.0	6.0	7.0	1.6	6.8	4.1	8.2	15.7
Iron (Fe)	4600	9600	7400	1100	2600	23700	5600	6400	3400	7400	4900	12600	16800
Lead (Pb)	3.3	4.9	5.8	2.0	1.6	6.8	2.7	3.7	2.6	4.1	2.6	6.4	7.7
Magnesium (Mg)	1480	4300	3300	2510	1710	2460	2420	2950	1400	4200	1410	4830	7090
Manganese (Mn)	38	93	62	51	49	94	80	68	29	102	32	124	171
Mercury (Hg)	<0.05	<0.05	0.25	0.09	0.06	0.71	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Molybdenum (Mo)	0.2	0.2	0.6	2.0	0.3	1.6	0.2	0.2	0.2	0.3	0.2	0.3	0.4
Nickel (Ni)	2.3	6.8	7.5	2.4	1.7	6.5	3.7	5.4	4.5	6.2	2.3	7.5	11.0
Potassium (K)	200	1700	800	600	500	300	500	500	400	500	300	1700	2800
Selenium (Se)	<0.2	<0.2	0.6	<0.2	<0.2	1.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2
Silver (Ag)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sodium (Na)	100	300	200	200	200	1000	100	100	100	200	100	200	300
Strontium (Sr)	3	8	23	70	24	109	7	7	6	13	5	8	11
Sulfur (S)	100	<100	1300	2000	800	5700	200	200	200	300	100	<100	<100
Thallium (Tl)	<0.05	0.13	0.07	0.07	<0.05	0.26	0.08	0.06	<0.05	0.08	<0.05	0.16	0.24
Tin (Sn)	<2	<2	<2	<2	<2	2	<2	<2	<2	<2	<2	2	3
Titanium (Ti)	441	811	383	60	207	30	467	407	356	683	345	1040	1320
Uranium (U)	0.45	2.75	2.89	0.50	0.54	10.5	1.12	1.42	1.28	2.30	0.69	1.46	1.60
Vanadium (V)	9.6	17.5	9.5	1.8	4.9	50.0	9.6	11.4	6.8	13.4	8.5	22.4	30.4
Zinc (Zn)	11	29	45	122	19	28	25	16	11	32	11	36	46

TABLE H2

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT
BACKGROUND METAL CONCENTRATIONS IN SOIL

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Parameter	08-VP14	08-VP15	08-VP16	08-VP17	08-VP18	08-VP19	08-VP20	08-VP21	08-VP22	08-VP23	08-VP24	08-VP25	08-VP26
	10-AUG-08	11-AUG-08	11-AUG-08	11-AUG-08	13-AUG-08	13-AUG-08	13-AUG-08	13-AUG-08	14-AUG-08	14-AUG-08	14-AUG-08	15-AUG-08	15-AUG-08
	L677944-14	L677944-15	L677944-16	L677944-17	L677944-18	L677944-19	L677944-20	L677944-21	L677944-22	L677944-23	L677944-24	L677944-25	L677944-26
General location of plot	Steensby Inlet	Steensby Inlet	Steensby Inlet	Steensby Inlet	Steensby Inlet	Near Steensby Inlet	Near Steensby Inlet	Near Steensby Inlet	Mine infrastructure area	Mine infrastructure area	Mine infrastructure area	Deposit #1	Deposit #1
Leachable Anions & Nutrients													
Total Kjeldahl Nitrogen	0.13	1.22	0.48	0.19	0.91	1.27	0.12	0.59	0.20	0.10	0.28	0.30	0.29
Metals													
Aluminum (Al)	2910	8750	6880	3780	3040	2350	1230	940	1780	850	1710	19100	21400
Arsenic (As)	0.5	1.3	0.6	0.5	0.4	0.6	0.3	0.2	0.8	0.4	0.2	1.7	1.1
Barium (Ba)	28.0	35.9	65.0	23.1	21.6	52.2	6.7	24.9	6.8	3.7	8.7	41.0	69.6
Beryllium (Be)	<0.2	0.3	0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	2.3	2.4
Bismuth (Bi)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	1.0
Boron (B)	3	7	3	4	6	8	<2	3	6	3	3	15	10
Cadmium (Cd)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.0	0.3
Calcium (Ca)	4000	2500	2700	2100	7000	6700	1000	2500	3000	2800	2200	6200	3600
Chromium (Cr)	7.7	19.3	50.0	10.2	5.9	5.9	2.0	1.5	8.2	4.7	6.1	61.8	65.6
Cobalt (Co)	4.2	7.2	6.3	4.4	2.8	1.9	1.0	1.3	2.2	1.0	1.7	18.5	18.1
Copper (Cu)	14.7	28.9	17.3	11.1	11.4	16.3	1.2	4.4	6.6	2.5	2.7	104	283
Iron (Fe)	8500	26000	15500	12600	6300	6200	2400	1900	4100	2300	3700	27100	35400
Lead (Pb)	5.0	15.9	7.9	3.6	3.9	4.7	1.9	1.5	4.3	2.5	3.4	66.5	53.3
Magnesium (Mg)	3000	4820	7430	3440	2860	1940	980	1120	2540	1880	1430	17900	21600
Manganese (Mn)	112	172	148	164	87	36	36	11	72	47	80	388	339
Mercury (Hg)	<0.05	0.06	<0.05	<0.05	0.06	0.13	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Molybdenum (Mo)	0.2	6.5	1.1	0.7	0.8	0.8	0.1	0.4	0.2	<0.1	0.2	2.1	15.7
Nickel (Ni)	5.2	13.0	27.0	6.2	4.3	4.4	1.4	1.8	8.3	5.8	3.9	45.2	36.3
Potassium (K)	900	1200	2200	500	800	600	200	300	600	200	400	2400	3000
Selenium (Se)	<0.2	1.0	0.3	<0.2	0.2	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	1.1	0.8
Silver (Ag)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sodium (Na)	200	200	200	200	200	200	100	100	<100	<100	<100	300	200
Strontium (Sr)	10	11	13	8	14	33	3	13	2	2	2	6	7
Sulfur (S)	200	2000	600	600	1000	1800	<100	700	200	100	200	300	600
Thallium (Tl)	0.10	0.25	0.17	0.09	0.11	0.06	<0.05	<0.05	<0.05	<0.05	0.06	0.58	0.65
Tin (Sn)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	2	<2
Titanium (Ti)	663	1300	1480	656	507	332	185	142	160	63	202	1230	1380
Uranium (U)	1.29	8.69	2.94	1.86	1.78	2.11	0.26	0.42	0.29	0.37	0.36	36.5	22.0
Vanadium (V)	15.5	37.6	25.8	15.4	10.3	8.9	3.6	3.0	6.9	3.8	6.0	73.7	81.6
Zinc (Zn)	26	49	43	28	30	30	9	26	13	9	17	145	188

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BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT
BACKGROUND METAL CONCENTRATIONS IN SOIL

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Parameter	08-VP27	08-VP28	08-VP29	08-VP30	08-VP31	08-VP32	08-VP33	08-VP35	08-VP36	08-VP37	08-VP38	08-VP39	08-VP40
	15-AUG-08	15-AUG-08	15-AUG-08	15-AUG-08	16-AUG-08	16-AUG-08	16-AUG-08	17-Aug-08	17-Aug-08	18-AUG-08	18-AUG-08	19-AUG-08	19-AUG-08
	L677944-27	L677944-28	L677944-29	L677944-30	L677944-31	L677944-32	L677944-33	L677928-146	L677928-147	L677944-37	L677944-38	L677944-39	L677944-40
General location of plot	Deposit #1	Deposit #1	Mary River rail crossing	Mary River rail crossing	Deposit #1	Deposit #1	Deposit #1	Steensby Inlet nr proposed. Airstrip	Steensby Inlet nr proposed airstrip	Cockburn Lake	Cockburn Lake	Steensby Inlet	Steensby Inlet
Leachable Anions & Nutrients													
Total Kjeldahl Nitrogen	0.31	0.28	0.32	0.42	0.06	0.37	0.16	0.34	0.72	0.12	0.60	0.43	0.23
Metals													
Aluminum (Al)	8560	13200	1560	1770	3320	3910	3890	-	-	4020	1620	6850	4460
Arsenic (As)	0.7	0.5	0.2	0.6	0.9	0.6	0.6	0.7	0.9	0.5	0.1	0.8	0.4
Barium (Ba)	33.3	64.6	11.5	27.1	11.5	19.1	18.7	55.6	53.0	30.0	19.1	38.3	28.3
Beryllium (Be)	0.3	0.3	<0.2	<0.2	0.2	0.2	0.2	<0.2	0.4	0.2	<0.2	0.5	0.3
Bismuth (Bi)	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (B)	5	7	3	8	7	6	8	-	-	2	2	6	4
Cadmium (Cd)	0.7	0.3	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Calcium (Ca)	3400	1100	2000	4600	1100	1800	2500	-	-	3000	1000	2200	2800
Chromium (Cr)	19.2	11.5	7.0	8.7	13.8	16.8	17.5	60.7	18.6	11.6	4.3	11.6	10.6
Cobalt (Co)	5.3	3.9	1.8	2.3	3.1	3.7	3.7	7.2	9.5	4.2	1.2	5.0	3.4
Copper (Cu)	11.0	11.0	3.4	8.2	6.5	7.1	5.8	46.8	26.6	16.8	4.1	15.5	12.1
Iron (Fe)	13400	18400	3400	5900	6300	7800	7900	-	-	8700	4500	13400	11600
Lead (Pb)	21.8	21.7	2.7	3.2	5.3	5.7	5.3	27.9	8.8	13.4	4.3	8.1	5.9
Magnesium (Mg)	9950	12700	1740	2700	2220	3840	3680	-	-	4030	1070	5850	3490
Manganese (Mn)	210	172	53	187	106	119	122	-	-	100	47	191	84
Mercury (Hg)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	0.06	<0.05
Molybdenum (Mo)	0.7	57.6	0.3	0.4	<0.1	0.1	0.1	3.0	0.8	0.5	0.4	2.0	0.4
Nickel (Ni)	42.1	8.3	7.0	13.1	12.1	13.2	9.8	22.6	13.2	9.0	2.1	6.2	5.8
Potassium (K)	800	1600	300	400	800	800	1100	-	-	1100	500	1300	700
Selenium (Se)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.4	0.4	<0.2	<0.2	0.3	<0.2
Silver (Ag)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sodium (Na)	100	100	<100	<100	<100	100	200	-	-	100	100	200	200
Strontium (Sr)	3	3	3	4	2	3	3	3	17	8	6	12	8
Sulfur (S)	200	400	300	500	<100	200	200	700	1000	200	400	900	300
Thallium (Tl)	0.18	0.25	<0.05	0.07	0.10	0.11	0.13	0.47	0.23	0.11	0.07	0.12	0.10
Tin (Sn)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Titanium (Ti)	625	791	198	221	276	465	495	-	-	713	497	850	799
Uranium (U)	0.77	1.25	0.40	1.00	0.42	0.91	0.97	3.27	3.13	2.04	1.09	2.20	1.53
Vanadium (V)	16.1	17.9	5.6	7.9	11.1	16.0	14.9	63.6	22.9	15.3	9.3	23.5	23.0
Zinc (Zn)	62	74	11	22	14	20	18	50	51	32	43	38	28

TABLE H2

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

VEGETATION BASELINE STUDY REPORT
BACKGROUND METAL CONCENTRATIONS IN SOIL

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Parameter	08-VP41	08-VP42	08-VP43	08-VP44	08-VP45	08-VP49	08-VP50	08-VP51	08-VP52	08-VP53	08-VP54	08-VP55	08-VP56
	19-AUG-08	19-AUG-08	21-AUG-08	21-AUG-08	21-AUG-08	22-AUG-08	22-AUG-08	23-AUG-08	23-AUG-08	23-AUG-08	23-AUG-08	23-AUG-08	23-AUG-08
	L677944-41	L677944-42	L677944-43	L677944-44	L677944-45	L677944-49	L677944-50	L677944-51	L677944-52	L677944-53	L677944-54	L677944-55	L677944-56
General location of plot	Steensby Inlet	Steensby Inlet	Steensby Inlet nr proposed airstrip	Steensby Inlet nr proposed airstrip	Steensby Inlet, Ikpikitujua	Near Steensby Inlet, Km 135	Steensby Inlet nr proposed airstrip	Steensby Inlet nr proposed airstrip	Cockburn Lake	Cockburn Lake	Valley N of Cockburn Lake	Valley south of Mary River rail crossing	Valley south of Mary River rail crossing
Leachable Anions & Nutrients													
Total Kjeldahl Nitrogen	0.35	0.31	1.22	1.15	0.11	0.09	0.07	0.10	0.19	1.19	1.88	0.30	0.14
Metals													
Aluminum (Al)	1370	4520	9500	4340	2300	4640	2000	2970	12100	6230	17500	2450	3160
Arsenic (As)	0.1	0.2	1.5	0.4	0.4	0.8	0.2	0.6	0.9	1.5	0.6	0.4	0.4
Barium (Ba)	6.2	15.1	82.9	41.0	15.9	25.9	13.2	25.0	111	96.7	109	12.0	17.7
Beryllium (Be)	<0.2	<0.2	0.5	<0.2	<0.2	0.3	<0.2	<0.2	0.6	0.4	0.6	<0.2	<0.2
Bismuth (Bi)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (B)	2	2	8	9	3	2	<2	2	6	6	7	4	4
Cadmium (Cd)	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.8	<0.1	<0.1
Calcium (Ca)	1800	2900	3900	2600	2900	2400	600	2500	4200	9000	3500	2100	2300
Chromium (Cr)	1.9	5.6	26.3	55.1	9.1	15.5	4.3	8.3	29.4	7.7	17.1	6.3	8.9
Cobalt (Co)	1.0	4.3	11.2	2.3	2.3	3.9	2.4	3.2	10.4	5.8	5.9	2.1	2.8
Copper (Cu)	7.4	12.8	25.8	9.4	4.6	10.4	3.8	9.5	29.8	50.1	13.5	2.6	4.7
Iron (Fe)	2900	9500	40900	6200	6800	19300	6600	9300	24600	13800	10200	5100	6300
Lead (Pb)	1.6	3.8	9.7	21.9	5.1	5.7	2.9	4.6	13.1	13.6	9.1	4.2	4.8
Magnesium (Mg)	1260	2650	7730	940	2450	4480	1640	3140	12400	3530	3630	1990	2740
Manganese (Mn)	24	141	307	21	61	93	46	78	252	141	385	81	94
Mercury (Hg)	<0.05	<0.05	<0.05	0.20	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	0.10	<0.05	<0.05
Molybdenum (Mo)	0.2	0.5	2.3	10.9	0.8	0.6	0.2	0.4	1.1	4.0	0.7	0.2	0.2
Nickel (Ni)	1.4	5.9	14.3	20.2	4.3	7.6	2.8	5.1	21.9	8.1	8.7	3.7	5.1
Potassium (K)	200	400	2900	500	400	1100	500	1000	5400	700	900	600	700
Selenium (Se)	<0.2	<0.2	0.4	0.4	<0.2	<0.2	<0.2	<0.2	<0.2	0.9	0.5	<0.2	<0.2
Silver (Ag)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2
Sodium (Na)	200	400	400	200	200	200	100	200	500	400	200	200	100
Strontium (Sr)	6	10	20	22	8	5	3	7	18	53	26	5	5
Sulfur (S)	300	300	1100	1700	100	100	200	100	300	1500	2600	200	200
Thallium (Tl)	<0.05	<0.05	0.30	<0.05	<0.05	0.11	0.05	0.09	0.42	0.17	0.17	0.05	0.07
Tin (Sn)	<2	<2	<2	<2	<2	2	<2	<2	<2	6	<2	<2	<2
Titanium (Ti)	234	582	1240	224	549	760	484	685	1920	367	756	598	601
Uranium (U)	0.60	0.83	5.83	1.46	0.74	1.37	0.72	1.38	2.82	10.7	3.46	1.32	0.88
Vanadium (V)	6.4	40.2	44.0	3.4	12.4	28.9	14.7	17.0	42.2	12.9	21.9	10.1	12.5
Zinc (Zn)	14	22	61	31	18	28	13	26	84	49	42	16	22