



May 2014

## ARCHAEOLOGICAL IMPACT ASSESSMENT

# FOX-D DEW Line Site, Kivitoo

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FINAL REPORT



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### EXECUTIVE SUMMARY

During August of 2013, Golder Associates Ltd. (Golder) conducted an Archaeological Impact Assessment on behalf of Dillon Consulting Ltd. (Dillon) working for Public Works and Government Services Canada (PWGSC) and Aboriginal Affairs and Northern Development Canada (AANDC) in conjunction with a Phase III Environmental Site Assessment Remedial Action Plan for the Former FOX-D Distant Early Warning (DEW) Line site, Kivitoo, Nunavut. All required field work was conducted under Nunavut Archaeologists Permit 2013-031A issued by the Department of Culture and Heritage, Government of Nunavut to Brent Murphy of Golder.

The FOX-D site and the former community of Kivitoo are located approximately 60 km northwest of the community of Qikiqtarjuaq on Baffin Island. FOX-D was constructed at Kivitoo Point in 1957 and is made up of an Upper and Lower sites that operated until 1963. The Upper Site included a continuous wave tower, a main building train, a warehouse, a garage, two 75,700 litre POL tanks, and a small building that may have been an Inuit house. The Lower Site is located on a coastal plain to the south of the Upper Site. It once consisted of two POL tanks, a beach landing area, drum storage and an airstrip. A freshwater lake, borrow source areas and a construction camp area were also present at the lower site. The Upper and Lower sites are connected by a 4 km access road.

Low-level aerial reconnaissance of the site area was conducted in order to assess the locations of all structures and debris requiring further investigation and to identify areas of archaeological potential. Lack of vegetation and sedimentation enabled surface examination of the facility areas to adequately assess for the presence of cultural materials. During the study four previously recorded archaeological sites MIDc-7, MIDc-8, MIDc-9 and MIDc-17 were revisited and two previously unrecorded sites, MIDc-19 and 20, were documented as per the Nunavut Archaeological and Palaeontological Sites Regulations. In addition several land use sites were documented. All of the archaeological sites are thought to have moderate to high significance and it is recommended that any impacts to the sites be avoided. There are no plans to disturb any of the sites recorded or revisited during the current study during the remediation of the FOX-D DEW Line site.

By conducting this AIA, it is recommended that Dillon, PWGSC, and AANDC have fulfilled the requirements of the current program in their attempts to identify the potential for impact to heritage resources resulting from the proposed remediation of the FOX-D DEW Line site. The AIA included the participation of Losie Audiakiak and Johnny Kooneeliusie from Qikijtarjuaq, who acted as bear monitors and participated in the identification and recordation of the heritage resource sites.





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The factual data, interpretations, suggestions, recommendations and opinions expressed in this document pertain to the specific project, site conditions, design objective, development, and purpose described to Golder by Dillon and are not applicable to any other project or site location. The study incorporated traditional knowledge, where available, but was not specifically designed to address issues of traditional aboriginal use of the project area and does not constitute a traditional use study. In order to properly understand the factual data, interpretations, suggestions, recommendations, and opinions expressed in this document, reference must be made to the entire document.

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### INTRODUCTION

During August of 2013, Golder Associates Limited (Golder) conducted an Archaeological Impact Assessment (AIA) on behalf of Dillon Consulting Ltd. (Dillon) working for Public Works and Government Services Canada (PWGSC) and Aboriginal Affairs and Northern Development Canada (AANDC) in conjunction with a Phase III Environmental Site Assessment Remedial Action Plan for the Former FOX-D Distant Early Warning (DEW) Line site (the Project), Kivitoo, Nunavut. All required field work was conducted under Nunavut Archaeologist Permit 2013-031A issued by the Department of Culture and Heritage, Government of Nunavut (CH-GN) to Brent Murphy of Golder.

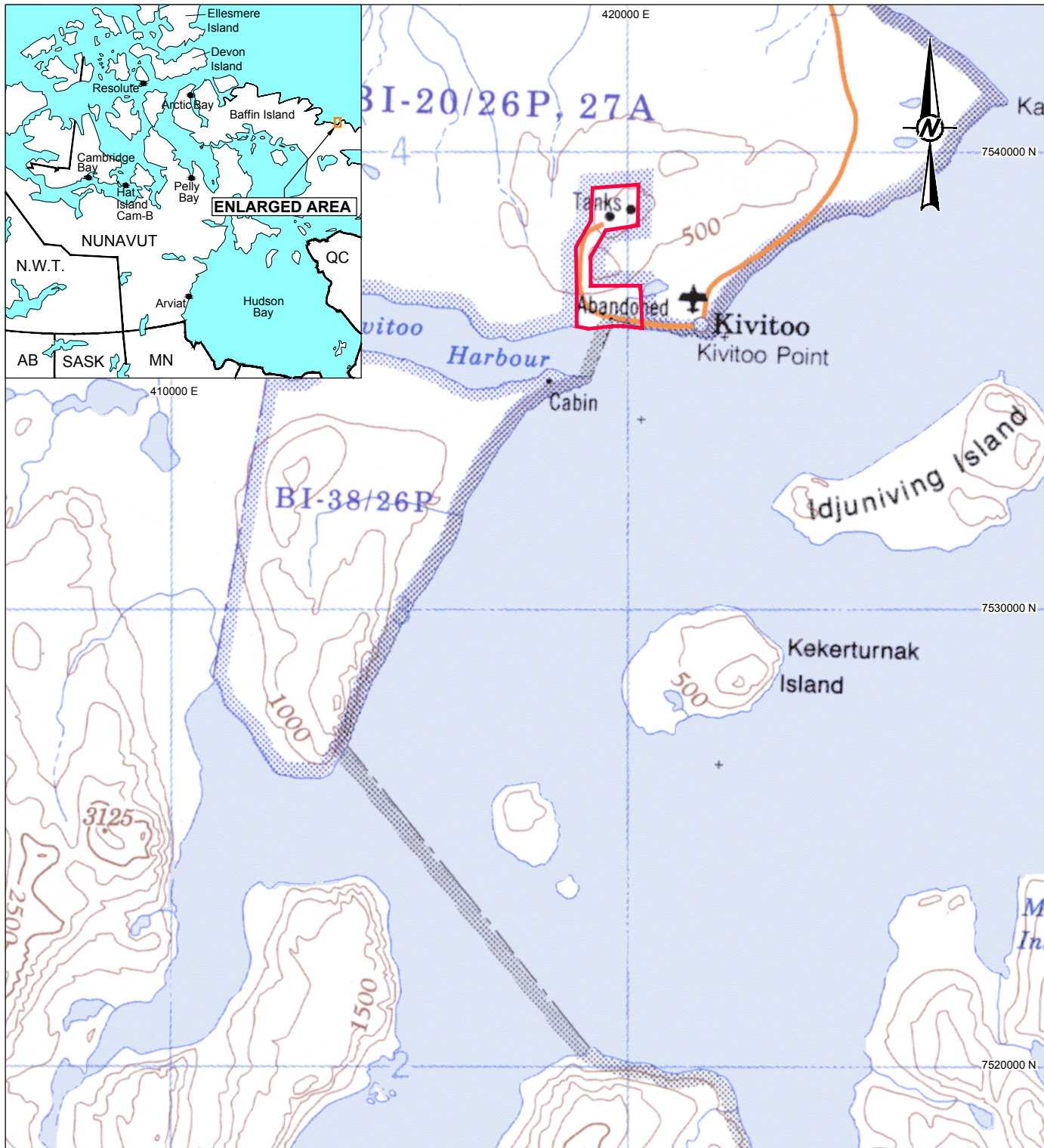
Low-level aerial reconnaissance of the Project area was conducted in order to assess the locations of all structures and debris requiring further investigation and to identify areas of archaeological potential. Pedestrian reconnaissance over areas with moderate to high archaeological potential was conducted; the spacing of the area traversed varied depending on terrain. Lack of vegetation and sedimentation enabled surface examination of the facility areas to adequately assess for the presence of cultural materials. If an area was assessed as having high potential with vegetation coverage the area was subject to shovel testing.

The AIA was intended to identify any artifacts or heritage resource areas that were impacted by the construction and operation of FOX-D DEW Line site as well as any future impacts associated with remediation activities, for instance, proposed borrow sources, landfarm, landfill, camp, and road locations.

### Location

The FOX-D DEW Line site and the former community of Kivitoo are located approximately 60 km northwest of the community of Qikiqtarjuaq, Nunavut on the southeast coast of Baffin Island on the Davis Strait (Figure 1). The FOX-D DEW Line site was constructed at Kivitoo Point in 1957 and comprised an Upper and Lower site that operated until 1963. The Upper Site included a continuous wave tower, a main building train, a warehouse, a garage, two 75,700 litre POL tanks, and a small building that may have been an Inuit house. The Lower Site is located on a coastal plain to the south of the Upper Site. It once consisted of two POL tanks, a beach landing area, drum storage and an airstrip. A freshwater lake, borrow source areas and a construction camp area were also present at the lower site (Figure 2). The Upper and Lower Site are connected by a 4 km access road (Plates 1, 2 and 3). The site operated until October of 1963. After military operations at the site ceased the site became part of the Auyuittuk National Park and under the management of Parks Canada until 1992 when custody of the site was transferred to AANDC.





#### LEGEND

PROJECT AREA

#### REFERENCES

TOPOGRAPHIC MAP 026/P OBTAINED FROM Canmatrix © 1986. HER MAJESTY THE QUEEN  
IN RIGHT OF CANADA. DEPARTMENT OF NATURAL RESOURCES.  
DATUM: NAD27 PROJECTION: UTM ZONE 20.  
REPROJECTED TO DATUM: NAD83 PROJECTION: UTM ZONE 20.

#### PROJECT

FOX-D DEW LINE SITE, KIVITOO

#### TITLE

**FOX-D PROJECT LOCATION**

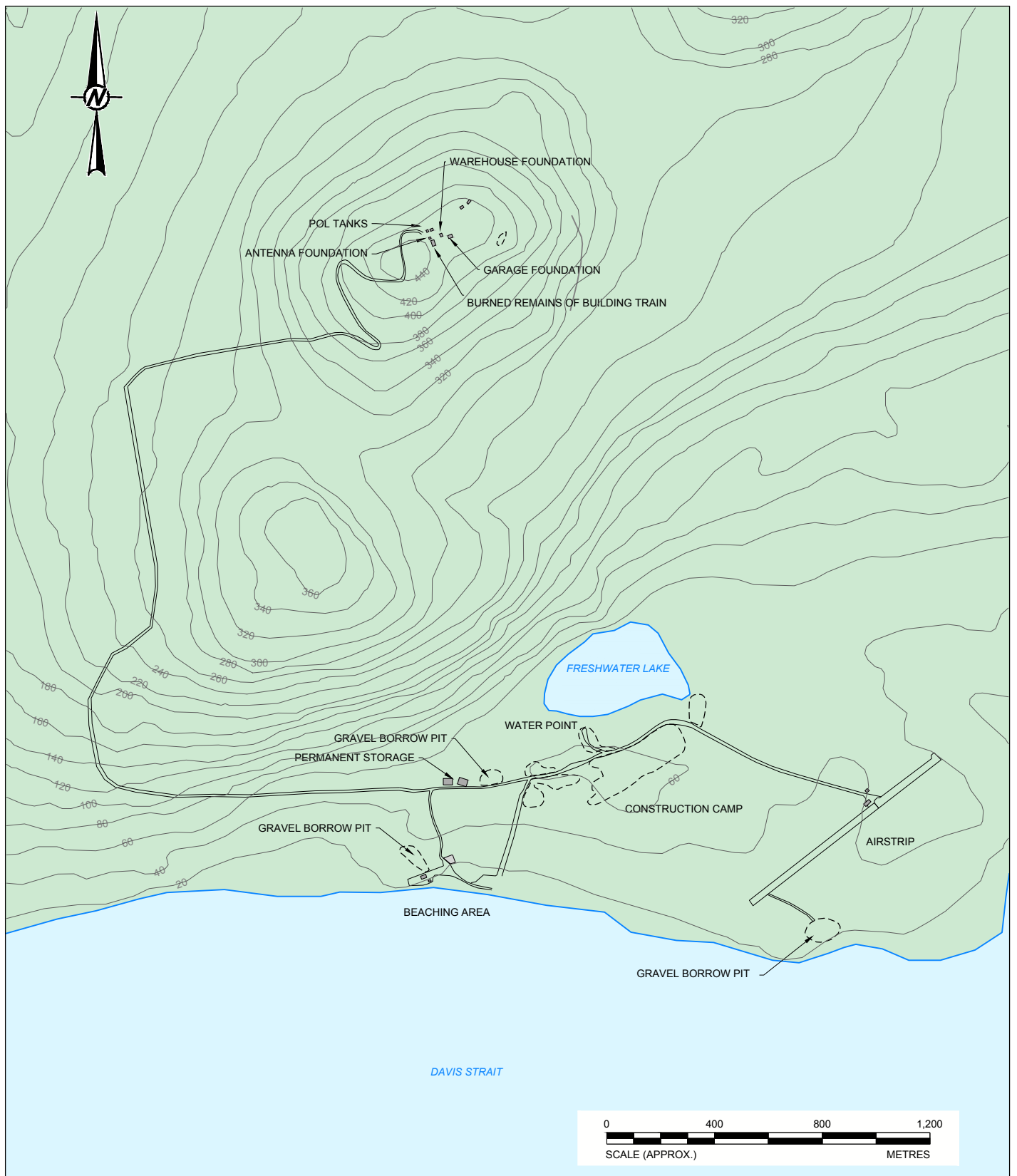


PROJECT No. 13.1379.0026.1400			FILE No. 13137900261400A001	
DESIGN	BM	2013-11-25	SCALE	AS SHOWN
CADD	BTM	2013-11-28	<b>FIGURE: 1</b>	
CHECK	BM	2014-05-28		
REVIEW	DB	2014-05-28		

**FIGURE: 1**



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**LEGEND**

- CONTOUR (METRES)
- ROAD
- WATERCOURSE
- AREA OF DUMP, GRAVEL BORROW AREA, OR WORKED AREA
- WATERBODY

**REFERENCES**

ALBERTA NTDB DIGITAL DATA OBTAINED FROM GEOMATICS CANADA, AUGUST 2001.  
MAPSHEET 26P015 DATUM: NAD83 PROJECTION: UTM ZONE 20

PROJECT

FOX-D DEW LINE SITE, KIVITOO

TITLE

**SITE LOCATION MAP**



PROJECT No. 13.1379.0026.1400		FILE No. 13137900261400A002
DESIGN	BM	2013-11-25
CADD	BTM	2013-11-25
CHECK	BM	2014-05-28
REVIEW	DB	2014-05-28
SCALE		AS SHOWN

**FIGURE: 2**





## FOX-D DEW LINE SITE REMEDIATION



*Plate 1: View west of Kivitoo showing runway, freshwater lake and construction camp location*



*Plate 2: View northwest of upper site with PLO in the background*



*Plate 3: View south of road between upper and lower sites, with Beaching area in the centre of the photograph*

### Potential Impacts

The potential impacts to heritage resources around the FOX-D Dew Line site are dependent upon the proximity of those resources to the remediation activities that will be conducted to remove the remnants of the former site. Heritage resource sites are non-renewable resources that may be located at or near ground level or may be deeply buried. Prehistoric or precontact archaeological sites are those sites which contain features, artifacts, or ecofacts reflecting the use of a given land base by people prior to European influences and technologies. Features are non-portable articles that indicate a human modification of the local environment such as hearths, pits, tent rings, stone cairns, and Inuksuit. Artifacts are portable items that have been modified by people at some time in the past. These include such items as projectile points, stone flaking debris, and cut and modified bone. Ecofacts are naturally occurring items such as preserved plant remains or pollen that can aid in the interpretation of archaeological sites. Historic archaeological sites include the features, artifacts, and ecofacts relating to the past few hundred years of human occupation. These sites are typically identified by the presence of buildings or structural remains, but may include any site that has evidence of historic use of the landscape.

Alteration of the landscape can result in the damage or complete destruction of all or portions of historic resource sites. These alterations often involve the displacement of artifacts resulting in the loss of valuable contextual information or may involve the destruction of the artifacts and features themselves resulting in complete information loss. These losses are permanent and irreversible. Primary, secondary, and tertiary impacts are possible with any new development. Remediation can be considered a new development in this context if it impacts previously undisturbed areas during operation.



Primary impacts include those disturbances resulting immediately from a project. The primary impact zone is the area within the remediation footprint including access roads, temporary work zones, borrow areas, and landfills. Individual sites are likely to be affected to varying degrees if they are located within the development area. Artifact context is fundamental to interpretation of archaeological sites. By disturbing the context in which artifacts and features are recovered, interpretations of heritage resources sites and, ultimately, past lifeways are affected negatively.

Secondary impacts can occur when the support services or additional access required by development adversely affects heritage resources outside the primary target areas. The Project should have no secondary effect on heritage resources.

Tertiary impacts are the results of project induced changes in demography and land use patterns. Increased rates of intentional and unintentional impacts can be expected as a result of increased visitation to an area if the project were large enough to affect regional population bases. Tertiary impacts are anticipated to be very low for this Project, especially because changes to the site through remediation will probably only negatively affect the visitation rates.

The study detailed in this report is intended to identify areas of possible impact and to determine whether the current Project will disturb those heritage resources located in proximity to the development.

### Project Objectives

The objective of the Project is to ensure that heritage resources are not inadvertently impacted by the proposed clean-up and remediation activities. Specifically the purpose of this AIA is to:

- conduct a pre-impact assessment of the proposed remediation areas;
- identify any archaeological sites within proposed remediation areas (if present);
- make recommendations to CH-GN, Dillon, and PWGSC to mitigate or avoid those sites;
- make recommendations on surveillance and monitoring; and
- prepare a draft final report to be reviewed by Dillon and PWGSC, followed by a final report for distribution as required and submission to CH-GN.

## PHYSICAL AND CULTURAL SETTING

### Environmental Context

An understanding of past environmental conditions and the environmental factors that shape human approaches to subsistence and settlement patterns enables archaeologists to not only locate sites, but also to provide more accurate interpretations of individual sites. The physical aspects of the environs (topography, drainage, climate, and soils) as well as resource availability (flora, fauna, lithic materials, and water) are prime criteria for the identification of site location and function. Assessments of universal cultural activities related to site location, travel within and through variable terrain, and resource exploitation are key components of any archaeological site analysis.

The anthropological theory of environmental determinism suggests that, to a great extent, environmental factors condition human behavioural and cultural adaptations, or patterns of behaviour. The environment has likely



influenced many of the activities that contribute to the character of the regional prehistoric record. All available environmental variables must be considered as indicators of prehistoric use of the landscape.

The regional environment influences where specific activities and occupation are located in a pattern of seasonal movements according to the availability of resources: a seasonal round. The variables of archaeological site distribution can be identified and combined into useful criteria for suggesting the potential of an environment to hold heritage resources that includes a wide variety of landforms frequently associated with coastlines and lake shores, river banks, eskers and kames, and bedrock knolls in Arctic environs. Distribution patterns partially reflect environmental opportunities presented to human groups as well as cultural preferences demonstrated by site location. Topography influences much human activity including travel, communication, resource catchments, dwelling locations and eventually constrains human activity areas to defined localities. Based on existing heritage resources, the environment is a key factor in human settlement patterns.

### Regional Environment

Prior to contact with Europeans, the environment in which the people of North America lived strongly influenced their culture and economy. The people who inhabited the North took advantage of the seasons and all the resources that were available.

Baffin Island is part of the Canadian Shield, an old erosion surface of Precambrian rocks. Specifically, the northeast coast is mountainous and framed by numerous fjords, inlets, cliffs, eroded sandstone valleys and intricate alpine glaciers flowing to the sea (Collignon 2005). Hundreds of small islands surround the coast. The vegetation is diverse by sparse and dwarfed with sedges, saxifrage, dryas, Arctic willows, cottongrass, broad-leaved willows, herbs and Arctic poppies being the most common plants of the 350 species recorded on the island. Caribou, wolf, Arctic fox, lemming, Arctic hare, and polar bears are the most common land mammals on the island while sea mammals include walrus and several species of seals and whales are found in coastal waters.

The FOX-D DEW Line site area is characterized by a beach landing area that is at sea level with the actual DEW Line Site being located on a high volcanic plateau up to 440 m above sea level (masl) surrounded by steep slopes. The beach landing is connected to the station by a 4 km road that was cut into a steep valley with several switch backs. During the study wildlife that was observed near the station area included a polar bear, and various birds. Although the volcanic plateau area is sparsely vegetated with some moss the lower area, especially in wet areas near the beach are heavily vegetated with sedges, willows and many flowering plants, grasses and rushes.



### Heritage Resources

Archaeology is the study of human history through the material remains of culture, often referred to as heritage resources. The ultimate goal in archaeology is to describe the cultures and events responsible for the creation and deposition of the remains at a given archaeological site. As such, archaeologists use material remains to determine the nature and age of cultural occupations at a site. Artifacts, ecofacts and features deposited into the natural environment, along with their inter-relationships, are the integral parts that make up an archaeological site. The Nunavut Archaeological and Palaeontological Sites Regulations (2003) define heritage resources as: “but not limited to, archaeological and historical sites, burial grounds, palaeontological sites, historical buildings and cairns.”

Predating the arrival of Europeans, precontact archaeological sites are comprised of artifacts, features, and residues of native origin typically characterized by modified bone and stone, and stone structures. Historic sites are those structures, features, and objects of European influence that date to as early as contact with the Europeans but can also represent more recent activity of more than 50 years. Depending on the context, sites less than 50 years old may be considered to represent traditional land use and are identified to document continued use and occupation of an area to the present time. A key component of the historic period record are the sites, artifacts, and affiliated resources relating to post-contact Aboriginal people's use of the landscape. These include both archaeological sites and objects such as standing and collapsed cabins, campsites, graves, and traditional sites and resources, such as special places, hunting and plant collecting areas, traplines and their associated remains, oral traditions, and documents. These latter resources are usually identified through consultation procedures such as Traditional Use Studies (TUS), Inuit Qaujimajatuqangit (IQ) or other forms of community consultations.

Heritage resources are non-renewable and are susceptible to alteration, damage, and destruction by construction and development activities. The value of heritage resources cannot be measured in terms of individual artifacts or biological specimens; rather the value of these resources lies in the integrated information which is derived from the relationship of the individual artifacts and fossil specimens, associated features, spatial relationships (distribution), and contextual situations. Interpretation of heritage resource materials, and the ability to interpret the significance of particular sites in a landscape, is based on an understanding of the nature of the relationship between individual archaeological and palaeontological materials, as well as the sediments and strata within which they are contained. As such, removal or mixing of cultural or fossil bearing sediments results in the permanent loss of information basic to the understanding of these resources. As a result, heritage resources are increasingly susceptible to destruction and depletion through disturbance.

Areas north of the tree line are characterized by extremely slow rates of soil development and sediment accumulation. Accordingly, at repeatedly occupied sites, there is little chance of distinguishing occupations relating to different periods within the 5,000 year record of human occupation in the region without recovering a diagnostic indicator. Some areas of high sediment deposition rates are present within the study area, but these are not the typical scenario.

The lack of temporally diagnostic artifacts, the absence of materials suitable for radiocarbon dating, and the natural mixing of shallow archaeological deposits serve to limit the definition of the recognized prehistory for the region. In contrast, extant documents, records, and oral testimony provide a firmer basis for understanding the historic period of the region.



### Cultural Chronology

Many of the archaeological materials in the project area represent human activity after the ice sheet receded from Baffin Island about 5,000 years before present (BP). Soon afterward the Arctic was colonized by peoples archaeologists referred to as the Arctic Small Tool tradition (ASTt) with Southwestern Baffin Island, Melville Peninsula, Southampton Island, and the northern portion of Quebec being considered to be part of the core area of ASTt Culture Development.

#### *Early Arctic Small Tool Tradition (4200 BP to 2800 BP)*

The ASTt represents a widespread cultural manifestation that covers all of the Canadian Arctic as well as parts of Alaska and Greenland. The early ASTt is typically thought to date between approximately 4,200 and 2,800 BP (McGhee 1990). It includes the Denbigh Flint complex in northern Alaska, the Independence I culture of the Canadian High Arctic, the Inuvik Phase, the Pre-Dorset culture in Arctic Canada, and the Sarqaq culture in Greenland. It is thought that the ASTt relates to a separate migration of peoples from Siberia and does not appear to be related to the preceding Palaeo-Arctic tradition, known from areas further south in Nunavut. As the name implies, the toolkit of the ASTt is comprised of lithic artifacts that are finely made and smaller than tools of similar function and age from elsewhere in North America. These include microblades and microcores, burins, graters, small side and end scrapers, side and end blades, and bipointed (arrow) and triangular (harpoon) projectile points (Wright 1995). The region was first inhabited by the Pre-Dorset approximately 4,200 BP, supported by archaeological sites identified at Mansel Island, Lake Harbour, Frobisher Bay, and Pond Inlet (Desrosiers 2005:193). Prior to this inhabitation, a large ice sheet had covered the island until its melting 5,000 years ago (Desrosiers 2005:193). In Alaska Early ASTt appears to have developed into the cultures of the Norton tradition while in Canada it developed into the Late ASTt or the Dorset culture. Dorset groups are identified in the archaeological record, between 2,500 and 600 BP. The regions of Southwestern Baffin Island, Melville Peninsula, Southampton Island, and northern Quebec are considered the central regions of Pre-Dorset and Dorset cultural development (Desrosiers 2005:193).

#### *Dorset Culture (2,500 BP to 600 BP)*

The Dorset culture of the Canadian Arctic are best known for miniature carvings, Dorset appears to have been a more successful adaptation to the conditions of the north than the preceding ASTt cultures from which it developed. This is demonstrated by the huge area occupied by Dorset groups and by evidence that they had perfected winter hunting on the sea ice. Cooler conditions in the northern hemisphere around 3,000 BP resulted in expansion of the sea ice and a shift away from terrestrial hunting of caribou and hunting of sea mammals from boats in open water to a procurement of sea mammals from coastal edges and sea ice. This is evidenced in the archaeological record with a shift away from bow hunting to harpoon and spear hunting (McGhee 1990). Artifacts recovered from sites representing this period are more diverse and “reflect a richer and more secure way of life than that of earlier Palaeo-Eskimos or Pre-Dorset.” including the establishment of permanent winter villages (McGhee 1990).

Thule or Neo-Eskimo groups entered the area during the final 200 years of the Dorset occupation of the area. These two archaeologically distinct cultures may have coexisted in the region, but the character of this relationship is unclear (McGhee 2001, 2009; Wright 1999).



### *Thule (800 BP to 400 BP)*

The Thule tradition dates from approximately 800 to 400 BP and is derived from the Norton tradition in northern Alaska. More specifically, Thule grows out of the Old Bering Sea and Punuk traditions, which have numerous similarities to Thule cultural assemblages. These assemblages suggest subsistence based on maritime resources such as seals and whales that were hunted from kayaks or umiaks as identified by harpoon floats. Thule represented a new kind of adaptation to the Arctic environment, based on the hunting of large sea mammals in open water through the use of drag floats attached to the harpoon line. Large skin boats and the use of dogs to pull large sleds were other Thule innovations. Winters were spent in sometimes large communities of semi-subterranean houses, subsisting on a stored surplus obtained most typically by hunting bowhead whales. The introduction of Thule into the Canadian Arctic is noted by a distinct change in a number of cultural markers from the Dorset culture. The earliest Thule occupations currently recognized are on islands in the Bering Strait and exhibit an almost complete reliance on maritime resources; however, later sites demonstrate that both maritime and terrestrial resources were utilized (McGhee 1990). Climatic changes following the thirteenth century likely caused the Thule to modify their way of life into that of the various historic Inuit groups.

### **Historic Inhabitants**

Historic use of the project area is identified with the 'Baffin Eskimo'. This group inhabited the southern two-thirds of Baffin Island and some of the nearby islands off its shores (Kemp 1984:464). The remaining northern region of the Island is inhabited by the Iglulik (Kemp 1984:464). The island region that is inhabited by the Baffin Eskimo is characterized by freshwater systems located in the central interior and mountainous areas in the northeast and southwest (Kemp 1984:464). The region was first inhabited by the Pre-Dorset approximately 4,200 BP, supported by archaeological sites identified at Lake Harbour, Frobisher Bay, and Pond Inlet (Desrosiers 2005:193). Prior to this inhabitation, a large ice sheet had covered the island until its melting 5,000 BP (Desrosiers 2005:193). Dorset groups are identified in the archaeological record following this, between 2,500 and 600 BP. The regions of southwestern Baffin Island, Melville Peninsula, Southampton Island, and northern Quebec are considered the central regions of Pre-Dorset and Dorset cultural development (Desrosiers 2005:193). Thule groups entered the area during the final 200 years of the Dorset occupation of the area. These two archaeologically distinct cultures coexisted in the region, but the character of this relationship is unclear. Much of the information known of the historic Thule, or Baffin Eskimo, is based on the ethnographic recordings of Franz Boas from the late 1800's. At this time, Boas recognized seven distinct regional populations within the Baffin Eskimo area (Kemp 1984:464). These populations were "linked together by [bilateral] kinship and the mutual use of hunting and territory, to form larger territorial and social groupings...bands" (Kemp 1984:464). Importantly, by the time of Boas' ethnography the Baffin Eskimo possessed many European goods, which influenced and altered the traditional life-ways of the local groups.

European contact with the Baffin Eskimo populations began in the 16<sup>th</sup> Century with the Frobisher Expedition (Kemp 1984:467), whose task it was to find the North West Passage (Desrosiers 2005:193). However, previously Baffin Bay had been explored by the Norse (Heinrichs 2005:191). During the 10th Century these Norseman built settlements on Greenland and perhaps Newfoundland but little evidence remains of where and how far they had actually travelled as these same settlements collapsed during the 13th Century. Baffin Bay was next explored and recorded by John Davis in 1587. European interaction gradually increased with the rise of European whale hunting; whaling stations began operating throughout the eastern arctic in the 1880's (Kemp 1984:466). Such whaling activities around Davis Strait originated in the 1700's, but it was not until the 1850's



that all the inhabitants of the Cumberland Sound and Davis Strait regions were in contact with whalers (Kemp 1984:466). The whaling industry was eventually eclipsed by fur trapping in 1910 (Kemp 1984:474). Also at this time Anglican missionaries entered the region (Kemp 1984:474).

The Baffin Eskimo have historically utilized a vast array of subsistence resources, including marine, terrestrial, avian, and freshwater game; however, the wolf was sought but not utilized for subsistence (Kemp 1984:467). A vast array of tools was used for hunting, such as plugs to stop the bleeding of seals that made it easier for their transport. Bird nets were also constructed and used to ensnarl various avian species (Kemp 1984:468). Hunting weapons included breathing-hole harpoons that had compound elements, and single-curve bows (Kemp 1984:69). Metal, along with driftwood, antler, bone, and stone, were used in the construction of these implements. In addition, Baffin Eskimo technology allowed for water transportation via kayaks and umiaks, or women's boats (Kemp 1984:469); the form of the kayaks was not consistent throughout the Baffin Eskimo area. Dog sleds were used as well. These sleds were the dominant method of transportation until the 1960's when snowmobiles were introduced (Kemp 1984:469). With these forms of transportation, the Baffin Eskimo interacted with neighbouring groups such as those from northern Quebec (Kemp 1984:465). However, this interaction did not occur regularly.

Different subsistence resources were procured based on the season. For instance, seals (particularly ringed seal) were hunted along the floe-edge during the spring months, and caribou herds were hunted during the fall in the interior and coastal regions (sometimes with the aid of drives) (Kemp 1984:467-468). As this instance suggests, Baffin Eskimo mobility was seasonal and influenced by the location of what game they were pursuing. As a rule, Baffin Eskimo groups resided primarily in the coastal regions. It was the caribou that pulled groups into the interior, whereby three particular lakes were favoured as hunting locals: Nettling, Amadjuak, and Sylvia Grinnel Lakes (Kemp 1984:468). During these interior hunts, if excess caribou meat was produced, then it would be cached at these interior locations and retrieved at times of food stress during the winter months (Kemp 1984:468). In addition to there being differences in subsistence procurement based on seasonality, there were also differences in dwellings. Winter dwellings were commonly snow houses, although occasionally early and abandoned Thule houses were reused through the addition of roofs (Kemp 1984:470). In contrast to the winter, skin tents were utilized during the warmer months. These tents varied in form and size depending on how far they were to be transported and their use (Kemp 1984:470). A further seasonal distinction is found in Baffin Eskimo clothing; only caribou skin was used for winter clothing, and seal skin was used in addition to caribou for summer clothes (Kemp 1984:470).

### Kivitoo

As early as 1750, the Dutch had 41 whaling vessels patrolling the waters of the Davis Strait in a single year (Anders et al 1967). In the summer whalers stopped at Kivitoo to trade with Inuit who travelled there from Broughton Island (now Qikiqtarjuaq) and Padloping to trade. At this time Kivitoo did not support a year-round economy, whalers returned annually to trade, acquire fresh water, and bury their dead.

With the declined in the use of whale oil in the late 19<sup>th</sup> century fewer whalers visited Kivitoo. However, with the growing market for fur the Sabellum Trading Company established a trading post at Kivitoo in 1911. The post was managed by an Inuk named Niaqutsiaq who was hired by the Sabellum Trading Company (Dictionary of Canadian Biography, n.d.). Niaqutsiaq, who was later found to be mentally ill, abused his power and in 1922 ordered hunters to kill two fellow Inuit. He then tried to kill an Inuk woman, but was murdered by her husband



## FOX-D DEW LINE SITE REMEDIATION

Kidlapiik. RCMP visiting the settlement the next year recommended that no legal action be taken against Kidlapiik. The Sabellum Trading Company at Kivitoo was later sold to the Hudson Bay Company, and closed around 1926 (Usher 1971).

In 1955, Kivitoo was chosen be an intermediate site along the DEW line. At this time the RCMP reported that Inuit were “loitering” around the Kivitoo site, as well as in Padloping (Johnson, 1955). Historian Philip Goldring (2008) suggests that at this time that the Inuit wanted to see what the newcomers were planning, and assumed that strangers would be willing to share their abundant foodstuffs as the whalers had done. The Inuit were also willing work for the construction crews working on the DEW Line sites. During this time the construction work at Kivitoo provided Inuit with income that was invested in the hunting economy and the first motor-powered boats on the north coast appeared (Goldring, 2008). After FOX-D was abandoned some of the Inuit moved from Kivitoo to Broughton Island.

In 1963 the six remaining families from Kvitoo were relocated to Qikiqtarjuaq after Nowyakkbik, a 63-year old camp boss at Kivitoo, his son Peterosee and sons-in-law Poisey and Joanasee got caught in a storm after leaving the Hudson Bay Company post at Broughton Island on dog sled resulting in the death of Nowyakkbik, Peterosee and Poisey and the amputation of Joanasee’s legs. Historian Kenn Harper states this action was taken by the government for humanitarian reasons because the people of Kivitoo would not be able to survive with the loss of four of their hunters. Inuit remember that they were forced to move to Qikiqtarjuaq but assured that they would later be allowed to return to Kivitoo. The houses at Kivitoo were bulldozed and buried shortly after the relocation (Gleeson, 1999).

### Heritage Studies

Prior to the current assessment of the FOX-D DEW Line site assessment, ten heritage resources sites have been recorded in the vicinity of the Project in the Nunavut or Canadian Museum of Civilization (CMC) database. The sites include stone features sites (MIDc 1, 2, 3, 7, 8 and 18) semi-subterranean houses (MIDc-9 and 15) a historic whaling station (MIDc-17) and a lithic scatter site (MIDc-6).

Site MIDc-1 was first reported by McKenzie-Pollock (1969). At that time, a series of tent rings, caches and other stone structures were observed on Kangeeak Point, on the terrace approximately 200 yards back from the sea. A few scattered caribou bones and a number of modern tent rings were also located on this point. Site MIDc-2 was also first reported by McKenzie-Pollock (1969). At that time, two tent rings, one circular and one rectangular, were observed south of Kangeeak Point, just south of second Lake. McKenzie-Pollock collected a piece of worked bone from the surface in the circular tent ring. She opened two, 2 foot by 3 foot test units in one of the rings excavated to a depth of 8 inches. A thong and distal seal bone fragments were recovered from just below the turf in the excavation.

Site MIDc-3 is a prehistoric campsite consisting of two meat caches, two tent rings and two Thule-type semi-subterranean houses (McKenzie-Pollock 1969). The site is located in the first bay south of the large inlet south of the abandoned settlement of Kivitoo, opposite south tip of Idjiniwing Island. In 1973 the site was revisited. It was mapped and excavations of the two Thule-style houses were undertaken. These excavations established that these structures were utilized during the early post Euro-American contact period (Schledermann 1973).

Site MIDc-6 is a lithic scatter with ASTt artifacts. The site is located on the south side of inlet just south of abandoned settlement of Kivitoo, halfway down inlet on low lying grassy area on point. In 1969, McKenzie-



## FOX-D DEW LINE SITE REMEDIATION

Pollock reported that the site had been extensively looted, with the turf having been stripped off an area 200 by 300 feet revealing a stony layer with soil underneath. Flakes were found among the stones just below turf and the cultural material was inferred to continue below the stones. In addition, eight artifacts were given to McKenzie-Pollock by the mother of an Inuit who had removed them from the site. McKenzie-Pollock also observed a modern tent ring in the site area. In 1972, Schledermann revisited the site and identified a 40 year old grave nearby. He conducted salvage work on the lithic scatter and identified un-eroded areas of the site near the pebble beach at approximate 5 masl. In 1975, Sabo revisited the site and described it as “well-trashed”. He observed a number of modern tent rings and a pile of lumber.

Site MIDc-7 consists of eight stone cairns that were interpreted as possible burials. It is located on a point out from the historic location of Kivitoo. In 1969, McKenzie-Pollock observed eight stone cairns; all are long and narrow and are fairly heavily lichen covered. In one cairn, human bones were exposed. In 1972, Schledermann visited the area, mapping site MIDc-7, 8 and 9 on August 24. He determined that the features were occupied during the contact period. Sabo visited area of the abandoned settlement of Kivitoo in 1975, in particular the north side of Kivitoo inlet between the settlement and an abandoned whaling station. He noted that while there are numerous archaeological sites in the area, there are more Borden numbers than sites. He feels that there is no basis for separating McKenzie-Pollack's MIDc-7, 8, 9 into discrete components. That the Kivitoo area can be best characterized as having seen fairly continuous, intermittent occupation from the late Thule era right up to present day (McCartney and Sabo 1975). In August 2008, the site area was visited by students as part of the Students on Ice - International Polar Year Arctic Expedition. Permit was issued to Jesse Tungilik, IPY Project Assistant & Youth Coordinator (CMC 2012).

Site MIDc-8 is located on a point just east of old airstrip at the abandoned settlement of Kivitoo, 200 yards south of MIDc-7. In 1969, McKenzie-Pollock observed two large stone house remains with caches to the northeast of each foundation. She indicates that these are much larger than houses normally encountered in cultures of Eastern Arctic and that they may be quaggi or singing houses (McKenzie-Pollock 1969). Schledermann revisited the site on August 24, 1972 and determined that the houses were occupied during the contract period (Schledermann 1973). At that time, the site was still being used by people from Broughton as a hunting camp and most of original tent ring boulders have been re-oriented numerous times. Old house ruins were often turned into meat caches obliterating the original outlines. Test excavation of two stone houses indicated they were occupied at a time when Euro-American whalers were operating in area. In 1975, Sabo visited the abandoned settlement of Kivitoo inlet between the settlement and an abandoned whaling station and felt that there is no basis for separating McKenzie-Pollack's MIDc-7, 8, 9 into discrete components. That the Kivitoo area can be best characterized as having seen fairly continuous, intermittent occupation from the late Thule era right up to present day (McCartney and Sabo 1975). In August 2008, the site area was visited by students as part of the Students on Ice - International Polar Year Arctic Expedition. Permit was issued to Jesse Tungilik, IPY Project Assistant & Youth Coordinator (CMC 2012).

Site MIDc-9 is located on the south side of the point out from Kivitoo airstrip 250 yards south of the two large stone houses (MIDc-8 site area). In 1969, McKenzie-Pollock observed four large circular house foundations, with entrance passageways with lintel stones preserved. Walrus, whale and caribou bones were scattered in area and a number of modern tent rings were also in the area. Schledermann visited the site area in 1972 and mapped the features. Sabo visited the area in 1975 and felt that there is no basis for separating McKenzie-Pollack's MIDc-7, 8, 9 into discrete components. That the Kivitoo area can be best characterized as having seen fairly continuous, intermittent occupation from the late Thule era right up to present day



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(McCartney and Sabo 1973). In August 2008, the site area was visited by students as part of the Students on Ice - International Polar Year Arctic Expedition. Permit was issued to Jesse Tungilik, IPY Project Assistant & Youth Coordinator (CMC 2012).

Site MIDc-15 is located on the north shore of a small peninsula on the east coast of the Kivitung Peninsula, about 2 miles west from Kivitoo. In 1972, Schledermann observed a more "recent" Thule winter site with shallow house outlines of boulders and sleeping platforms only slightly raised above the central floor area. There were, in addition, several tent rings and caches in the area. The six houses were probably occupied simultaneously and judging from the amount of iron fragments in and around the houses, the site belonged fairly well within contact times (Schledermann 1973). In 1975, Sabo revisited the site area and observed several "quarmat" structures from the contact period (McCartney & Sabo 1975).

Site MIDc-17 is located on the east side of a small stream about one mile west of the abandoned settlement of Kivitoo. There is confusion over the parameters and contents of this site and over the distance between the whaling station and the abandoned settlement of Kivitoo. Schledermann reported an old historic whaling station and an Eskimo graveyard (1973). In correspondence with L. Konotopetz, he added that the Eskimo graveyard consisted of 2 or 3 unmarked graves and that the whaling station included a hut and boilers as well as the abandoned settlement of Kivitoo. Sabo and Elliot visited the site but did not forward reports to the ASC. Phillips visited the site and photographed the whalers' hut and rendering vats as well as a whalers' graveyard. The remains of two lean-tos were found in association with the hut. The cemetery contained seven rock-outlined mounds, six with markers, dating 1866-1907. One of her recommendations was to accurately record the "jumble of structural remains and artifact deposits" (1980). Park warden R. Breneman observed the site in 1984 and reported the graveyard in the same condition as described by Phillips (1980). Konotopetz surveyed Auyuittuq National Park in 1985 but was unable to visit the site. He also recommended that features be more accurately recorded. In August 2008, the site area was visited by students as part of the Students on Ice - International Polar Year Arctic Expedition. Permit was issued to Jesse Tungilik, IPY Project Assistant & Youth Coordinator (CMC 2012).

Site MIDc-18 is located about 1.5 miles west of Kivitoo, along the shore. In 1972, Schledermann observed four stone house ruins. In 1973, Kemp returned to the site and collected lithics, ceramics, metal bone, shell, wood and glass artifacts.





## METHODOLOGY

### Field Inventory and Assessment

Archaeological field studies are conducted with the intent of identifying significant heritage and cultural resources that might be affected by the Project. Locations identified for assessment are investigated using a combination of surface and subsurface investigation techniques. Surface techniques include pedestrian reconnaissance of areas that are not water saturated or poorly suited for occupation, and visual inspection of any fortuitous subsurface exposures that might be present. Subsurface techniques include placement of shovel tests or test units in areas assessed as having high archaeological potential and covered by vegetation.

Site evaluation is based on assessment of physical attributes, including site size, depth and character of deposits, assemblage density, and diversity and current condition. Consideration is also given to traditional significance reported by local community representatives assisting on the project, to cultural historic context and to relative frequency in the region. Sites or areas of traditional significance that are not considered archaeological sites are also recorded in detail. These results are included in written submissions to CH-GN as required by the permit to conduct the AIA.

### Heritage Feature/Structure Evaluation

Evaluations of heritage features and standing structures are completed for features/structures that are observed during the investigations. These evaluations consider perceived heritage resource value and community cultural value as well as the predicted impact from the proposed program. Disturbed sites with limited cultural remains would be assigned lower archaeological resource values than undisturbed sites, large sites with large amounts of cultural material, complex sites, and multicomponent sites. Undisturbed multicomponent sites would be assigned the highest heritage resource value.

Community input plays a role in the evaluation of site value and the inclusion of a member of the local community on the field crew when possible aids discussions regarding site significance.

### Reporting and Conservation

Analysis of collected artifacts includes consultation with a professional conservator regarding specific conservation requirements; cleaning, cataloguing, identification, inventory, and description of each individual piece for inclusion in the final report. GPS site information is provided to CH-GN and the Canadian Museum of Civilization for archival purposes and is used for mapping features and important aspects of each identified site, but is not included in the final versions of the report. Archaeological site maps and photographs are prepared as digital files. Based on the cultural material collected and site observations, a recommendation regarding final site disposition relative to future projects is made.

Upon completion of the field components, a final permit report on the archaeological studies is prepared on behalf of Dillon for review by CH-GN. This report includes a Project description, environmental setting, cultural and archaeological context for the project area, field methodology, and the results of the field reconnaissance. All identified sites are documented on appropriate site inventory forms.

The following recommendations are employed:

Avoidance by 30 m is recommended, if feasible, at all archaeological sites.



Documentation is undertaken as a mitigative option of sites, as a method of protecting the heritage resource from future undocumented impacts due to increased personnel activity in the vicinity.

Sites at immediate risk of disturbance, or if the location of a site conflicts with project cleanup activities, (depending on their scientific significance) sites will be photographed, mapped, and test excavations conducted and collections made if warranted.

### Community Consultation

Consultation regarding the Project was undertaken in January of 2014 with the community of Qikiqtarjuaq. During the permit application process the community was consulted by means of letter from the Permit Holder and the Inuit Heritage Trust Incorporated (IHTI) was in contact with the community. Copies of permit reports are typically submitted to the hamlet(s) situated closest to the Project.



### RESULTS

Upon completion of the field component and the artifact curation, a draft report was prepared. This final permit report on the AIA will be forwarded to Dillon for review, and then submitted to CH-GN for review. The report includes a project description, the environmental setting, the historical and archaeological context for the Project area, field methodology, and the results of the field reconnaissance. The report also includes descriptive data on the sites, artifacts, and features identified, as well as detailed information on the nature, content, and significance of the artifacts and features identified. Cultural material that was recovered was inventoried, described, and discussed within the report text to aid in evaluation of scientific and interpretive value. All identified sites have been documented on appropriate site inventory forms.

If required, a summary of the findings will be prepared for inclusion in a screening document.

The following workplan was followed:

Avoidance has been recommended where feasible at all sites assigned high archaeological resource value (this to include all constructed features: burials, tent rings, caches, hunting blinds, hearths).

Collection and documentation has been undertaken as a mitigative option of sites with low archaeological resource value and as a method of protecting the heritage resource from future undocumented impacts due to increased personnel activity in the vicinity.

Acceptable methods of mitigation were discussed with CH-GN and the Territorial Archaeologist, and may lead to a recommendation for detailed mapping, collection, and/or test excavations at those sites assigned high archaeological resource value that cannot be avoided by the remediation project.

A management plan for required mitigation, monitoring, or surveillance relative to the proposed remediation will be developed as part of the contracted services deliverable to PWGSC. This includes site mitigation, additional survey of any project re-locates required due to site avoidance, and verification of those heritage sites located outside the proposed development activity area that should remain outside re-located areas.

### Field Results

The AIA assessment included all of the areas of moderate to high archaeological potential that has been disturbed by the FOX-D DEW Line site as well as areas identified as having potential for future borrow sources or dumps. The disturbed areas that were surveyed included the entire Upper and Lower site areas. The Upper Site included the main building train, a warehouse, a garage (Plate 4), two 75,700 litre POL tanks, wave tower (Plate 5) and a small building that may have been an Inuit house. The Lower Site consisted of gravel borrow areas, a freshwater lake (Plate 1), construction camp location, a beaching area (Plate 6) and two POL tank foundations (Plate 7). Previously undisturbed areas that were examined included the periphery of all the impacted areas.



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*Plate 4: View west of garage foundation with PLO tanks in the background on Upper Site.*



*Plate 5: View south of antennae on the Upper Site with road to Lower Site in the background.*



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Plate 6: View west Lower Site with beaching area and gravel borrow area in centre of photo and whaler's graveyard (MIDc-17) in the foreground to the right.



Plate 7: View south beaching area showing POL foundations from gravel borrow area.



During the survey previously recorded sites MIDc-7, 8, 9, and 17 were revisited and two new sites, MIDc-19 and MIDc-20 were identified and recorded. The sites include five stone features sites (MIDc-7, 8, 9, 19 and 20) a historic whaling graveyard, debris (MIDc-17) and Inuit graveyard and graves (MIDc-19). In addition to the heritage sites, two land use sites consisting of the historic house remains of the community of Kivitoo and modern stone tent rings around the beaching area of FOX-D were observed.

### Revisited Heritage Resource Sites

During the survey of the project area and surrounding area four previously recorded archaeological sites, MIDc-7, 8, 9 and 17, were recorded and documented as per the *Nunavut Archaeological and Palaeontological Sites Regulations* (Government of Nunavut 2003).

#### MIDc-7

MIDc-7 was originally recorded by McKenzie-Pollock (1969) as consisting of eight stone cairns that were interpreted as burials. They are located on a point east from the historic location of Kivitoo facing east and south. During the original investigation the cairns were described as being long and narrow and fairly heavily lichen covered with one of the cairns having human remains exposed. The general area was revisited several times (Schledermann 1973 and McCartney and Sabo 1975) but MIDc-7 was not commented on specifically except to note that sites MIDc-7, 8 and 9 should be compressed into one site representing a fairly continuous, intermittent occupation from the late Thule era until the present day (McCartney and Sabo 1975).

During the current study MIDc-7 was revisited and all eight of the cairns were recorded. The cairns might be better characterized as open caches and are located on an upper beach in a boulder field east of the house remains associated with Kivitoo and 450 m southeast of the runway. The stone features range from 2 m to 3 m in diameter and 0.25 to 1 m deep (Table 1: Plates 8, 9 and 10). Most of the features are open and empty with the exception of some scrap lumber, tin cans and seal bone scattered around the site area. As reported by McKenzie-Pollock (1969) one of the features does have human remains associate with it. Two femurs, a tibia, several ribs and a scapula fragment are scattered within and around one of the stone features. Other than the possible addition of some of the debris the site has not changed since originally recorded. Although there are no indications of age it is assumed that MIDc-7 is contemporaneous with Kivitoo. MIDc-7 is thought to have high heritage resource significance and it is recommended that any impacts to the site be avoided. There are no plans to disturb MIDc-7 during the remediation of the FOX-D DEW Line site.

**Table 1: Features observed at MIDc-7**

Feature	Description	Size
Feature 1	Cache with wood and seal bone	3 m diameter, 1 m deep
Feature 2	Cache with human remains	3 m diameter, 1 m deep
Feature 3	Cache built around a large boulder	3 m diameter, 50 cm deep
Feature 4	Cache with seal bone beside it	2.5 m diameter, 80 cm deep
Feature 5	Open cache	3 m diameter, 30 cm deep
Feature 6	Open cache	3 m diameter, 30 cm deep
Feature 7	Open cache on ridge, some wood and a solder-top can	2 m diameter, 25 cm deep
Feature 8	Cache, heavily lichened, seal skull in it	3 m diameter, 50 cm deep
	Possible open cache	3 m diameter



## FOX-D DEW LINE SITE REMEDIATION

**Table 1: Features observed at MIDc-7**

Feature	Description	Size
	Possible open cache, appears disturbed	
	Possible open cache, appears disturbed	



*Plate 8: MIDc-19 Feature 1.*



*Plate 9: View south of Feature 5, MIDc-19.*



*Plate 10: View south of Feature 8, MIDc-19.*



### MIDc-8

MIDc-8 was originally recorded by McKenzie-Pollock (1969) as two large stone house remains with associated caches. The stone features were interpreted as being much larger than houses normally encountered in cultures of the Eastern Arctic and that they may be quaggi or singing houses. Schledermann revisited the site in 1972 and may have tested the features, however, in his report the sketch map and site description (Schledermann 1973:23 and 28) may actually be McKenzie-Pollock's site MIDc-9 or an amalgamation of the two sites as there are four stone features and no mention of the unusual size of the features. The result of the testing was the interpretation that the features were occupied during the historic period. During the 1972 study Schledermann stayed at Kivitoo with an Inuit family who was there hunting and proposed that because the area was still being used by people from Broughton Island (Qikiqtarjuaq) as a hunting camp and most of the original tent ring boulders had been re-oriented numerous times. MIDc-8 was also revisited by McCartney and Sabo (1975) who did not comment specifically on the site except to note that sites MIDc-7, 8 and 9 should be compressed into one site representing a fairly continuous, intermittent occupation from the late Thule era until the present day.

During the current study MIDc-8 was revisited and both of the stone features recorded (Table 2). The first feature is 5.5 m in diameter, made up of more than 120 stones and has a cairn associated with it. The stones are very well sodded in and have quite a bit of lichen cover. McKenzie-Pollock described the feature as having a 12' 8" (3.86 m) tunnel entrance with a large cache of boulders north east of the entrance tunnel. The cache is still present but evidence of the remainder of the tunnel is no longer apparent (Plate 11). The second stone feature was described as also having a cache associated with it but without a clear centre passage (McKenzie-Pollock 1969). During the revisit a second large (5.5 m) stone circle was recorded which is believed to be the second feature recorded by McKenzie-Pollock (1969). The feature no longer includes a cache and is made up of more than 50 stones and is 7 m from the first feature (Plate 12). Although there are no indications of age it is assumed that MIDc-8 is contemporaneous with Kivitoo. MIDc-8 is thought to have moderate to high heritage resources significance and it is recommended that any impacts to the site be avoided. At this time there are no plans to disturb MIDc-8 during the remediation of the FOX-D DEW Line site.

**Table 2: Features observed at MIDc-8**

Feature	Description	Size
Feature 1	Ring of 120 or more stones	5.5 m diameter
Feature 2	Ring of 50 or more stones	5.5 m diameter



*Plate 11: View north of Feature 1, MIDc-8.*



*Plate 12: View east of Feature 2, MIDc-8 with Feature 1 in the background.*



### MIDc-9

MIDc-9 was originally recorded by McKenzie-Pollock (1969) as four large circular house foundations, with entrance passageways with lintel stones preserved, located on the south side of the point out from Kivitoo airstrip 250 yards south of the two large stone houses (MIDc-8 site area). She described the sites as having walrus, whale and caribou bones scattered around and a number of modern tent rings were also in the area. Schledermann revisited the site in 1972 and tested the features and it is believed this is the site that he described and sketched in his 1973 report (Schledermann 1973:23 and 28) or is an amalgamation of MIDc-8 and MIDc-9. The result of the testing was the interpretation that the features were occupied during the historic period. During the 1972 study Schledermann stayed at Kivitoo with an Inuit family who was there hunting and proposed that because the area was still being used by people from Broughton Island (Qikiqtarjuaq) as a hunting camp that most of the original tent ring boulders had been re-oriented numerous times. MIDc-9 was also revisited by McCartney and Sabo (1975) who did not comment specifically on the site except to note that sites MIDc-7, 8 and 9 should be compressed into one site representing a fairly continuous, intermittent occupation from the late Thule era until the present day.

During the current study MIDc-9 was revisited and 10 stone features were observed including seven stone circles, two caches and one hunting blind (Table 3). The site is approximately 100 m east/west by 80 north/south and 30 m west of MIDc-8. All of the stone features appear to be contemporaneous with the DEW Line site or more recent. The seven stone circle sites range from 3.5 m to 5 m in diameter with some being quite dispersed and one having sod built up around it (Plates 13, 14 and 15). The two caches are 1.5 and 2.5 m in diameter respectively with the first one having some seal bones around it and the second being filled with modern debris (Plate 16). The hunting blind is modern. There is modern debris all over the site area, some appears to be from the DEW Line Site but most of it is associated with the historic occupation at Kivitoo (Plate 17). This is believed to be MIDc-9 as reported by Schledermann as the location 250 yards south of the two large stone houses (MIDc-8 site area) as reported by McKenzie-Pollock (1969) would place the sites in the water. MIDc-9 is thought to have moderate heritage resources significance and it is recommended that any impacts to the site be avoided. There are no plans to disturb MIDc-9 during the remediation of the FOX-D DEW Line site.

**Table 3: Features observed at MIDc-9**

Feature	Description	Size
Feature 1	Modern stone feature, square, composed of 65 stones	3.5 by 4.0 m
Feature 2	Modern stone feature, square, with metal fragments and mammal bone fragments	5.0 by 4.5 m
Feature 3	Modern stone feature, square, with metal and wood fragments near by	3.0 by 4.0 m
Feature 4	Modern stone circle with toy skidoo, canvas and metal food tins	
Feature 5	Cache with modern debris	2.5 m diameter
Feature 6	Modern stone feature, square	4.0 by 5.0 m
Feature 7	Modern stone circle with wood and sea mammal bones	5 m diameter
Feature 8	Cache with some sea mammal bone	1.5 m diameter
Feature 9	Hunting blind	
Feature 10	Stone-lined, cut sod square	4.0 by 5.0 m



## FOX-D DEW LINE SITE REMEDIATION



*Plate 13: View south of Feature 6, MIDc-9.*



*Plate 14: View north of Feature 10, MIDc-9.*



*Plate 15: View south of Feature 7, MIDc-9.*



*Plate 16: View south of Feature 5, MIDc-9.*



*Plate 17: Toy snowmobile found in inside Feature 4, MIDc-9.*

### MIDc-17

MIDc-17 was originally recorded by Schledermann (1973) as an old historic whaling station and an Inuit graveyard located on the east side of a small stream about one mile west of the abandoned settlement of Kivitoo. The site data from the CMC database also states that there is confusion over the parameters and contents of this site, over the distance between the whaling station and the abandoned settlement of Kivitoo and that Schledermann reported an old historic whaling station and an Inuit graveyard. In correspondence with L. Konotopetz, Schledermann stated that the Inuit graveyard consisted of two or three unmarked graves and that the whaling station included a hut and boilers as well as the abandoned settlement of Kivitoo. Phillips visited the site and photographed the whalers' hut and rendering vats as well as a whalers' graveyard. The remains of two lean-tos were found in association with the hut. The whaler's cemetery contained seven rock-outlined mounds, six with markers, dating 1866-1907. One of her recommendations was to accurately record the "jumble of structural remains and artifact deposits". Park warden R. Breneman observed the site in 1984 and reported the graveyard in the same condition as described by Phillips. In August 2008, the site area was visited by students as part of the Students on Ice - International Polar Year Arctic Expedition (CMC 2012).

During the current study MIDc-17 was revisited and the whaler's graveyard and the previously reported boilers were recorded. The site extends over an area of approximately 250 m north/south by 1200 m east/west and is divided by a small stream and the beaching area of FOX-D. East of the small stream the whaler's graveyard is made up of six graves surrounded by a white fence that is approximately 8 m north/south by 22 m east/west (Plates 18 and 19). Five of the graves have wooden markers with writing indicating that the graveyard was used between 1866 and 1907, the sixth grave has only a wooden cross. The grave markers and graveyard fence



## FOX-D DEW LINE SITE REMEDIATION

have all been painted in the last 20 years or so. A short description of the grave markers can be found in Table 4. Also east of the small stream there is a modern camp that was recently damaged by a polar bear (Plate 20) and the beaching area of the FOX-D site (Plate 6).

**Table 4: Whaler's Grave Markers**

Grave	Description
1	"In Memory of John Bain Aged 52 Native of Wick who died on board SS Diana Oct the 21 1907"
2	"Sacred to the memory of James Hopkins seamen native of Perlican NFLD Age 22 Died on board SS Eagle Sept. 9 1891"
3	"In memory of Link Late who died August 186 on board the ndrew of Cape Hooper Aged 21 year Sheatlan"
4	"In Memory Robert Couper Firemen who died on board the SS Novazembla September 30 Aged 29 years 1896"
5	"Sacred to the memory of Will Brown of Dundee second mate of SS Esquimaux Who Died Sept 17 1866 aged 31"
6	Cross with no inscription



*Plate 18: View northwest of whaler's graveyard, MIDc-17.*



## FOX-D DEW LINE SITE REMEDIATION



Plate 19: View north of Grave 3, whaler's graveyard, MIDc-17.



Plate 20: View east of modern hunting camp with whaler's graveyard in the background.



## FOX-D DEW LINE SITE REMEDIATION

West of the small stream are the previously reported boilers. There are 14 of the boilers along the beach and in the small stream (Plate 21). Previous researchers have referred to these as both boilers and rendering vats. Although their use is not clear they appear to have been used to hold a liquid – either whale oil or water. Of the 14 boilers, 11 are made of iron, riveted and welded 48” square with a single 20” opening that is slotted and threaded to be sealed (Plate 22). The remaining three are smaller and made out of galvanized steel, 38” square (Plate 23). The boilers are spread out over an area of 70 m east/west by 40 m north/south close to a cabin and several debris dumps. The cabin is quite dilapidated with most of the east and west walls missing and the floor having been broken by frost heaves (Plate 24 and 25). The cabin is 5 x 5 m and is framed out of dimensional lumber suggesting that it is not associated with the whaling activities and is more than likely the house that Sabo mentions as having been occupied until around 1960 (Sabo 1975:58). The debris around the house and boilers includes can dumps, miscellaneous pieces of electronics from the DEW Line site and modern outboard motor parts and sea mammal faunal remains (Plates 26 and 27). No other evidence of whaling activities were observed during the current study.



*Plate 21: View northeast of boilers with cabin in the background, MIDc-17.*



*Plate 22: Detail of the closure on the boilers.*



*Plate 23: View south of galvanized steel boilers in the stream, MIDc-17.*



*Plate 24: View east of cabin.*



*Plate 25: Photo of the interior of the cabin showing dimensional lumber framing and cast iron stove.*



## FOX-D DEW LINE SITE REMEDIATION



*Plate 26: View north of debris dump with cans and faunal remains with cabin in the background.*



*Plate 27: Photo of debris that someone has placed on and around one of the galvanized boilers.*



## FOX-D DEW LINE SITE REMEDIATION

The previously recorded site MIDc-17 is made up of a whaler's grave yard and debris that may be associated with whaling activities and more recent use. The site extends over an area of area is approximately 250 m north/south by 1,200 m east/west and is divided by a small stream and the beaching area of FOX-D. The beaching area for FOX-D has been quite extensively disturbed with the beaching area extending from the POL tanks along the shore to the whaler's grave yard (Plates 6 and 7). There is a strong possibility that evidence of both the whaling activities and prehistoric use of the area were disturbed by the construction of the DEW Line site. MIDc-17 is thought to have high heritage resource significance and it is recommended that any impacts to the site be avoided. There are no plans to disturb MIDc-17 during the remediation of the FOX-D DEW Line site outside of those areas included in the site that have been already extensively impacted by the FOX-D DEW Line site.

### Newly Recorded Heritage Resources Sites

During the survey of the project area and surrounding area two previously unrecorded archaeological sites, MIDc-19 and 20, were recorded and documented as per the *Nunavut Archaeological and Palaeontological Sites Regulations* (Government of Nunavut 2003).

#### MIDc-19

During the current study, 17 Inuit graves were observed within and west of the historic Kivitoo Whaling Camp (MIDc-17). Twelve of which are on the same landform with the other five spread out over 630 m east/west across the site area (Table 5). The main cemetery is located 130 m north of the high water mark on a flat bench 780 m west of the beaching area of the FOX-D DEW Line Site (Plate 28). The remaining five graves are east of the main cemetery with two side by side north of the cabin (440 m from the main graveyard) and the remaining three between the cabin and the Whaler's graveyard (600 m east of the main graveyard) 120 m, 250 m and 320 m north of the high water mark, respectively (Plate 29). Thirteen of the graves have a modern grave marker with a metal name plate and painted wooden crosses (Plate 30) and half of the graves appear to have been children (130 cm or less in length). Johnny Kooneeliusie explained that in 1999 people who had been resettled from Kivitoo to Qikiqtarjuaq had returned to erect the new grave markers. Although there are no dates associated with the grave markers most of the coffins that are exposed are made of laminated wood and thought to either be contemporaneous with the FOX-D DEW Line site or post-date it. More information on the graves may be available during the community consultation associated with the Project.

MIDc-19 is thought to have high heritage resource significance and it is recommended that any impacts to the site be avoided. There are no plans to disturb MIDc-19 during the remediation of the FOX-D DEW Line site.

**Table 5: Features Observed at MIDc-19**

Feature	Location	Size & Description
Grave 1	Cemetery	50 x 110 cm, stone lined, cross has been broken, stone were whitewashed, buried – no evidence of a coffin
Grave 2	Cemetery	45 x 110 cm, also a small stone line square 30 x 38 cm around the marker that has a possible rib bone sticking out of the peat
Grave 3	Cemetery	70 x 200 cm, grave marker broken, may have been disturbed by animals, stone lined, wooden casket appears to be collapsing, casket is partially buried
Grave 4	Cemetery	60 x 160 cm, stone lined, buried, casket is collapsing, rodent hole along eastern edge



## FOX-D DEW LINE SITE REMEDIATION

**Table 5: Features Observed at MIDc-19**

Feature	Location	Size & Description
Grave 5	Cemetery	60 x 250 cm, depression, not stone lined,
Grave 6	Cemetery	80 x 150 cm, stone lined, buried with lots of peat on top
Grave 7	Cemetery	25 x 55 cm, stone lined, covered in peat with casket on the ground, wooden casket can be seen between the stones on all sides
Grave 8	Cemetery	53 x 29 cm, older grave marker without any writing, casket made of laminated wood secured by a wire
Grave 9	Cemetery	29 x 63 cm, older cross grave marker without any writing, casket made of laminated wood with some paint visible
Grave 10	Cemetery	80 x 170 cm, stone lined covered in moss, wooden box with plastic flowers on top, laid on surface, laminated wood with metal strapping, evidence of rodent activity
Grave 11	Cemetery	55 x 175 cm, stone lined, covered in moss, laid on the ground, top of coffin has collapsed, wood is de-laminating
Grave 12	Cemetery	47 x 67 cm, stone lined, partially covered in moss, on the surface, laminated wood coffin with metal strapping
Grave 13	Isolated	66 x 110 cm, stone lined, laminated wood coffin that is coming apart, partially covered in peat, partially buried
Grave 14	Isolated	50 x 60 cm, stone lined, sod covered, cannot see any of the coffin, buried, modern grave marker is on the ground
Grave 15	Isolated	34 x 80 cm, stone lined and stone covered, on the ground, coffin is falling apart,
Grave 16	Isolated	30 x 130 cm, stone covered, has corrugated roof sheet covering it, can't see any wood
Grave 17	Isolated	180 x 45 cm, stone lined, on the surface, coffin has collapsed, covered in moss, made of scrap wood and has some blue and white paint still visible



## FOX-D DEW LINE SITE REMEDIATION



*Plate 28: View southeast of main graveyard with boilers and cabin in the background.*



*Plate 29: View west of single grave.*



*Plate 30: View west of three graves in main graveyard showing grave markers and coffins.*

### MIDc-20

MIDc-20 is a stone feature site that is made up of seven house features and two caches (Table 6). The site is spread along the shore 250 east/west between 25 and 40 m from the high water mark and 180 m east of the whaler's graveyard (MIDc-17). Although these features are close to MIDc-17 they are not described in any of the previous research from the area and therefore were considered a newly recorded site. MIDc-20 is more than 1 km west of the previously recorded sites MIDc-7, 8 and 9.

**Table 6: Features Observed at MIDc-20**

Feature	Description	Size
House Feature 1	Deeply buried stones make ring difficult to discern, excavated entry, one fragment of sea mammal bone	5 x 8 m
House Feature 2	Excavated entry, piece of stoneware observed nearby	5 x 7 m
House Feature 3	Well sodded, lots of mammal remains, solder top tin can, a bit dispersed	5 x 4 m
House Feature 4	Bit dispersed, sea mammal remains, centre feature dug out	4 m diameter
House Feature 5	Entry passage, dug into bank, 50+ stones	4 x 6 m
House Feature 6	Entry passage, dug into bank, 23+ stones	4 x 6 m



## FOX-D DEW LINE SITE REMEDIATION

Feature	Description	Size
House Feature 7	Excavated entry, raised sleeping platform, sea mammal remains, 90+ stones	4 x 1.5 m
Cache 1	Dispersed cache, whale bone and bird bone, 60+ stones	1.5 m diameter
Cache 2	Dispersed cache, sea mammal remains, 55+ stones	2 m diameter

The stone features are in three groups along the shore of two house features with excavated entries, two stone circles and three houses with excavated entries and two caches that are 70 and 100 m apart, respectively. From east to west Features 1 and 2 are house features with excavated entry ways that are 5 m wide and 7 and 8 m long with the entry ways oriented toward the water (Plate 31). There are several pieces of sea mammal bone and one large piece of stoneware from the base of a vessel beside Feature 2.



Plate 31: View north of Feature 2, MIDc-20.



## FOX-D DEW LINE SITE REMEDIATION

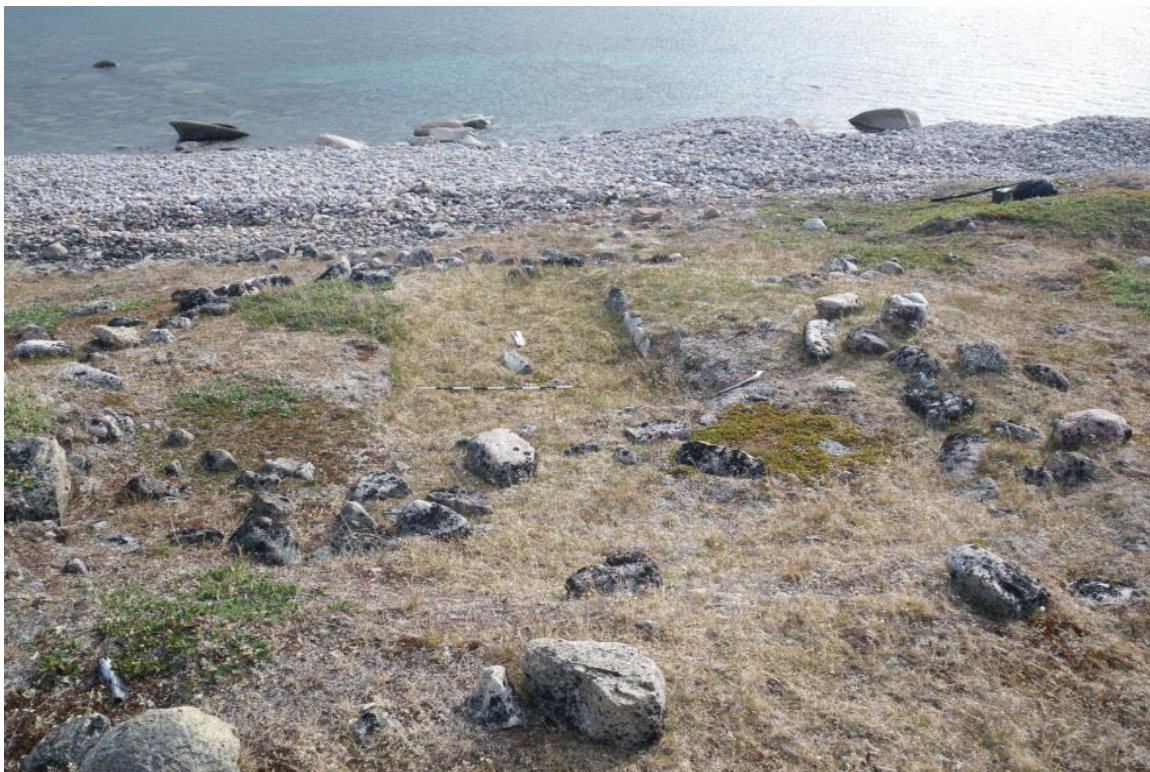
Feature 3 and 4 are 70 m from Features 1 and 2 and are a rectangular stone outline and a stone circle. Feature 3 is rectangular and 5 x 4 m in size made up of more than 75 stones (Plate 32). Feature 4 is made up of more than 60 stones in a 4 m diameter and appears to have the centre dug out. There are sea mammal faunal remains around both features including a walrus skull and mandible as well as a solder dot tin can.



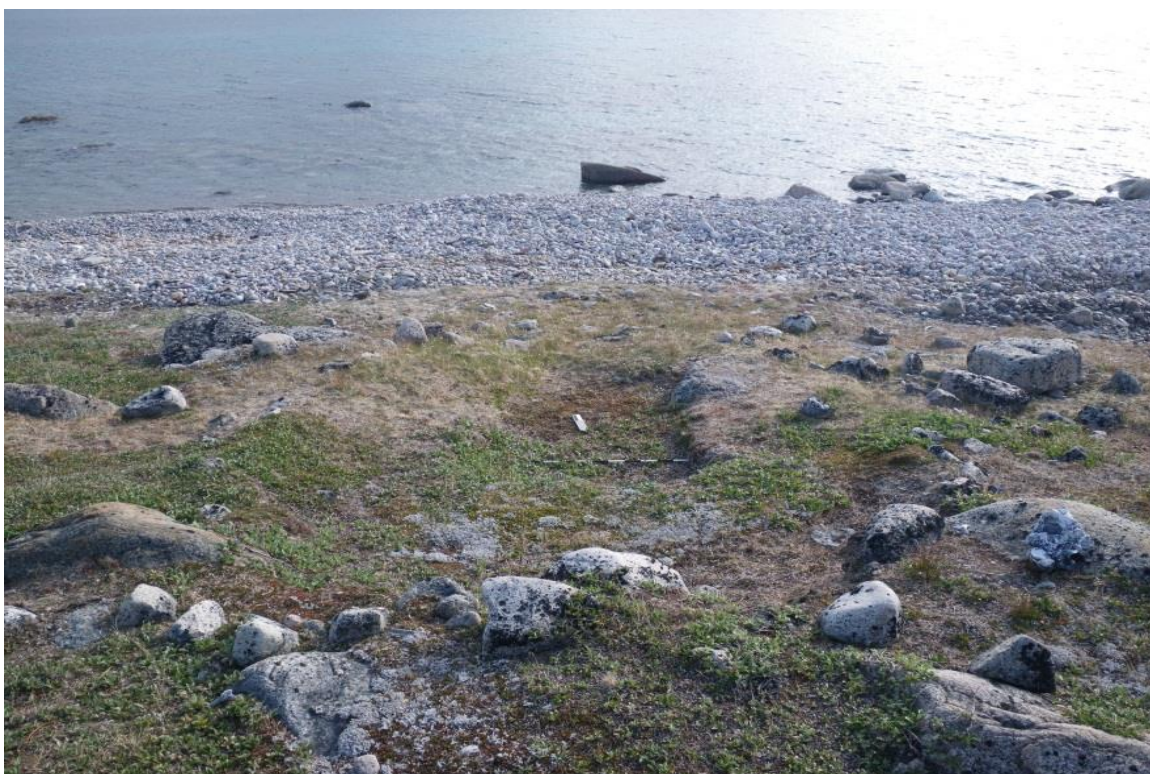
*Plate 32: View south of Feature 3, MIDc-20.*

Features 5 through 9 are located 100 m east of Features 3 and 4 and include three house features with excavated entry ways and two caches. The three house features are all approximately 4 m wide and 6 m wide, are located close to the beach and have been dug into the shore (Plate 33, 34 and 35). There are two walrus skulls close to Feature 6 and some butchered bone close to Feature 7 (Plate 36). Features 8 and 9 are open caches to the west of the house features. Feature 8 is 1.5 m in diameter with some whale bone and bird bone associated with it. Feature 9 is 2 m in diameter and has some small pieces of sea mammal bone inside.

With the exception of the stoneware sherd there were no obvious indications of age, however the architecture of the house features with the excavated entry passages would suggest they predate FOX-D DEW Line and date to the early whaling period or before. MIDc-20 is thought to have moderate to high heritage resources significance and it is recommended that any impacts to the site be avoided. There are no plans to disturb MIDc-20 during the remediation of the FOX-D DEW Line site.



*Plate 33: View south of Feature 5, MIDc-20.*



*Plate 34: View south of Feature 6, MIDc-20.*



*Plate 35: View south of Feature 7, MIDc-20.*



*Plate 36: Sea mammal bone with cut marks, MIDc-20.*



### Land Use Site

Land use sites represent evidence of human use of the land within the past 50 years; typically but not exclusively Inuit. They are not assigned Borden numbers, there is no obligation to report them and they are not afforded protection under law. Therefore, there is no requirement to make accommodations for them during non-traditional land use planning. However, they are important to note because as time passes, should these sites not be disturbed, they will qualify as archaeological sites; they provide important information about changes in land use and technology and they may indicate the presence of other valued environmental components for which it is prudent for land developers to be aware of these sites.

The Project area does contain several modern tent rings and hearth features both around the historic location of Kivitoo and the FOX-D beaching area (Plates 37 and 38). During the present study there were five modern stone circles at Kivitoo and 18 stone circles and three hearths around the FOX-D DEW Line Site beaching area.



*Plate 37: View south of a modern stone tent ring at Kivitoo.*



*Plate 38: View west of a modern stone circle on the beaching area of FOX-D.*



### SUMMARY AND RECOMMENDATIONS

During August of 2013, Golder conducted an AIA on behalf of Dillon working for PWGSC and AANDC in conjunction with a Phase III Environmental Site Assessment Remedial Action Plan for the former FOX-D DEW Line site, Kivitoo, Nunavut. All required field work was conducted under Nunavut Archaeologists Permit 2013-031A issued by the CH-GN to Brent Murphy of Golder.

All areas of potential disturbance were surveyed for heritage resources. The FOX-D DEW Line site is made up of an Upper and Lower site. The Upper Site included a continuous wave tower, a main building train, a warehouse, a garage, two 75,700 litre POL tanks, and a small building that may have been an Inuit house. The Lower Site is located on a coastal plain to the south of the Upper Site. It once consisted of two POL tanks, a beach landing area, drum storage and an airstrip. A freshwater lake, borrow source areas and a construction camp area were also present at the lower site. The Upper Site and Lower Site are connected by a 4 km access road.

During the study four previously recorded archaeological sites MIDc-7, MIDc-8, MIDc-9 and MIDc-17 were revisited and two previously unrecorded sites, MIDc-19 and MIDc-20, were documented as per the Nunavut Archaeological and Palaeontological Sites Regulations. In addition two land use sites were documented. MIDc-7 consists of eight stone caches located on an upper beach in a boulder field east of the house remains associated with Kivitoo. There are human remains associated with one of the caches but they do not all appear to be burials. MIDc-8 is made up of two unusually large stone circles with associated caches and MIDc-9 consists of 10 stone features including seven stone circles, two caches and one hunting blind. MIDc-17 is made up of a whaler's graveyard and debris that may be associated with whaling activities and more recent use. MIDc-19 is an Inuit graveyard and individual graves. MIDc-20 is a stone feature site that is made up of seven house features and two caches. All of the archaeological sites are thought to have moderate to high significance and it is recommended that any impacts to the sites be avoided. There are no plans to disturb any of the sites recorded or revisited during the current study during the remediation of the FOX-D DEW Line site.

By conducting this AIA, it is recommended that Dillon Consulting Ltd., Public Works and Government Services Canada, and Aboriginal Affairs and Northern Development Canada have fulfilled the requirements of the current program in their attempts to identify the potential for impact to heritage resources resulting from the proposed remediation of the FOX-D Distant Early Warning Line site. The AIA included the participation of Losie Audiakiak and Johnny Kooneeliusie from Qikijtarjuaq, who acted as bear monitors and participated in the identification and recordation of the heritage resource sites.





## Report Signature Page

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# APPENDIX A

## Photograph Log





## APPENDIX A

### Photograph Log

**Table 1: Photograph Log**

Number	Borden Number (if applicable)	Comment
13-031A photo1		View west of Kivitoo showing runway, freshwater lake and construction camp
13-031A photo2		View west of Kivitoo runway
13-031A photo3		View west of Kivitoo runway
13-031A photo4		View west of lake, construction camp
13-031A photo5		View south of construction camp
13-031A photo6		Inuit cemetery
13-031A photo7		View north of old cabin and whaling station
13-031A photo8		View north off beach lower POL tanks
13-031A photo9		Aerial view of whaler's cemetery
13-031A photo10		Aerial view of whaler's cemetery
13-031A photo11		View northeast of Kivitoo from the air
13-031A photo12		View northwest of Kivitoo from the air
13-031A photo13		View north of Kivitoo from the air
13-031A photo14		View northeast of Kivitoo from the air
13-031A photo15		View north of Kivitoo from the air
13-031A photo16		View north of Kivitoo from the air
13-031A photo17		View south of dump off the top of the upper site area
13-031A photo18		View south of dump off the top of the upper site area
13-031A photo19		View south of dump off the top of the upper site area
13-031A photo20		View southeast of upper PLO tanks
13-031A photo21		View northeast of road to upper site
13-031A photo22		View northwest of upper site with PLO in the background
13-031A photo23		View northwest of upper site with PLO in the background
13-031A photo24		View northwest of upper site with dump in the foreground
13-031A photo25		View south of dump off the top of the upper site area
13-031A photo26		View south of upper area with project tents
13-031A photo27		View south of PLO tanks
13-031A photo28		View south of road between upper and lower sites
13-031A photo29		View south of road between upper and lower sites
13-031A photo30		View south of road between upper and lower sites
13-031A photo31		View south of road between upper and lower sites
13-031A photo32		View south of road between upper and lower sites
13-031A photo33		View south of road between upper and lower sites
13-031A photo34		View east along road showing lake
13-031A photo35		View east along road showing lake
13-031A photo36		View northeast of construction camp and lake
13-031A photo37		View north of construction camp and lake
13-031A photo38		View north of construction camp and lake
13-031A photo39		View north of lower PLO tanks
13-031A photo40		View north of beach landing and whaler cemetery



## APPENDIX A

### Photograph Log

**Table 1: Photograph Log**

Number	Borden Number (if applicable)	Comment
13-031A photo41		View west of whaler's cemetery and modern cabin
13-031A photo42		View south off whaler's cemetery
13-031A photo43		View south of upper site from the tents
13-031A photo44		Photo of dump
13-031A photo45		View southwest from tents of upper site
13-031A photo46		Helicopter and small fuel kegs
13-031A photo47		View northeast across the upper station
13-031A photo48		Batteries near the garage foundation
13-031A photo49		View west of garage foundation
13-031A photo50		View north of warehouse foundation
13-031A photo51		View north of warehouse foundation
13-031A photo52		View south of the remains of the burned module train
13-031A photo53		View south of antenna
13-031A photo54		View south of antenna
13-031A photo55		View south of antenna
13-031A photo56		View south of the access road
13-031A photo57		View northeast near antenna area - foundation
13-031A photo58		View northwest of POL tanks
13-031A photo59		Antenna foundation with POL tanks in the background
13-031A photo60		Detail of antenna
13-031A photo61		View south of antenna
13-031A photo62		View southwest of water tank
13-031A photo63		View north of upper POL tanks
13-031A photo64		Detail of walrus bone
13-031A photo65		Detail of walrus bone
13-031A photo66		Detail of walrus bone
13-031A photo67		Detail of walrus bone
13-031A photo68		Detail of walrus bone
13-031A photo69		Detail of walrus bone
13-031A photo70		View east of POL tanks
13-031A photo71		Detail of water tank
13-031A photo72		Dump along access road
13-031A photo73		Dump along access road
13-031A photo74	MIDc-19	View south of feature 3 site 1
13-031A photo75	MIDc-19	View north of feature 3 site 1
13-031A photo76	MIDc-19	View south of feature 3 site 1
13-031A photo77	MIDc-19	View north of feature 3 site 1
13-031A photo78	MIDc-19	View south of feature 3 site 1
13-031A photo79	MIDc-19	Overhead view of feature 3 site 1
13-031A photo80	MIDc-19	Overhead view of feature 3 site 1



## APPENDIX A

### Photograph Log

**Table 1: Photograph Log**

Number	Borden Number (if applicable)	Comment
13-031A photo81	MIDc-19	Overhead view of feature 3 site 1
13-031A photo82	MIDc-19	View south of feature 3 site 1
13-031A photo83	MIDc-19	View south of feature 4 site 1
13-031A photo84	MIDc-19	View south of feature 4 site 1
13-031A photo85	MIDc-19	Overhead view of feature 4 site 1
13-031A photo86	MIDc-19	Overhead view of feature 4 site 1
13-031A photo87	MIDc-19	Overhead view of feature 4 site 1
13-031A photo88	MIDc-19	View south of feature 4 site 1
13-031A photo89	MIDc-19	Faunal remains near feature 4 site 1
13-031A photo90	MIDc-19	Solder top can near feature 3 site 1
13-031A photo91	MIDc-19	Walrus mandible near features 3 and 4 site 1
13-031A photo92	MIDc-19	Walrus mandible near features 3 and 4 site 1
13-031A photo93	MIDc-19	Overhead view of feature 4 site 1
13-031A photo94	MIDc-19	Overhead view of feature 4 site 1
13-031A photo95	MIDc-19	Walrus bone close to feature 4 site 1
13-031A photo96	MIDc-19	Walrus bone close to feature 4 site 1
13-031A photo97	MIDc-19	Walrus bone close to feature 4 site 1
13-031A photo98	MIDc-19	View north of feature 5, site 1
13-031A photo99	MIDc-19	View south of feature 5, site 1
13-031A photo100	MIDc-19	View south of feature 5, site 1
13-031A photo101	MIDc-19	View north of feature 5, site 1
13-031A photo102	MIDc-19	View south of feature 5, site 1
13-031A photo103	MIDc-19	Overhead shot of feature 5, site 1
13-031A photo104	MIDc-19	Overhead shot of feature 5, site 1
13-031A photo105	MIDc-19	View north of feature 5, site 1
13-031A photo106	MIDc-19	View north of feature 5, site 1
13-031A photo107	MIDc-19	View northeast of feature 5, site 1
13-031A photo108	MIDc-19	View west of feature 5, site 1
13-031A photo109	MIDc-19	View north of feature 6, site 1
13-031A photo110	MIDc-19	View south of feature 6, site 1
13-031A photo111	MIDc-19	View north of feature 6, site 1
13-031A photo112	MIDc-19	Overhead shot of feature 6, site 1
13-031A photo113	MIDc-19	Overhead shot of feature 6, site 1
13-031A photo114	MIDc-19	Overhead shot of feature 6, site 1
13-031A photo115	MIDc-19	Overhead shot of feature 6, site 1
13-031A photo116	MIDc-19	Overhead shot of feature 6, site 1
13-031A photo117	MIDc-19	View south of feature 6, site 1
13-031A photo118	MIDc-19	View south of feature 6, site 1
13-031A photo119	MIDc-19	View north of feature 7, site 1
13-031A photo120	MIDc-19	View south of feature 7, site 1



## APPENDIX A

### Photograph Log

**Table 1: Photograph Log**

Number	Borden Number (if applicable)	Comment
13-031A photo121	MIDc-19	View south of feature 7, site 1
13-031A photo122	MIDc-19	Butchered walrus bone associated with feature 7
13-031A photo123	MIDc-19	Butchered walrus bone associated with feature 7
13-031A photo124	MIDc-19	Butchered walrus bone associated with feature 7
13-031A photo125	MIDc-19	Butchered walrus bone associated with feature 7
13-031A photo126	MIDc-19	View north of feature 7, site 1
13-031A photo127	MIDc-19	Overhead shot of feature 7, site 1
13-031A photo128	MIDc-19	Overhead shot of feature 7, site 1
13-031A photo129	MIDc-19	View north of feature 7, site 1
13-031A photo130	MIDc-19	View north of feature 7, site 1
13-031A photo131	MIDc-19	View north of feature 7, site 1
13-031A photo132	MIDc-19	View south of feature 7, site 1
13-031A photo133	MIDc-19	View south of feature 7, site 1
13-031A photo134	MIDc-19	View west of features 7 and 6, Site 1
13-031A photo135	MIDc-19	Feature 8 (Cairn)
13-031A photo136	MIDc-19	Feature 8 (Cairn)
13-031A photo137	MIDc-19	Feature 8 (Cairn)
13-031A photo138	MIDc-19	Feature 8 (Cairn)
13-031A photo139	MIDc-19	Feature 9 (Cairn)
13-031A photo140	MIDc-19	Feature 9 (Cairn)
13-031A photo141	MIDc-19	Feature 9 (Cairn)
13-031A photo142	MIDc-19	View west of Feature 8 and 9
13-031A photo143	MIDc-19	View west of Feature 8 and 9
13-031A photo144	MIDc-19	View north of Feature 2 site 1
13-031A photo145	MIDc-19	View north of centre passage feature 2, site 1
13-031A photo146	MIDc-19	View south of feature 2, site 1
13-031A photo147	MIDc-19	View north of Feature 2 site 1
13-031A photo148	MIDc-19	Overhead of feature 2 site 1
13-031A photo149	MIDc-19	Overhead of feature 2 site 1
13-031A photo150	MIDc-19	Overhead of feature 2 site 1
13-031A photo151	MIDc-19	View north of Feature 2 site 1
13-031A photo152	MIDc-19	View east of feature 2 site 1
13-031A photo153	MIDc-19	View west of features 1 and 2 site 1
13-031A photo154	MIDc-19	Centre passage feature 1 site 1
13-031A photo155	MIDc-19	Centre passage feature 1 site 1
13-031A photo156	MIDc-19	Detail of large piece of stone wear - plate?
13-031A photo157	MIDc-19	Detail of large piece of stone wear - plate?
13-031A photo158	MIDc-19	Detail of large piece of stone wear - plate?
13-031A photo159	MIDc-19	View north of feature 1 site 1
13-031A photo160	MIDc-19	View south of feature 1 site 1



## APPENDIX A

### Photograph Log

**Table 1: Photograph Log**

Number	Borden Number (if applicable)	Comment
13-031A photo161	MIDc-19	View east of feature 1 site 1
13-031A photo162	MIDc-19	View east of feature 1 site 1
13-031A photo163	MIDc-19	Overhead shot of feature 1 site 1
13-031A photo164	MIDc-19	Overhead shot of feature 1 site 1
13-031A photo165	MIDc-17	Whaler John Bain grave marker
13-031A photo166	MIDc-17	Whaler John Bain grave marker
13-031A photo167	MIDc-17	Whaler James Hopkins
13-031A photo168	MIDc-17	Whaler James Hopkins
13-031A photo169	MIDc-17	Whaler Link Late (?)
13-031A photo170	MIDc-17	Whaler Link Late (?)
13-031A photo171	MIDc-17	Whaler Link Late (?)
13-031A photo172	MIDc-17	Whaler Robert Cooper
13-031A photo173	MIDc-17	Whaler Robert Cooper
13-031A photo174	MIDc-17	Whaler Will Brown
13-031A photo175	MIDc-17	Whaler Will Brown
13-031A photo176	MIDc-17	Unmarked grave
13-031A photo177	MIDc-17	View northwest of whaler's grave yard
13-031A photo178	MIDc-17	View northeast of whaler's grave yard
13-031A photo179	MIDc-17	View northeast of whaler's grave yard
13-031A photo180	MIDc-17	View northeast of whaler's grave yard
13-031A photo181	MIDc-17	View northeast of whaler's grave yard
13-031A photo182	MIDc-17	View north of whaler's graveyard
13-031A photo183	MIDc-17	View south of whaler's graveyard
13-031A photo184	MIDc-17	View southwest of whaler's graveyard
13-031A photo185	MIDc-17	View north of unmarked grave
13-031A photo186	MIDc-17	View north of Robert Cooper and Will Brown's graves
13-031A photo187	MIDc-17	View northwest of the easternmost graves
13-031A photo188		Modern tent ring wpt 26
13-031A photo189		Modern tent ring wpt 27
13-031A photo190		Modern tent ring wpt 28
13-031A photo191		Modern tent ring wpt 29
13-031A photo192		Modern tent ring wpt 30
13-031A photo193		Sea lift platform
13-031A photo194		Sea lift platform
13-031A photo195		View west of modern cabin
13-031A photo196		View east of modern cabin
13-031A photo197		Modern tent ring wpt 33
13-031A photo198		Modern tent ring wpt 34
13-031A photo199		Modern tent ring wpt 35
13-031A photo200		Modern tent ring wpt 36



## APPENDIX A

### Photograph Log

**Table 1: Photograph Log**

Number	Borden Number (if applicable)	Comment
13-031A photo201		Modern tent ring wpt 37
13-031A photo202		Modern tent ring wpt 38
13-031A photo203		Modern tent ring wpt 39
13-031A photo204		Modern tent ring wpt 42
13-031A photo205		Modern tent ring wpt 43
13-031A photo206		Modern ring wpt 45
13-031A photo207		View south of POL tank foundations
13-031A photo208		View east of beaching area
13-031A photo209		View east of beaching area
13-031A photo210		Photo of gravel borrow area north of POL
13-031A photo211		View west from POL tank area
13-031A photo212		View west from POL tank area
13-031A photo213		View north of Kivitoo from the air
13-031A photo214		View west of beaching area from the air
13-031A photo215		View west of beaching area from the air
13-031A photo216		View west of beaching area from the air
13-031A photo217		View west of beaching area from the air
13-031A photo218		View west of beaching area from the air
13-031A photo219		View west of beaching area from the air
13-031A photo220		View west of beaching area from the air
13-031A photo221		View west of beaching area from the air
13-031A photo222		View west of beaching area from the air
13-031A photo223		View west of beaching area from the air - with whaler's graveyard
13-031A photo224		View west of beaching area from the air - with whaler's graveyard
13-031A photo225		View west of beach landing area with Whaler's graveyard
13-031A photo226		View west of beaching area from the air with modern cabin in foreground
13-031A photo227		View west of beaching area from the air with POL foundations and gravel borrow in the foreground
13-031A photo228		View west of beaching area from the air with POL foundations and gravel borrow in the foreground
13-031A photo229		View west of beaching area from the air with POL foundations and gravel borrow in the foreground
13-031A photo230		View west of beaching area from the air with POL foundations and gravel borrow in the foreground
13-031A photo231	MIDc-17	View north of Inuit Graveyard
13-031A photo232	MIDc-17	View north of Inuit Graveyard
13-031A photo233	MIDc-17	View east of Inuit Graveyard
13-031A photo234	MIDc-17	View east of Inuit Graveyard
13-031A photo235	MIDc-17	View east of Inuit Graveyard
13-031A photo236	MIDc-17	View south of Inuit Graveyard
13-031A photo237	MIDc-17	View south of Inuit Graveyard



## APPENDIX A

### Photograph Log

**Table 1: Photograph Log**

Number	Borden Number (if applicable)	Comment
13-031A photo238	MIDc-17	View north of graves 1 and 2 wpt 50
13-031A photo239	MIDc-17	Detail of graves 1 and 2 wpt 50
13-031A photo240	MIDc-17	Detail of grave 1 marker
13-031A photo241	MIDc-17	Detail of grave 1 marker
13-031A photo242	MIDc-17	Detail of stones between grave markers 1 and 2
13-031A photo243	MIDc-17	Detail of stones between grave markers 1 and 2
13-031A photo244	MIDc-17	Detail of stones between grave markers 1 and 2
13-031A photo245	MIDc-17	Detail of stones between grave markers 1 and 2
13-031A photo246	MIDc-17	Detail of stones between grave markers 1 and 2
13-031A photo247	MIDc-17	View north of grave 3, wpt 51
13-031A photo248	MIDc-17	Detail of grave 3
13-031A photo249	MIDc-17	Detail of grave 3
13-031A photo250	MIDc-17	View south of grave 3
13-031A photo251	MIDc-17	Detail of grave marker - grave 3
13-031A photo252	MIDc-17	Detail of grave 3
13-031A photo253	MIDc-17	View north of graves 4 and 5 - wpt 52
13-031A photo254	MIDc-17	View north of graves 4 and 5 - wpt 52
13-031A photo255	MIDc-17	Detail of grave 4
13-031A photo256	MIDc-17	Detail of grave 4
13-031A photo257	MIDc-17	Detail of grave 4
13-031A photo258	MIDc-17	View north of graves 4 and 5 - wpt 52
13-031A photo259	MIDc-17	View northwest of graves 4 and 5
13-031A photo260	MIDc-17	Detail of grave 5 marker
13-031A photo261	MIDc-17	Detail of grave 5 marker
13-031A photo262	MIDc-17	View north of grave 6 - wpt 53
13-031A photo263	MIDc-17	View west of grave 6
13-031A photo264	MIDc-17	Detail of grave marker - grave 6
13-031A photo265	MIDc-17	View south of grave 6
13-031A photo266	MIDc-17	View north of grave 7 - wpt 54
13-031A photo267	MIDc-17	Detail of grave 7
13-031A photo268	MIDc-17	Detail of grave 7
13-031A photo269	MIDc-17	Detail of grave 7
13-031A photo270	MIDc-17	Detail of grave 7 - marker
13-031A photo271	MIDc-17	View north of graves 8 and 9 - wpt 55
13-031A photo272	MIDc-17	View north of graves 8 and 9 - wpt 55
13-031A photo273	MIDc-17	Detail of grave 8
13-031A photo274	MIDc-17	Detail of grave 8
13-031A photo275	MIDc-17	Detail of grave 8
13-031A photo276	MIDc-17	Detail of grave 9
13-031A photo277	MIDc-17	Detail of grave 9



## APPENDIX A

### Photograph Log

**Table 1: Photograph Log**

Number	Borden Number (if applicable)	Comment
13-031A photo278	MIDc-17	Detail of grave 9
13-031A photo279	MIDc-17	Detail of graves 8 and 9
13-031A photo280	MIDc-17	View north of graves 10, 11 and 12
13-031A photo281	MIDc-17	View north of grave 10 - wpt 56
13-031A photo282	MIDc-17	Detail of grave 10
13-031A photo283	MIDc-17	Detail of grave 10
13-031A photo284	MIDc-17	Detail of grave 10
13-031A photo285	MIDc-17	Detail of grave 10 - marker
13-031A photo286	MIDc-17	Plastic flower stock from grave 10
13-031A photo287	MIDc-17	View north of grave 11 - wpt 57
13-031A photo288	MIDc-17	Detail of grave 11
13-031A photo289	MIDc-17	Detail of grave 11
13-031A photo290	MIDc-17	Detail of grave 11
13-031A photo291	MIDc-17	Detail of grave 11 - marker
13-031A photo292	MIDc-17	View north of grave 12 - wpt 58
13-031A photo293	MIDc-17	View north of grave 12
13-031A photo294	MIDc-17	View west of graves 10, 11 and 12
13-031A photo295	MIDc-17	Detail of grave 12
13-031A photo296	MIDc-17	Detail of grave 12
13-031A photo297	MIDc-17	Detail of grave 12 - marker
13-031A photo298	MIDc-17	View south of graveyard
13-031A photo299	MIDc-17	View south of grave yard
13-031A photo300	MIDc-17	View south of grave yard
13-031A photo301	MIDc-17	View south of grave yard
13-031A photo302	MIDc-17	View south of grave yard
13-031A photo303		Sea mammal bone
13-031A photo304		Sea mammal bone
13-031A photo305		Sea mammal bone
13-031A photo306	MIDc-17	View north of grave yard
13-031A photo307	MIDc-17	View north of grave yard
13-031A photo308		Modern tent ring - wpt 60
13-031A photo309		Modern tent ring - wpt 60
13-031A photo310		Modern box hearth - wpt 61
13-031A photo311		Modern box hearth - wpt 61
13-031A photo312		Modern box hearth - wpt 61
13-031A photo313		Modern box hearth - wpt 61
13-031A photo314		Modern box hearth - wpt 61
13-031A photo315		Modern tent ring - wpt 62
13-031A photo316		Modern tent ring - wpt 62
13-031A photo317		Modern tent ring - wpt 62



## APPENDIX A

### Photograph Log

**Table 1: Photograph Log**

Number	Borden Number (if applicable)	Comment
13-031A photo318		Modern tent ring - wpt 62
13-031A photo319		Toy gun
13-031A photo320		Modern hearth - wpt 63
13-031A photo321		Modern tent ring - wpt 64
13-031A photo322		Modern hearth - wpt 65
13-031A photo323	MIDc-17	View north of graves 13 and 14 wpt 66
13-031A photo324	MIDc-17	View north of graves 13 and 14 wpt 66
13-031A photo325	MIDc-17	View north of grave 13
13-031A photo326	MIDc-17	Detail of grave 13
13-031A photo327	MIDc-17	Detail of grave 13
13-031A photo328	MIDc-17	Detail of grave 13
13-031A photo329	MIDc-17	Detail of grave 13
13-031A photo330	MIDc-17	Detail of grave 13 - grave marker
13-031A photo331	MIDc-17	View north of grave 14
13-031A photo332	MIDc-17	View north of grave 14
13-031A photo333	MIDc-17	Detail of grave 14
13-031A photo334	MIDc-17	Detail of grave 14 - marker
13-031A photo335	MIDc-17	View north of grave 15 - wpt 67
13-031A photo336	MIDc-17	View north of grave 15 - wpt 67
13-031A photo337	MIDc-17	View north of grave 15 - wpt 67
13-031A photo338	MIDc-17	Detail of grave 15
13-031A photo339	MIDc-17	Detail of grave 15 - marker
13-031A photo340	MIDc-17	Detail of grave 15
13-031A photo341	MIDc-17	Detail of grave 15
13-031A photo342	MIDc-17	View north of grave 16 - wpt 68
13-031A photo343	MIDc-17	View north of grave 16
13-031A photo344	MIDc-17	View west of grave 16
13-031A photo345	MIDc-17	Detail of grave 16 - marker
13-031A photo346	MIDc-17	Detail of grave 16
13-031A photo347	MIDc-17	View north of grave 17 - wpt 69
13-031A photo348	MIDc-17	View northeast of grave 17
13-031A photo349	MIDc-17	Detail of grave 17
13-031A photo350	MIDc-17	Detail of grave 17
13-031A photo351	MIDc-17	Detail of grave 17
13-031A photo352	MIDc-17	Detail of grave 17 - marker
13-031A photo353	MIDc-17	View north of grave 17
13-031A photo354	MIDc-17	View north of grave 17
13-031A photo355		View north of camp - wpt 70
13-031A photo356		View north of camp - wpt 70
13-031A photo357		View west of camp



## APPENDIX A

### Photograph Log

**Table 1: Photograph Log**

Number	Borden Number (if applicable)	Comment
13-031A photo358		Detail of camp - canvas
13-031A photo359		Detail of camp - nails - both cut and wire
13-031A photo360		View south of camp
13-031A photo361		View east of camp
13-031A photo362		Oven door at camp
13-031A photo363		Interior floor and sewing machine
13-031A photo364		Stove and interior
13-031A photo365		Interior detail
13-031A photo366		Interior detail
13-031A photo367		Interior detail - cardboard insulation
13-031A photo368		Page from 1958 catalogue
13-031A photo369		Random things on large stone in front of camp
13-031A photo370		Dump with faunal remains and tin cans
13-031A photo371		Large tool
13-031A photo372		Square Boilers
13-031A photo373	MIDc-17	Detail of boiler
13-031A photo374	MIDc-17	Detail of boiler
13-031A photo375	MIDc-17	Detail of boiler
13-031A photo376	MIDc-17	Detail of boiler
13-031A photo377	MIDc-17	View east of boilers
13-031A photo378	MIDc-17	View northeast of boilers
13-031A photo379	MIDc-17	View northeast of boilers
13-031A photo380	MIDc-17	View north of boilers
13-031A photo381	MIDc-17	Detail of boiler
13-031A photo382	MIDc-17	View north of boilers
13-031A photo383	MIDc-17	View east of boilers
13-031A photo384	MIDc-17	Detail of whale bone
13-031A photo385	MIDc-17	Detail of modified boiler
13-031A photo386	MIDc-17	Detail of modified boiler
13-031A photo387	MIDc-17	View west of boilers
13-031A photo388	MIDc-17	Steel boiler with faunal remains on top and part of a boat engine
13-031A photo389	MIDc-17	Steel boiler with faunal remains on top and part of a boat engine
13-031A photo390	MIDc-17	Steel boiler with faunal remains on top and part of a boat engine
13-031A photo391	MIDc-17	Walrus skulls on a rock
13-031A photo392		Engraved stone - wpt 73
13-031A photo393		Engraved stone - wpt 73
13-031A photo394		View north of location of engraved stone
13-031A photo395		View east of location of engraved stone
13-031A photo396		View east of location of engraved stone
13-031A photo397		View south of galvanized steel boilers



## APPENDIX A

### Photograph Log

**Table 1: Photograph Log**

Number	Borden Number (if applicable)	Comment
13-031A photo398	MIDc-17	Detail of galvanized boiler with repair
13-031A photo399	MIDc-17	Random debris on a rock - DEW line stuff as well as a leg hold trap
13-031A photo400	MIDc-17	Boiler with white paint "Elijah E6-630"
13-031A photo401		Antenna base - wpt 77
13-031A photo402		View west across Kivitoo from wpt 77
13-031A photo403	MIDc-7	Cache 1 with some wood in it - wpt 78
13-031A photo404	MIDc-7	Cache 1 with some wood in it - wpt 78
13-031A photo405	MIDc-7	Cache 2 with bone
13-031A photo406	MIDc-7	Detail of bone in Cache 2
13-031A photo407	MIDc-7	Detail of bone in Cache 2
13-031A photo408	MIDc-7	Detail of bone in Cache 2
13-031A photo409	MIDc-7	Detail of bone in Cache 2
13-031A photo410	MIDc-7	Detail of bone in Cache 2
13-031A photo411	MIDc-7	Detail of bone in Cache 2
13-031A photo412	MIDc-7	Detail of bone outside of Cache 2
13-031A photo413	MIDc-7	Detail of bone outside of Cache 2
13-031A photo414	MIDc-7	Detail of bone outside of Cache 2
13-031A photo415	MIDc-7	Detail of bone outside of Cache 2
13-031A photo416	MIDc-7	View east of Cache 2
13-031A photo417	MIDc-7	Solder top can near Cache 2
13-031A photo418	MIDc-7	View east of Cache 3
13-031A photo419	MIDc-7	View north of Cache 3
13-031A photo420	MIDc-7	Detail of bone in Cache 2
13-031A photo421	MIDc-7	View north of Cache 4
13-031A photo422	MIDc-7	View east of Cache 4
13-031A photo423	MIDc-7	Detail Cache 4
13-031A photo424	MIDc-7	View southeast of Cache 4
13-031A photo425	MIDc-7	View east of Cache 5
13-031A photo426	MIDc-7	View east of Cache 5
13-031A photo427	MIDc-7	View south of Cache 5
13-031A photo428	MIDc-7	Natural cache looking stones - Wpt 84
13-031A photo429	MIDc-7	Natural cache looking stones - Wpt 84
13-031A photo430	MIDc-7	Natural cache looking stones - Wpt 85
13-031A photo431	MIDc-7	Natural cache looking stones - Wpt 85
13-031A photo432	MIDc-7	Seal bone
13-031A photo433	MIDc-7	Natural cache looking stones - wpt 86
13-031A photo434	MIDc-7	Natural cache looking stones - wpt 86
13-031A photo435	MIDc-7	Natural cache looking stones - wpt 86
13-031A photo436	MIDc-7	View north of Cache 6 wpt 87
13-031A photo437	MIDc-7	View north of Cache 6 wpt 87



## APPENDIX A

### Photograph Log

**Table 1: Photograph Log**

Number	Borden Number (if applicable)	Comment
13-031A photo438	MIDc-7	View north of Cache 6 wpt 87
13-031A photo439	MIDc-7	View north of Cache 7 - wpt 88
13-031A photo440	MIDc-7	Detail of Cache 7
13-031A photo441	MIDc-7	Solder top can associated with Cache 7 wpt 88
13-031A photo442	MIDc-7	Solder top can associated with Cache 7 wpt 88
13-031A photo443	MIDc-7	View north of Cache 8 wpt 89
13-031A photo444	MIDc-7	View west of Cache 8 wpt 89
13-031A photo445	MIDc-7	Seal skull outside of Cache 8
13-031A photo446	MIDc-7	View south of Cache 8
13-031A photo447		Modern tent ring - wpt 90
13-031A photo448		Modern tent ring - wpt 91
13-031A photo449		Modern tent ring - wpt 92
13-031A photo450		Modern tent ring - wpt 92
13-031A photo451		Modern tent ring - wpt 92
13-031A photo452		DEW line debris
13-031A photo453		Modern tent ring - rectangular - wpt 93
13-031A photo454		Modern tent ring - wpt 94
13-031A photo455	MIDc-8	View north of large tent ring - feature 1 - wpt 95
13-031A photo456	MIDc-8	View west of large tent ring - feature 1 - wpt 95
13-031A photo457	MIDc-8	View south of large tent ring - feature 1 - wpt 95
13-031A photo458	MIDc-8	View south of cairn at entrance of feature 1
13-031A photo459	MIDc-8	View north of large tent ring - feature 1 - wpt 95
13-031A photo460	MIDc-8	Detail of centre feature in feature 1
13-031A photo461	MIDc-8	View south of large tent ring - feature 2 - wpt 96
13-031A photo462	MIDc-8	View southeast of large tent ring - feature 2 - wpt 96
13-031A photo463	MIDc-8	View east of MIDc-8 with feature 2 in the foreground
13-031A photo464	MIDc-8	View northeast of feature 2
13-031A photo465	MIDc-8	Detail of centre feature, feature 2
13-031A photo466	MIDc-9	Modern stone ring - wpt 97 - south
13-031A photo467	MIDc-9	Modern stone ring - wpt 97 - east
13-031A photo468	MIDc-9	View stone ring - wpt 99 - south
13-031A photo469	MIDc-9	View stone ring - wpt 99 - south
13-031A photo470	MIDc-9	Debris
13-031A photo471	MIDc-9	Modern stone ring - wpt 100 - south
13-031A photo472	MIDc-9	Detail - toy snowmobile
13-031A photo473	MIDc-9	Detail - toy snowmobile
13-031A photo474	MIDc-9	Detail - toy snowmobile
13-031A photo475	MIDc-9	Modern cache with debris - wpt 101
13-031A photo476	MIDc-9	Modern cache with debris - wpt 101
13-031A photo477	MIDc-9	Modern cache with debris - wpt 101



## APPENDIX A

### Photograph Log

**Table 1: Photograph Log**

Number	Borden Number (if applicable)	Comment
13-031A photo478	MIDc-9	Modern cache with debris - wpt 101
13-031A photo479	MIDc-9	Modern tent ring - wpt 102- south
13-031A photo480	MIDc-9	Modern tent ring - wpt 102 - west
13-031A photo481	MIDc-9	Modern tent ring - wpt 102 - west
13-031A photo482	MIDc-9	Modern tent ring - wpt 103
13-031A photo483	MIDc-9	Modern tent ring - wpt 103
13-031A photo484	MIDc-9	Cache - wpt 74
13-031A photo485	MIDc-9	Cache - wpt 74
13-031A photo486	MIDc-9	View east across Kivitoo
13-031A photo487	MIDc-9	Modern hunting blind - wpt 104
13-031A photo488	MIDc-9	Stone ring - modern wpt 105

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