

Qulliq Energy Corporation

PHASE I ENVIRONMENTAL SITE ASSESSMENT

**Proposed Power Plant Location in Zone 17W
Igloolik, Nunavut – Option 02**

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FINAL REPORT



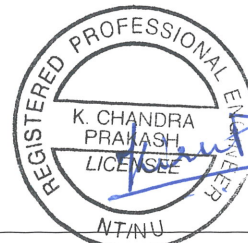
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Summary

Site and Adjacent Land Conditions

Location(s)	Zone 17W, Site located north of Tank Farm, Igloolik, Nunavut
Type of facility	Vacant
Current on-site facilities	None
Former on-site facilities	None
Site Zoning	Heavy Industrial M2
Adjacent land use	North: Buildings South: Tank Farm East: Road and Airport (restricted access) West: Road and Undeveloped Land
Current Site owner	Crown Land
Previous owners/caveats of Potential Environmental Concern (PEC)	None
PECs identified during aerial photo review	None

Site Reconnaissance Findings

Spills/stains	None
Aboveground storage tanks	No evidence
Underground storage tanks	No evidence
Vegetation	None

Environmental Receptors

Residences/subsurface features	None
Groundwater use	None
Local water supply	None
Surface water bodies	None
Sensitive habitats or areas	None

Areas of Potential Environmental Concern

On site	None
Adjacent properties	Several buildings are located immediately north of the Site and there is an active Tank Farm situated approximately 200 m south of the Site

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1 Introduction

Englobe Corp. (Englobe) was retained by Qulliq Energy Corporation (QEC) to perform a Phase I Environmental Site Assessment (ESA) of the proposed power plant location in Zone 17W in Igloolik, Nunavut – Option 02 (the Site). A Site location map is presented on Figure 1 and a Site plan is presented on Figure 2.

1.1 Objectives

The objectives of the Phase I ESA are to:

- ▶ Determine if the current and past usage of the Site and/or adjacent properties could have had an environmental impact at the Site.
- ▶ Identify areas of potential environmental concern (APECs) and potential contaminants of concern (PCOCs) at the Site.
- ▶ Identify potential sensitive receptors that could be affected by environmental impacts.

The Phase I ESA is based on a visual inspection of the Site and neighboring areas, interviews concerning historical uses and practices of the area, and the consultation of records of hazardous spills, hamlet records, satellite imagery and aerial photographs.

2 Phase I Environmental Site Assessment

2.1 Site Description and Background

Igloolik is an Inuit hamlet situated on an island in Foxe Basin, in the Qikiqtaaluk Region in Nunavut. The Site is a vacant lot located in the Industrial zone of Igloolik, east of the airport and north of the Tank Farm. The Site is rectangular in shape: Figure 1 provides the location of the Site and Figure 2 shows a closer look at the Site and surrounding areas. The nearest surface water body is Turton Bay, approximately 490 m east of the Site.

The Site is zoned as Industrial M2, Zone 17W by the hamlet of Igloolik. The land use surrounding the Site is as follows:

- ▶ North: storage area comprising several seacans situated approximately 20 m north of the Site.
- ▶ South: Tank Farm approximately 200 m south of the Site.
- ▶ West: Road and airport (restricted access).
- ▶ East: Road and undeveloped land.

Currently, the Site is unoccupied and vacant. Based on the information gathered from available documents, the property has always been vacant, with no history of residential, industrial, or commercial buildings, nor have there been any known activities in the past in which a potential contamination might have occurred.

2.2 Geology, Topography and Hydrogeology

Igloolik Island is located in the northwest of Foxe Basin (81° 48' W, 69° 22' N) in the eastern lowlands of Melville Peninsula. The island is 103 km² in size, 18 km long and is almost entirely split by Turton Bay, a shallow bay that opens to the south and contains the town of Igloolik. The island is 18 km long and consists of several buttes that join the lowland plains where bedrock is partially covered by old, raised beaches. The highest buttes occur on the western portion of the island; the airport butte has an elevation of 56 m and the cemetery butte is 51 m. A smaller butte on the eastern part of the island has an elevation of 33 m (Dredge, 1992; in Dale and Lenontowich, 2006).

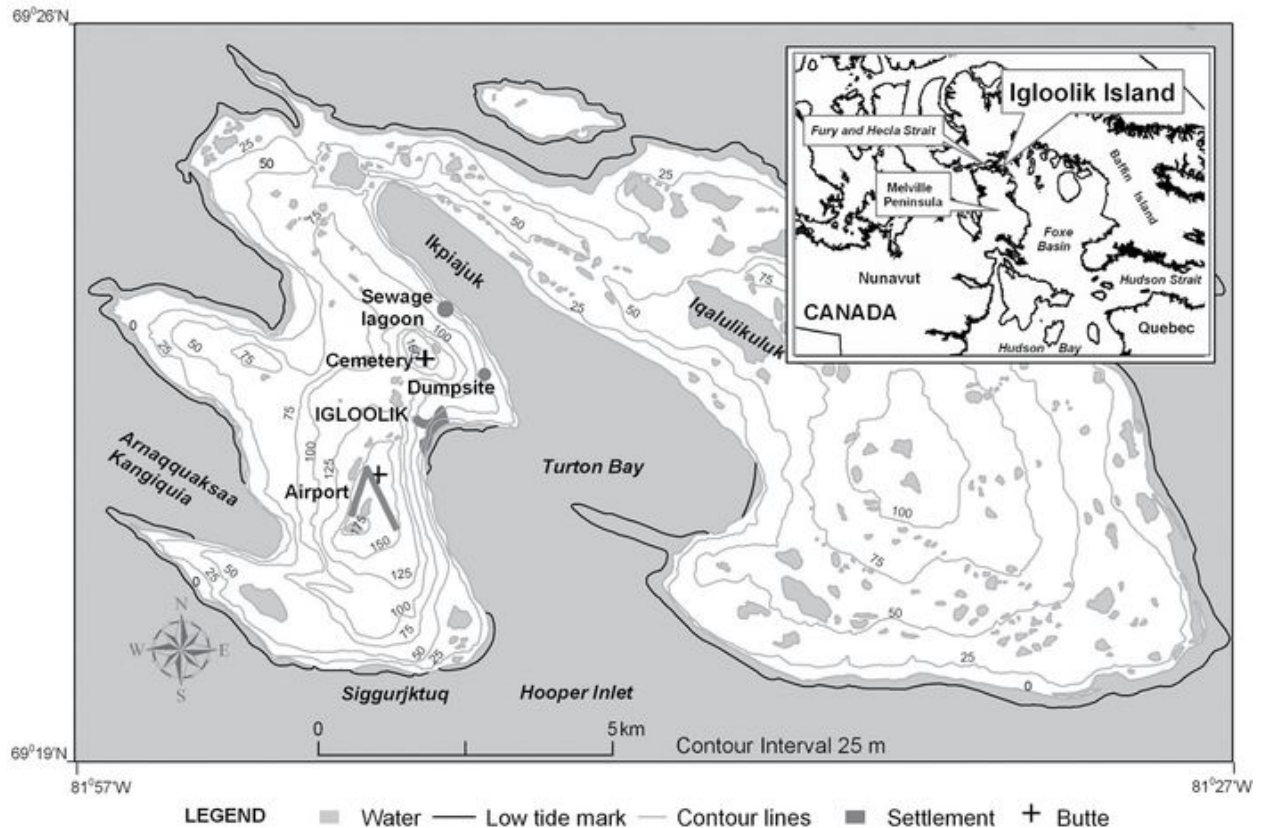
Igloolik Island consists of Precambrian rocks flanked by Paleozoic sediments (Schau, 1984; Schau et al., 1994; in Dale and Lenontowich, 2006). Carbonate rocks of Paleozoic age underlie Foxe Basin, eastern Melville Peninsula and are exposed on Igloolik Island (Boulton et al., 1977; in Dale and Lenontowich, 2006). The lower Ship Point Formation is a sandstone and dolomite unit. Overlying this is a conglomerate and limestone unit called the Bad Cache Formation that makes up the upper parts of the buttes (Dale and Lenontowich, 2006).

A thin layer of pebbly till overlies much of the bedrock in the lowland areas of the island. Much of the surface, along with the cobble beaches, are composed primarily of Paleozoic materials, limestone and dolomite. Granitic and quartzite erratics are present and thought to have originated on Melville Peninsula or Baffin Island and were transported to this area during numerous glacial advances during the Pleistocene (Dredge, 1992; in Dale and Lenontowich, 2006). The island appears to have been ice covered at 7000 BP and ice-free by 6000 BP (Dyke and Prest, 1987; Dredge, 1992; Dyke et al., 1996; in Dale and Lenontowich, 2006). A thin layer of till was deposited on the surface, and exposed bedrock, felsenmeer and raised shingle beaches occur elsewhere. The bedrock dominates the subtidal marine environment as well.

Igloolik receives water from the Arctic Ocean via Fury and Hecla Strait (Campbell and Ollin, 1956; Campbell, 1964; in Dale and Lenontowich, 2006). Arctic water from the northwest dominates the Igloolik marine environment from currents flowing from west to east through Hooper Sound and from the north flow along the west and east coasts of the island (Grainger, 1959; in Dale and Lenontowich, 2006).

The figure below shows the location of Igloolik and the general topography of Igloolik Island with contour lines at 25 m. Topographically, the Site location has a general downslope towards the east. Elevation from the west boundary of the Site adjacent to the access road is approximately 45 m and over a distance of approximately 100 m, drops to 39 m elevation, east of the Site's boundaries (slope of 6%) (<https://en-us.topographic-map.com/maps/9zv0/Igloolik/>).

The slope on Site is gently sloping from west to east, towards Turton Bay.



Igloolik Island (from Dale and Lenontowich, 2006)

A more site-specific topographical map is presented in Appendix A.

2.3 Methodology

The Phase I ESA was completed in accordance with the Government of Nunavut Environmental Guideline for the Management of Contaminated Sites (2014) and Canadian Standard's Association CAN/CSA Z768-01 (R2016).

The four principal components of this Phase I ESA include a review of available public and private information regarding the Site, a Site visit, interviews, and the evaluation and reporting of information

2.3.1 Review of Available Public and Private Information

This activity involves the review of available information on site history, including ownership and use, aerial photos, publicly available environmental reports, water well records, along with a review for the presence of upstream oil and gas activities. Englobe also obtained an EcoLog Environmental Risk Information Services Ltd. (ERIS) report for the Site and surrounding properties within a 250 m radius of the centre of the Site.

This research helps to determine if past activities may have impacted the Site, as well as if activities carried out on adjacent properties may have contributed to potential impacts at the Site.

2.3.2 Site Visit

The Site visit takes place after the records review. The Site visit helps to determine if potential impacts exist on the Site, and if there are any discrepancies from the records reviewed. A thorough examination of the Site is conducted to determine any site impacts, hazards, and risks.

2.3.3 Interviews

Interviews are conducted, to gather information that may not have been formally documented, and to corroborate or augment information gathered in the records review and site visit.

2.3.4 Evaluation and Reporting

All of the information gathered from the Phase I ESA is evaluated and reported to assist in the potential subsequent ESAs at the Site.

3 Records Review

The following sources of information were consulted and reviewed to determine potential environmental impacts from past activities on the Site or on adjacent sites. Table 1 below is a summary of records reviewed.

Table 1: Summary of Records Reviewed

Record	Consultation Location
Land use and ownership titles	Legal Registries Division (Land Titles Office), Government of Nunavut – <i>Unable to obtain the plan number from the Hamlet</i>
Historical City Directories	Hamlet of Igloolik
Aerial photographs	National Air Photo Library
Hazardous Materials and Spill Database	Online, Government of Northwest Territories
Various government and private source records	EcoLog ERIS
Records from Regulatory Agencies	Department of Environment, Government of Nunavut

3.1 Land Use

Requests for Lot number and site plan were made to the Hamlet. The Hamlet indicated that the Site is located on unsurveyed Commissioner's lands. Accordingly, no land title search could be requested with the Department of Justice of Nunavut.

3.2 Chain of Title

Based on the information above, a chain of title could not be obtained for the Site.

3.3 Fire Insurance Plans

The Catalogue of Canadian Fire Insurance Plans 1875-1975 (Catalogue) was not requested given the historical background of the Site.

3.4 Site Operating Records

Since the proposed Site for the construction of the new QEC Power Plant was previously undeveloped, there are no Site Operating Records for the Site.

3.5 Previous Environmental Reports

Englobe was not provided any past environmental reports by QEC. Englobe made a formal request with the Government of Nunavut Department of the Environment for any environmental reports on the property. It is possible that the Government of Nunavut Department of the Environment has environmental reports on the Tank Farm located to the south of the Site, but these were not requested.

3.6 Aerial Photographs and Satellite Imagery

Aerial photographs of the Site were obtained from the National Air Photo Library (NAPL) for 1965, 1975, 1983, and 1995. Satellite imagery was obtained from Google Earth® for 2005, 2006, 2011, 2019, and Google Maps® for 2020. Aerial photographs and satellite imagery were used to develop a history of land use for the Site and adjacent properties. Tables 2 and 3 summarize the results of the aerial photograph review. The aerial and satellite photographs are included in Appendix B.

Table 2: Aerial Photographs and Main Observations of the Study Site

Image	Id Number / Date	Year	Observations
Aerial Photographs	A24206_005	1975	No buildings or infrastructures present on the Site in all photographs or on neighboring lots. The Tank Farm seems to have been built between 1975 and 1983, as it is present in the 1983 photo.
	A26390_093	1983	
	A28213_192	1995	
Google Earth®	August 19, 2005	2005	No buildings or infrastructures present on the Site. Buildings and/or containers are present on the lot immediately north of the Site. The Tank Farm is situated approximately 200 m towards the south.
	July 9, 2006	2006	
	July 24, 2011	2011	
	October 8, 2019	2019	
Google Maps	2020	2020	No buildings or infrastructures present on the Site. Buildings and/or containers are present on the lot immediately north of the Site. The Tank Farm is situated approximately 200 m towards the south.

Table 3: Description of Surrounding Area based on Aerial and Satellite Image Record

Year	Site Review	North of Site	West of Site	South of Site	East of Site
1975	No significant changes were apparent	New highway visible with some activities seen	Presence of air strip (approx. 900 m away)	No significant changes were apparent	No significant changes were apparent
1983	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent	Presence of Tank Farm and road	No significant changes were apparent
1995	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent
2005	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent
2006	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent
2011	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent
2019	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent
2020	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent	No significant changes were apparent

Based on the review of aerial and satellite images, the Site has never been built-on or used for any purpose.

3.7 Records from Regulatory Agencies

The following regulatory agencies were contacted for environmental information pertaining to the Site. Copies of the correspondence are included in Appendix C. Relevant information from these inquiries is presented below.

- ▶ The Hamlet of Igloolik
- ▶ The Department of Environment, Government of Nunavut
- ▶ Hazardous Materials Spills Database

3.7.1 Hamlet Records

The hamlet of Igloolik was contacted to request for any relevant information about the history of the Site and surrounding lots. The lot number and plan were also requested but not received at the time of this report preparation. If any information is forthcoming which may differ from the findings discerned herein, Englobe will provide an amendment. A community map obtained from the Community and Government Services indicates the property is located within the Heavy Industrial M2 zone.

3.7.2 Department of Environment, Government of Nunavut

The Department of Environment of the Government of Nunavut was contacted to request any relevant information about the history of the Site and surrounding lots as it pertains to any potential environmental contamination. Email correspondences with the Department of Environment which are included in Appendix C revealed there is no known existing or past contamination on the Site. However, environmental site investigations conducted in the past on neighboring areas confirmed the presence of environmental contamination. For instance, in 2008 an environmental site investigation was conducted by Nunami Jacques Whitford on the lot situated immediately to the north. At the time of the investigation, the lot was being used for the storage of drums containing mainly aviation fuel. This lot, referred to as 'Fuel Cache 2/ MLIG010' was operated by De Beers and at one point contained 325 drums, high pressure cylinders (~30), pails of grease, and several seacans. Soil analyses in 2008 of stained areas revealed an exceedance of Commercial CCME Canada Wide Standard for the Petroleum Hydrocarbon F2 fraction in one of the samples taken. Little is known whether this lot was remediated following Nunami Jacques Whitford's report. Please refer to Appendix D for the detailed summary report. As of today, the lot is operated by Canadrill Inc. The lot is currently being used to store construction equipment. There is no evidence that any hazardous materials are being stored on the lot. Englobe's site visit revealed no evidence of spills or petroleum contamination.

3.7.3 Hazardous Materials Spills Database

Englobe consulted the Hazardous Materials Spills Database (HMSD), maintained by the Environment and Natural Resources department of the Government of Northwest Territories. Since the study Site was not found within the database a more generalized search for the community of Igloolik was undertaken on the HMSD. Seventy-one (71) spill reports were found for the hamlet of Igloolik (for the complete list, please refer to Appendix E). Each spill report was looked at to determine the exact location. Table 4 summarizes the spills that potentially occurred within 250 m of the study Site. ERIS reports two spills within 0.25 km of the, marked with an asterisk in the table below.

Table 4: Summary of Spills which occurred in Proximity to the Site

Spill No.	Date	Region	Town	Location	Contaminant	Volume (L)	Details
*spill-2012100	March 26, 2012	Baffin	Igloolik	Tank Farm Igloolik	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Overflow Event (approx. 180 m away)
*spill-2010196	May 29, 2010	Baffin	Igloolik	Tank Farm Igloolik	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	3000	Overflow Event (approx. 180 m away)
spill-2007464	October 3, 2007	Baffin	Igloolik	Tank Farm Area	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	30	Overflow Event
spill-2007423	September 5, 2007	Baffin	Igloolik	Tank Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	69	Overflow Event

Spill No.	Date	Region	Town	Location	Contaminant	Volume (L)	Details
spill-2006103	March 20, 2006	Baffin	Igloolik	Power Plant Between D348 and Lube Oil Bulk Tank	Petroleum - lubricating oil (lube, hydraulic)	40	Overflow Event
spill-1994039	March 11, 1994	Baffin	Igloolik	Tank Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Overflow Event
spill-1992004	January 29, 1992	Baffin	Igloolik	Tank Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	200	Overflow Event
spill-1991107	June 19, 1991	Baffin	Igloolik	Oil Pumphouse at Tank Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Pipe Leaks

Given the topography of the Site and surroundings (terrain gently sloping west to east towards Turton Bay) and the distance of these spill occurrences to the Site, the likelihood of impacts from spills at the Tank Farm is considered very low.

3.8 Various Government and Private Source Records

EcoLog ERIS is a database and information Service Company that specializes in providing environmental and historical information compiled from government and private source records. A request was forwarded to ERIS to conduct a search of the databases listed in Table 5.

Table 5: EcoLog ERIS Databases Reviewed

Federal	Other
National PCB Inventory	Retail Fuel Storage Tanks
Federal Convictions	Dry Cleaning Facilities
Federal Contaminated Sites	Scott's Manufacturing Directory
National Pollutant Release Inventory	ERIS Historical Searches
National Environmental Emergencies System	Canadian Mine Locations
National Analysis of Trends in Emergencies System	Canadian Pulp and Paper
Crown Land Fuel Storage Tanks	Automobile Wrecking and Supplies
National Defence and Canadian Forces Spills	Oil and Gas Wells
National Energy Board Pipeline Incidents	Compressed Natural Gas Stations
National Energy Board Wells	Greenhouse Gas Emissions from Large Facilities
Indian and Northern Affairs Fuel Tanks	-

Notes:

PCB – Polychlorinated biphenyl

Relevant information from the database searches is presented below and is summarized according to the database reviewed. The ERIS results are presented in Appendix F.

3.9 Federal Contaminated Land

There are three federal contaminated sites identified in the area of Igloolik which are presented in Table 6. Of the three, only one, site number 16364, appears within the 250 m radius of the Site. It is considered 'closed' by the Federal Government. Therefore, Englobe will not consider this as a potential contaminant source.

Table 6: Federal Contaminated Sites reported in Igloolik

Site Number	Reporting Organization or Branch	Internal Identifier	Site Name
16364	Fisheries and Oceans Canada	C N 00093	Unassessed/Closed
16485	Fisheries and Oceans Canada	C N 00337	Igloolik Wharf (Unassessed)
26398	Royal Canadian Mounted Police	PR V/43	Igloolik RCMP Detachment

3.10 Upstream Oil and Gas Facilities

There are no upstream oil and gas facilities on or near the Site.

4 Results

4.1 Site Visit Results

A site reconnaissance was conducted by a representative of Englobe on September 17, 2020. The site visit included a walkthrough of the Site and a cursory assessment of adjacent properties. During the site reconnaissance, the weather was cloudy and the temperature was approximately 0°C. Photographs were taken during the site reconnaissance and are included in Appendix G.

4.2 Site Description

The Site is undeveloped. The easterly portion of the Site is characterized by terrain made up of broken rock, gently sloping toward the east. The westerly portion next to the road is gravel of various sizes with a few small patches of stunted vegetation. Root penetration is limited to a few centimeters. There is some evidence of bulldozing with some small piles of materials and tracks.

4.3 Adjacent and Surrounding Properties

A visual inspection of the adjacent properties and properties within 250 metres of the Site was undertaken to determine the occupants and document the activities and sources of potential contamination.

The area adjoining the Site to the north is currently being used by Canadrill Inc. There are several seacans as well as some construction equipment stored on the site. Englobe did not observe any evidence of oil spills or petroleum contamination.

The north-westerly portion of the Site falls on Lot 1000 Quad 47 D/7 which is the airport property. The boundaries of this lot were located on the ground and are plotted on the topographic plan. The remainder of the Site as well as the adjoining land is 'Commissioners Land' (not titled).

The Site visit was able to confirm what the aerial and satellite photos show, that there are containers immediately to the north of the Site, an access road and airport property to the west, an active Tank Farm to the south, and non-developed land to the east.

4.4 Utilities

There are no overlying oil pipes or any utilities present.

4.5 Drains, Pits and Sumps

There are no drains, pits or sumps on the Site.

4.6 Interviews

An Englobe representative was able to interview the Assistant SAO John Murray at the Hamlet Office on September 17, 2020. He advised that there had been no significant activity on the Site other than some surface bulldozing. There has been no construction activity. Notes from the Site visit are provided in Appendix H.

4.7 Topography

The Site visit confirmed that the terrain is relatively flat with a gentle slope to the east. Please refer to Appendix A for a detailed topographical survey of the Site.

4.8 Gas Well

There are no gas wells on Site or on surrounding sites.

4.9 Air Emissions

No strong, pungent or noxious odours were noted during the Site visit. There is no environmental concern associated with air emissions at the Site.

4.10 Water and Wastewater Discharges

No water and wastewater discharges are present on Site.

4.11 Waste Management, Handling and Landfill

At the time of the Site visit, there were no hazardous wastes and no additional wastes generated on the Site.

4.12 Spills and Releases

No evidence of spills or releases were observed on the Site.

4.13 Designated Substances

4.13.1 Asbestos-containing Materials

The 1981 Alberta Building Code prohibited the use of products that have the potential for releasing asbestos fibers in a building, except asbestos cement board and asbestos cement pipe. Asbestos was used as a construction material for residential and commercial buildings from 1920 to 1986.

There are no buildings on Site to contain asbestos-containing materials (ACMs), and there is no construction debris present on Site that could contain ACMs.

4.13.2 PCB-containing Materials and Equipment

The use of PCB dielectric fluids in electrical equipment such as transformers, fluorescent light ballasts and capacitors was a common industry practice up to approximately 1980. The Federal Chlorobiphenyls Regulation, SOR/91-152, prohibits the use of PCBs in this electrical equipment installed after July 1, 1980.

There are no buildings on Site to contain PCBs, and there is no construction debris present on Site that could contain PCB-containing materials and equipment.

4.13.3 Lead-based Paint

Although Lead-based Paints (LBP) were banned from use on exterior or interior surfaces of buildings, furniture or household products in the early 1970s, various commercial paints are still known to contain lead in concentrations greater than 0.5% by weight (e.g., road paint).

There are no buildings on Site to contain LBP, and there was no construction debris present on site that could contain LBP.

4.13.4 Mercury

Englobe did not observe any potential mercury-containing devices or equipment on Site during the reconnaissance.

4.13.5 Urea Formaldehyde Foam Insulation

Urea Formaldehyde Foam Insulation (UFFI) was commonly used as insulation in buildings between 1975 and 1978. The use of UFFI was banned across Canada on December 17, 1980.

There are no buildings on Site to contain UFFI, and there was no construction debris present on Site that could contain UFFI.

4.13.6 Ozone-depleting Substances

In 1987, Canada signed the Montreal Protocol on Substances that Deplete the Ozone Layer which involved the phase out of Ozone-depleting Substances (ODS). Currently, it has been agreed upon that developed countries must phase-out the production and consumption of hydrochlorofluorocarbons, which were used as transitional chemicals to replace more harmful ODS, by 75% in 2010, 90% in 2015, and completely by 2020. Therefore, these transitional ODS may still be in use and are typically found in refrigerants on heating, ventilation and air conditioning systems, refrigerators, coolers, and freezers.

No potential ODS sources were observed on the Site; therefore, ODS is not considered an environmental concern.

4.13.7 Radioactive Materials

Englobe did not observe any potential radioactive materials present on Site. A naturally-occurring radioactive materials survey was not completed as part of this Phase I ESA.

4.13.8 Radon Gas

Radon gas is a product of the natural decay series that begins with uranium. Radon is produced directly from barium, which can be commonly found in geologic materials that contain black shale and/or granite. In confined spaces (e.g., basements) it can be concentrated and become a health hazard.

Radon gas is not expected to be an area of environmental concern for the Site.

4.13.9 Potential for Mould

Englobe did not observe any evidence of mould during the Site reconnaissance.

4.14 Aboveground Storage Tanks

No evidence of Aboveground Storage Tanks (ASTs) was observed at the Site.

4.15 Underground Storage Tanks

No evidence of Underground Storage Tanks (USTs) was observed at the Site.

5 Summary and Conclusions

Englobe carried out a Phase I ESA for the proposed power plant location in Zone 17W in Igloolik, Nunavut. The objectives of the Phase I ESA were to determine if the current and past usage of the Site and/or adjacent properties could have had an impact on soil and groundwater quality at the Site, and to identify APECs and PCOCs that could have resulted from past on-site activities and/or activities on neighbouring properties.

The following points summarize the findings of the Phase I ESA:

- ▶ The Site is currently vacant and there is no evidence to suggest the Site was ever used or developed before.
- ▶ The Site is surrounded by restricted airport land to the west, storage containers to the north, a Tank Farm to the south and a road and undeveloped land to the east Site.
- ▶ Records from the regulatory agencies did not reveal APECs for the Site.
- ▶ The Phase I ESA did not identify APECs for the Site.

The results obtained from the Phase I ESA did not reveal any APECs or PCOCs.

6 Recommendations

Based on the available information, the Site and surrounding properties did not reveal the presence of any current environmental concerns likely to affect the Site. No additional environmental investigation is suggested to verify the environmental quality of the property at this time.

7 References

LITERATURE CITED

- BOULTON, T.E., SANFORD, B.V., COPELAND, M.J., BARNES, C.R. AND RIGBY, J.K., 1977. Geology of Ordovician Rocks, Melville Peninsula and Region, Southeastern District of Franklin. Geological Survey of Canada, Ottawa, Bulletin 269, 21 p.
- CAMPBELL, N.J., 1964. The origin of cold high salinity water in Foxe Basin. Journal of Fisheries Research Board of Canada, 21: 45-55.
- CAMPBELL, N.J. AND OLLIN, A.E., 1956. A Preliminary Report on some of the Oceanographic Features of Foxe Basin. Fisheries Research Board of Canada Manuscript 613, 64 p.
- CANADIAN STANDARDS ASSOCIATION (CSA). 2001. Z768-01 (R2016) – Phase I Environmental Site Assessment. Current as of 2016. Toronto, ON. ISBN: 1-55-324-599-7.
- DALE, JANIS.E. AND KENT LEONTOWICH. Sediments and biota of the Marine Coastal Zone of Igloolik Island, Nunavut. Géographie physique et Quaternaire. Volume 60, Number 1, 2006, pp.3-92.
- DEPARTMENT OF COMMUNITY AND GOVERNMENT SERVICES (<https://www.gov.nu.ca/community-and-government-services>). Community maps, zoning bylaw information and AutoCad files were downloaded from this site.
- DREDGE, L.A., 1992. The Geology of the Igloolik Island Area, and Sea Level Changes. Scientific Institute of the Northwest Territories, Report 2, 7 p.
- DYKE, A.S. AND PREST, V.K., 1987. Late Wisconsinan and Holocene history of the Laurentide Ice Sheet. Géographie physique et Quaternaire, 41: 237-263.
- ECOLOG ERIS (ECOLOG ENVIRONMENTAL RISK INFORMATION SERVICES LTD.). 2020. EcoLog Environmental Risk Information Services Ltd.
- KRISTENSEN, R.M., PETERSEN, G.H. AND SKOVGAARD, K., 1991. Hydrographic conditions at Igloolik, N.W.T., Arctic Canada, p. 23-33. *In* M. Jorgensen, ed., Arctic Biology Course 1989, Igloolik, Northwest Territories, Canada, 45 p.
- Hazardous Materials and Spill Database (<https://www.enr.gov.nt.ca/en/spills>).
- SCHAU, M., 1984. Northern Melville Peninsula. Geological Survey of Canada, Ottawa, Map 1046, Scale 1:500 000.
- SCHAU, M., RENCZ, A., DREDGE, L., CHEING, C. AND CHORLTON, L., 1994. Digital Data Atlas, Hall Lake, Melville Peninsula, NWT. Geological Survey of Canada, Ottawa, Open File 2786, 44 p.

PERSONAL COMMUNICATIONS

- HAMLET OF IGLOOLIK, EMAILS SENT REQUESTING LOT AND PLAN INFORMATION FOR THE STUDY SITE, INCLUDING ANY RECORDED HISTORICAL ENVIRONMENTAL EVENTS ON THE STUDY SITE.

GOVERNMENT OF NUNAVUT, DEPARTMENT OF ENVIRONMENT, LAUREN PERRIN AND MEREDITH CLAYDEN. EMAIL COMMUNICATIONS ON THE RETRIEVAL OF ANY PAST ENVIRONMENTAL CONCERNS ON THE STUDY SITE, TOWN OF HINTON. www.hinton.ca. Accessed November 14, 2020.

INTERVIEWS

SEPTEMBER 20, 2020. MR. JOHN MURRAY, ASSISTANT SAO, IGLOOLIK HAMLET. INTERVIEW CONDUCTED BY STEWART MACPHEE, OF SUB-ARCTIC GEOMATICS.

FIGURES

Figure 1	Site Location
Figure 2	Site Plan

NUNAVUT TERRITORY



SITE
LOCATION

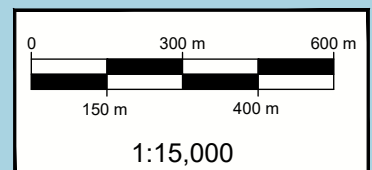


INSET MAP — NOT TO SCALE

ᐃᓄᓄᓄᓄᓄᓄ Igloolik

Site Location
69.368861°,-81.810354°

Igloolik
Airport



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Quilliq Energy Corporation
Société d'énergie Quilliq
Quilliq Airuyaktuqutunik Ikumatjutit

PHASE I ENVIRONMENTAL SITE ASSESSMENT PROPOSED POWER PLANT LOCATION Igloolik, Nunavut

SITE LOCATION – OPTION 02



Englobe

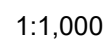
16114, 114 Avenue NW
Edmonton, Alberta
T5M 2Z5
780-481-1416

Discipline :	Environment	Prepared by :	K. BUDD	Checked by :	K. BUDD
Scale :	1:15,000	Drawn by :	D. WILSON	Approved by :	P. GINGRAS
Date :	February 2021	Figure no. :	FIGURE 1		
Layout :	Paper size :	Registration no. :	—		
LS-OPTION 02	LETTER (8.5" x 11")				

Resp.	Project	Otp	Project/ Disc	Phase/ Type	Electronic ref./ Drawing no.	Rev.
140	P0023273.000-0100-0000	---	---	---	P0023273.000-0100-0000-LS-PHI-IGLOOLIK.dwg	---



16114, 114 Avenue NW
Edmonton, Alberta
T5M 2Z5
780-481-1416



Igloodik, Nunavut

Aerial Photograph showing
Proposed Site Coordinates – Option 02

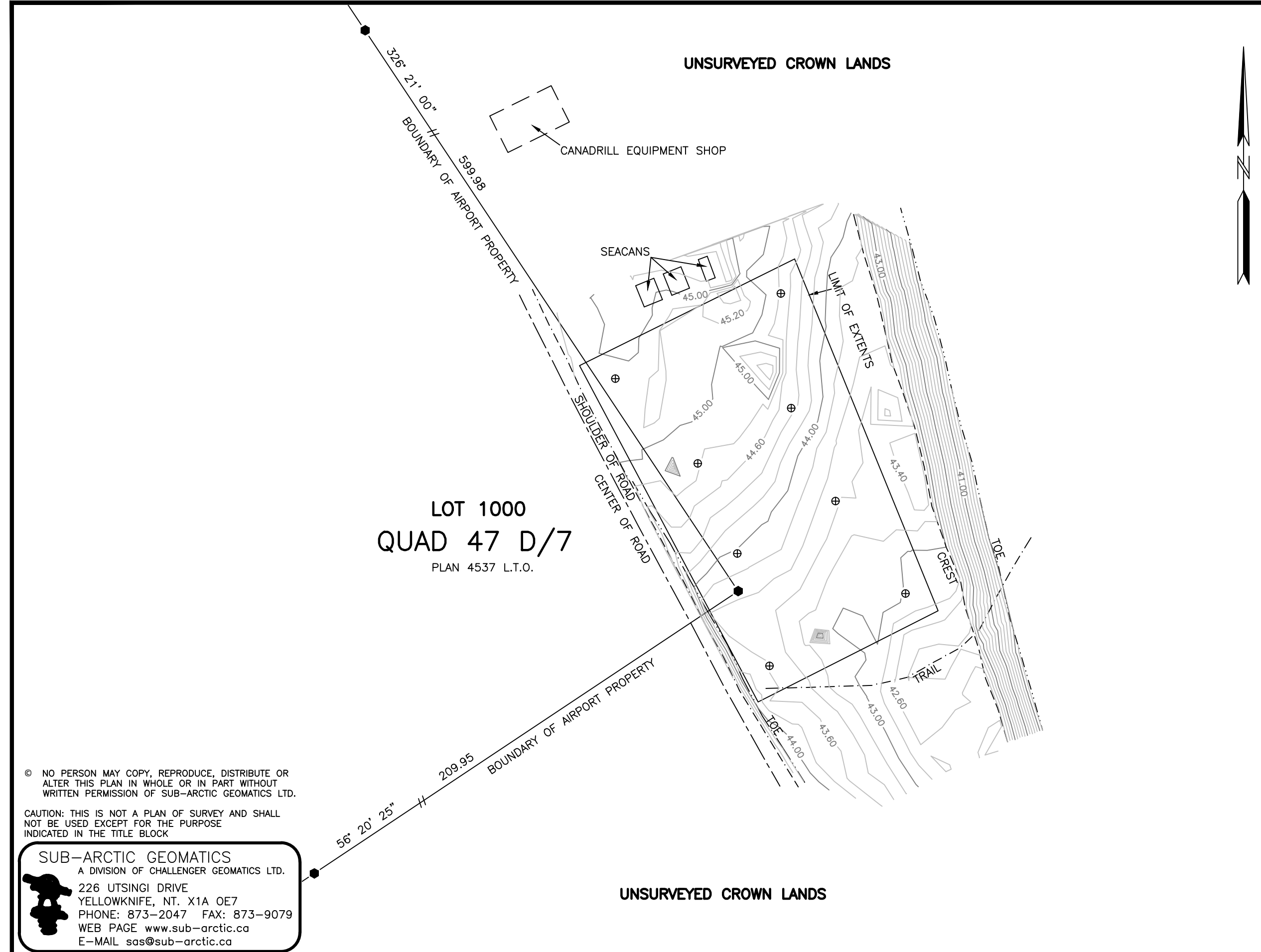
Geodetic Coordinate (Typical; see table)

Datum is NAD83(CSRs) / UTM zone 17N

Discipline :	Environment	Prepared by :	K. BUDD	Checked by :	K. BUDD
Scale :	1:1,000	Drawn by :	D. WILSON	Approved by :	P. GINGRA
Date :	February 2021	Figure no. :	FIGURE		
Layout :	Paper size :	Registration no. :			
OPTION 02 ANSI full bleed B (11.00 x 17.00 Inches)					

Resp.	Project	Otp	Project/ Disc	Phase/ Type	Electronic ref. / Drawing no.	R
140	P0023273.000-0100-0000	---	---	---	P0023273.000-0100-0000-PL-PHGLCOOLIK.dwg	

Appendix A Topographic Survey



NOTES:
DATE OF SURVEY:
CONTOUR INTERVAL IS 0.20 METRES
ALL ELEVATIONS ARE EXPRESSED IN METRES OR DECIMALS THEREOF.
LOT STRUCTURE COPIED FROM N.T.S. ZONE MAPPING.
ELEVATIONS BASED ON CSRS-PPP OBSERVATIONS UTM ZONE11 NAD83 CGVD2013 DATUM
PROJECT # 706-7524

LEGEND:
BOREHOLE ⊕

NO.	REVISION\ISSUE	DATE:
DRAWN BY: J.N.		
CHECKED BY: B.P.		

ENGLOBE CORP.

TOPOGRAPHIC SURVEY
IGLOOLIK – NU
POTENTIAL POWER
PLANT LOCATION

PROJECT NO.: 80589
FILE NO.: 80589-TOPO-OC26-REV1
DATE: OCTOBER 26, 2020
SCALE: 1:1000

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A DIVISION OF CHALLENGER GEOMATICS LTD.
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E-MAIL sas@sub-arctic.ca

Appendix B Aerial Photographs



Photo 1: Aerial Photo of the area in 1975 (Source: NAPL)



Photo 2: Aerial Photo of the area in 1983 (Source: NAPL)



Photo 3: Aerial Photo of the area in 1995 (Source: NAPL)



Photo 4: Satellite Photo of the area in 2005(Source: Google Earth)



Photo 5: Satellite photo of the area in 2006 (Source: Google Earth)



Photo 6: Satellite photo of the area in 2011 (Source: Google Earth)



Photo 7: Satellite photo of the area in 2019 (Source: Google Earth)



Photo 9: Satellite photo of the area in 2020 (Source: Google Maps)

Appendix C Records from Regulatory Agencies

Amanda Bruniski

From: Alix Rive
Sent: Tuesday, September 08, 2020 3:31 PM
To: nancymacdona@gmail.com
Cc: Katheryne Budd; Kiran Chandra Prakash
Subject: FW: request for environmental history information
Attachments: UTM coordinates.pdf

Importance: High

Hello Nancy,

We are working on a Phase I Environmental Site Assessment on a site located in Igloolik and would like some information about the environmental history of the site. Any land title (past and present) information would be greatly appreciated as well.

The site is shown here attached, with UTM coordinates.

I am looking for any historical events or environmental issues such as : infraction notices, complaints, corrective actions, spills, known sources of contamination, permits, certificates of authorization, aboveground storage tanks recorded for the subject property, etc Has there been any activities there ? Is the site being used right now to store anything?

Would it be possible to send a zoning and site plan identifying buildings and authorized uses of the area, that would be greatly appreciated.

Thank you very much for your assistance,

Alix

ALIX RIVE, Biol., M.Sc
Project Manager
Environmental engineering, Northern Canada

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Amanda Bruniski

From: Igloolik CEDO <Cedo@Igloolik.ca>
Sent: Tuesday, September 22, 2020 8:29 AM
To: Alix Rive
Cc: Lands
Subject: RE: site assessment

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CAUTION: Do not click on links or open attachments you do not trust.

Hi Alix,

The lands officer is not in today, I will follow up with him tomorrow or when he is back in the office.

Thank you/ Qujannamiik,



Ghadihela Quezada
Community Economic Development Officer
Municipality of Igloolik
PO Box 30
Igloolik, Nunavut X0A 0L0
Tel: (867) 934-8830 ext. 329
Fax: (867) 934-8757
Email: cedo@Igloolik.ca

From: Alix Rive <Alix.Rive@englobecorp.com>
Sent: Monday, September 21, 2020 4:52 PM
To: Igloolik CEDO <Cedo@Igloolik.ca>
Cc: Lands <Lands@Igloolik.ca>
Subject: RE: site assessment

Hello,
I still have not received any response to my email below.

Would it be possible to get back to me soon?

Thank you,

ALIX RIVE, Biol., M.Sc
Project Manager
Environmental engineering, Northern Canada

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16114 – 114 Avenue NW

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From: Alix Rive

Sent: Tuesday, September 15, 2020 11:50 AM

To: cedo@iglolik.ca

Cc: lands@iglolik.ca; Kiran Chandra Prakash <Kiran.ChandraPrakash@englobecorp.com>

Subject: site assessment

Hello Ghady,

Thanks for taking my call earlier.

We are working on a Phase I Environmental Site Assessment on a site located in Igloolik and would like some information about the environmental history of the site. Any land title (past and present) information would be greatly appreciated as well. For example, is there a lot number for this site ? Would it be possible to send a zoning and site plan identifying buildings and authorized uses of the area, that would be greatly appreciated.

The site is shown here attached, with UTM coordinates.

I am looking for any historical events or environmental issues such as : infraction notices, complaints, corrective actions, spills, known sources of contamination, permits, certificates of authorization, aboveground storage tanks recorded for the subject property, etc
Has there been any activities there ? The site is vacant right now, correct? Is the site being used right now to store anything?

Thank you very much for your assistance,
Alix

ALIX RIVE, Biol., M.Sc
Project Manager
Environmental engineering, Northern Canada

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Amanda Bruniski

From: Sewornu, Rita <RSewornu@GOV.NU.CA>
Sent: Friday, September 18, 2020 7:57 AM
To: Alix Rive
Cc: Boddie, Alecia
Subject: RE: Igloolik - future QEC power plant site

ATTENTION: Assurez-vous que le contenu soit de confiance avant d'ouvrir une pièce jointe ou un hyperlien.
CAUTION: Do not click on links or open attachments you do not trust.

Good morning Alix,

I apologize for the delay in getting back to you. It was quite a busy week for me.

Please see my answers to your questions are in blue.

- 1) Do you have any records of past usage of this site? – Such information can be obtained from the Hamlet from people with local knowledge, I will email the Planning and Lands Administrator to see what he could find out
- 2) Any lot information for this site – doesn't appear to be any based on the site plan. The selected site is Unsurveyed Commissioner's Land so there is no legal description (lot and plan numbers for the site).
- 3) Any historical maps for this site? – I believe we should have community plans for past years, so I've copied our Community Planner, Alecia Bodie in this email. She may be able to assist you with this.
- 4) Site operating records for this site? – As there is no known usage of this site on record at our office, we equally don't have any site operating record. May be Alecia can advise if the planning section have any such record

Alecia, I think question number 3 is more related to your area, so if you could assist Alix with that.

I will keep you posted once I hear back from the Hamlet about any history on the usage of this site.

Thanks,
Rita

Rita Sewornu, Ph.D.

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 ወይም
 በክፍል 145, የዘርፍ, ወይም, X0A 0C0

Senior Land Administrator
Department of Community & Government Services
Government of Nunavut
P.O. Box 145, Cape Dorset, Nunavut X0A 0C0

Angayukhiq Nunanun Titiqqiqiniq
Nunalingni Kavamatkunnilu Pivikhaqautikkut,
Nunavut Kavamanga
Titiraqarvia 145, Kinngait, NU X0A 0C0

Administratrice principale des terres
Ministère des Services communautaires et gouvernement aux
Gouvernement du Nunavut
C.P. Box 145, Cape Dorset (Nunavut) X0A 0C0

 (867) 897-3619 (867) 897-3632/33 rsewornu@gov.nu.ca



From: Alix Rive <Alix.Rive@englobecorp.com>
Sent: September 15, 2020 3:52 PM
To: Sewornu, Rita <RSewornu@GOV.NU.CA>
Subject: Igloolik - future QEC power plant site

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Hi there,
Thanks for speaking to me earlier on the phone.

Here is the site plan. My site corresponds to Heavy Industrial Zone M15.

My questions are the following :

- 1) Do you have any records of past usage of this site?
- 2) Any lot information for this site – doesn't appear to be any based on the site plan...
- 3) Any historical maps for this site?
- 4) site operating records for this site?

Thanks very much for your assistance,

Alix

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Amanda Bruniski

From: Boddie, Alecia <ABoddie@GOV.NU.CA>
Sent: Tuesday, September 22, 2020 9:10 AM
To: Alix Rive
Cc: Sewornu, Rita
Subject: RE: Igloolik - future QEC power plant site

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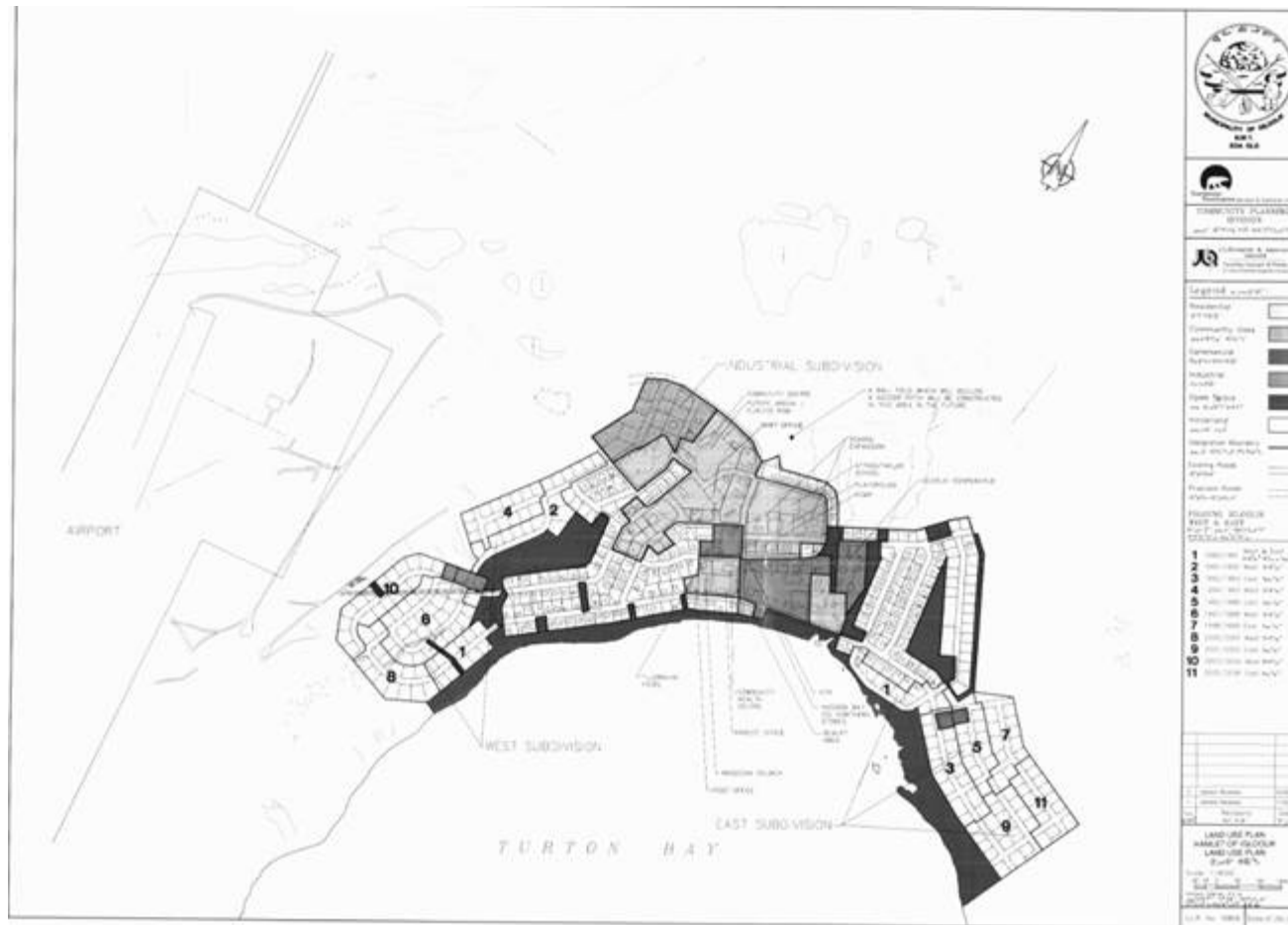
CAUTION: Do not click on links or open attachments you do not trust.

Hi Alix,

The Earliest Satellite I can find is from 2006 and the site seems to only have a couple of small items. Maybe it is a shed, but the hamlet would have to confirm. The same 'sheds' are in the succeeding years.



The Earliest Community Plan map I could find is from 1990 and the site was not identified as being used for any present or future use at that time. Only in 2015/2016 was it suggested that it could be the future site of a new power plant. This suggestion came from hamlet staff, the Mayor and Council at the time, but the site itself has never been formally studied.



Not sure if you have already reached out to the Hamlet, but Mike Immaroitok is the Planning and Lands Administrator for the Hamlet of Igloolik (867-934-8830 ext.330; Lands@Igloolik.ca). He would be the hamlet contact for your specific questions about the site. As Rita mentioned, he would most likely be able to speak to the history of the area or find people who know about the history of the site. I've found in Igloolik, residents have a good memory of what was going on in certain areas and even whether there is a history of oil/fuel spillage.

Thanks,

Alecia

x]oyx]Xt

Alecia Boddie M.Sc. RPP, MCIP

kNo8k5 X3Nwp

Community Planner

kNo8i4 Z?m4fi9l Wp5yC6]t5 Community & Government Services

kNK5 Z?m4fq5 Government of Nunavut

P.O. Box 145, Kinngait (Cape Dorset), Nunavut X0A 0C0

☎ (867) 897-3621

📠 (867) 897-3632/33

✉ aboddie@gov.nu.ca

From: Sewornu, Rita <RSewornu@GOV.NU.CA>

Sent: September 18, 2020 9:57 AM

To: Alix Rive <Alix.Rive@englobecorp.com>

To: Sewornu, Rita <RSewornu@GOV.NU.CA>
Subject: Igloolik - future QEC power plant site

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Hi there,
Thanks for speaking to me earlier on the phone.

Here is the site plan. My site corresponds to Heavy Industrial Zone M15.

My questions are the following :

- 1) Do you have any records of past usage of this site?
- 2) Any lot information for this site – doesn't appear to be any based on the site plan...
- 3) Any historical maps for this site?
- 4) site operating records for this site?

Thanks very much for you assistance,

Alix

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Project Manager
Environmental engineering, Northern Canada

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Amanda Bruneski

From: Alix Rive
Sent: Wednesday, September 30, 2020 11:19 AM
To: 'Perrin, Lauren'
Cc: Clayden, Meredith; Katheryne Budd; 'Nan Du'
Subject: RE: Nunavut ESAs

Hi Lauren,

I was actually thinking of these tank farms in Cambridge Bay (see copy paste here). Our study site is the pink polygon
Yes I would like to get that report in reference to Kugaaruk Option 1 (Mlk u010).

Could I also get MLIG010 (igloolik) – our site is located to this tank farm. Thanks very much. I am cc'ing Nan and Katheryne here as they are part of the team.

Have a good day,

Alix



ALIX RIVE, Biol., M.Sc

Project Manager
Environmental engineering, Northern Canada

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From: Perrin, Lauren <LPerrin@GOV.NU.CA>
Sent: Wednesday, September 30, 2020 7:38 AM
To: Alix Rive <Alix.Rive@englobecorp.com>
Cc: Clayden, Meredith <MClayden@GOV.NU.CA>; Katheryne Budd <Katheryne.Budd@englobecorp.com>
Subject: RE: Nunavut ESAs

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Hi Alix,

My apologies I should have indicated what the different colour dots mean. The different colours represent the various NCS scores (attached is a picture of NCS legend). I will note however, the NCS scores were developed a long time ago with limited information therefore are not great presentations of the level of concern. I can provide you with the report associated with MLKU010, if you like.

As requested attached is a screen shot of Cambridge Bay Tank Farm.

Cheers,
Lauren

From: Alix Rive <Alix.Rive@englobecorp.com>
Sent: September 29, 2020 5:58 PM
To: Perrin, Lauren <LPerrin@GOV.NU.CA>
Cc: Clayden, Meredith <MClayden@GOV.NU.CA>; Katheryne Budd <Katheryne.Budd@englobecorp.com>
Subject: RE: Nunavut ESAs

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Thanks Lauren for your email and for taking the time to have a look in your database.

It looks like site MLKU010 in Kugaaruk would be on our option 1 site. It's a red dot. Does this mean it's closed ? What colour does orange indicate ? I am just wondering because some of the neighbouring properties have orange dots.

Would it be possible to take a screen shot of the area around the tank farm in Cambridge Bay– our site is located about 400 m northwest of the tank farm.

Thanks for your help with this,

Alix

ALIX RIVE, Biol., M.Sc
Project Manager
Environmental engineering, Northern Canada

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From: Perrin, Lauren <LPerrin@GOV.NU.CA>
Sent: Tuesday, September 29, 2020 2:56 PM
To: Alix Rive <Alix.Rive@englobecorp.com>
Cc: Clayden, Meredith <MClayden@GOV.NU.CA>
Subject: RE: Nunavut ESAs

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Hi Alix,

After a preliminary search through our files it doesn't appear that we have any ESA's on the areas you've indicated however I have attached screenshots of the sites where we have site assessments in case I have misinterpreted your request and/or if another close contaminated site is within the boundaries you are looking at.

Happy to discuss further, let me know.

Cheers,
Lauren

From: Alix Rive <Alix.Rive@englobecorp.com>
Sent: September 21, 2020 8:30 PM
To: Perrin, Lauren <LPerrin@GOV.NU.CA>
Subject: RE: Nunavut ESAs

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Lauren,
Thanks for your response. Appreciate you looking into this for us.

Just to be clear, there is no accessible website that documents all the environmental reports relevant to communities of Nunavut in one place ? for e.g. in Alberta we have the Environmental site assessment repository.

Thanks again for your help!
Alix

ALIX RIVE, Biol., M.Sc
Project Manager
Environmental engineering, Northern Canada

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alix.rive@englobecorp.com
www.englobecorp.com



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Follow us :



From: Perrin, Lauren <LPerrin@GOV.NU.CA>

Sent: Monday, September 21, 2020 2:31 PM

To: Alix Rive <Alix.Rive@englobecorp.com>

Cc: Kiran Chandra Prakash <Kiran.ChandraPrakash@englobecorp.com>; Clayden, Meredith <MClayden@GOV.NU.CA>

Subject: RE: Nunavut ESAs

ATTENTION: Assurez-vous que le contenu soit de confiance avant d'ouvrir une pièce jointe ou un hyperlien.

CAUTION: Do not click on links or open attachments you do not trust.

Hi Alix,

Thanks for providing this information! I will look into this request and gather as much information as I can by end of week. I do suggest that you reach out to CGS' (PPE section) in the meantime as I will only be able to provide information on potential spills and known contaminants.

Cheers,
Lauren

From: Alix Rive <Alix.Rive@englobecorp.com>

Sent: September 17, 2020 12:50 PM

To: Clayden, Meredith <MClayden@GOV.NU.CA>

Cc: Perrin, Lauren <LPerrin@GOV.NU.CA>; Kiran Chandra Prakash <Kiran.ChandraPrakash@englobecorp.com>

Subject: RE: Nunavut ESAs

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Hello Meredith,

Thanks for reaching out – and I am sorry I missed your call yesterday. You mentioned you would be out today. So perhaps we could touch base tomorrow?

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- Gjoa Haven (M2 – Lot 47)
- Igloodik (M2 – north of tank farm)
- Chesterfield Inlet (Industrial, northeast of tank farm)
- Cambridge Bay (restricted industrial)
- Kugaaruk (Zone 16W heavy industrial)

I am interested in knowing whether the Government of Nunavut has any record of any historical activities that could have led to some potential contamination on these sites. For example are there any records of infraction notices, complaints, corrective actions, spills, known sources of contamination, permits, certificates of authorization, aboveground storage tanks recorded for these properties.

I am cc'ing Kiran Chandra Prakash, the Project Manager and Client contact on this project.

Kiran: Meredith would like to touch base with QEC to talk to them about contaminated sites in general. Could you give her the contact info?

Thanks!

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Amanda Bruniski

From: Perrin, Lauren <LPerrin@GOV.NU.CA>
Sent: Thursday, October 01, 2020 9:12 AM
To: Alix Rive
Cc: Clayden, Meredith; Katheryne Budd; Nan Du
Subject: RE: Nunavut ESAs
Attachments: Cambridge Bay2.png; Kugaaruk Site Summaries-compressed.pdf; Igloolik Site Summaries_compressed.pdf

ATTENTION: Assurez-vous que le contenu soit de confiance avant d'ouvrir une pièce jointe ou un hyperlien.
CAUTION: Do not click on links or open attachments you do not trust.

Hi Alix,

No worries, see attached new screenshot of Cambridge Bay and the ESA reports for Kugaaruk and Igloolik.

As for the NCS scores- they are site classifications:

Class 1: High Priority for Action (Total NCSCS Score greater than 70)
Class 2: Medium Priority for Action (Total NCSCS Score between 50 and 69.9)
Class 3: Low Priority for Action (Total NCSCS Score between 37 and 49.9)
Class N: Not a Priority for Action (Total NCSCS Score less than 37)
Class INS: Insufficient Information ($\geq 15\%$ of Responses are "Do Not Know")

As mentioned before these NCS scores had a lot of limitations when they were calculated.

Cheers,
Lauren

From: Alix Rive <Alix.Rive@englobecorp.com>
Sent: September 30, 2020 1:19 PM
To: Perrin, Lauren LPerrin@GOV.NU.CA
Cc: Clayden, Meredith <MClayden@GOV.NU.CA>; Katheryne Budd <Katheryne.Budd@englobecorp.com>; Nan Du <ndu@dstgroup.com>
Subject: RE: Nunavut ESAs

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Hi Lauren,
I was actually thinking of these tank farms in Cambridge Bay (see copy paste here). Our study site is the pink polygon
Yes I would like to get that report in reference to Kugaaruk Option 1 (Mlk u010).
Could I also get MLIG010 (igloolik) – our site is located to this tank farm. Thanks very much. I am cc'ing Nan and Katheryne here as they are part of the team.
Have a good day,
Alix



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Follow us :



From: Perrin, Lauren <LPerrin@GOV.NU.CA>
Sent: Wednesday, September 30, 2020 7:38 AM
To: Alix Rive <Alix.Rive@englobecorp.com>
Cc: Clayden, Meredith <MClayden@GOV.NU.CA>; Katheryne Budd <Katheryne.Budd@englobecorp.com>
Subject: RE: Nunavut ESAs

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CAUTION: Do not click on links or open attachments you do not trust.

Hi Alix,

My apologies I should have indicated what the different colour dots mean. The different colours represent the various NCS scores (attached is a picture of NCS legend). I will note however, the NCS scores were developed a long time ago with limited information therefore are not great presentations of the level of concern. I can provide you with the report associated with MLKU010, if you like.

As requested attached is a screen shot of Cambridge Bay Tank Farm.

Cheers,
Lauren

From: Alix Rive <Alix.Rive@englobecorp.com>

Sent: September 29, 2020 5:58 PM

To: Perrin, Lauren <LPerrin@GOV.NU.CA>

Cc: Clayden, Meredith <MClayden@GOV.NU.CA>; Katheryne Budd <Katheryne.Budd@englobecorp.com>

Subject: RE: Nunavut ESAs

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Thanks Lauren for your email and for taking the time to have a look in your database.

It looks like site MLKU010 in Kugaaruk would be on our option 1 site. It's a red dot. Does this mean it's closed ? What colour does orange indicate ? I am just wondering because some of the neighbouring properties have orange dots.

Would it be possible to take a screen shot of the area around the tank farm in Cambridge Bay– our site is located about 400 m northwest of the tank farm.

Thanks for your help with this,

Alix

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From: Perrin, Lauren <LPerrin@GOV.NU.CA>

Sent: Tuesday, September 29, 2020 2:56 PM

To: Alix Rive <Alix.Rive@englobecorp.com>

Cc: Clayden, Meredith <MClayden@GOV.NU.CA>

Subject: RE: Nunavut ESAs

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Hi Alix,

After a preliminary search through our files it doesn't appear that we have any ESA's on the areas you've indicated however I have attached screenshots of the sites where we have site assessments in case I have misinterpreted your request and/or if another close contaminated site is within the boundaries you are looking at.

Happy to discuss further, let me know.

Cheers,
Lauren

From: Alix Rive <Alix.Rive@englobecorp.com>
Sent: September 21, 2020 8:30 PM
To: Perrin, Lauren <LPerrin@GOV.NU.CA>
Subject: RE: Nunavut ESAs

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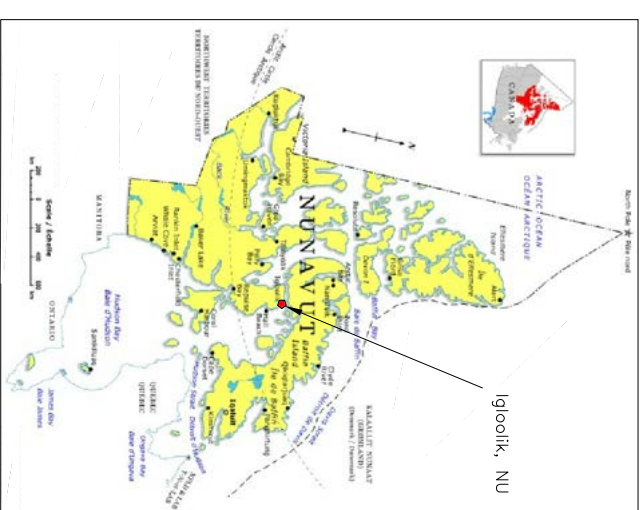
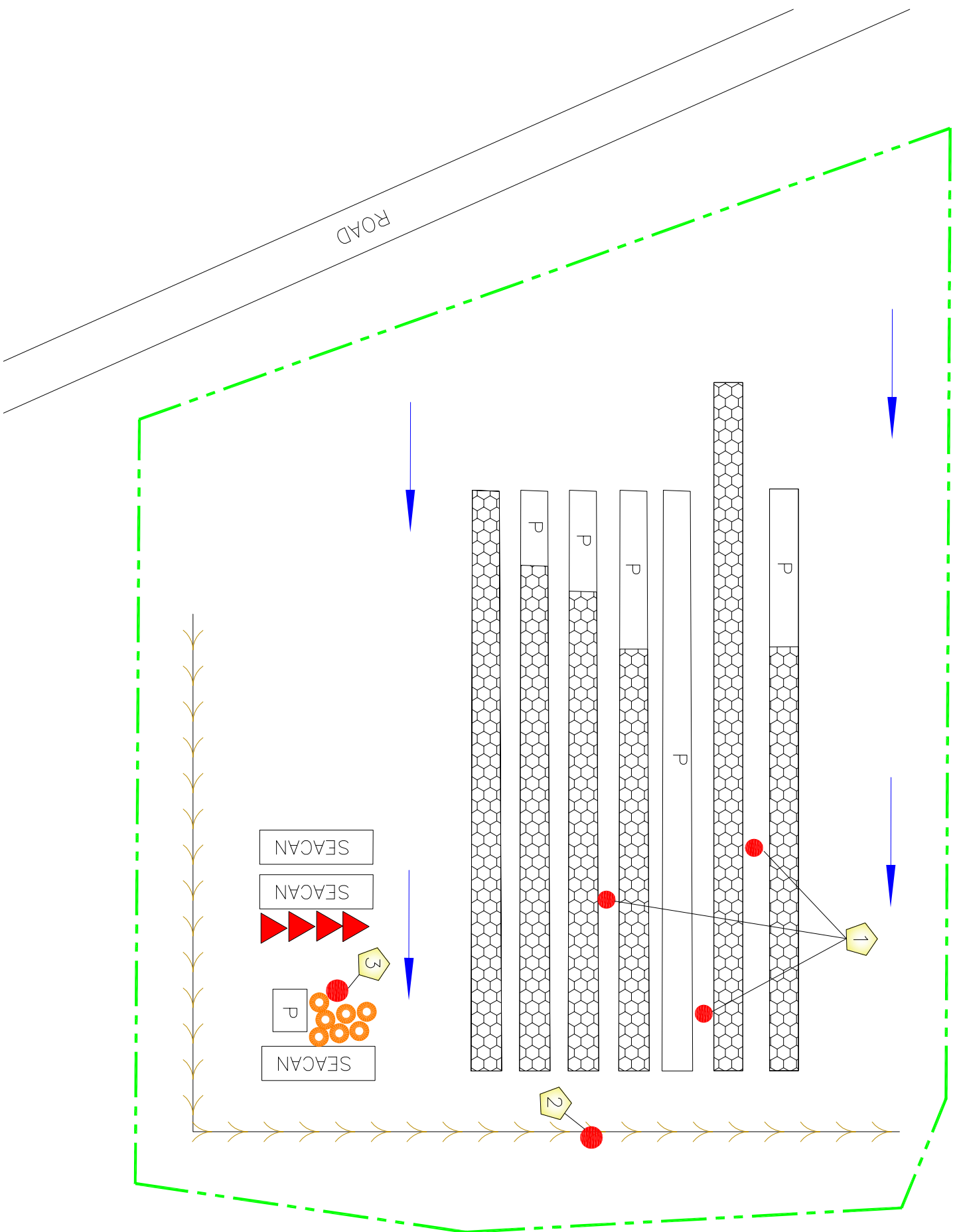
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



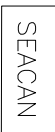





Subject: Nunavut ESAs

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Appendix D Previous Environmental Reports



LEGEND	
	SITE BOUNDARY (LIMITS OF AREA INVESTIGATED)
	SAMPLE NUMBER (YELLOW) / LOCATION (RED)
	ANTICIPATED SURFACE WATER FLOW DIRECTION
	PAILS
	COMPRESSED GAS CYLINDERS
	SEACAN
	DRUM STORAGE ON PALLETS
	PALLETS
	CONTAINMENT DITCH

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A JACQUES WHITFORD LTD (now STANTEC) PROJECT AND MUST NOT BE USED FOR OTHER PURPOSES. THIS DRAWING WAS ORIGINALLY PRODUCED IN COLOUR.

Reference:	Job No.: 123600062			Client: Department of the Environment Government of Nunavut	Government of Nunavut Contaminated Sites Inventory Igloodik Fuel Cache 2	GN INVENTORY NO. MLIG010	Dwg. No.: 10	 
Scale:	N.T.S.							
Date:	29/07/2011							
Dwn. By:	NJA							
App'd By:	Site Address N69.3696 W81.8115 Igloodik, Nunavut							

Igloolik Fuel Cache 2

Site Details

Site Name	Igloolik Fuel Cache 2 (MLIG010)
Site Location	Igloolik Fuel Cache 2 (herein referred to as the Site) is located southwest of the community of Igloolik, Nunavut.
Site Coordinates	Latitude: N69.3696, Longitude: W81.8115
Size (area)	Approximately 75 x 60 m
Current/ Former Land Use(s)	Site is currently being used as a fuel storage area.
Site History	Unknown.
Responsible Parties	Exploration Company (De Beers).
Current Property Owners/ Occupants	Hamlet of Igloolik and the Government of Nunavut
Former Property Owners/ Occupants	Unknown.
Records Review/ Interviews	Records indicated the Site was constructed in 2004 and was lined. Interviews with community members, including the Senior Administrative Officer and the Hamlet Foreman did not identify any concerns associated with this Site.
Sources of Information Referenced	Nunami Jacques Whitford Site Visit August, 2008

Site Description

The Site consists of a storage area for drums. Approximately 325 drums, mostly labeled aviation fuel, were observed in the area. This area was constructed with a liner on top of sand with pallets placed on top for the drum storage. Three seacans were located on the south portion of Site. High pressure cylinders (approximately 30 cylinders), pails of grease (approximately 8 pails), and pallets were observed around the seacans. The eastern edge of site was bordered by a containment ditch.

Drums were observed to be stored on their side on pallets. Various areas of staining were observed in the drum storage area. NJWL collected a composite soil sample from the sand fill in the storage area (IL-FC2-01).

A soil sample (IL-FC2-02) was also collected down gradient from the drum storage in the containment ditch east of the storage area. The ditch was approximately 0.2 m in depth.

Light surface staining was observed adjacent to the seacans and NJWL collected a soil sample from the area (IL-FC2-03).

Imported fill was present at the Site; the source(s) of the fill are unknown.

The adjacent properties bordering the Site were all observed to be vacant and undeveloped during the Site visit. NJWL is unaware of any previous development on the adjacent properties, and therefore, these properties are not considered to present a potential environmental concern.

Commercial regulatory guidelines were considered to be applicable to this Site.

Sampling Rationale

Sample Identification	Rationale
IL-FC2-01	Composite surface soil sample collected from sand located in the storage area.
IL-FC2-02	Surface soil sample collected from containment ditch on east edge of Site.
IL-FC2-03	Surface soil sample collected from stained area near seacans and grease pails.

Sample Details

Sample Identification	Sample Description	Odor	Latitude	Longitude
IL-FC2-01	0.0–0.1 mbg damp beach sand	Strong Hydrocarbon Odor	69.3722	81.81438
IL-FC2-02	0.0–0.1 mbg damp beach sand with gravel	None	69.36971	81.81197
IL-FC2-03	0.0–0.1 mbg damp silt with sand with gravel	Hydrocarbon Odor	69.36979	81.81131

Sample Analysis Requested

Soil					
Sample ID	BTEX/F1-F4	Metals	PCB	PAH	VOC
IL-FC2-01	x				
IL-FC2-02	x				
IL-FC2-03	x			x	

Sample Results

Three soil samples from the Site were analyzed for petroleum hydrocarbons. The results are summarized as follows:

- Concentrations of petroleum hydrocarbons exceeding the Commercial CCME Canada Wide Standard for the F2 fraction were detected in soil sample IL-FC2-01 (1,900 mg/kg vs. a standard of 260 mg/kg).

One surface soil sample (IL-FC2-01) from the Site was analyzed for Polycyclic Aromatic Hydrocarbons (PAHs). Concentrations of PAHs detected in the soil sample did not exceed the Commercial CCME Soil Quality Guidelines for the Protection of Environmental and Human Health Guidelines.

Conclusions

Based on interviews and observations made during the Site visit, the following environmental concerns were identified:

Concentrations of petroleum hydrocarbons exceeding the Commercial CCME Canada Wide Standard for Petroleum Hydrocarbons in Soil were detected in one of the three soil samples collected on the Site (IL-FC2-01). This sample exceeding the CWS standard was a composite sample collected from several locations onsite.

Fuel storage was observed on-site. Surface staining was observed at various locations on-site. The storage and handling of chemicals, including petroleum hydrocarbons, at the Site is considered to present an environmental concern.

Fill is suspected to have been imported to the Site. The source(s) of fill could not be confirmed. The import of fill from unknown sources to the Site is considered to present an environmental concern.

The CCME National Classification System for Contaminated Sites (NCS) was completed using information obtained during the Site visit. The CCME NCS was used to classify the actual and potential environmental and human health risks present at the Site. Based on information presented in the CCME NCS scoring sheets attached to this summary, the Site received a score of 54 +/- 3. This score identified the Site as a Class 2 site, with a medium risk potential.

Recommendations

Based on information gathered during this assessment, Nunami Jacques Whitford (NJWL) recommends a monitoring program be developed for the site while it is still operational. In addition, NJWL recommends that during decommissioning of the site the following issues be addressed:

- Contaminated fill should be treated or disposed in accordance with regulations.
- Surface soil beneath the storage area should be sampled for the presence of hydrocarbons.
- Debris should be removed from site and disposed of in accordance with regulations.

The statements made in this Site Summary are subject to the same limitations included in the Closure (Section 6.0) and are to be read in conjunction with the remainder of the report.

TABLE 1

Soil Petroleum Hydrocarbon Chemistry
Igloolik Fuel Cache 2
GN Contaminated Sites Inventory
Baffin Region
Igloolik, Nunavut
NJWL Project No. 1041168

Parameter	Units	RDL	GN Guidelines / CCME CWS & SQG (Commercial)	Sample ID, Depth (mbg), Date		
				IL-FC2-01 0-0.10mbg 10/08/08	IL-FC2-02 0-0.10mbg 10/08/08	IL-FC2-03 0-0.10mbg 10/08/08
SOIL PETROLEUM HYDROCARBONS CHEMISTRY						
BTEX Parameters						
Benzene	mg/kg	0.0050	5.0	ND	ND	ND
Toluene	mg/kg	0.020	0.8	ND	ND	ND
Ethyl benzene	mg/kg	0.010	20	ND	ND	ND
Xylenes	mg/kg	0.020	17	0.52	ND	ND
Petroleum Hydrocarbons						
F1 (C6-C10) - BTEX	mg/kg	10	320	59	ND	ND
F2 (>C10-C16)	mg/kg	10	260	1900	ND	ND
F3 (>C16-C34)	mg/kg	10	1700	81	20	10
F4 (C34-C50)	mg/kg	10	3300	39	32	ND

Notes:

1. RDL = laboratory reportable detection limit for routine analysis
2. mbg = meters below grade
3. ND = parameter not detected above RDL
4. -- = Analysis not completed
5. - = No applicable guideline available
6. BTEX = Benzene, Toluene, Ethyl Benzene and Xylenes
7. F1/F2/F3/F4 = Equivalent normal straight-chain hydrocarbon boiling point ranges, divided into four fractions
8. GN Guidelines = Government of Nunavut Guideline for Site Remediation, 2002 (BTEX)
CCME CWS = Canadian Council of Ministers of the Environment Canada-Wide Standards for Petroleum Hydrocarbons in Soil, 2008 (F1-F4). Exposure Pathways "Eco Soil Contact" (F1-F4), coarse-grained surface soil.
CCME SQG = Canadian Council Ministers of the Environment Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health, 1999; last update 2007 (Metals)
9. Commercial = Commercial Land Use
10. **Bold and Shaded** = exceeds the applicable guideline

TABLE 1
(continued)

**Soil Chemistry
Igloolik Fuel Cache 2
GN Contaminated Sites Inventory
Baffin Region
Igloolik, Nunavut
NJWL Project No. 1041168**

Parameter	Units	RDL	GN Guidelines / CCME SQG (Commercial)	Sample ID, Depth (mbg), Date
				IL-FC2-03 0-0.10mbg 10/08/08
SOIL POLYCYCLIC AROMATIC HYDROCARBONS CHEMISTRY				
Acenaphthene	mg/kg	0.0050	-	ND
Acenaphthylene	mg/kg	0.0050	-	ND
Acridine	mg/kg	0.0100	-	ND
Anthracene	mg/kg	0.0050	-	ND
Benzo(a)anthracene	mg/kg	0.0050	10	ND
Benzo(b&j)fluoranthene	mg/kg	0.0050	10	ND
Benzo(k)fluoranthene	mg/kg	0.0050	10	ND
Benzo(g,h,i)perylene	mg/kg	0.0050	-	ND
Benzo('c)phenanthrene	mg/kg	0.0050	-	ND
Benzeo(a)pyrene	mg/kg	0.0050	0.7	ND
Benzo[e]pyrene	mg/kg	0.0050	-	ND
Chrysene	mg/kg	0.0050	-	ND
Dibenze(a,h)anthracene	mg/kg	0.0050	10	ND
Dibenzo(a,e)pyrene	mg/kg	0.0050	-	ND
Dibenzo(a,i)pyrene	mg/kg	0.0050	-	ND
Dibenzo(a,l)pyrene	mg/kg	0.0050	-	ND
Fluroanthene	mg/kg	0.0050	-	ND
Fluorene	mg/kg	0.0050	-	0.013
Indeno(1,2,3-cd)pyrene	mg/kg	0.0050	10	ND
2-Methylnapthalene	mg/kg	0.0050	-	ND
Napthalene	mg/kg	0.0050	22	ND
Phenanthrene	mg/kg	0.0050	50	0.01
Perylene	mg/kg	0.0050	-	ND
Pyrene	mg/kg	0.0050	100	ND
Quinoline	mg/kg	0.010	-	ND

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CCME National Classification System for Contaminated Sites

Facility/Site Description: The Igloolik Fuel Cache 2 (herein referred to as the "Site") is located approximately 250m southwest of the community of Igloolik, Nunavut.

Facility Name/Location: Igloolik Fuel Cache 2

GN Inventory: MLIG010

Site Occupant: Exploration Company

Site Owner: Government of Nunavut

Latitude: N69.3696 **Longitude:** W81.8115

Current Site Use: Site is currently used as a Fuel Cache

Proposed Site Use: Unknown

Comments: The NCS scoring is based on information collected through completion of the GN Contaminated Sites Inventory by Nunami Jacques Whitford in the summer of 2008.

Site Classified by:

Jarrett Yaremko
Environmental Technologist
Nunami Jacques Whitford
Box 1680, 5021-49th Street
Yellowknife, NT
Phone: (867) 920-2216
Fax: (867) 920-2278

Degree of Familiarity with Site: moderate/adequate

Visited site: Yes

Date of Completed Classification: January 2009

DETAILED EVALUATION FORM

I CONTAMINANTS CHARACTERISTICS (Maximum Total Score is 33)
Complete Sections A, B, C, and Special Considerations
The checkmark (✓) indicates the answer is known; the question mark (?) indicates the answer is an estimate

Factors		Rationale	Scoring Guideline	Site Score		Totals
				✓	?	
A	Degree of Hazard (max. 14)	The Site includes large amounts of drums and some pails				
	High concern contaminants - high concentration		14	14		
	High concern contaminants - low concentration		11			
	Medium concern contaminants - high concentration		8			
	Medium concern contaminants - low concentration		5			
	Low concern contaminants		3			14
B	Contaminant Quantity (area of volume of site contamination) (max.10)	The Site was approximately 75m x 60m				Section A max. 14
	>10 ha or 1000 m ³ or drums of liquid		10			
	2 to 10 ha or 100 to 1000 m ³		6	6		
	<2 ha or 100 m ³		2		6	
C	Physical State of Contaminants (max.9)	Liquid from drums and AST on Site				Section B max. 10
	Liquid/gas		9	9		
	Sludge		7			
	Solid		3		9	
Special Considerations						Section C max. 9
Discretionary addition or subtraction to this category score (Contaminant Characteristics) by up to 6 points based on technical judgment of the user. (Special considerations scores must not cause total score for this category to exceed the maximum (33) or be lower than the minimum (0) allowable.)						
DETAILED RATIONALE MUST BE DOCUMENTED						0
						max. 6

				Total "✓"	Total "?"	Total "✓"+"?"
I	Total Site Score for CONTAMINANT CHARACTERISTICS	Add:	Section A	14	0	14
			Section B	6	0	6
			Section C	9	0	9
			Special Considerations	0	0	0
			TOTAL	29	0	29
						max. 33

Complete **Sections A, B, C (Groundwater, Surface Water, and Direct Contact)**

Score **Section 1 (Known)** or **2 (Potential)**, and **Special Considerations**

The checkmark (✓) indicates the answer is known; the question mark (?) indicates the answer is an estimate

Select which method is being used - Known (1) or Potential (2): 2

Factors		Scoring Guideline	Site Score		Totals
			✓	?	
1	Known Contamination of Groundwater at or beyond the Property Boundary (measured contamination of, or known contact with, groundwater (max. 11)) Groundwater significantly exceeds CDWG (by >2x) or known contact of contaminants with groundwater Between 1 and 2x CDWG or probable contact with groundwater Meets Canadian Drinking Water Guidelines If impact on groundwater is not known complete 2	11 6 0			0 Section 1 max. 11
2	Potential for Groundwater Contamination (max. 11) a) Engineered subsurface containment (max. 4) No containment Partial Containment Full Containment b) Thickness of confining layer over aquifer (max. 1.5) 3 m or less 3 to 10 m > 10 m c) Hydraulic conductivity of the confining layer (max. 1.5) >10 ⁻⁴ cm/sec 10 ⁻⁴ to 10 ⁻⁶ cm/sec <10 ⁻⁶ cm/sec d) Annual rainfall (max. 1) >1,000 mm 600 mm 400 mm 200 mm e) Hydraulic conductivity of aquifer(s) of concern (max. 3) >10 ⁻² cm/sec 10 ⁻² to 10 ⁻⁴ cm/sec <10 ⁻⁴ cm/sec	Drums are stored in a lined and bermed area. Unknown Unknown Area receives between 200-400mm annually The Site does not have an aquifer	4 2 0 1.5 1 0 1.5 1 0.5 1 0.6 0.4 0.2 3 1.5 0.5	0 0.75 0.75 0.4 0	1.9 Section 2 max. 11

<div> <div>3</div> <div>Special Considerations</div> </div> <div> <p>Discretionary addition or subtraction to this sub-category score (Groundwater Pathway) by up to 4 points based on technical judgment of the user. (Special considerations scores must not cause total score for this sub-category to exceed the maximum (11) or be lower than the minimum (0) allowable.)</p> <p>DETAILED RATIONALE MUST BE DOCUMENTED</p> </div> <div> <div>-4 to +4</div> <div>0</div> </div>	<div>Section 3 max. 4</div>
--	-----------------------------

A.	Groundwater Total	Add:	Section 1 or 2 Special Considerations	TOTAL	Total "✓"	Total "?"	Total "✓ "+"?"
					0.4	1.5	1.9
					0	0	0
					0.4	1.5	1.9
					max. 11		

Site Identification: Igloolik Fuel Cache 2

DETAILED EVALUATION FORM (Cont'd)

II EXPOSURE PATHWAYS (Cont'd)

B Surface Water (Maximum Score is 11)

Score **Section 1 (Known)** or **2 (Potential)**, and **Special Considerations**

Select which method is being used - Known (1) or Potential (2): 2

Factors		Scoring Guideline	Site Score		Totals
			✓	?	
1	Observed or Measured Contamination of Water/Effluent Discharged from Site (max.11)				
	Known or strongly suspected to exceed CWQG by >2x	11			
	Known or strongly suspected to be between 1 and 2x CWQG	6			
	Meets Canadian Water Quality Guidelines	0			0
	If impact on surface water is not known complete 2				Section 1 max. 11
2	Potential for Surface Water Contamination (max. 11)				
	a) Surface containment (max. 5)				
	No containment				
	Partial Containment				
		Site is lined and bermed	5		
			3		
	Full Containment		0.5	0.5	
	b) Distance to perennial surface water (max. 3)				
	0 to <100 m		3		
	100-300 m	Approximately 500m to a perennial area of surface water	2		
	>300 m		0.5	0.5	
	c) Topography (max. 1.5)				
	Contaminants above ground level and slope is steep		1.5		
	Contaminants at or below ground level and slope is steep	Contaminants are above and below ground level and slope is flat.	1.2		
	Contaminants above ground level and slope is flat		0.8	0.8	
Contaminants at or below ground level and slope is flat		0			
d) Run-off potential (see nomograph at end of Appendix D) (max. 1)					
>1,000 mm rainfall and low permeability surface material	Approximately 200-400mm precipitation annually.	1			
500-1000 mm rainfall and moderately permeable surface material		0.6			
<500 mm rainfall and highly permeable surface material		0.2	0.2		
e) Flood potential (max. 0.5)					
1 in 2 years	Site not in flood plain	0.5			
1 in 10 years		0.3			
1 in 50 years		0.1	0	2	
				Section 2 max. 11	
Special Considerations					
Discretionary addition or subtraction to this sub-category score (Surface Water Pathway) by up to 4 points based on technical judgment of the user. (Special considerations scores must not cause total score for this sub-category to exceed the maximum (11) or be lower than the minimum (0) allowable.)					
DETAILED RATIONALE MUST BE DOCUMENTED					
		-4 to +4			0
					Section 3 max. 4

		Total "✓"	Total "?"	Total "✓ "+"?"
B. Surface Water Total	Add:	2	0	2
	Section 1 or 2	0	0	0
	Special Considerations	0	0	0
	TOTAL	2	0	2

max. 11

DETAILED EVALUATION FORM (Cont'd)

II EXPOSURE PATHWAYS (Cont'd)

C Direct Contact (Maximum Score is 11)

Score Section 1 (Known) or 2 (Potential), and Special Considerations

Select which method is being used - Known (1) or Potential (2): 2

Factors		Scoring Guideline	Site Score		Totals
✓	?				
<div> <div>1 Known Contamination of Media Off-site (max. 11)</div> <div> Known contamination of media (soil, sediment, air) off-site due to direct contact with contaminated soil, dust, air etc. (vector transported should also be considered) 11 </div> <div> Strongly suspected contamination of media (soil, sediment, air) off-site 6 </div> <div> No contamination of media off-site 0 </div> <div>If impact due to direct contact is not known complete 2</div> </div>					
					0
					Section 1 max. 11
OR 2 Potential for Direct Human and/or animal Contact (max. 11)					
a) Airborne Emissions (gases, vapour, contaminated dust, etc.) (max. 5)					
Known or suspected airborne emissions impacting on neighbouring properties (see User's Guide)		None	5		
Airborne emissions generally restricted to site			3		
No airborne emissions			0	0	
b) Accessibility of Site (Ability to Contact Materials) (max. 4)					
Limited barriers to prevent site access; contaminants not covered			4		
Moderate accessibility or no intervening barriers; contaminants are covered		The site is not fenced	3	3	
Controlled access or remote location and contaminants are covered			0		
c) Hazardous soil gas migration from the site (max. 2)					
Contaminants are putrescible and soil permeability is high		Hazardous soil gas migration is not a concern at the Site	2		
Site contaminants are putrescible but soil permeability is low, and/or groundwater is <2 m from surface			1		
No putrescible contaminants at the site			0	0	
					3
					Section 2 max. 11
Special Considerations					
Discretionary addition or subtraction to this sub-category score (Direct Contact Pathway) by up to 4 points based on technical judgment of the user. (Special considerations scores must not cause total score for this sub-category to exceed the maximum (11) or be lower than the minimum (0) allowable.)					
DETAILED RATIONALE MUST BE DOCUMENTED		-4 to +4		0	
					0
					Section 3 max. 4
C. Direct Contact Total		Add:	Section 1 or 2	Total "✓"	Total "?"
			Special Considerations	3	0
			TOTAL	0	0
				3	0
				max. 11	
II Total Site Score for EXPOSURE PATHWAYS		Add:	A. Groundwater	0.4	1.5
			B. Surface Water	2	0
			C. Direct Contact	3	0
			TOTAL	5.4	1.5
				max. 33	

DETAILED EVALUATION FORM (Cont'd)

III RECEPTORS (Maximum Total Score is 34)
 Complete Section A and B

A Human and Animal Uses (Maximum score is 18)

Score Section 1 (Known) or 2 (Potential), and Special Considerations

The checkmark (✓) indicates the answer is known; the question mark (?) indicates the answer is an estimate

Select which method is being used - Known (1) or Potential (2): 2

Factors		Scoring Guideline		Site Score		Totals
		✓	?			
1	Known Impact on Humans or Animals (max. 18)					
	Known adverse impact on humans or domestic animals as a result of the contaminated site (see User's Guide)					
	Known adverse effect on humans or domestic animals					18
	Strongly suspected adverse effect on humans or domestic animals					15
	If adverse effect on humans is not known complete 2					0
						Section 1 max. 18
						Class 1
OR 2	Potential for Impact on Humans or Animals (max. 18)					
	a) Drinking Water Supply (max. 9) (groundwater or surface water; private, commercial or municipal supply) Complete Section i) (Known) OR ii) (Potential)					
	Select which method is being used - Known (1) or Potential (2): 2					
	i) Known impact on drinking water supply (max. 9) (see User's Guide)					
	Drinking water supply is known to be adversely affected as a result of site contamination					
	Known contamination of drinking water supply (to levels exceeding CDWG)					9
	Strongly suspected contamination of drinking water supply					7
	Drinking water supply is known not to be contaminated					0
	ii Potential for impact on drinking water supply (max. 9)					
	■ Proximity to drinking water supply (max. 6)					
	0 to <100 m					
	100 to <300 m					
	300 m to <1 km					
	1 to 5 km					
	■ "Availability" of alternate drinking water supply (max. 3)					
	Alternate drinking water supply is not available					
	Alternate drinking water supply difficult to obtain					
	Alternate drinking water supply available					

DETAILED EVALUATION FORM (Cont'd)

III RECEPTORS
 A Human and Animal Uses (cont'd)

The checkmark (✓) indicates the answer is known; the question mark (?) indicates the answer is an estimate

Factors	Scoring Guideline		Site Score		Totals
			✓	?	
b) Other Water Resources (max. 4) (groundwater or surface water)					
Complete i) (Known) OR ii) (Potential)	Select which method is being used - Known (1) or Potential (2): 2				
i) Known Impact of water resources (max. 4) (See User's Guide) Water resources (used for recreational purposes, commercial food preparation, livestock watering, irrigation and other food chain uses) is known to be adversely affected as a result of site contamination					
Water resource is known to be contaminated above CWQG			4		
Water resource is strongly suspected to be contaminated above CWQG			3		
Water resource is known not to be contaminated			0		
If impact on water resource is not known, complete ii)					
ii) Potential for impact on water resources (max. 4)					
■ Proximity to water resources used for activities listed above (max. 2)					
0 to <100 m			2		
100 to <300 m			1.5		
300 m to < 1km			1		
1 to 5 km			0.5		
■ Use of water resources (max. 2) If multiple uses, give highest score automatically (use following table)					
	Recreational use of local bay approximately 500m east of Site			1	
	Frequent Fishing				
	Frequency of Use				
Water Use	Frequent	Occasional			
Recreational (swimming, fishing, etc.)	2	1		2	
Commercial food preparation	1.5	0.8			
Livestock watering	1	0.5			
Irrigation	1	0.5			
Other domestic or food chain uses	0.5	0.3			
Not currently used but likely future use	0.5	0.2			

A Human and Animal Uses (Cont'd)

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DETAILED EVALUATION FORM (Cont'd)

III RECEPTORS (Cont'd)

B Environmental Receptors (Maximum Score is 16)

Score
 Section 1 (Known) or 2 (Potential), and Special Considerations

Select which method is being used - Known (1) or Potential (2): 2

Factors		Scoring Guideline		Site Score		Totals		
		✓	?					
1	Known Adverse Impact on the Environment as a Result of the Contaminated Site (max. 16)							
	Known adverse impact on sensitive environment		16					
	Evidence of stress on aquatic species, or vegetative stress on trees, crops or plant life located on properties neighbouring the site		14					
	Strongly suspected adverse impact on sensitive environment		12					
	If impact on environment is not known complete 2							
						0		
						Section 1 max. 16		
2	Potential for Impact on Sensitive Environments (max. 16)							
	a) Distance from the site to the nearest sensitive environment (max. 10) e.g., sensitive aquatic environment, nature preserve, habitat for endangered species, sensitive forest reserves, national parks or forests, etc.)							
	0 to <500 m		Ocean is approximately 500m east of the Site.	10	6			
	500 m to <2 km			6				
	2 to <5 km			2				
	5 to 10 km			0.5				
	b) Groundwater (max. 6) Distance to an important or susceptible groundwater resource (e.g. recharge area)							
	0 to <500 m		Groundwater / meltwater not used as a resource in the area	6	0			
	500 m to <2 km			4				
	2 to <5 km			2				
	5 to 10 km			1				
						6		
						Section 2 max. 16		
Special Considerations								
Discretionary addition or subtraction to this sub-category (Environmental Receptors) by up to 5 points based on technical judgment of the user. (Special considerations scores must not cause total score for this sub-category to exceed the maximum (16) or be lower than the minimum (0) allowable.)								
DETAILED RATIONALE MUST BE DOCUMENTED								
					-5 to +5	0	0	Section 3 max. 5
B	Total Environmental Receptors	Add:	Section 1 or 2 Special Considerations TOTAL	Total "✓"	Total "?"	Total "✓ "+"?"		
				6	0	6		
				0	0	0		
				6	0	6		
						max. 16		
III	Total Site Score for RECEPTORS	Add:	A. Human & Animal Use B. Environmental Receptors TOTAL	11	1.5	12.5		
				6	0	6		
				17	1.5	18.5		
							max. 34	

CCME National Classification System for Contaminated Sites

Site Identification: Igloolik Fuel Cache 2

DETAILED EVALUATION FORM (Cont'd)

FINAL SCORE SHEET AND SITE CATEGORIES

Factor Categories	Category Score (CS) ("✓ +?")	Estimated Score (ES) ("?")	Total Category Score (CS)	Total Estimated Score (ES)
I CONTAMINANT CHARACTERISTICS (33)	29	0	Total → 29	+/- 0
II EXPOSURE PATHWAYS (33)				
A Groundwater (11)	1.9	1.5		
B Surface Water (11)	2	0		
C Direct Contact (11)	3	0		
Total	6.9	1.5	Total → 6.9	+/- 1.5
III RECEPTORS (34)				
A Human and Animal (18)	12.5	1.5		
B Environment (16)	6	0		
Total	18.5	1.5	Total → 18.5	+/- 1.5
			54	+/- 3
			TOTAL SCORE FOR THE SITE (TS) (Sum of scores marked "a" and "?", rounded to nearest whole number)	ESTIMATED SCORE FOR SITE (ES) (Sum of scores marked "?", i.e., score estimated or unknown)

TOTAL SCORE	CLASS	RISK POTENTIAL	ACTION REQUIRED
70-100	Class 1	High	Yes
50-69	Class 2	Medium	Likely
38-49	Class 3	Medium Low	May Be
</=37	Class N	Low	Not Likely

CLASSIFICATION (1, 2, 3, or N)
If **ES** >15, then site is categorized as I
(insufficient information to classify site)

2



Figure 1: View of berm and tanks stored on site, looking south.



Figure 2: Storage of tanks with plastic liner underneath, looking east.



Figure 3: Seacan storage area south portion of site.



Figure 4: Storage of cylinders and pails next to seacans.

Appendix E Hazardous Materials and Spills Database

Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-2019228	3-Jun-19	Baffin	Igloolik, Community, Nunavut	Arctic College	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	138	Litres	Tank Leak	GN - Government of Nunavut
spill-2019090	6-Mar-19	Baffin	Igloolik, Community, Nunavut	Continuing Care Centre	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	2			GN - Government of Nunavut
spill-2018480	17-Dec-18	Baffin	Igloolik, Community, Nunavut		Petroleum - fuel oil (jet A, diesel, turbo A, heat)	950	Litres	Breakage	GN - Government of Nunavut
spill-2018465	27-Nov-18	Baffin	Igloolik, Community, Nunavut		Petroleum - fuel oil (jet A, diesel, turbo A, heat)	30	Litres	Breakage	GN - Government of Nunavut
spill-2018352	27-Aug-18	Baffin	Igloolik, Community, Nunavut		Petroleum - fuel oil (jet A, diesel, turbo A, heat)	46	Litres	Breakage	GN - Government of Nunavut
spill-2018233	14-Jun-18	Baffin	Igloolik, Community, Nunavut		Petroleum - fuel oil (jet A, diesel, turbo A, heat)	180	Litres	Tank Leak	GN - Government of Nunavut
spill-2017349	12-Sep-17	Baffin	Igloolik	Igloolik	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	GN - Government of Nunavut
spill-2017363	12-Sep-17	Baffin	Igloolik	Unit 287 Igloolik, NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	30	Litres	Tank Leak	GN - Government of Nunavut
spill-2017174	11-May-17	Baffin	Igloolik	Unit #266 mechanical room, Igloolik, NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Fitting Leak	GN - Government of Nunavut
spill-2017119	21-Apr-17	Baffin	Igloolik	69 23N 23N 81 46W	Wastewater (sewage, mine tailings)	1000	Litres	Overflow Event	GN - Government of Nunavut
spill-2016269	18-Jul-16	Baffin	Igloolik	Unit 257	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	46	Litres	Fitting Leak	GN - Government of Nunavut

Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-2016312	18-Jul-16	Baffin	Igloolik	Unit 257	Petroleum - crude oil	46	Litres	Fitting Leak	GN - Government of Nunavut
spill-2015436	16-Oct-15	Baffin	Igloolik	Haz, Waste Area, Airport Access Road	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	207	Litres	Breakage	GN - Government of Nunavut
spill-2015363	22-Aug-15	Baffin	Igloolik	Igloolik, NU Pub, Housing Unit#245	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	205	Litres	Collision or Crash	GN - Government of Nunavut
spill-2015355	22-Aug-15	Baffin	Igloolik	Public Houing unit#245	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	205	Litres	Collision or Crash	GN - Government of Nunavut
spill-2015256	12-Jun-15	Baffin	Igloolik	Igloolik	Petroleum - gasoline (aviation, turbo B, jet B)	0.1	Litres	Fitting Leak	GN - Government of Nunavut
spill-2014256	4-Jul-14	Baffin	Igloolik	Igloolik near 326 delta	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Other	GN - Government of Nunavut
spill-2014206	9-Jun-14	Baffin	Igloolik, Community, Nunavut	Igloolik	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	10	Litres	Tank Leak	ECCC - Environment and Climate Change Canada
spill-2014159	12-May-14	Baffin	Igloolik	Igloolik NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Fitting Leak	GN - Government of Nunavut
spill-2014140	29-Apr-14	Baffin	Igloolik	Igloolik 620 NCC Office Building- Timmivut Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Unkown Cause	GN - Government of Nunavut
spill-2013306	4-Sep-13	Baffin	Igloolik	East shore of Foxe Basin- Igloolik Beach	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	205	Litres	Tank Leak	GN - Government of Nunavut

Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-2013304	3-Sep-13	Baffin	Igloolik	Igloolik Sealift Beach	Chemicals (including transformer oils)	200	Litres	Tank Leak	GN - Government of Nunavut
spill-2013260	18-Jul-13	Baffin	Igloolik	Igloolik Tummivut Building	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Tank Leak	GN - Government of Nunavut
spill-2012100	26-Mar-12	Baffin	Igloolik	Tank Farm Igloolik	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Litres	Overflow Event	GN - Government of Nunavut
spill-2012052	21-Feb-12	Baffin	Igloolik	Igloolik	Chemicals (including transformer oils)	207	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2010422	18-Oct-10	Baffin	Igloolik	Unit 299B, Igloolik NU	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2010378	15-Sep-10	Baffin	Igloolik	Igloolik Health Centre	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	30	Litres	Tank Leak	GN - Government of Nunavut
spill-2012100	26-Mar-12	Baffin	Igloolik	Tank Farm Igloolik	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Litres	Overflow Event	GN - Government of Nunavut
spill-2010124	25-Apr-10	Baffin	Igloolik	Unit 246	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	30	Litres	Collision or Crash	GN - Government of Nunavut
spill-2009425	4-Sep-09	Baffin	Igloolik	Outside DPW Warehouse/Shop	Petroleum - waste oil (slops, sludge)	180	Litres	Collision or Crash	GN - Government of Nunavut
spill-2009078	21-Feb-09	Baffin	Igloolik	Grey Building Next to N End of Igloolik Hotel	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	150	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2009072	15-Feb-09	Baffin	Igloolik	Unit 299E	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	239	Litres	Pipe Leaks	GN - Government of Nunavut

Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-2008605	31-Dec-08	Baffin	Iglolik	Unit 37-505 (299A)	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	1100	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2008328	4-Jul-08	Baffin	Iglolik	Kipsigak Arena	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	3000	Litres	Fitting Leak	GN - Government of Nunavut
spill-2008258	29-May-08	Baffin	Iglolik	Iglolik HTO	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	50	Litres	Tank Leak	GN - Government of Nunavut
spill-2012100	26-Mar-12	Baffin	Iglolik	Tank Farm Iglolik	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Litres	Overflow Event	GN - Government of Nunavut
spill-2012100	26-Mar-12	Baffin	Iglolik	Tank Farm Iglolik	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Litres	Overflow Event	GN - Government of Nunavut
spill-2007263	11-Jun-07	Baffin	Iglolik	Gas Pumps by Iglolik Coop	Petroleum - gasoline (aviation, turbo B, jet B)	409	Litres	Unkown Cause	GN - Government of Nunavut
spill-2006332	21-Aug-06	Baffin	Iglolik	Beside the Road Near Northern's Beach Warehouse	Chemicals (including transformer oils)	10	Litres	Other	GN - Government of Nunavut
spill-2006103	20-Mar-06	Baffin	Iglolik	Power Plant Between D348 and Lube Oil Bulk Tank	Petroleum - lubricating oil (lube, hydraulic)	40	Litres	Overflow Event	GN - Government of Nunavut
spill-2004454	9-Jul-04	Baffin	Iglolik	Airport West of Apron	Petroleum - gasoline (aviation, turbo B, jet B)	201	Litres	Unkown Cause	GN - Government of Nunavut
spill-2003766	22-Dec-03	Baffin	Iglolik	Outside Terminal	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Litres	Overflow Event	GN - Government of Nunavut

Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-2003517	1-Aug-03	Baffin	Igloolik	69:22:586N 81:47:677W	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	50	Litres	Collision or Crash	GN - Government of Nunavut
spill-2001155	8-May-01	Baffin	Igloolik	Attagutaluk Elementary School	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	725	Litres	Tank Leak	GN - Government of Nunavut
spill-2000143	4-Jun-00	Baffin	Igloolik	House #301	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	1137	Litres	Pipe Leaks	GN - Government of Nunavut
spill-1998141	22-Aug-98	Baffin	Igloolik	Hamlet Parking Garage	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	1136	Litres	Other	GNWT - Department of Environment and Natural Resources
spill-1996059	22-Apr-96	Baffin	Igloolik	NWTPC Power Plant	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	55574	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1995138	24-Aug-95	Baffin	Igloolik	2 Miles Out of Town	Mixed load	27	Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
spill-1994082	22-May-94	Baffin	Igloolik	Unit #37-021	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	227	Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
spill-2012100	26-Mar-12	Baffin	Igloolik	Tank Farm Igloolik	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Litres	Overflow Event	GN - Government of Nunavut
spill-2012100	26-Mar-12	Baffin	Igloolik	Tank Farm Igloolik	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Litres	Overflow Event	GN - Government of Nunavut

Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-1994036	28-Feb-94	Baffin	Igloolik	Airport Apron	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	115	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1992173	1-Aug-92	Baffin	Igloolik	Outside Municipal Office	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	900	Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
spill-2012100	26-Mar-12	Baffin	Igloolik	Tank Farm Igloolik	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Litres	Overflow Event	GN - Government of Nunavut
spill-1991199	11-Oct-91	Baffin	Igloolik	Co-op's Gas Storage Facility	Petroleum - gasoline (aviation, turbo B, jet B)	55	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1991149	9-Aug-91	Baffin	Igloolik	In Front of Gas Station	Petroleum - gasoline (aviation, turbo B, jet B)	35	Litres	Unkown Cause	GNWT - Department of Environment and Natural Resources
spill-1991107	19-Jun-91	Baffin	Igloolik	Oil Pumphouse at Tank Farm	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
spill-1991100	18-Jun-91	Baffin	Igloolik	Housing Association Workshop	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	10	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-1990209	11-Dec-90	Baffin	Igloolik	Airport	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	50	Litres	Overflow Event	GNWT - Department of Environment and Natural Resources
spill-2012100	26-Mar-12	Baffin	Igloolik	Tank Farm Igloolik	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Litres	Overflow Event	GN - Government of Nunavut

Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-1988167	27-Nov-88	Baffin	Igloolik	Co-op Parking Garage	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	750	Litres	Fitting Leak	GNWT - Department of Environment and Natural Resources
spill-1987105	29-Sep-87	Baffin	Igloolik		Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Unkown Cause	ECCC - Environment and Climate Change Canada
spill-2012100	26-Mar-12	Baffin	Igloolik	Tank Farm Igloolik	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Litres	Overflow Event	GN - Government of Nunavut
spill-1983099	21-Feb-83	Baffin	Igloolik	Fuel Tank	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	711	Litres	Other	
spill-1983089	21-Feb-83	Baffin	Igloolik	Ground Beside House	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	711	Litres	Tank Leak	GNWT - Department of Environment and Natural Resources
spill-1983003	7-Jan-83	Baffin	Igloolik	Pipe Along Road	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	910	Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
spill-1982035	10-May-82	Baffin	Igloolik	Dispenser Area	Petroleum - gasoline (aviation, turbo B, jet B)	2410	Litres	Unkown Cause	GNWT - Department of Environment and Natural Resources
spill-2012100	26-Mar-12	Baffin	Igloolik	Tank Farm Igloolik	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	100	Litres	Overflow Event	GN - Government of Nunavut
spill-1977060	15-Jun-77	Baffin	Igloolik	Dispensing Unit	Petroleum - gasoline (aviation, turbo B, jet B)	482	Litres	Tank Leak	GNWT - Department of Environment and Natural Resources

Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-1977021	16-Apr-77	Baffin	Igloolik	Fuel Loading Rack Area	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	20911	Litres	Overflow Event	
spill-1976004	19-Feb-76	Baffin	Igloolik	Main Fuel Line	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	37473	Litres	Pipe Leaks	
spill-1991105		Baffin	Igloolik	House #238	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
spill-1991106		Baffin	Igloolik	House #1114	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	0	Litres	Pipe Leaks	GNWT - Department of Environment and Natural Resources
spill-2017062		Baffin	Igloolik	Igloolik	Wastewater (sewage, mine tailings)	0	Litres	Other	GN - Government of Nunavut
spill-2017228		Baffin	Igloolik	Igloolik NU, Unit#229E fuel tank flex hose	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	2	Litres	Pipe Leaks	GN - Government of Nunavut
spill-2014185		Baffin	Igloolik	Tumibut GN Building	Wastewater (sewage, mine tailings)	4000	Litres	Overflow Event	GN - Government of Nunavut

Appendix F ERIS Search Results



DATABASE **REPORT**

Project Property:	<i>Igloolik Option 2 Igloolik Option 2 Igloolik NU</i>
Project No:	
Report Type:	<i>Quote - Custom-Build Your Own Report</i>
Order No:	<i>20291100217</i>
Requested by:	<i>Englobe Corp.</i>
Date Completed:	<i>September 21, 2020</i>

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Executive Summary

Property Information:

Project Property: *Igloolik Option 2
Igloolik Option 2 Igloolik NU*

Project No:

Order Information:

Order No: *20291100217*
Date Requested: *September 11, 2020*
Requested by: *Englobe Corp.*
Report Type: *Quote - Custom-Build Your Own Report*

Historical/Products:

Aerial Photographs *Aerials - National Collection*
ERIS Xplorer [*ERIS Xplorer*](#)

Executive Summary: Report Summary

<i>Database</i>	<i>Name</i>	<i>Searched</i>	<i>Project Property</i>	<i>Boundary to 0.25km</i>	<i>Total</i>
AUWR	Automobile Wrecking & Supplies	Y	0	0	0
CDRY	Dry Cleaning Facilities	Y	0	0	0
CFST	Crown Land Fuel Storage Tanks	Y	0	0	0
CNG	Compressed Natural Gas Stations	Y	0	0	0
EHS	ERIS Historical Searches	Y	0	0	0
FCON	Federal Convictions	Y	0	0	0
FCS	Contaminated Sites on Federal Land	Y	0	1	1
FRST	Federal Identification Registry for Storage Tank Systems (FIRSTS)	Y	0	0	0
GHG	Greenhouse Gas Emissions from Large Facilities	Y	0	0	0
IAFT	Indian & Northern Affairs Fuel Tanks	Y	0	0	0
MINE	Canadian Mine Locations	Y	0	0	0
MNR	Mineral Occurrences	Y	0	0	0
NATE	National Analysis of Trends in Emergencies System (NATES)	Y	0	0	0
NDSP	National Defense & Canadian Forces Spills	Y	0	0	0
NDWD	National Defence & Canadian Forces Waste Disposal Sites	Y	0	0	0
NEBI	National Energy Board Pipeline Incidents	Y	0	0	0
NEBT	National Energy Board Wells	Y	0	0	0
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0
NPCB	National PCB Inventory	Y	0	0	0
NPRI	National Pollutant Release Inventory	Y	0	0	0
OGWE	Oil and Gas Wells	Y	0	0	0
RST	Retail Fuel Storage Tanks	Y	0	0	0
SCT	Scott's Manufacturing Directory	Y	0	0	0
SPL	Spills	Y	0	2	2
Total:			0	3	3

Executive Summary: Site Report Summary - Project Property

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev diff (m)</i>	<i>Page Number</i>
--------------------	-----------	--------------------------	----------------	---------------------	--------------------------	------------------------

No records found in the selected databases for the project property.

Executive Summary: Site Report Summary - Surrounding Properties

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev Diff (m)</i>	<i>Page Number</i>
<u>1</u>	FCS	Unassessed	Igloolik NU	ESE/18.8	-0.26	<u>11</u>
<u>2</u>	SPL		Tank Farm Igloolik Igloolik NU	SSE/183.2	1.66	<u>13</u>
<u>2</u>	SPL		Tank Farm Igloolik Igloolik NU	SSE/183.2	1.66	<u>14</u>

Executive Summary: Summary By Data Source

FCS - Contaminated Sites on Federal Land

A search of the FCS database, dated Jun 2000-Apr 2020 has found that there are 1 FCS site(s) within approximately 0.25 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Unassessed	Igloolik NU	18.8	<u>1</u>

SPL - Spills

A search of the SPL database, dated Mar 31, 2020 has found that there are 2 SPL site(s) within approximately 0.25 kilometers of the project property.

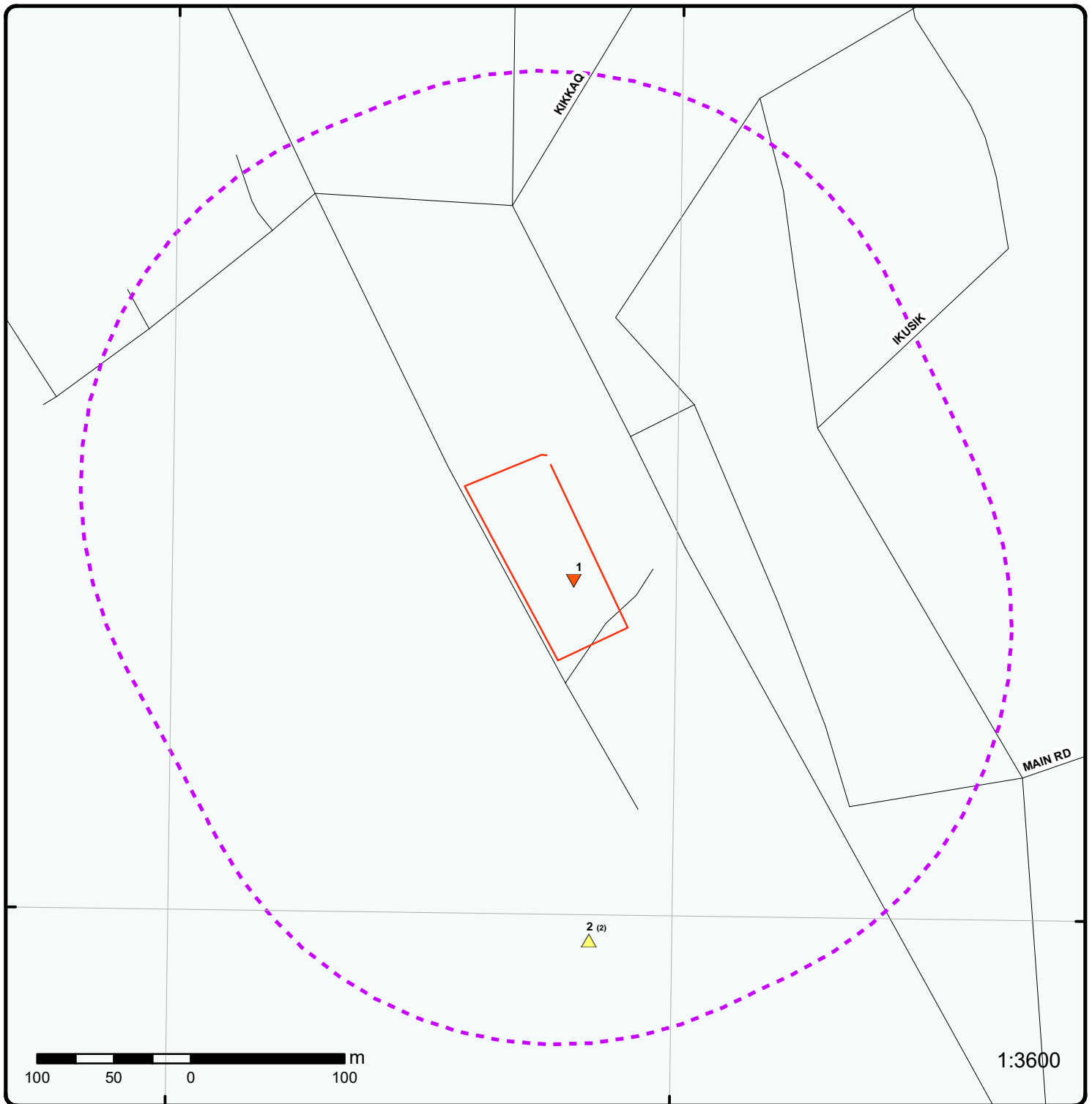
<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	Tank Farm Igloolik Igloolik NU	183.2	<u>2</u>
	Tank Farm Igloolik Igloolik NU	183.2	<u>2</u>

81°49'W

81°48'30"W

69°22'N

69°22'N



Map : 0.25 Kilometer Radius

Order Number: 20291100217

Address: Igloolik Option 2, Igloolik, NU



Project Property	Expressway	Industrial and Resource - Regions	National Park
Buffer Outline	Principal Highway	Main Line	Provincial or Territorial Park
Eris Sites with Higher Elevation	Secondary Highway	Sidetrack	Other Park
Eris Sites with Same Elevation	Major Road	Transit Line	Golf Course or Driving Range
Eris Sites with Lower Elevation	Local road	Abandoned Line	Park or Sports Field
Eris Sites with Unknown Elevation	Trail		Other Recreation Area
	Proposed Road		
	Ferry Route/Ice Road		

81°49'30"W

81°48'W

69°22'30"N

69°22'30"N



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Aerial Year: 2019

Address: Igloolik Option 2, Igloolik, NU

Source: ESRI World Imagery

Order Number: 20291100217



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81°51'W

81°49'30"W

81°48'W

81°46'30"W

69°22'30"N

69°22'30"N

69°21'N

69°21'N



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

1:24000

Topographic Map

Address: Igloolik Option 2, NU

Source: ESRI World Topographic Map

Order Number: 20291100217



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Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	1 of 1	ESE/18.8	40.7 / -0.26	Unassessed Igloolik NU	FCS
SGC: 6204012 Site ID: 00016364 Departmental ID: C N 00093 Depart Code: DFO Class Type: Class: Site Name: Unassessed Site Name (FR): Unassessed Site Status: Closed Site Status Desc: Historical review not required. Site Status (FR): Fermé Description (FR): Aucun examen historique nécessaire. Involv Code: Census Division: Baffin Municipality: Igloolik Census Sub Class: 2 Latitude: 69.368611 Longitude: -81.810000 Location: Protected Data: 0 FED: 001 Fed Electoral District: Nunavut Fed Electoral District (FR): Nunavut Metro: Nearest Pop. Area: Highest Step Cmpltd: 1 Site Deleted Flag: Created: 2011-04-26T09:52:00 Modified: 2017-02-16T16:34:00 Property No.: 86476 Est m³ Contmnted: 0.0000 Est Ha Contmnted: 0.0000 Est Tons Contamin: 0.0000 Est Population at 1 Km: 117 Est Population at 5 Km: 849 Est Population at 10 Km: 1,436 Est Population at 25 Km: 1,749 Est Population at 50 Km: 1,749 Reporting Org: Reporting Org (FR): Reason for Involv: Federal Real Property Reason for Involv (FR): Biens immobiliers fédéraux Liabile Third Party: Class (FR): Action Plan: Action Plan (FR): Site Mgmnt Strategy: Other Minimap URL: http://www.tbs-sct.gc.ca/fcsi-rscf/minimap.aspx?fsi=00016364 Additional Info: Additional Info (FR):					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Management</u>					
Management Code:	9				
Management Type (EN):	Other				
Management Type (FR):	Autre type de gestion				
<u>Annual Data</u>					
Fiscal Year:	2011-2012				
Reporting Organization:	DFO				
Reporting Organization (EN):	Fisheries and Oceans Canada				
Reporting Organization (FR):	Pêches et Océans Canada				
Class Type:					
Class (EN):					
Class (FR):					
CCME Flag:					
CCME NCS Year:					
Step Name (EN):					
Step Name (FR):					
Highest Step Completed:	01				
Highest Step Completed Desc:					
Planned Compl Date Step7:					
Planned Compl Date Step8:					
Planned Compl Date Step9:					
Created:					
Modified:					
NCSCS Year:					
Closed:	Yes				
Actual Cubic Metres Rem:	0.0000				
Actual Hectares Rem:	0.0000				
Actual Tons Remediated:	0.0000				
Total Asmt Expenditure:	0.00				
Total Remediation Expenditure:	0.00				
Total Care/Maint Expenditur:	0.00				
Total Mntring Expenditure:	0.00				
Ttl Expenditure Reduc Liabil:					
FCSAP Asmt Expenditure:	0.00				
FCSAP Remed Expenditure:	0.00				
FCSAP Care/Maint Expenditur:	0.00				
FCSAP Mntring Expenditure:	0.00				
<u>Annual Data</u>					
Fiscal Year:	2010-2011				
Reporting Organization:	DFO				
Reporting Organization (EN):	Fisheries and Oceans Canada				
Reporting Organization (FR):	Pêches et Océans Canada				
Class Type:					
Class (EN):					
Class (FR):					
CCME Flag:					
CCME NCS Year:					
Step Name (EN):					
Step Name (FR):					
Highest Step Completed:	01				
Highest Step Completed Desc:					
Planned Compl Date Step7:					
Planned Compl Date Step8:					
Planned Compl Date Step9:					
Created:					
Modified:					
NCSCS Year:					
Closed:	Yes				
Actual Cubic Metres Rem:	0.0000				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<hr/>					
Actual Hectares Rem:		0.0000			
Actual Tons Remediated:		0.0000			
Total Asmt Expenditure:		0.00			
Total Remediation Expenditure:		0.00			
Total Care/Maint Expenditur:		0.00			
Total Mntring Expenditure:		0.00			
Ttl Expenditure Reduc Liabil:					
FCSAP Asmt Expenditure:		0.00			
FCSAP Remed Expenditure:		0.00			
FCSAP Care/Maint Expenditur:		0.00			
FCSAP Mntring Expenditure:		0.00			
 <u>Annual Data</u>					
Fiscal Year:		2012-2013			
Reporting Organization:		DFO			
Reporting Organization (EN):		Fisheries and Oceans Canada			
Reporting Organization (FR):		Pêches et Océans Canada			
Class Type:					
Class (EN):					
Class (FR):					
CCME Flag:					
CCME NCS Year:					
Step Name (EN):					
Step Name (FR):					
Highest Step Completed:		01			
Highest Step Completed Desc:					
Planned Compl Date Step7:					
Planned Compl Date Step8:					
Planned Compl Date Step9:					
Created:					
Modified:					
NCSCS Year:					
Closed:		Yes			
Actual Cubic Metres Rem:		0.0000			
Actual Hectares Rem:		0.0000			
Actual Tons Remediated:		0.0000			
Total Asmt Expenditure:		0.00			
Total Remediation Expenditure:		0.00			
Total Care/Maint Expenditur:		0.00			
Total Mntring Expenditure:		0.00			
Ttl Expenditure Reduc Liabil:					
FCSAP Asmt Expenditure:		0.00			
FCSAP Remed Expenditure:		0.00			
FCSAP Care/Maint Expenditur:		0.00			
FCSAP Mntring Expenditure:		0.00			

2	1 of 2	SSE/183.2	42.7 / 1.66	Tank Farm Igloolik Igloolik NU	SPL
<hr/>					
Spill No:	spill-2010196			Land Sea Indicator:	Land
Spill Date:				Potential Spill:	No
Spill Quantity:	3000.00			Received Method:	
Measurement:	Litres			Involved Parties Type:	Terrotirial Government Department
Spill Cause:	Overflow Event			Spill Region:	Baffin
Spill Source:	Storage tank < 4000 Litre				
Product Spilled:	Petroleum - fuel oil (jet A, diesel, turbo A, heat)				
Product Spilled Description:	Diesel Fuel				
Area of Contamination:					
Spill Location Description:	Tank Farm Igloolik				
Known Hazards:					
Occurrence Date/Time:	May 29, 2010				
Reporting Date and Time:	Sunday, May 30, 2010 - 18:00				
Support Info Un No:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Supp Info Describe Any Assi: Support Info Water Use Permit: Supp Info Land Use Permit N: Support Info Factors Affecting: Support Info Additional Inform: Supporting Agencies: Lead Agency: GN - Government of Nunavut URL: https://www.enr.gov.nt.ca/en/spill/spill-2010196					
2	2 of 2	SSE/183.2	42.7 / 1.66	Tank Farm Igloolik Igloolik NU	SPL
Spill No: spill-2012100 Spill Date: Spill Quantity: 100.00 Measurement: Litres Spill Cause: Overflow Event Spill Source: Other Transportation Product Spilled: Petroleum - fuel oil (jet A, diesel, turbo A, heat) Product Spilled Description: Heating Fuel P-50 Area of Contamination: Spill Location Description: Tank Farm Igloolik Known Hazards: Occurrence Date/Time: March 26, 2012 Reporting Date and Time: Monday, March 26, 2012 - 18:00 Support Info Un No: Supp Info Describe Any Assi: Support Info Water Use Permit: Supp Info Land Use Permit N: Support Info Factors Affecting: Support Info Additional Inform: Supporting Agencies: Lead Agency: GN - Government of Nunavut URL: https://www.enr.gov.nt.ca/en/spill/spill-2012100					
Land Sea Indicator: Land Potential Spill: No Received Method: Involved Parties Type: Other Spill Region: Baffin					

Unplottable Summary

Total: 20 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
SPL		Igloolik HTO	Igloolik NU	
SPL		Unit #266 mechanical room, Igloolik, NU	Igloolik NU	
SPL		Igloolik	Igloolik NU	
SPL		Haz, Waste Area, Airport Access Road	Igloolik NU	
SPL		Igloolik	Igloolik NU	
SPL		Unit 287 Igloolik, NU	Igloolik NU	
SPL		Igloolik, NU Pub, Housing Unit#245	Igloolik NU	
SPL		Igloolik NU	Igloolik NU	
SPL		Airport, near fuel tanks	NU	
SPL		Igloolik	Igloolik NU	
SPL		Igloolik near 326 delta	Igloolik NU	
SPL		Unit 299B, Igloolik NU	Igloolik NU	
SPL		Igloolik Health Centre	Igloolik NU	
SPL		Igloolik 620 NCC Office Building- Timmivut Building	Igloolik NU	
SPL		Igloolik Tummvut Building	Igloolik NU	
SPL		Igloolik	Igloolik NU	
SPL		Airport Apron	Igloolik NU	
SPL		Airport	Igloolik NU	

SPL	Igloolik NU, Unit#229E fuel tank flex hose	Igloolik NU
SPL	Airport West of Apron	Igloolik NU

Unplottable Report

Site: <i>Igloolik HTO Igloolik NU</i>		Database: <i>SPL</i>	
Spill No:	spill-2008258	Land Sea Indicator:	Land
Spill Date:		Potential Spill:	No
Spill Quantity:	50.00	Received Method:	
Measurement:	Litres	Involved Parties Type:	Other
Spill Cause:	Tank Leak	Spill Region:	Baffin
Spill Source:	Storage tank < 4000 Litre		
Product Spilled:	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		
Product Spilled Description:	Heating Fuel P-50		
Area of Contamination:			
Spill Location Description:	Igloolik HTO		
Known Hazards:			
Occurrence Date/Time:	May 29, 2008		
Reporting Date and Time:	Thursday, May 29, 2008 - 18:00		
Support Info Un No:			
Supp Info Describe Any Assi:			
Support Info Water Use Permit:			
Supp Info Land Use Permit N:			
Support Info Factors Affecting:			
Support Info Additional Inform:			
Supporting Agencies:			
Lead Agency:	GN - Government of Nunavut		
URL:	https://www.enr.gov.nt.ca/en/spill/spill-2008258		

Site: <i>Unit #266 mechanical room, Igloolik, NU Igloolik NU</i>		Database: <i>SPL</i>	
Spill No:	spill-2017174	Land Sea Indicator:	Land
Spill Date:		Potential Spill:	No
Spill Quantity:	0.00	Received Method:	
Measurement:	Litres	Involved Parties Type:	Other
Spill Cause:	Fitting Leak	Spill Region:	Baffin
Spill Source:	Storage tank < 4000 Litre		
Product Spilled:	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		
Product Spilled Description:	Fuel Oil P-50		
Area of Contamination:			
Spill Location Description:	Unit #266 mechanical room, Igloolik, NU		
Known Hazards:			
Occurrence Date/Time:	May 11, 2017		
Reporting Date and Time:	Sunday, May 21, 2017 - 18:00		
Support Info Un No:			
Supp Info Describe Any Assi:			
Support Info Water Use Permit:			
Supp Info Land Use Permit N:			
Support Info Factors Affecting:			
Support Info Additional Inform:			
Supporting Agencies:			
Lead Agency:	GN - Government of Nunavut		
URL:	https://www.enr.gov.nt.ca/en/spill/spill-2017174		

Site: <i>Igloolik Igloolik NU</i>		Database: <i>SPL</i>	
Spill No:	spill-2017062	Land Sea Indicator:	Land

Spill Date:		Potential Spill:	No
Spill Quantity:	0.00	Received Method:	
Measurement:	Litres	Involved Parties Type:	Municipal Government
Spill Cause:	Other	Spill Region:	Baffin
Spill Source:	Sewage Lagoon		
Product Spilled:	Wastewater (sewage, mine tailings)		
Product Spilled Description:	Sewage		
Area of Contamination:			
Spill Location Description:	Igloolik		
Known Hazards:			
Occurrence Date/Time:			
Reporting Date and Time:	Sunday, February 26, 2017 - 17:00		
Support Info Un No:			
Supp Info Describe Any Assi:			
Support Info Water Use Permit:			
Support Info Land Use Permit N:			
Support Info Factors Affecting:			
Support Info Additional Inform:			
Supporting Agencies:			
Lead Agency:	GN - Government of Nunavut		
URL:	https://www.enr.gov.nt.ca/en/spill/spill-2017062		

Site: **Haz, Waste Area, Airport Access Road Igloolik NU** **Database:** **SPL**

Spill No:	spill-2015436	Land Sea Indicator:	Land
Spill Date:		Potential Spill:	No
Spill Quantity:	207.00	Received Method:	
Measurement:	Litres	Involved Parties Type:	Other
Spill Cause:	Breakage	Spill Region:	Baffin
Spill Source:	Drum or Barrel		
Product Spilled:	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		
Product Spilled Description:	Jet A		
Area of Contamination:			
Spill Location Description:	Haz, Waste Area, Airport Access Road		
Known Hazards:			
Occurrence Date/Time:	October 16, 2015		
Reporting Date and Time:	Tuesday, October 20, 2015 - 18:00		
Support Info Un No:			
Supp Info Describe Any Assi:			
Support Info Water Use Permit:			
Support Info Land Use Permit N:			
Support Info Factors Affecting:			
Support Info Additional Inform:			
Supporting Agencies:			
Lead Agency:	GN - Government of Nunavut		
URL:	https://www.enr.gov.nt.ca/en/spill/spill-2015436		

Site: **Igloolik Igloolik NU** **Database:** **SPL**

Spill No:	spill-2017349	Land Sea Indicator:	Land
Spill Date:		Potential Spill:	No
Spill Quantity:	0.00	Received Method:	
Measurement:	Litres	Involved Parties Type:	Private Individuals
Spill Cause:	Tank Leak	Spill Region:	Baffin
Spill Source:	Storage tank < 4000 Litre		
Product Spilled:	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		
Product Spilled Description:	Heating Fuel P-50		
Area of Contamination:			
Spill Location Description:	Igloolik		
Known Hazards:			
Occurrence Date/Time:	September 12, 2017		
Reporting Date and Time:	Tuesday, September 12, 2017 - 18:00		
Support Info Un No:			
Supp Info Describe Any Assi:			

Support Info Water Use Permit:
Supp Info Land Use Permit N:
Support Info Factors Affecting:
Support Info Additional Inform:
Supporting Agencies:
Lead Agency: GN - Government of Nunavut
URL: <https://www.enr.gov.nt.ca/en/spill/spill-2017349>

Site: Unit 287 Igloolik, NU Igloolik NU **Database:** SPL

Spill No: spill-2017363 **Land Sea Indicator:** Land
Spill Date: **Potential Spill:** No
Spill Quantity: 30.00 **Received Method:**
Measurement: Litres **Involved Parties Type:** Private Individuals
Spill Cause: Tank Leak **Spill Region:** Baffin
Spill Source: Storage tank < 4000 Litre
Product Spilled: Petroleum - fuel oil (jet A, diesel, turbo A, heat)
Product Spilled Description: Diesel P-50
Area of Contamination:
Spill Location Description: Unit 287 Igloolik, NU
Known Hazards:
Occurrence Date/Time: September 12, 2017
Reporting Date and Time: Monday, September 25, 2017 - 18:00
Support Info Un No:
Supp Info Describe Any Assi:
Support Info Water Use Permit:
Supp Info Land Use Permit N:
Support Info Factors Affecting:
Support Info Additional Inform:
Supporting Agencies:
Lead Agency: GN - Government of Nunavut
URL: <https://www.enr.gov.nt.ca/en/spill/spill-2017363>

Site: Igloolik, NU Pub, Housing Unit#245 Igloolik NU **Database:** SPL

Spill No: spill-2015363 **Land Sea Indicator:** Land
Spill Date: **Potential Spill:** No
Spill Quantity: 205.00 **Received Method:**
Measurement: Litres **Involved Parties Type:** Municipal Government
Spill Cause: Collision or Crash **Spill Region:** Baffin
Spill Source: Storage tank < 4000 Litre
Product Spilled: Petroleum - fuel oil (jet A, diesel, turbo A, heat)
Product Spilled Description: Heating Fuel P-50
Area of Contamination:
Spill Location Description: Igloolik, NU Pub, Housing Unit#245
Known Hazards:
Occurrence Date/Time: August 22, 2015
Reporting Date and Time: Friday, August 21, 2015 - 18:00
Support Info Un No:
Supp Info Describe Any Assi:
Support Info Water Use Permit:
Supp Info Land Use Permit N:
Support Info Factors Affecting:
Support Info Additional Inform:
Supporting Agencies:
Lead Agency: GN - Government of Nunavut
URL: <https://www.enr.gov.nt.ca/en/spill/spill-2015363>

Site: Igloolik NU Igloolik NU **Database:** SPL

Spill No: spill-2014159 **Land Sea Indicator:** Land

Spill Date:		Potential Spill:	No
Spill Quantity:	0.00	Received Method:	
Measurement:	Litres	Involved Parties Type:	Other
Spill Cause:	Fitting Leak	Spill Region:	Baffin
Spill Source:	Storage tank < 4000 Litre		
Product Spilled:	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		
Product Spilled Description:	Diesel P-50		
Area of Contamination:			
Spill Location Description:	Igloolik NU		
Known Hazards:			
Occurrence Date/Time:	May 12, 2014		
Reporting Date and Time:	Sunday, May 11, 2014 - 18:00		
Support Info Un No:			
Supp Info Describe Any Assi:			
Support Info Water Use Permit:			
Support Info Land Use Permit N:			
Support Info Factors Affecting:			
Support Info Additional Inform:			
Supporting Agencies:			
Lead Agency:	GN - Government of Nunavut		
URL:	https://www.enr.gov.nt.ca/en/spill/spill-2014159		

Site: **Airport, near fuel tanks NU** **Database:** **SPL**

Spill No:	spill-2013194	Land Sea Indicator:	Land
Spill Date:		Potential Spill:	No
Spill Quantity:	0.00	Received Method:	
Measurement:	Litres	Involved Parties Type:	Terrotirial Government Department
Spill Cause:	Pipe Leaks	Spill Region:	Baffin
Spill Source:	Pipe or Line		
Product Spilled:	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		
Product Spilled Description:	Jet A		
Area of Contamination:			
Spill Location Description:	Airport, near fuel tanks		
Known Hazards:			
Occurrence Date/Time:	June 5, 2013		
Reporting Date and Time:	Wednesday, June 5, 2013 - 18:00		
Support Info Un No:			
Supp Info Describe Any Assi:			
Support Info Water Use Permit:			
Support Info Land Use Permit N:			
Support Info Factors Affecting:			
Support Info Additional Inform:			
Supporting Agencies:			
Lead Agency:	GN - Government of Nunavut		
URL:	https://www.enr.gov.nt.ca/en/spill/spill-2013194		

Site: **Igloolik Igloolik NU** **Database:** **SPL**

Spill No:	spill-2012052	Land Sea Indicator:	
Spill Date:		Potential Spill:	No
Spill Quantity:	207.00	Received Method:	
Measurement:	Litres	Involved Parties Type:	Other
Spill Cause:	Pipe Leaks	Spill Region:	Baffin
Spill Source:	Pipe or Line		
Product Spilled:	Chemicals (including transformer oils)		
Product Spilled Description:	Glycol 50%		
Area of Contamination:			
Spill Location Description:	Igloolik		
Known Hazards:			
Occurrence Date/Time:	February 21, 2012		
Reporting Date and Time:	Tuesday, February 21, 2012 - 17:00		
Support Info Un No:			
Supp Info Describe Any Assi:			

Support Info Water Use Permit:
Support Info Land Use Permit N:
Support Info Factors Affecting:
Support Info Additional Inform:
Supporting Agencies:
Lead Agency: GN - Government of Nunavut
URL: <https://www.enr.gov.nt.ca/en/spill/spill-2012052>

Site: Igloolik near 326 delta Igloolik NU **Database:** [SPL](#)

Spill No: spill-2014256 **Land Sea Indicator:** Land
Spill Date: **Potential Spill:** No
Spill Quantity: 0.00 **Received Method:**
Measurement: Litres **Involved Parties Type:** Unknown
Spill Cause: Other **Spill Region:** Baffin
Spill Source: Storage tank < 4000 Litre
Product Spilled: Petroleum - fuel oil (jet A, diesel, turbo A, heat)
Product Spilled Description: Fuel
Area of Contamination:
Spill Location Description: Igloolik near 326 delta
Known Hazards:
Occurrence Date/Time: July 4, 2014
Reporting Date and Time: Thursday, July 10, 2014 - 18:00
Support Info Un No:
Support Info Describe Any Assi:
Support Info Water Use Permit:
Support Info Land Use Permit N:
Support Info Factors Affecting:
Support Info Additional Inform:
Supporting Agencies:
Lead Agency: GN - Government of Nunavut
URL: <https://www.enr.gov.nt.ca/en/spill/spill-2014256>

Site: Unit 299B, Igloolik NU Igloolik NU **Database:** [SPL](#)

Spill No: spill-2010422 **Land Sea Indicator:** Land
Spill Date: **Potential Spill:** No
Spill Quantity: 0.00 **Received Method:**
Measurement: Litres **Involved Parties Type:** Other
Spill Cause: Pipe Leaks **Spill Region:** Baffin
Spill Source: Storage tank < 4000 Litre
Product Spilled: Petroleum - fuel oil (jet A, diesel, turbo A, heat)
Product Spilled Description: Fuel Oil P-50
Area of Contamination:
Spill Location Description: Unit 299B, Igloolik NU
Known Hazards:
Occurrence Date/Time: October 18, 2010
Reporting Date and Time: Sunday, October 17, 2010 - 18:00
Support Info Un No:
Support Info Describe Any Assi:
Support Info Water Use Permit:
Support Info Land Use Permit N:
Support Info Factors Affecting:
Support Info Additional Inform:
Supporting Agencies:
Lead Agency: GN - Government of Nunavut
URL: <https://www.enr.gov.nt.ca/en/spill/spill-2010422>

Site: Igloolik Health Centre Igloolik NU **Database:** [SPL](#)

Spill No: spill-2010378 **Land Sea Indicator:** Land

Spill Date:		Potential Spill:	No
Spill Quantity:	30.00	Received Method:	
Measurement:	Litres	Involved Parties Type:	Territorial Government Department
Spill Cause:	Tank Leak	Spill Region:	Baffin
Spill Source:	Storage tank < 4000 Litre		
Product Spilled:	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		
Product Spilled Description:	Heating Fuel P-50		
Area of Contamination:			
Spill Location Description:	Igloolik Health Centre		
Known Hazards:			
Occurrence Date/Time:	September 15, 2010		
Reporting Date and Time:	Tuesday, September 14, 2010 - 18:00		
Support Info Un No:			
Supp Info Describe Any Assi:			
Support Info Water Use Permit:			
Support Info Land Use Permit N:			
Support Info Factors Affecting:			
Support Info Additional Inform:			
Supporting Agencies:			
Lead Agency:	GN - Government of Nunavut		
URL:	https://www.enr.gov.nt.ca/en/spill/spill-2010378		

Site: **Igloolik 620 NCC Office Building- Timmivut Building Igloolik NU** **Database:** **SPL**

Spill No:	spill-2014140	Land Sea Indicator:	Land
Spill Date:		Potential Spill:	No
Spill Quantity:	0.00	Received Method:	
Measurement:	Litres	Involved Parties Type:	Unknown
Spill Cause:	Unkown Cause	Spill Region:	Baffin
Spill Source:	Truck		
Product Spilled:	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		
Product Spilled Description:	Heating Fuel P-50		
Area of Contamination:			
Spill Location Description:	Igloolik 620 NCC Office Building- Timmivut Building		
Known Hazards:			
Occurrence Date/Time:	April 29, 2014		
Reporting Date and Time:	Monday, May 5, 2014 - 18:00		
Support Info Un No:			
Supp Info Describe Any Assi:			
Support Info Water Use Permit:			
Support Info Land Use Permit N:			
Support Info Factors Affecting:			
Support Info Additional Inform:			
Supporting Agencies:			
Lead Agency:	GN - Government of Nunavut		
URL:	https://www.enr.gov.nt.ca/en/spill/spill-2014140		

Site: **Igloolik Tummivut Building Igloolik NU** **Database:** **SPL**

Spill No:	spill-2013260	Land Sea Indicator:	Land
Spill Date:		Potential Spill:	No
Spill Quantity:	0.00	Received Method:	
Measurement:	Litres	Involved Parties Type:	Other
Spill Cause:	Tank Leak	Spill Region:	Baffin
Spill Source:	Storage tank < 4000 Litre		
Product Spilled:	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		
Product Spilled Description:	Heating Fuel P-50		
Area of Contamination:			
Spill Location Description:	Igloolik Tummivut Building		
Known Hazards:			
Occurrence Date/Time:	July 18, 2013		
Reporting Date and Time:	Thursday, July 18, 2013 - 18:00		
Support Info Un No:			
Supp Info Describe Any Assi:			

Support Info Water Use Permit:
Supp Info Land Use Permit N:
Support Info Factors Affecting:
Support Info Additional Inform:
Supporting Agencies:
Lead Agency: GN - Government of Nunavut
URL: <https://www.enr.gov.nt.ca/en/spill/spill-2013260>

Site: Igloolik Igloolik NU **Database:** SPL

Spill No: spill-2015256 **Land Sea Indicator:** Land
Spill Date: **Potential Spill:** No
Spill Quantity: 0.10 **Received Method:**
Measurement: Litres **Involved Parties Type:** Terrotirial Government Department
Spill Cause: Fitting Leak **Spill Region:** Baffin
Spill Source: Pipe or Line
Product Spilled: Petroleum - gasoline (aviation, turbo B, jet B)
Product Spilled Description: Gasoline
Area of Contamination:
Spill Location Description: Igloolik
Known Hazards:
Occurrence Date/Time: June 12, 2015
Reporting Date and Time: Sunday, June 14, 2015 - 18:00
Support Info Un No:
Supp Info Describe Any Assi:
Support Info Water Use Permit:
Supp Info Land Use Permit N:
Support Info Factors Affecting:
Support Info Additional Inform:
Supporting Agencies:
Lead Agency: GN - Government of Nunavut
URL: <https://www.enr.gov.nt.ca/en/spill/spill-2015256>

Site: Airport Apron Igloolik NU **Database:** SPL

Spill No: spill-1994036 **Land Sea Indicator:** Land
Spill Date: **Potential Spill:** No
Spill Quantity: 115.00 **Received Method:**
Measurement: Litres **Involved Parties Type:** Terrotirial Government Department
Spill Cause: Overflow Event **Spill Region:** Baffin
Spill Source: Aircraft
Product Spilled: Petroleum - fuel oil (jet A, diesel, turbo A, heat)
Product Spilled Description: Aircraft Fuel
Area of Contamination:
Spill Location Description: Airport Apron
Known Hazards:
Occurrence Date/Time: February 28, 1994
Reporting Date and Time: Sunday, February 27, 1994 - 17:00
Support Info Un No:
Supp Info Describe Any Assi:
Support Info Water Use Permit:
Supp Info Land Use Permit N:
Support Info Factors Affecting:
Support Info Additional Inform:
Supporting Agencies:
Lead Agency: GNWT - Department of Environment and Natural Resources
URL: <https://www.enr.gov.nt.ca/en/spill/spill-1994036>

Site: Airport Igloolik NU **Database:** SPL

Spill No: spill-1990209 **Land Sea Indicator:** Land

Spill Date:		Potential Spill:	No
Spill Quantity:	50.00	Received Method:	
Measurement:	Litres	Involved Parties Type:	Other
Spill Cause:	Overflow Event	Spill Region:	Baffin
Spill Source:	Pipe or Line		
Product Spilled:	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		
Product Spilled Description:	Turbo Fuel		
Area of Contamination:			
Spill Location Description:	Airport		
Known Hazards:			
Occurrence Date/Time:	December 11, 1990		
Reporting Date and Time:	Monday, December 10, 1990 - 17:00		
Support Info Un No:			
Supp Info Describe Any Assi:			
Support Info Water Use Permit:			
Support Info Land Use Permit N:			
Support Info Factors Affecting:			
Support Info Additional Inform:			
Supporting Agencies:			
Lead Agency:	GNWT - Department of Environment and Natural Resources		
URL:	https://www.enr.gov.nt.ca/en/spill/spill-1990209		

Site: **Igloolik NU, Unit#229E fuel tank flex hose Igloolik NU** **Database:** **SPL**

Spill No:	spill-2017228	Land Sea Indicator:	Land
Spill Date:		Potential Spill:	No
Spill Quantity:	2.00	Received Method:	
Measurement:	Litres	Involved Parties Type:	Other
Spill Cause:	Pipe Leaks	Spill Region:	Baffin
Spill Source:	Pipe or Line		
Product Spilled:	Petroleum - fuel oil (jet A, diesel, turbo A, heat)		
Product Spilled Description:	Fuel Oil P-50		
Area of Contamination:			
Spill Location Description:	Igloolik NU, Unit#229E fuel tank flex hose		
Known Hazards:			
Occurrence Date/Time:			
Reporting Date and Time:	Tuesday, June 27, 2017 - 18:00		
Support Info Un No:			
Supp Info Describe Any Assi:			
Support Info Water Use Permit:			
Support Info Land Use Permit N:			
Support Info Factors Affecting:			
Support Info Additional Inform:			
Supporting Agencies:			
Lead Agency:	GN - Government of Nunavut		
URL:	https://www.enr.gov.nt.ca/en/spill/spill-2017228		

Site: **Airport West of Apron Igloolik NU** **Database:** **SPL**

Spill No:	spill-2004454	Land Sea Indicator:	
Spill Date:		Potential Spill:	No
Spill Quantity:	201.00	Received Method:	
Measurement:	Litres	Involved Parties Type:	Transportation Company
Spill Cause:	Unkown Cause	Spill Region:	Baffin
Spill Source:	Drum or Barrel		
Product Spilled:	Petroleum - gasoline (aviation, turbo B, jet B)		
Product Spilled Description:	Jet B		
Area of Contamination:			
Spill Location Description:	Airport West of Apron		
Known Hazards:			
Occurrence Date/Time:	July 9, 2004		
Reporting Date and Time:	Friday, July 9, 2004 - 18:00		
Support Info Un No:			
Supp Info Describe Any Assi:			

Support Info Water Use Permit:
Supp Info Land Use Permit N:
Support Info Factors Affecting:
Support Info Additional Inform:
Supporting Agencies:
Lead Agency:
URL:

GN - Government of Nunavut
<https://www.enr.gov.nt.ca/en/spill/spill-2004454>

Appendix: Database Descriptions

*Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. **Note:** Databases denoted with " * " indicates that the database will no longer be updated. See the individual database description for more information.*

Automobile Wrecking & Supplies:

Private

[AUWR](#)

This database provides an inventory of known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

Government Publication Date: 1999-Jan 31, 2020

Dry Cleaning Facilities:

Federal

[CDRY](#)

List of dry cleaning facilities made available by Environment and Climate Change Canada. Environment and Climate Change Canada's Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations (SOR/2003-79) are intended to reduce releases of tetrachloroethylene to the environment from dry cleaning facilities.

Environment and Climate Change Canada cites the coronavirus pandemic as an explanation for delays in releasing data pursuant to requests.

Government Publication Date: Jan 2004-Dec 2017

Crown Land Fuel Storage Tanks:

Territorial

[CFST](#)

The Department of Indian and Northern Affairs Canada mandates that all fuel storage tanks on Crown Land be recorded, when an individual applies for a land use permit or surface lease. Please note that there are numerous records in the database where the "Commencement Date" is previous to 1997. However, since INAC only began registering tank locations in 1997, any tanks installed previous to that may or may not be in the database, due to lack of regulations. Note the following descriptions: Commencement Date is the original file date, Fuel Application Date is the date an application was submitted for a tank, and the Fuel Confirmation Date is the date the department accepted the application and confirmed the information submitted. The Department of Indian and Northern Affairs cites the coronavirus pandemic as an explanation for delays in releasing data pursuant to requests.

Government Publication Date: Oct 1997-Feb 2019

Compressed Natural Gas Stations:

Private

[CNG](#)

Canada has a network of public access compressed natural gas (CNG) refuelling stations. These stations dispense natural gas in compressed form at 3,000 pounds per square inch (psi), the pressure which is allowed within the current Canadian codes and standards. The majority of natural gas refuelling is located at existing retail gasoline that have a separate refuelling island for natural gas. This list of stations is made available by the Canadian Natural Gas Vehicle Alliance.

Government Publication Date: Dec 2012 - Jun 2020

ERIS Historical Searches:

Private

[EHS](#)

ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

Government Publication Date: 1999-Jul 31, 2020

Federal Convictions:

Federal

[FCON](#)

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

Government Publication Date: 1988-Jun 2007*

Contaminated Sites on Federal Land:

Federal

[FCS](#)

The Federal Contaminated Sites Inventory includes information on known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government. Includes fire training sites and sites at which Per- and Polyfluoroalkyl Substances (PFAS) are a concern.

Government Publication Date: Jun 2000-Apr 2020

Federal Identification Registry for Storage Tank Systems (FIRSTS):

Federal

FRST

A list of federally regulated Storage tanks from the Federal Identification Registry for Storage Tank Systems (FIRSTS). FIRSTS is Environment and Climate Change Canada's database of storage tank systems subject to the Storage Tank for Petroleum Products and Allied Petroleum Products Regulations. The main objective of the Regulations is to prevent soil and groundwater contamination from storage tank systems located on federal and aboriginal lands. Storage tank systems that do not have a valid identification number displayed in a readily visible location on or near the storage tank system may be refused product delivery.

Government Publication Date: May 31, 2018

Greenhouse Gas Emissions from Large Facilities:

Federal

GHG

List of greenhouse gas emissions from large facilities made available by Environment Canada. Greenhouse gas emissions in kilotonnes of carbon dioxide equivalents (kt CO₂ eq).

Government Publication Date: 2013-Dec 2017

Indian & Northern Affairs Fuel Tanks:

Federal

IAFT

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

Government Publication Date: 1950-Aug 2003*

Canadian Mine Locations:

Private

MINE

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

Government Publication Date: 1998-2009*

Mineral Occurrences:

Territorial

MNR

The C.S. Lord Northern Geoscience Centre maintains a database of mineral showings (commodity occurrences) for both the Northwest Territories and Nunavut. The database provides Showing ID, latitude, longitude, Showing Name, commodity type, current development stage, and general comments on lithology, mineralization and geological settings.

Government Publication Date: 1900-Sep 2018

National Analysis of Trends in Emergencies System (NATES):

Federal

NATE

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

Government Publication Date: 1974-1994*

National Defense & Canadian Forces Spills:

Federal

NDSP

The Department of National Defense and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

Government Publication Date: Mar 1999-Apr 2018

National Defence & Canadian Forces Waste Disposal Sites:

Federal

NDWD

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

Government Publication Date: 2001-Apr 2007*

National Energy Board Pipeline Incidents:

Federal

NEBI

Locations of pipeline incidents from 2008 to present, made available by the Canada Energy Regulator (CER) - previously the National Energy Board (NEB). Includes incidents reported under the Onshore Pipeline Regulations and the Processing Plant Regulations related to pipelines under federal jurisdiction, does not include incident data related to pipelines under provincial or territorial jurisdiction.

Government Publication Date: 2008-Mar 31, 2020

National Energy Board Wells:

Federal

NEBT

The NEBW database contains information on onshore & offshore oil and gas wells that are outside provincial jurisdiction(s) and are thereby regulated by the National Energy Board. Data is provided regarding the operator, well name, well ID No./UWI, status, classification, well depth, spud and release date.

Government Publication Date: 1920-Feb 2003*

National Environmental Emergencies System (NEES):

Federal

[NEES](#)

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for previous Environment Canada spill datasets. NEES is composed of the historic datasets ' or Trends ' which dates from approximately 1974 to present. NEES Trends is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

Government Publication Date: 1974-2003***National PCB Inventory:**

Federal

[NPCB](#)

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. Federal out-of-service PCB containing equipment and PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

Government Publication Date: 1988-2008***National Pollutant Release Inventory:**

Federal

[NPRI](#)

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances.

Government Publication Date: 1993-May 2017**Oil and Gas Wells:**

Private

[OGWE](#)

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

Government Publication Date: 1988-May 31, 2020**Retail Fuel Storage Tanks:**

Private

[RST](#)

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks.

Government Publication Date: 1999-Jan 31, 2020**Scott's Manufacturing Directory:**

Private

[SCT](#)

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

Government Publication Date: 1992-Mar 2011***Spills:**

Territorial

[SPL](#)

The Department of Resources, Wildlife & Economic Development (RWED), in Yellowknife, maintains an inventory of spill locations through the "Hazardous Materials Spills Database". Information is provided on the spill number, date, location, spill description, quantity & commodity spilled and all applicable parties involved.

Government Publication Date: Mar 31, 2020

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

Appendix G Site Photographs



Photo 1: Storage seacans on north adjoining lot.



Photo 2: Vista looking eastwards across the road.



Photo 3: Vista looking north along east side of the Site



Photo 4: Vista looking northwards.



Photo 5: Vista looking south along east side of access road.



Photo 6: Vista looking southeast across access road.

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PHASE I ENVIRONMENTAL SITE ASSESSMENT

PROPOSED POWER PLANT LOCATION IN ZONE 17W, IGLOOLIK, NUNAVUT

QULLIQ ENERGY CORPORATION



Photo 7: Vista looking southeast across the Site.

Photo 8: Vista looking southwards to Tank Farm.

Appendix H Site Notes/Interview



SAG Project 80589.

Iqaluit NU,

21 September 2020

To Kiran Prakash
Englobe
Edmonton AB

**Test Drilling for Geo-technical and Environmental Evaluation,
QEC Power Plant Site, Igloolik Nunavut.**

17 September 2020

Drill Hole # 1.

Geo-tec Samples at 1.5m, 3.0m, 4.0 m
Bedrock at 4.0m, Drilled to 4.5m
Environmental Sample at 1.5m

Drill Hole # 2.

Geo-tech Samples at 1.5m, 3.0m, 4.5 m
Bedrock at 10m, Drilled to 11.5m
Environmental Sample at 3.5m

Drill Hole # 3.

Geo-tech Samples at 1.5m, 3.0m, 4.5 m
Bedrock at 4.5m, Drilled to 5.5m

Drill Hole # 4.

Geo-tech Samples at 1.5m, 3.0m, 4.0 m
Bedrock at 4.0m, Drilled to 4.5m

18 September 2020

Drill Hole # 5.

Geo-tech Samples at 1.5m, 3.0m, 5.0 m
Bedrock at 6.5m, Drilled to 7.5m
Environmental Sample at 1.5m

Drill Hole # 6.

Geo-tech Samples at 1.5m, 3.0m, 4.0 m
Bedrock at 4.0m, Drilled to 6m

2.

Drill Hole # 7.

Small amount of water at 1m depth, this did not continue and the hole was dry.

Probably a small amount of perched water collected in a basin in the rock.

Geo-tech Samples at 1.5m, 3.0m, 4.5 m

Bedrock at 6.0m, Drilled to 7.5m

Environmental Sample at 3.5m

Drill Hole # 8.

Geo-tech Samples at 1.5m, 3.0m, 4.5 m

Bedrock at 6.0m, Drilled to 7m

GENERAL INFORMATION.

17 September,

QEC Plant Manager Steven and QEC Plant Forman visited the site.

Steven confirmed that the Hamlet Council approved this site for the proposed plant construction.

17 September,

Met with Assistant SAO John Murray at the Hamlet Office.

He advised that there had been no significant activity on the site other than some surface bulldozing.

There had been no construction activity.

This is consistent with the conditions observed on the site. Some evidence of bulldozing with some small piles of material and tracks. These are evident in the site photos and on the topographic plan.

We did not observe any evidence of fuel spills or foreign material.

There does not appear to be any significant run off from the access road which leads to the Petroleum tank farm located to the south of the site. (Fenced enclosure).

The easterly portion of the site is mainly broken rock which extends down the slope to the east.

The westerly portion next to the road is gravel of various sizes with a few small patches of stunted organic. Root penetration is limited to a few centimetres. These conditions are evident in some of the individual drill hole photos.

The area adjoining the site to the north is currently being used by Canadrill Inc.

There are several sea cans as well as some construction equipment stored on the site, We did not observe any evidence of oil spills or petroleum contamination.

The north-westerly portion of the designated site falls on Lot 1000 Quad 47 D/7 which is the airport property. The boundaries of this lot were located on the ground and are plotted on the topographic plan.

The remainder of the site as well as the adjoining land is 'Commissioners Land' (Not titled).

3.

20 September

Samples shipped to Englobe, Edmonton by Canadian North Cargo.

Way Bill # 518-36866756.

A handwritten signature in black ink, appearing to read 'Stewart MacPhee'.

Stewart MacPhee, CLS

Sub-Arctic Geomatics,

Iqaluit.

