Phase I Environmental Site Assessment

Former US Military Mid Canada Line Radar Site 209
Wild Boar, NL

Department of Environment and Conservation

1118 Topsail Road, PO Box 8353 Station A St. John's NL A1B 3N7 Canada

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EXECUTIVE SUMMARY

GHD Limited (GHD, formally Conestoga-Rovers & Associates (CRA)) were retained by the Government of Newfoundland & Labrador, Department of Environment and Conservation (ENVC) to complete a Phase I Environmental Site Assessment (ESA) of the former United States (US) Military Mid Canada Line (MCL) Radar Site 209 known as Wild Boar (Site or Property) located approximately 140 kilometers west of the Town of Hopedale, Newfoundland and Labrador (NL). The Wild Boar facility operated as a Doppler Detection Station. Based on the information provided to GHD as part of the initial call-up for services under the Impacted Sites Liability Assessment Program, the Site was part of the MCL.

The MCL was a series of radar stations located along the 55th parallel between Alaska and Newfoundland built to supplement the less-advanced Pinetree Line, which was located further south. Around 1951, the US military began construction of the Pinetree Line that was a network of Aircraft Control and Warning (AC&W) stations that acted as a radar curtain to detect Soviet aircraft flying toward potential US and Canadian targets during the Cold War. Construction of the Pinetree Line had only just begun when there were concerns about its capabilities and the fact it would be possible for Soviet bombers to evade detection by flying lower. They would eventually be seen as they approached the stations, but possibly so late that there would be no possibility of intercepting them. The MCL Doppler detection radar system was built to avoid this problem by using a transmitter and receiver, separated by approximately 90 km. Any aircraft flying between the antennas would be detected when it entered the beam, causing the received signal to change, thus allowing the identification and interception of enemy aircraft. Around 1953, the MCL had been approved: however, unlike the jointly-operated Pinetree Line and future Distant Early Warning Line (DEW Line), the MCL would be funded and operated entirely by the Royal Canadian Air Force (RCAF).

Construction of the MCL began in 1956, and was declared fully operational on January 1, 1958. The Wild Boar facility formerly contained a one story operations building housing the radio equipment, a heating and power plant, sleeping area, and a kitchen. The station was also equipped with four Communication Antennae towers linked by a cable trough and wood trestle, an emergency shelter, nine aboveground storage tanks (ASTs) containing diesel fuel, and a helicopter pad, all of which were connected via gravel access roads. In addition to the Wild Boar station facilities on top of the hill, a gravel roadway was constructed to connect the upper portion of the Site to the lower. The roadway was used to transport supplies from the lower Site to the station. In addition, the lower Site formally contained a one story accommodations building, a fuel pump house, and seven ASTs which contained diesel fuel.

It was not long before the RCAF started to have reservations about the costs of maintaining the Line. The extra time offered by the MCL was not considered worth the trouble of keeping the line operational. Even before the line became operational, a new and more capable line was already under study that would combine the plotting capability of the Pinetree system with the line-breaking capabilities of the MCL, and located much further north to dramatically improve the detection and response times, known as DEW Line, which became operational in 1957. The entire MCL including the Wild Boar facility was shut down in April 1965.

The former buildings and equipment remained abandoned until the Provincial government tendered a contract to dismantle and decommission the remaining structures at the Site in 1987. The concrete foundations of the former structures still remain at the Site.

The purpose of the Phase I ESA was to identify, through a non-intrusive investigation, the existence of any significant actual or potential areas of environmental impairment associated with the Property. The Phase I ESA was conducted in general accordance with the Canadian Standards Association (CSA) Standard Z768-01 for conducting ESAs that included a review of Site history, document review, interviews with individuals knowledgeable of the Site operations, and correspondence with regulatory agencies. As indicated in the request for proposal, and given the location and time of year, a Site visit was not completed as part of the Phase I ESA. Based on the Phase I ESA findings, the following potential environmental impairment issues were identified with respect to the Site:

- **Historic Handlings, Use, and Storage of Petroleum Hydrocarbons:** As a self-sufficient Doppler detection station in a remote location, significant quantities of fuel was formerly stored at the Site in ASTs, as well as in thousands of Petroleum, Oils and Lubricants (POL) drums. The Site also formerly contained a helicopter landing pad that contained drum storage. The potential for petroleum hydrocarbon impacts exist as a result of the historical petroleum storage and distribution activities conducted at the Site. The main areas of concern would include the former main upper Site (in the area of the former ASTs), the lower Site (in the area of the former ASTs), along the former product pipelines, the former helicopter landing area, as well as in the former landfill area.
- **Solid Waste/Recyclables:** During the operation of the facility from 1957 to 1965 solid waste was historically disposed in an unlined landfill (unknown location). Based on historical activities at the Site, the landfill may contain demolished building materials that include Asbestos-Containing Materials (ACMs); material with painted

surfaces containing lead and/or mercury based paint, former Site electrical equipment containing Polychlorinated Biphenyls (PCBs), mechanical equipment debris, motor repair wastes and/or drums formerly containing POLs as well as other solvents. The Site decommissioning program was completed under the approval of ENVC in 1987, and included the razing of all remaining structures and the burning of all materials on Site, followed by the burying and covering of the debris and other remaining materials. It is noted that the contractor typically buried the debris in at least two locations when the Site contained an upper and lower Sites. This was completed due to the distance and effort required to transport metal/other debris from the lower Site to the upper Site. Based on the photos taken during the Site restoration program in 1987 which shows metal debris buried on-Site, it can be assumed this was the case during the Site decommissioning at the Wild Boar station. The location of the burial sites was not identified in the documents review. As a Site visit was not part of the scope, it is unknown if these areas remain covered as reported in the 1987 field program.

- **Heavy Metals:** Possible sources of heavy metals may be associated with past operations. The former on-Site buildings were constructed in the 1950s; therefore, the potential exists that lead/mercury based paint was used on the interior and exterior surfaces which may have potentially impacted the surface soils.
- **PCBs:** Past uses of PCBs were identified through the records review and regulatory responses. PCBs were historically used as an insulator and coolant in electrical transformers and capacitors at the Site. PCBs were commonly used because they were chemically inert, not affected by acids and corrosive chemicals, did not conduct electricity and would not burn (only at extremely high temperatures). Although the US banned the use of PCBs in 1972, the Wild Boar station was in operation from approximately 1957 to 1965. A Site inventory completed during the 1980 Site visit, as outlined in the April 1981 report on PCB and General Environmental Mismanagement, revealed the presence of six capacitors containing PCBs in the former operations building.

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1.0 INTRODUCTION

GHD Limited (GHD, formally Conestoga-Rovers & Associates (CRA)) were retained by the Government of Newfoundland & Labrador, Department of Environment and Conservation (ENVC) to complete a Phase I Environmental Site Assessment (ESA) of the former United States (US) Military Mid Canada Line (MCL) Radar Site 209 known as Wild Boar (Site or Property) located approximately 140 kilometers west of the Town of Hopedale, Newfoundland and Labrador (NL). The Wild Boar facility operated as a Doppler Detection Station. Based on the information provided to GHD as part of the initial call-up for services under the Impacted Sites Liability Assessment Program, the Site was part of the MCL.

The purpose of the Phase I ESA was to identify, through non-intrusive investigation, the existence of any significant actual or potential areas of environmental impairment associated with the Property. A Site Location Map is included as Figure 1, a Site Overview is shown as Figure 2, and a Site Plan of the Lower Site, and Upper Site are included as Figure 3, and 4; respectively.

The Phase I ESA was conducted in general accordance with the Canadian Standards Association (CSA) Standard Z768-01 for conducting ESAs. The qualifications of the GHD personnel who completed the Phase I ESA are provided in Appendix A. The Phase I ESA included a review of Site history, document review, interviews with individuals knowledgeable of the Site operations, and correspondence with regulatory agencies. As indicated in the request for proposal, and given the location and time of year, a Site visit was not completed as part of the Phase I ESA. The following tasks were conducted during this assessment:

- Review of an electronic environmental database search
- Review of available fire insurance plans and aerial photographs
- Review of any available previous environmental reports and company files
- Review of past and current Property usage and adjacent property occupancy
- Observations of any conditions that represented potential environmental concerns
- Review of chemical usage and storage and spill/release incidents
- Review of underground and aboveground storage tank records
- Review of air emissions and wastewater discharges
- Review of waste handling, storage, and disposal practices
- Review of equipment that potentially contains polychlorinated biphenyls (PCBs)

- Observations of potential asbestos-containing materials (ACM)
- Inquiries with regulatory agencies and discussions with persons knowledgeable of the Site and Site operations

GHD relied on information received from all parties as accurate, unless contradicted by field observations or written documentation.

The following report summarizes the information gathered by GHD during the Phase I ESA and identifies any significant actual or potential environmental impairment issues associated with the related Property.

This Phase I ESA has been prepared for the use of ENVC and may not be relied upon by others without the written concurrence of GHD and ENVC.

2.0 BACKGROUND

The MCL was a series of radar stations located along the 55th parallel between Alaska and Newfoundland built to supplement the less-advanced Pinetree Line, which was located further south. Around 1951, the US military began construction of the Pinetree Line that was a network of Aircraft Control and Warning (AC&W) stations that acted as a radar curtain to detect Soviet aircraft flying toward potential US and Canadian targets during the Cold War. Construction of the Pinetree Line had only just begun when there were concerns about its capabilities and the fact it would be possible for Soviet bombers to evade detection by flying lower. They would eventually be seen as they approached the stations, but possibly so late that there would be no possibility of intercepting them. The MCL Doppler detection radar system was built to avoid this problem by using a transmitter and receiver, separated by approximately 90 km. Any aircraft flying between the antennas would be detected when it entered the beam, causing the received signal to change, thus allowing the identification and interception of enemy aircraft. Around 1953, the MCL had been approved: however, unlike the jointly-operated Pinetree Line and future Distant Early Warning Line (DEW Line), the MCL would be funded and operated entirely by the Royal Canadian Air Force (RCAF).

Construction of the MCL began in 1956, and was declared fully operational on January 1, 1958. The Wild Boar facility formerly contained a one story operations building housing the radio equipment, a heating and power plant, sleeping area, and a kitchen. The station was also equipped with four Communication Antennae towers linked by a cable trough and wood trestle, an emergency shelter, nine aboveground storage tanks (ASTs) containing diesel fuel, and a helicopter pad, all of which were connected via gravel access roads (See Figure 4). In addition to the Wild Boar station facilities on top

of the hill, a gravel roadway was constructed to connect the upper portion of the Site to the lower. The roadway was used to transport supplies from the lower Site to the station. In addition, the lower Site formally contained a one story accommodations building, a fuel pump house, and seven ASTs which contained diesel fuel (See Figure 3).

It was not long before the RCAF started to have reservations about the costs of maintaining the Line. The extra time offered by the MCL was not considered worth the trouble of keeping the line operational. Even before the line became operational, a new and more capable line was already under study that would combine the plotting capability of the Pinetree system with the line-breaking capabilities of the MCL, and located much further north to dramatically improve the detection and response times, known as DEW Line, which became operational in 1957. The entire MCL including the Wild Boar facility was shut down in April 1965.

The former buildings and equipment remained abandoned until the Provincial government tendered a contract to dismantle and decommission the remaining structures at the Site in 1987. The concrete foundations of the former structures still remain at the Site.

3.0 HISTORICAL RECORDS

Historical land use of the Property was investigated by GHD through a review of regulatory correspondence, Property title documents, aerial photographs, and available documents or reports pertaining to the Site.

3.1 REGULATORY CORRESPONDENCE

The Government of Newfoundland and Labrador – Service NL (Service NL) were requested to undertake a search of their records for documentation pertaining to environmental issues at the Site. In their letter response dated June 20, 2015, Service NL indicated to the best of their knowledge and on a search of the files they have reviewed, they are not aware of any outstanding environmental concerns with regards the property.

ENVC completed a file review and provided the following relevant information:

- Report on “PCB Spills and General environmental mismanagement at EX-USAF Bases in Labrador”, Resource Program Division, Intergovernmental Affairs Secretariat, Government of Newfoundland and Labrador, dated April 15, 1981.
- Correspondences between the Government of Newfoundland & Labrador and the Government of Canada regarding the clean-up and funding of the abandoned radar sites.
- Demolition and Site Restoration, Former Radar Sites Contract Package, February 2, 1987.
- Correspondence between the Government of Newfoundland & Labrador and the sub-contractor (Titan Holdings Limited) awarded the contract to decommission the Site.
- Site restoration status report, July 31, 1987.
- Report on “Environmental Inspection Abandoned Military Sites in Labrador”, Environmental Management Division, Department of Environment and Labour, NL, dated October, 1996.

Environment Canada (EC) was requested to undertake a search of their records with respect to documentation of environmental issues regarding the subject Property. Receipt acknowledgement letters were issued by EC (received by GHD on June 17 and July 17, 2015), indicating the request was being processed and a response will be provided as soon as possible.

Copies of the requests by GHD along with relevant correspondence from Service NL, ENVC, and EC are provided in Appendix B.

3.2 PROPERTY TITLE SEARCH

Property title information was obtained following a review of ENVC archived files (most notably the 1981 report on PCB Spills and General Management at Ex-USAF Bases in Labrador) provided some supplemental information regarding title of the Property, which is included below.

To Canada:	M.C. 20 - ’57	1957
	(M. & R. 3 –’57)	(1957)
To NL:	(M.A. & R. 3 (c) - ’65	(1965)
	P.C. 1965-1125	

Conveyed to Department of National Defence (DND) in connection with the Mid Canada Line negotiation. The lots were transferred back to the Province on June 18, 1965 by federal P.C. (See M.A. &R. 3(C) –'65) and approved 29-10-1965 but no M.C. has been found for any of the lots. Conditions of original transfer were that the lands of all times had to be used for the purposes of and in connection with Mid Canada Line and were to revert to Newfoundland in the event that they ceased to be used for that purpose.

Reference is in Federal Reservation Book (FRB) Vol. 1, Folio 50.

The results of the Property title search are included in Appendix C.

3.3 AERIAL PHOTOGRAPHS

An aerial photograph from 1968 was reviewed during the Phase I ESA. The observations of the aerial photograph are presented below. A copy of the aerial photography is included as Appendix D.

The 1968 aerial photograph shows the upper Site is cleared and developed with structures (buildings, and communication towers, etc.) present; however, the development or presence of infrastructure at the lower Site is not visible.

3.4 PREVIOUS ENVIRONMENTAL REPORTS

The following historical reports were provided regarding the general issues associated with the former military sites in Labrador. The following details the reports reviewed pertaining to the Site.

The Government of Newfoundland and Labrador (Resource Program Division, Intergovernmental Affairs Secretariat) completed a report entitled: "*PCB Spills and General Environmental Mismanagement at EX-USAF Bases in Labrador",* dated April 15, 1981. The report discusses the history of the former US military installations (including Site 209 - Wild Boar), details of land transfers for the various sites, the potential for PCB impacts at these former radar locations, inventories of ASTs, PCBs and equipment completed during a 1980 Site inspection, as well as provides a discussion on responsible parties for the impacts at the sites.

The Government of Newfoundland and Labrador (Environmental Management Division, Department of Environment and Labour) also completed a report in 1996 entitled: "*Environmental Inspection Abandoned Military Sites in Labrador"*. The purpose of this

report was to conduct a file review and preliminary site assessment at selected former US military sites. The inspection of these sites provided an update to the 1986 cleanup contracts and to respond to media and public concerns. Based on a review of the report, the following information was obtained for the Wild Boar station:

- Site closed in 1965
- Infrastructure was decommissioned in 1986
- Residual fuel in the ASTs was burned off during the decommissioning program
- All debris was buried on-Site in various locations due to lack of soil cover
- Only concrete foundations of building/towers remain in the upper Site
- Several rusted drums were noted along the cliff face (upper Site) and along the route to the lower Site
- Lower Site was vacant

3.5 INTERVIEWS

GHD was unable to contact anyone to interview regarding the former US Military Mid Canada Line Radar Site 209 known as Wild Boar.

4.0 ENVIRONMENTAL PROPERTY ASSESSMENT

At the request of ENVC, a Site visit was not be completed as part of the Phase I ESA; the efforts of the environmental assessment was to complete a desk-top review of available documents and summarize the findings in a stand-alone report.

4.1 PROPERTY OVERVIEW

The Site is located approximately 140 kilometers west of the Town of Hopedale, NL. The Wild Boar station formerly contained a one story operations building housing the radio equipment, a heating and power plant, sleeping area, and a kitchen. The station was also equipped with four Communication Antennae towers linked by a cable trough and wood trestle, an emergency shelter, nine aboveground storage tanks (ASTs), and a helicopter pad, all of which were connected via gravel access roads.

In addition to the Wild Boar station facilities on top of the hill, a gravel roadway was constructed to connect the upper portion of the Site to the lower. The roadway was used to transport supplies from the lower Site to the station. The lower Site formally contained a one story accommodations building, a fuel pump house, and seven ASTs.

Following the installation of the new DEW Line further north in 1957, which improved the detection and response times dramatically there was no longer a need for the MCL. The Wild boar station closed in 1965 along with the other MCL stations. The former buildings and equipment remained abandoned until the Provincial government tendered a contract to dismantle and decommission the remaining structures at the Site in 1987. The concrete foundations of the former structures still remain at the Site. A Site Location Map is included as Figure 1, a Site Overview is shown as Figure 2, and a Site Plan of the Lower Site, and Upper Site are included as Figure 3, and 4; respectively.

The total area of the Property is unknown as the information was not available. The Site is predominantly covered in vegetation/gravel/exposed bedrock (approximately 99 percent), and concrete from the former building structures (approximately less than 1 percent). Both surface and groundwater at the main Site are anticipated to follow the surface contours in the area and flow south toward the lake, which is located adjacent to and south of the lower portion of the Site. The elevation at the upper portion of the Site is approximately 550 metres above sea level (masl), while the elevation at the lower is approximately 270 masl.

The Site is not currently serviced with water or sewer, historically domestic drinking water was imported to the Site and septic was discharged via an aboveground pipeline to a septic tank. Surrounding properties are not serviced by municipal water or sewer systems.

Based on existing land use, the Site is classified under the Atlantic RBCA as a commercial property with non-potable groundwater and coarse-grained soil.

4.2 ENVIRONMENTAL SETTING/ADJACENT LAND USE

The Site is not zoned as such as it is not located within municipal boundaries; however, would be considered commercial in nature. The upper portion of the Property is bordered to the north, east, south, and west by undeveloped land. The lower portion of the Property is bordered to the south by a lake and to the east, south, and west by undeveloped land (see Figure 2).

A review of the “Geological Map of Labrador”, Geology Survey Branch, Department of Mines and Energy, Government of Newfoundland and Labrador (Map 97-07) and the “Geology of the Pants Lake Intrusions and Surrounding Area, Labrador”, issued by the Geology Survey Branch, Department of Natural Resources, Government of Newfoundland and Labrador (Map 2012-18) indicates that the bedrock in the vicinity of

the Site consists of intermediate plutonic rocks fine to coarse grained texturally variable ferrodiotrite monzodiotrite to monozonite, typically rich in iron oxides. Mafic phases include pyroxenes. Outcrops are typically deeply weathered. Also containing granitic orthogneiss coarse-grained leucocratic granitic gneiss, typically containing biotite and garnet. Igneous textures are well-preserved locally, suggesting the protolith was a megacrystic monzogranite to granite. Catadastic to mylonitic fabric is variabily developed and locally intense. Also containing tonalitic top granodioritic orthogneiss fine to coarse grained, grey, quartzfeldspathic orthogneiss, typically containing biotite and hornblende with relict pyroxenes. Typically banded with a complex history of migmagtization and deformation. Numerous bands and inclusions of mafic gneiss. Interlayered with paragneiss of the metamorphic, granitiod, and anorthositic rocks. Maps also indicate that the bedrock in the vicinity of the Site from the early Mesoproterozoic age consists undifferientiated gneiss, anorthosite and other locally layered mafic rocks of the anorthosite, monzonite, charnockite and granite suites of the Grenville and Southeastern Churchill and Nain Provinces.

A review of the “Geology of the Pants Lake Intrusions and Surrounding Area, Labrador”, as described above, indicates that the Site’s surficial geology consists of coarse grained granitic gneiss and fine to coarse grained, grey, quartzfeldspathic orthogneiss with intermediate plutonic rocks fine to coarse grained texturally variable ferrodiotrite monzodiotrite to monozonite, typically rich in iron oxides.

4.3 UNDERGROUND STORAGE TANKS (USTs)

With the exception of septic tanks associated with the former station, past use of USTs was not revealed during the records review, historical searches, or regulatory responses.

4.4 ABOVEGROUND STORAGE TANKS (ASTs)

Evidence of ASTs was revealed from the records review, historical searches, photo searches, and/or regulatory responses.

The following ASTs were previously located on-Site:

- Five steel 6,819 Litres (L) ASTs (listed as 1,500 gallon), located at the upper Site (exact locations unknown), which contained diesel fuel.
- Four steel 9,547 L ASTs (listed as 2,100 gallon), located at the upper Site (exact locations unknown), which contained diesel fuel.

- Two steel 909 L ASTs (listed as 200 gallon), located in the mechanical room of the former operations building.
- Seven steel 9,547 L ASTs (listed as 2,100 gallon), located at the lower Site (exact locations unknown), which contained diesel fuel.

Based on the 1981 report entitled: "*PCB Spills and General Environmental Mismanagement at EX-USAF Bases in Labrador"* the 1980 Site inspection revealed between 20,000 to 25,000 litres of diesel fuel remaining in the ASTs at the upper Site and approximately 24,000 litres of diesel fuel remaining in the ASTs at the lower Site.

In addition to the ASTs noted above, Site records also indicate the supply and use of Petroleum, Oils and Lubricants (POL) drums for the storage of fuel. Below are known locations in which drums were used/stored to supply fuel:

- Drums for refueling of helicopters at the former helicopter pad
- Upper Site
- Lower Site

The 1980 Site inspection discussed above also revealed approximately 500 - 45 gallon fuel oil drums scattered throughout the lower Site (see Appendix B).

Past use of other ASTs was not revealed from the records review, historical searches, or regulatory responses.

4.5 UTILITY SERVICES

The Site is no longer serviced with water or sewer; nor is any of the surrounding properties. The on-Site latrine was equipped with a septic tank (unknown location). Historically electricity was supplied by on-Site diesel generators.

4.6 CHEMICAL USE AND STORAGE

Past use of chemicals and storage may have existed with past operations; however, were not revealed from the records review, historical searches, or regulatory responses. Based on the historical activities at the Site, it is assumed that various petroleum lubricants, cleaners, degreasers, solvents, etc. were used and stored at the facility.

4.7 SOLID WASTE/RECYCLABLES

During the operation of the facility from 1957 to 1965 solid waste was historically disposed in an unlined landfill (unknown location). Based on historical activities at the Site, the landfill may contain former ACM building materials; material with painted surfaces containing lead and/or mercury based paint, former electrical equipment containing PCBs, mechanical equipment debris, motor repair wastes and/or drums formerly containing POLs, as well as other solvents. The Site decommissioning program was completed under the approval of ENVC in 1987, and included the razing of all remaining structures and the burning of all materials on Site, followed by the burying and covering of the debris and other remaining materials. It is noted that the contractor typically buried the debris in at least two locations when the Site contained an upper and lower site. This was completed due to the distance and effort required to transport metal/other debris from the lower Site to the upper Site. Based on the photos taken during the Site restoration program in 1987 which shows metal debris buried on-Site, it can be assumed this was the case during the Site decommissioning at the Wild Boar station. The location of the burial sites were not identified in the documents review; however, the 1996 report completed during the inspection of the Wild Boar station (see Section 3.4 for details) indicated the debris was buried in various pits due to lack of soil and cover. As a Site visit was not part of the scope, it is unknown if these areas remain covered as reported in the 1987 field program.

4.8 HAZARDOUS WASTE

Past use/disposal of hazardous wastes may have existed with past operations; however, use/disposal of these substances was not revealed from the records review, historical searches, or regulatory responses.

4.9 WASTEWATER

Past disposal of wastewater existed during the operation of the Site from 1957 to 1965. A washroom with a toilet and sink was present in the former building that produced wastewater, which were discharged into the on-Site septic tank. Other wastewater disposal activities were not revealed from the records review, historical searches, or regulatory responses.

4.10 STORMWATER

Stormwater run-off from the main station Site is mainly directed south by overland flow toward the adjacent lake, which is located adjacent to and south of the lower portion of the Site. Sources of adverse impacts from stormwater run-off were not revealed from the records review, historical searches, or regulatory responses.

4.11 ASBESTOS-CONTAINING MATERIALS (ACM)

Past use/disposal of ACM may have existed with historic operations at the Site; however, with the exception of the concrete foundations, no visible building materials remain on-Site. Possible ACM containing building materials may include floor tiles, roofing materials, piping insulation, and ceiling tiles. ACMs would also be expected to be in the boilers and piping associated with the former heating plant. As a result, potential ACM in the form of discarded building materials may be present in the former landfill and/or debris pits completed during the 1987 Site decommissioning program.

No other sources of ACM were revealed from the records review, historical searches, or regulatory responses.

4.12 POLYCHLORINATED BIPHENYLS (PCBs)

Past use of PCBs were identified through the records review and regulatory responses. PCBs were historically used as an insulator and coolant in electrical transformers and capacitors at the Site. PCBs were commonly used because they were chemically inert, not affected by acids and corrosive chemicals, did not conduct electricity and would not burn (only at extremely high temperatures). Although the US banned the use of PCBs in 1972, the Wild Boar station was in operation from approximately 1957 to 1965. A Site inventory completed during the 1980 Site visit as outlined in the April 1981 report on PCB and General Environmental Mismanagement (see Appendix B) revealed the presence of six capacitors containing PCBs in the former operations building.

Other sources of adverse impacts from PCBs were not revealed from the records review, historical searches, or regulatory responses.

4.13 HEAVY METALS

Past use/disposal of heavy metals wastes may have existed with past operations. Possible sources of heavy metals (lead) may be associated with all terrain vehicle (ATV) and helicopter repairs. In addition, the former on-Site buildings were constructed in the 1950s; therefore, the potential exists that lead/mercury based paint on the interior and exterior surfaces may have potentially impacted the surface soils.

4.14 OZONE-DEPLETING SUBSTANCES (ODS)

Past use/disposal of ODS may have existed with past operations; however, were not revealed from the records review, historical searches, or regulatory responses.

4.15 AIR EMISSIONS

Air emissions may have existed with past operations; however, were not revealed from the records review, historical searches, or regulatory responses.

4.16 IONIZING RADIATION

Based on the geology of the area, sources of ionizing radiation are not suspect at the Site and were not revealed from the records review, historical searches, or regulatory responses.

4.17 CHEMICAL SPILLS/RELEASES

Past chemical spills/releases may have occurred with past operations; however, no past spills/releases were revealed from the records review, historical searches, or regulatory responses. It is noted during the 1980 Site visit, as outlined in the April 1981 report on PCB and General Environmental Mismanagement, the gate valve on one of the ASTs located at the lower Site leaked when opened.

4.18 OTHER ISSUES OF POTENTIAL ENVIRONMENTAL CONCERN

Other issues of potential environmental concern were not identified through the record reviews, historical searches, or regulatory responses.

5.0 CONCLUSIONS

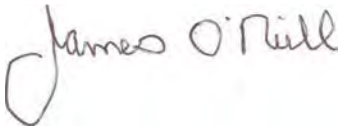
Based on the Phase I ESA, including the historical records review, and interviews, the following potential environmental impairment issues were identified with respect to the Site:

- **Historic Handlings, Use, and Storage of Petroleum Hydrocarbons:** As a self-sufficient Doppler detection station in a remote location, significant quantities of fuel was formerly stored at the Site in ASTs, as well as in thousands of Petroleum, Oils and Lubricants (POL) drums. The Site also formerly contained a helicopter landing pad that contained drum storage. The potential for petroleum hydrocarbon impacts exist as a result of the historical petroleum storage and distribution activities conducted at the Site. The main areas of concern would include the former main upper Site (in the area of the former ASTs), the lower Site (in the area of the former ASTs), along the former product pipelines, the former helicopter landing area, as well as in the former landfill area.
- **Solid Waste/Recyclables:** During the operation of the facility from 1957 to 1965 solid waste was historically disposed in an unlined landfill (unknown location). Based on historical activities at the Site, the landfill may contain former ACM building materials; material with painted surfaces containing lead and/or mercury based paint, former electrical equipment containing PCBs, mechanical equipment debris, motor repair wastes and/or drums formerly containing POLs as well as other solvents. The Site decommissioning program was completed under the approval of ENVC in 1987, and included the razing of all remaining structures and the burning of all materials on Site, followed by the burying and covering of the debris and other remaining materials. It is noted that the contractor typically buried the debris in at least two locations when the Site contained an upper and lower Site. This was completed due to the distance and effort required to transport metal/other debris from the lower Site to the upper Site. Based on the photos taken during the Site restoration program in 1987 which shows metal debris buried on-Site, it can be assumed this was the case during the Site decommissioning at the Wild Boar station. The location of the burial sites was not identified in the documents review. As a Site visit was not part of the scope, it is unknown if these areas remain covered as reported in the 1987 field program.
- **Heavy Metals:** Possible sources of heavy metals may be associated with past operations. The former on-Site buildings were constructed in the 1950s; therefore, the potential exists that lead/mercury based paint was used on the interior and exterior surfaces which may have potentially impacted the surface soils.

- **Polychlorinated Biphenyls (PCBs):** Past uses of PCBs were identified through the records review and regulatory responses. PCBs were historically used as an insulator and coolant in electrical transformers and capacitors at the Site. PCBs were commonly used because they were chemically inert, not affected by acids and corrosive chemicals, did not conduct electricity and would not burn (only at extremely high temperatures). Although the US banned the use of PCBs in 1972, the Wild Boar station was in operation from approximately 1957 to 1965. A Site inventory completed during the 1980 Site visit, as outlined in the April 1981 report on PCB and General Environmental Mismanagement, revealed the presence of six capacitors containing PCBs in the former operations building.

All of Which is Respectfully Submitted,

GHD LIMITED



James O'Neill, P. Eng. Hubert Anderson

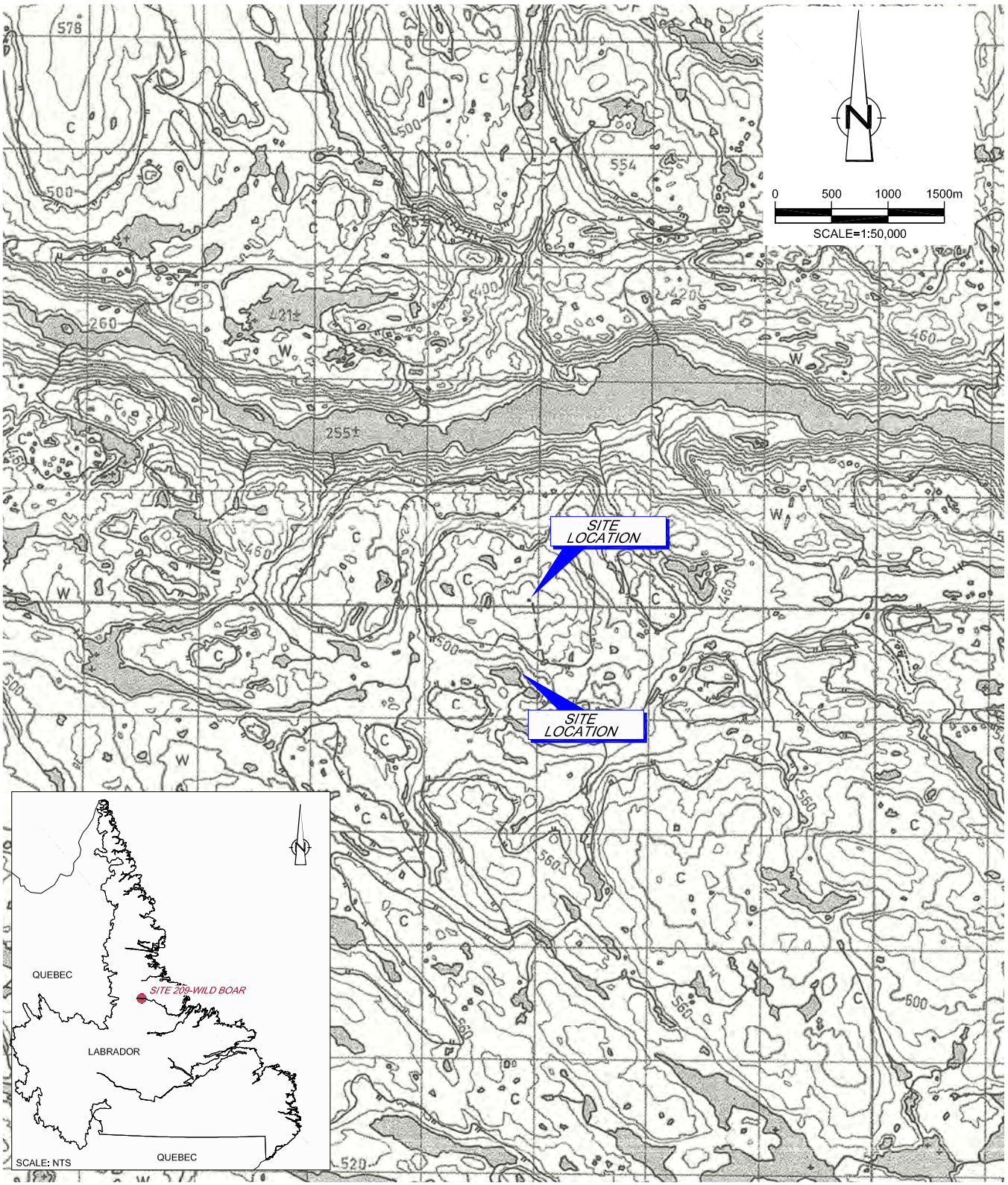


figure 1

SITE LOCATION MAP
PHASE I ENVIRONMENTAL SITE ASSESSMENT
FORMER UNITED STATES MILITARY SITE
Site 209-Wild Boar, Labrador, NL

N

0 100 200 300m

SCALE=1:10,000

SEE FIGURE 4

SEE FIGURE 3

LEGEND:

BOGGY AREA

RIVER/STREAM

WOODED/SHRUB AREA

figure 2

SITE OVERVIEW
PHASE I ENVIRONMENTAL SITE ASSESSMENT
FORMER UNITED STATES MILITARY SITE
Site 209-Wild Boar, Labrador, NL

089758-00(009) GN-NL002

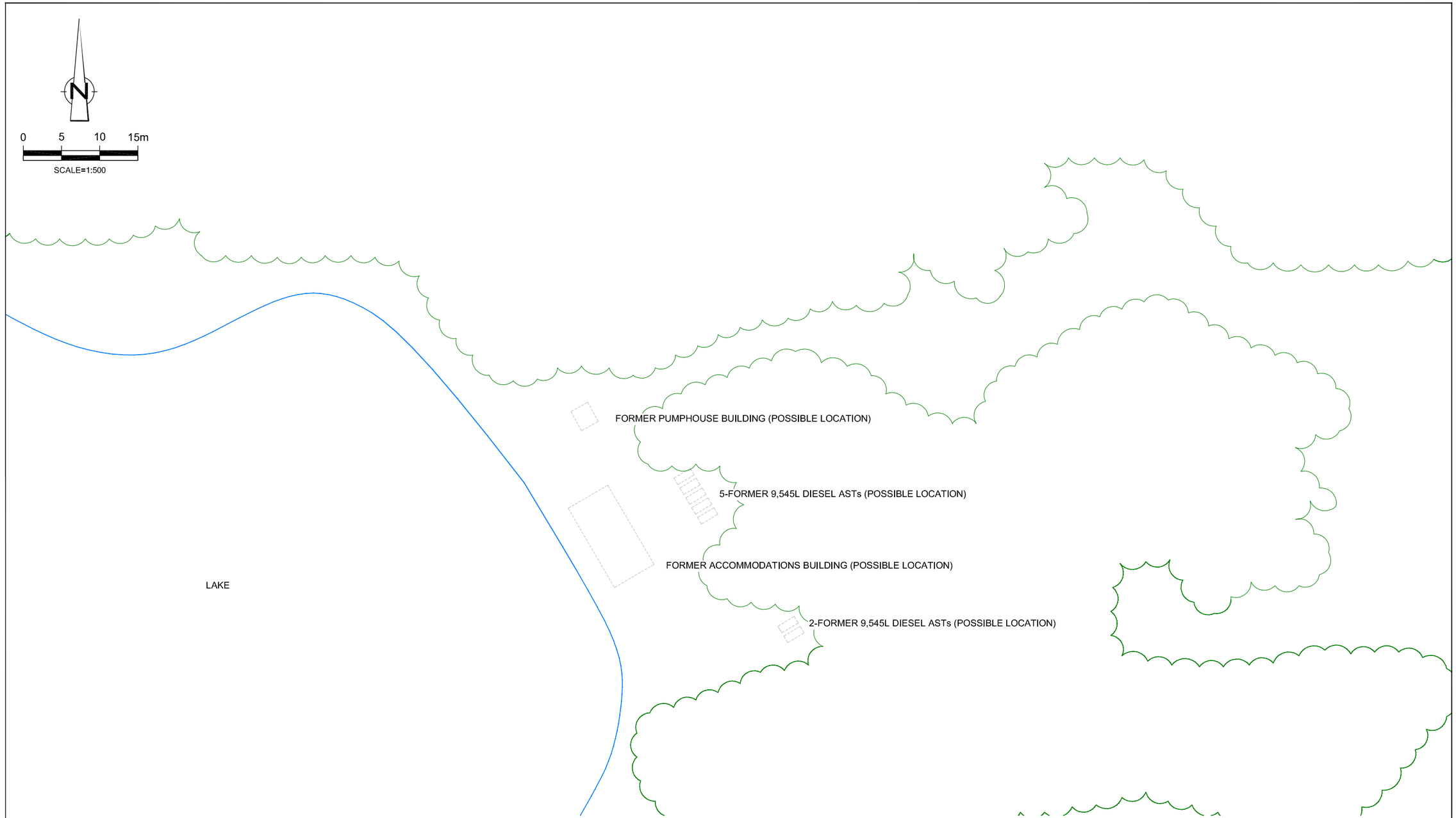


figure 3

SITE PLAN - LOWER SITE
PHASE I ENVIRONMENTAL SITE ASSESSMENT
FORMER UNITED STATES MILITARY SITE
Site 209-Wild Boar, Labrador, NL

089758-00(009) GN-NL003

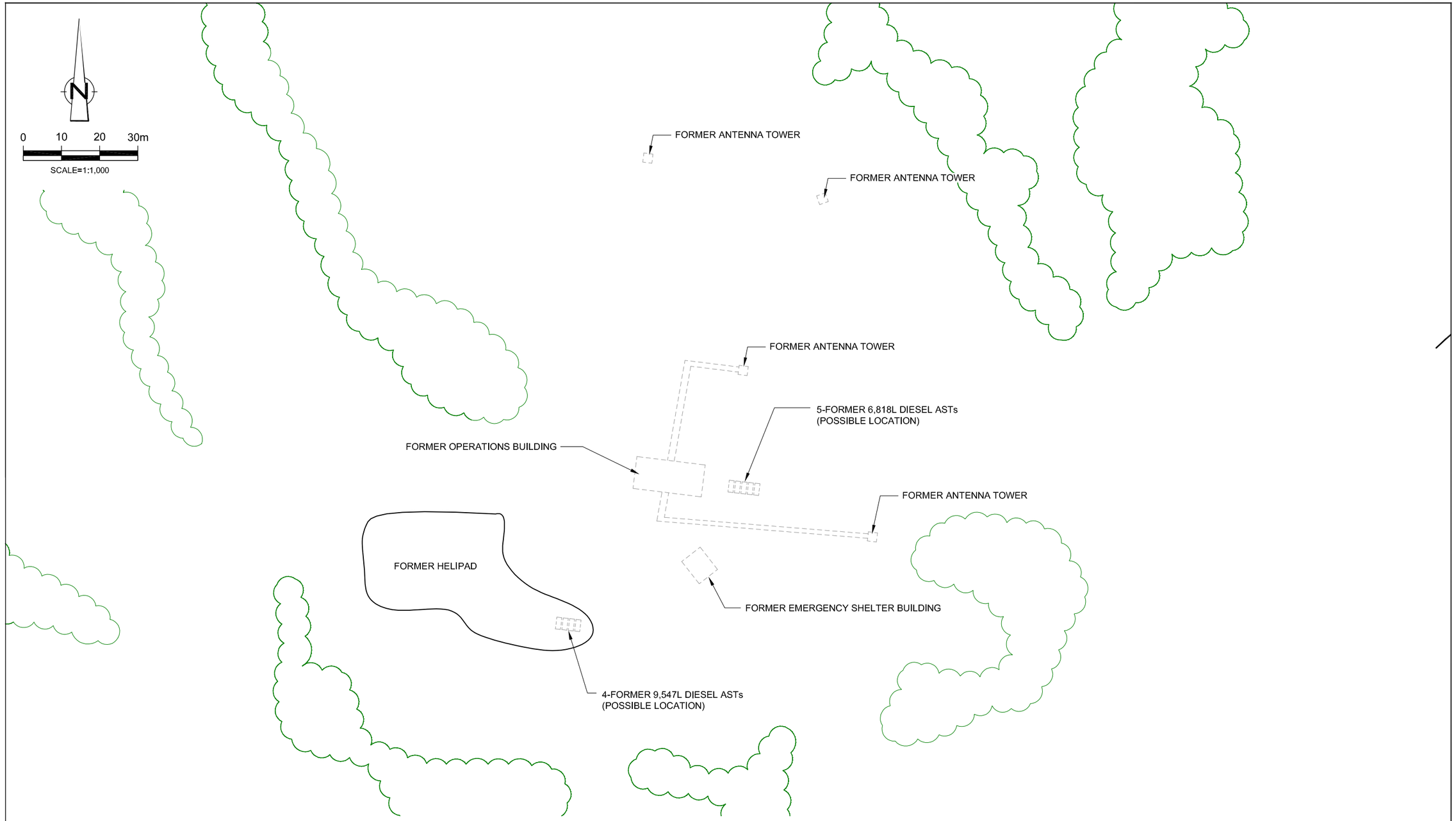


figure 4

SITE PLAN - UPPER SITE
PHASE I ENVIRONMENTAL SITE ASSESSMENT
FORMER UNITED STATES MILITARY SITE
Site 209-Wild Boar, Labrador, NL

GHD

089758-00(009) GN-NL004

Appendices

Appendix A
Qualifications of Site Assessors

QUALIFICATIONS OF SITE ASSESSOR

Name: James O'Neill, P. Eng.

Position: Engineer

Education: B.Eng. (Civil Engineering), Memorial University (1997)

Experience:

James P. O'Neill, P.Eng. is a Senior Project Manager/Engineer with GHD Limited (GHD). He has performed or overseen environmental site assessments at residential, commercial, industrial and public facilities. Mr. O'Neill has completed courses in environmental engineering, hydrology, geology, project management, asbestos awareness, indoor air quality, Standard First Aid/CPR Level C, Automated External Defibrillator, WHMIS, 40-hour HAZWOPER, Powerline Hazards, Leadership in Safety Excellence, and other miscellaneous training. Mr. O'Neill is also a member of the Professional Engineers and Geoscientists of Newfoundland and Labrador (PEGNL) as a Professional Engineer and is registered with the NL Department of Environment and Conservation as a Site Professional. Mr. O'Neill has been directly involved in numerous environmental site assessment and remediation projects concerning hydrocarbon and PCB impacts on residential and/or commercial sites, and is knowledgeable of the current environmental legislation regarding contaminants and hazardous materials.

QUALIFICATIONS OF SITE ASSESSOR

Name: Peter Gillingham, P. Tech.

Position: Environmental Technologist

Education: Environmental Technology (Co-op) Diploma; College of the North Atlantic, Corner Brook, NL, 2007

Fish & Wildlife Technician Diploma; College of the North Atlantic, Bonavista, NL, 2003

Experience:

Peter Gillingham, P. Tech., is an Environmental Technologist with GHD Limited (GHD). Mr. Gillingham has over eight years of experience in various aspects of the environmental sector that included review of environmental site assessments, investigations and remediation of hydrocarbon impacts, hazardous building materials surveys, asbestos management and abatement, drinking water quality, oil storage tank management, and indoor air quality investigations. Mr. Gillingham has also conducted numerous field investigations and projects involving contractor oversight and coordination. He has completed courses in Environmental Site Assessment, Water Quality Analysis, Solid Waste Management, and Air Pollution. Mr. Gillingham is certified in WHMIS, Standard First Aid, Leadership in Safety Excellence, and has completed the 40-hour HAZWOPER course. Mr. Gillingham is also a member of the Association of Engineering Technicians and Technologist of Newfoundland and Labrador (AETTNL). He has completed various environmental site assessments, monitoring programs and site remediation projects where his duties included site supervision, health and safety, soil sampling of excavation boundaries, and groundwater sampling and monitoring. Mr. Gillingham has been a supervisor on numerous petroleum hydrocarbon sites (retail and bulk storage facilities) and supervised drilling, test pitting and soil excavation for various clients in the Province. This Phase I was conducted under the direct supervision of senior staff at GHD.

Appendix B
Regulatory Correspondence

Service NL Responses

CONESTOGA-ROVERS & ASSOCIATES

1118 Topsail Road, P.O. Box 8353, Station A
St. John's, NL, Canada A1B 3N7
Telephone: (709) 364-5353 Fax: (709) 364-5368
www.CRAworld.com

FACSIMILE

DATE: June 16, 2015

REFERENCE NO.: 089758

TO: Mr. George Blackwood
Service NL

FACSIMILE NO.: 709-896-4340

FROM: Mr. Peter Gillingham

Total Pages (Including Cover Page) 3

☐ **Facsimile is Receiver's Original**

Original Will Follow By:

☐ Mail
☐ Overnight Courier
☒ E-mail

Re: Phase I Environmental Site Assessment, Former United States Military Site 209 – Doppler Detection Station (Wild Boar), NL

MESSAGE

Conestoga-Rovers & Associates Ltd. (CRA) is currently conducting a Phase I Environmental Site Assessment of the former United States Military Site 209 – Doppler Detection Station (Wild Boar), NL.

Please review your records for the Site and provide us with any available information, such as the following:

1. underground storage tank registration, or records of tank decommissioning;
2. knowledge or records of past environmental infractions; and/or,
3. any known existing environmental concerns.

I have attached a letter from Ms Christa Curnew, a representative of the Government of Newfoundland & Labrador – Department of Environment and Conservation, that provides permission for the release of this information to CRA, along with Site Location Maps to help with your search. Thank-you for your time and please call if you have any questions.

Regards,

Peter Gillingham, P. Tech.

Attachments: Permission Letter
Site Location Map

Newfoundland Labrador

Government of Newfoundland and Labrador
Department of Environment & Conservation

Pollution Prevention Division
(Environment)

March 3, 2015

RE: Phase I Environmental Site Assessment
Government of Newfoundland & Labrador
Former United States (US) Military Site
Site 209 – Doppler Detection Station, NL (Call Sign WILD BOAR)

To Whom It May Concern:

As a representative of the primary owner of the above listed property, I certify that Conestoga-Rovers & Associates (CRA) has been contracted to complete a Phase I Environmental Site Assessment on the above-noted property.

The site was established as part of the Mid-Canada Line, a network of communication posts across Canada funded by the United States Air Force. The Site was activated in the late 1950's and continued to operate until the mid 1960's.

The property was originally transferred from the Province of Newfoundland and Labrador to the Government of Canada in the 1950's after which permission was granted to the US Government for their use. Operations ceased in 1965 when the property reverted back to the Government of Canada. It is my understanding the Site was transferred back to the Province of Newfoundland & Labrador in 1986.

The former Site is located at 55° 24' North Latitude and 62° 25' West Longitude. A site location map illustrating the approximate location of the property is attached.

Please release any information pertaining to this property to CRA.

Sincerely,

Christa Curnew

Ms. Christa Curnew, M.Env. Sci., P.Eng.
Project Manager – Impacted Sites
Pollution Prevention Division
Department of Environment and Conservation
Government of Newfoundland & Labrador

c.c. Brian Luffman, CRA

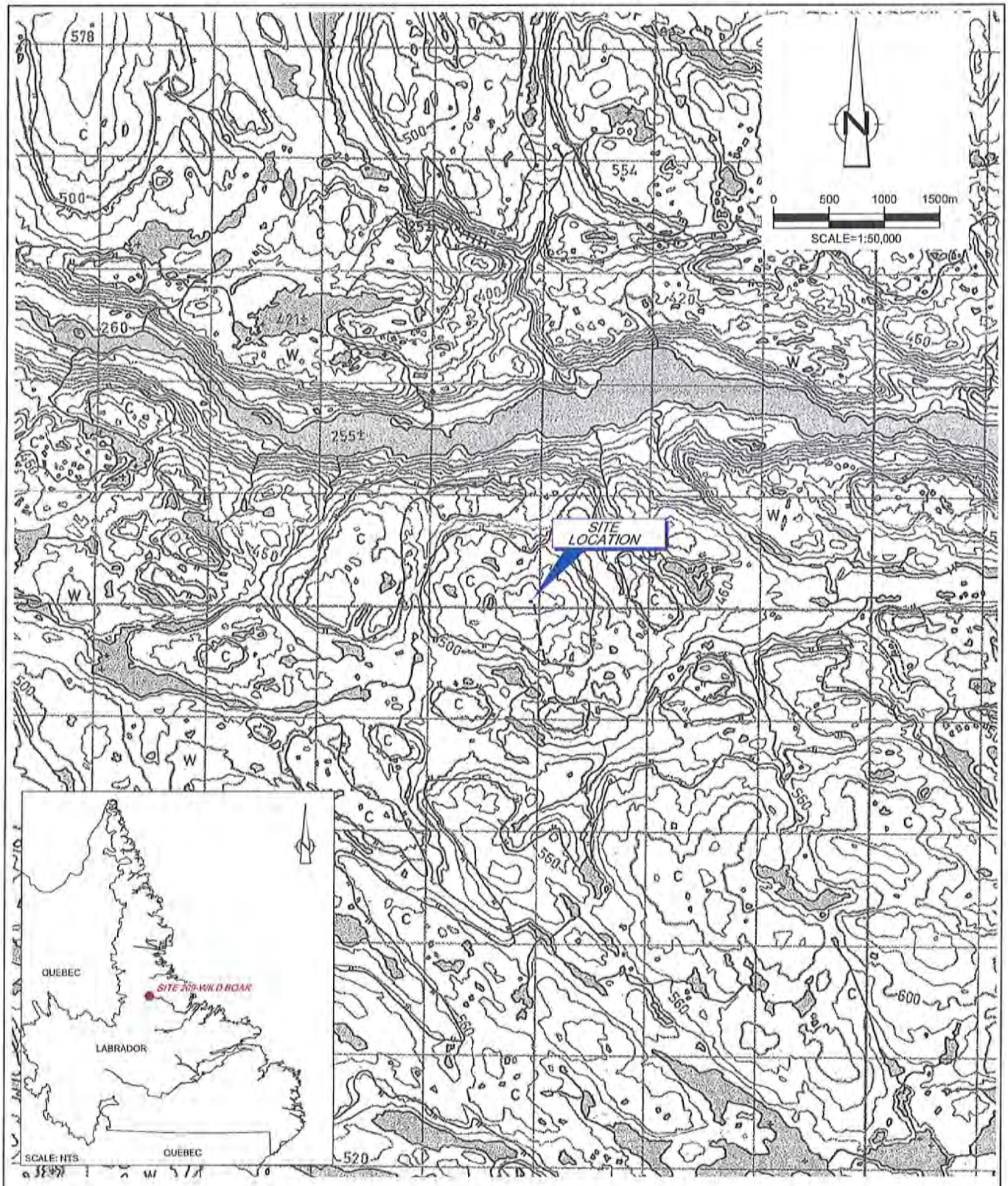


figure 1

SITE LOCATION MAP
PHASE I ENVIRONMENTAL SITE ASSESSMENT
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Site 209-Wild Boar, Labrador, NL

089758-00(008) GN-NL001

Newfoundland Labrador

Government of Newfoundland and Labrador
Service NL

June 20, 2015

Peter Gillingham, P. Tech.
Conestoga-Rovers & Associates
1118 Topsail Road, P.O. Box 8353, Stn A,
St. John's, NL
A1B 3N7

Attention: Mr. Peter Gillingham

RE: File/Record Search – Former United States Military Site 209 (Wild Boar), NL

This refers to your request dated June 16, 2015, requesting information of an environmental nature on the above-mentioned property.

As we do not possess a departmental central registry of activities affecting the environment on properties in the province, we state that to the best of our knowledge and on a search of the files that we have reviewed, that there is no information contained on file and we are not aware of any outstanding environmental concerns with the above noted property.

In addition, we would like to point out that the information on the above property may be obtained by contacting the Department of Environment and Conservation by telephoning (709) 729-5782. Information on an environmental nature for Labrador, prior to 1990, is located at the Department of Environment and Conservation in St. John's, NL.

The Department makes no representations or warranties on the accuracy or completeness of the information provided.

If you have any questions, please do not hesitate to contact me at (709) 896-5473 or at the address below.

Sincerely,

George Blackwood
Environmental Protection Officer

ENVC Responses

CONFIDENTIAL

REPORT ON PCB SPILLS AND GENERAL ENVIRONMENTAL MISMANAGEMENT AT EX-USAF BASES IN LABRADOR

Resource Programs Division
Intergovernmental Affairs Secretariat
Government of Newfoundland and Labrador

April 15, 1981

Hunt River 203: - The upper site is comprised of two buildings on top of a hill. In the main building were found: -

- 1, Gyro-Flo (125) generators on the ground near the fallen tower
- 3, diesel generators (Dorman) in good condition with associated electrical equipment
- 1, kitchen area
- 1, all-terrain vehicle
- 1, felled tower

Contaminants include:

- 80, 45-gal. drums jet B fuel, some full and some empty. Total is estimated at 800 gals
- 4, 2100-gal. capacity diesel tanks are 5/8 full. Total is estimated at 5250 gals.
- 5, 1500-gal. capacity diesel tanks are 3/4 full
  Total is estimated at 5,625 gals.

The lower site is located on the shore of a lake. There are no buildings left. The area is littered with an estimated 350 empty 45-gal. drums which are rusted. 7, 2100-gal. capacity diesel tanks with a few inches of fuel in each (the tanks are inter-connected) totalling about 750 gallons are left. This lower site is a hazard to the acquatic environment if drums do leak.

Site 206: - The upper site has two buildings similar to site 203 at Hunt River. The main building contains 3 diesel generators and associated electrical equipment in excellent condition. A smaller building contains a large diesel heater. On the site, towers have been felled and approximately 150, 45-gal. empty drums litter the upper site. A diesel generator lies on the ground near the towers. Contaminants at the upper site include 4, 2100-gal. capacity diesel tanks which are 1/4 full or less. Total capacity is estimated at 1800 gallons. Also 5 diesel tanks of about 1500 gals. capacity are present. Each tank has a few inches of fuel in the bottom for an estimated total of 250 gals.

At the lower site there are two cabins and a metal frame building (8 ft. by 8 ft.). Contaminants include 7, 2100 gal. empty fuel tanks and 55, 45-gal. full drums of Jet B fuel (total is 4475 gals.).

The local acquatic environment is also threatened if the tanks or drums leak. Disposal is recommended, preferably by burning fuels.

Site 209: - The upper site's main building contains electronic (radio) equipment in good condition. (The site is similar to the 203 and 206 sites) Three diesel generators with associated equipment including batteries in series are noted. One of the generators is scrapped. One other diesel generator is on the ground outside the building. A second small building is located on the upper site.

In the main building are six capacitors (capacity is one pint) containing Aerowax Hyvol Oil (PCBs). They are on a beach in the building and are not leaking. Also there are:

- 4, 2100-gal. diesel tanks, 1/2 to 1/3 full (total is estimated 2800-4200 gals.)
- 1, 1 lb. tin alkali "R" cannister in small building next to the main facility at the upper site
- 5, 1500 gal (approx.) diesel tanks which are 1/3 full (Total is estimated at 2500 gals.)
- 1, 100 lb. compressed gas fire extinguisher, dry chemical 1500 psi, full

The lower site is situated on the lake shore. One building remains standing with the roof removed. The area is littered with approximately 500 empty 45-gal. drums which are rusted. Contaminants include:

- 22, 45-gal. drums which are full of fuel (type unknown) possible Jet B (Total is estimated at 990 gals.)
- 5, 2100-gal. tanks of diesel each 1/2 full (Total is estimated at 5250 gals)
- 2, 2100-gal. (approx.) tanks, some 100 feet from shore which are empty

It was noted that a gate valve on one of the bulk tanks is closed but it leaks badly when opened.

Site 212 - Border Beacon: - The upper site is located a few miles away from the border beacon airport facilities, and it is completely burned out.

The lower site was unmanned on the day of inspection (July 2, 1980). There are a number of buildings in excellent structural condition which made up a gravel airport facility when it was operative.

In a maintenance garage building is a John Deere tractor plus a smaller tractor with a front scoop for snow removal. Both are in good condition. The building contains miscellaneous parts and equipment in addition to the chemicals and fuel tested below under contaiminants. Three large diesel generators and associated electrical equipment are contained within the garage area. Electrical equipment is intact, but the generators have been scrapped.

A main terminal building with two furnaces, kitchen, stainless steel freezer area and living quarters containing dressers, desks, beds, bookcases, chesterfields, etc. is in excellent condition. In an area of this building complex is a radio room and offices containing filing cabinets, radio equipment and spare parts. Transport Canada and the Atmospheric Environment Service's documents litter the office area.

The area is very sandy near the bulk storage tanks and hundreds of 45-gal. drums are strewn across the area. Two other buildings are on this site and contain numerous miscellaneous articles. They are in good shape. All four buildings were unlocked and were accessible to anyone. Contaminants at the lower site include:

In the maintenance garage -

- 5, gallon size airpressed gas cylinders containing propane
- 1, 5-gal drum of transmission fluid
- 1, 45-gal. drum of lubricating oil
- 1, 45-gal. drum of DOWTHERM (a heat transfer agent)
- 6, 5-gal. drums of grease
- 1, 5-gal. drum of Pentox (a wood preservative)
- 2, 45-gal. drums of aviation fueld (full)

Between maintenance garage and terminal building -

- 10, 2000 gal (approx.) bulk tanks in series containing about 1000 gals. in total
- 1, 23,500 gal. bulk tank containing 9,000 gallons of fuel (diesel probably). The tank is metered.

Outside the terminal building -

- 5 propane cylinders of about 100 lb., part-full.

SAGLEK:

To Canada:	M.C. 163-'65 (M.A.&R. 8-'65)	1965 (1965)
To Nfld:	P.C. 1976-2983 M.C. 1111-'77	1976 1977

Conveyed along with Hopedale to the Department of National Defense. Conditions included mineral and gas rights for the Province and a return clause stating that when lands no longer used by DND, they will be assumed by Newfoundland.

Reference is in Federal Reservation Book (FRB), Vol. 2 Folio 46/49.

HUNT RIVER - BORDER BEACON (INLAND HOPEDALE):

To Canada:	M.C. 20-'57 (M.&R. 3-'57)	1957 (1957)
To Nfld:	(M.A.&R. 3(c)-'65) P.C. 1965-1125	(1965) 1965

Conveyed to DND in connection with Mid Canada Line N gotiation on Lot 212 indicates it was transferred to the control of the Department of Transport (Federal). The other lots were transferred back to the Province on June 18, 1965 by federal P.C. (See M.A.&R. 3(c)-'65) and approved 29-10-1965 but no M.C. has been found for any of the lots. Conditions of original transfer were that the lands of all times had to be used for the purposes of an in connection with mid Canada Line and were to revert to Newfoundland in the event that they ceased to be used for that purpose.

Reference is in FRB Volume 1, Folio 50.

HOPEDALE

To Canada:	M.C. 163-'65 (M.A.&R. 8-'65)	1965 (1965)
To Nfld:	P.C. 1976-2983 M.C. 111-'77	1976 1977

Conveyed along with Saglek to DND. Conditions are same as for Saglek.

Reference is in FRB Volume 2, 46/49.

CHURCH ISLAND: No records available.

CAPE AILLIK (MAKKOVIK):

To Canada:	M.C. 697-'57 (M.&.R. 39(o)'57)	1957 (1957)
To Nfld:	M.C. 203-'63	1963

Two pieces of land transferred to Canada for use by DND in connection with mid Canada Line. Area A is 16.64 acres; Area B is 104.23 acres. Use and conditions the same as for Inland Hopedale.

Reference is in FRB Volume 1, Folio 60.

EXECUTIVE COUNCIL
NEWFOUNDLAND AND LABRADOR

NDHQ

Sous-Ministre de la Défense Nationale
JAN 30 1986
Deputy Minister of National Defence

600444

CONFEDERATION BLDG.
ST. JOHN'S, NFLD.
A1C 5T7

January 28, 1986

NORM/SCDDN 0-0-4
Referred to
Transmis à
JAN 31 1986

File No.
Dossier No. 1266-3-2
Charged to/Chargé à ID 6031

Mr. D. B. Dewar,
Deputy Minister,
Department of National Defence,
National Defence Headquarters,
101 Colonel By Drive,
Ottawa, Ontario.
K1A 0K2

Dear Mr. Dewar:

You will recall our previous correspondence concerning the abandoned military sites in Labrador and our decision to arrange a meeting in St. John's to finalize a mutually acceptable settlement.

The offer of five million dollars to assist in the clean-up of the abandoned sites plus a contingency allowance, not to exceed five hundred thousand dollars, to provide for possible undetected contamination at any site, was informally accepted by the Province on 13 August 1985. I am hereby advising that the Province has now authorized formal acceptance of that offer.

The Government of Newfoundland and Labrador, by acceptance of the payment, will absolve the Government of Canada of any further responsibility and liability for the clean-up of sites identified on the attached list.

Environmental restoration of these sites will be undertaken in a timely manner, bearing in mind the short construction season in Labrador.

Yours truly,

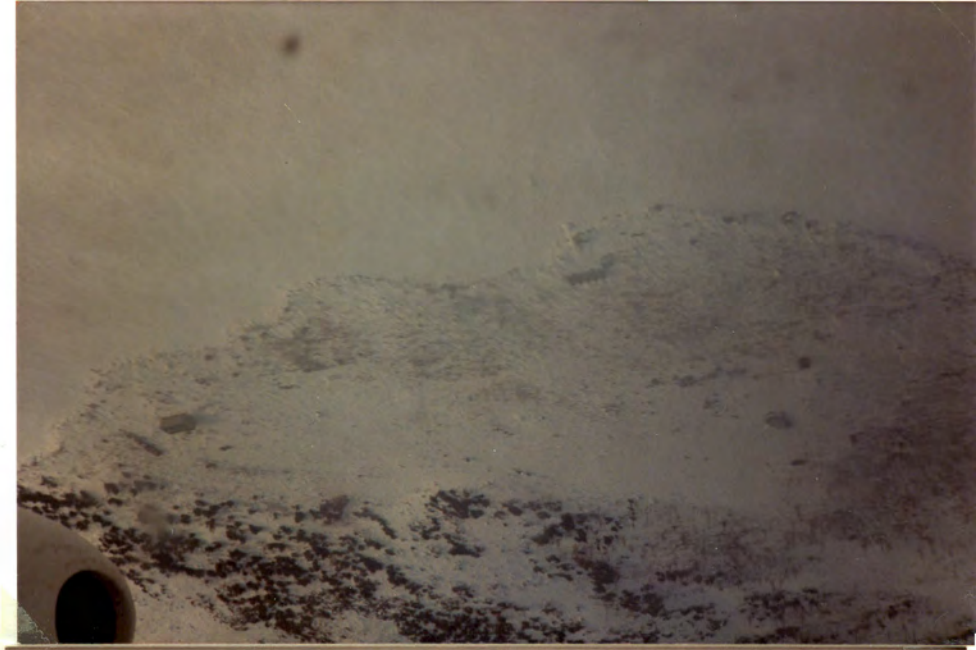
H H Stanley

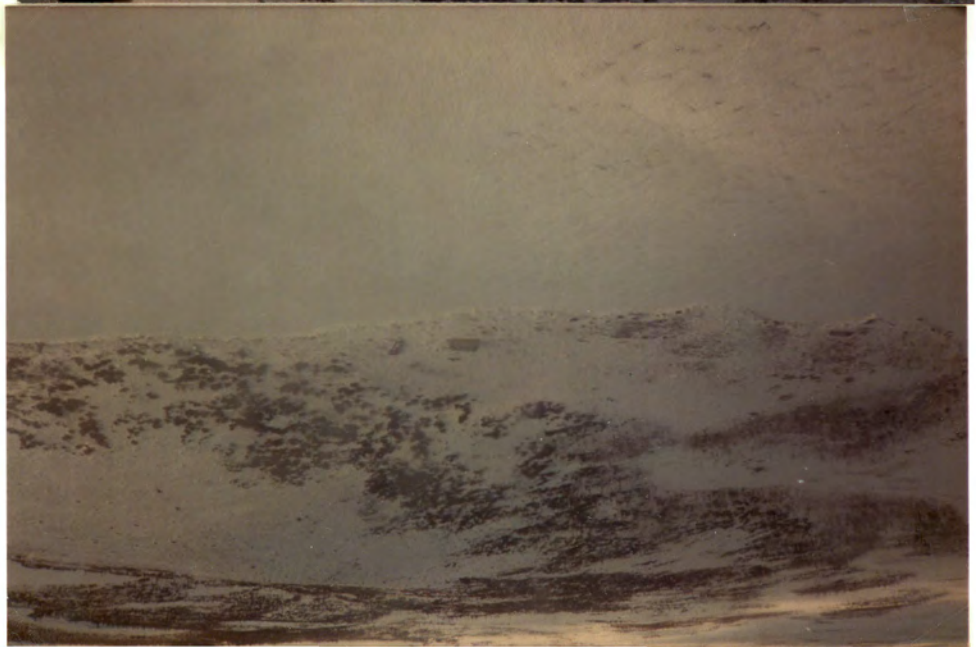
H. H. Stanley,
Deputy Minister.

(9)

ABANDONED MILITARY SITES

1. ✓ Cartwright
2. ✓ Hopedale
3. ✓ Spotted Islands ✗
4. Hopedale Island ?
5. ✓ Cape Makkovik (Allik) ✗
6. ✓ Cutthroat Island
7. ✓ Cape Harrison
8. N.W. Point (2 sites) ✗
9. Boa ?
10. Harbour Lake ?
11. Wild Boar ?
12. ✓ Border Beacon
13. ✓ St. Anthony





PRE-TENDER
SCOPE OF WORK AND LOGISTICS
DEMOLITION AND SITE RESTORATION
FORMER DEW LINE RADAR SITES
LABRADOR

PRE-TENDER
SCOPE OF WORK AND LOGISTICS
DEMOLITION AND SITE RESTORATION
FORMER DEW LINE RADAR SITES
LABRADOR

Prepared for:

Department of Environment
Government of Newfoundland & Labrador
P.O. Box 4750
St. John's, Newfoundland
A1B 1R9

Prepared by:

Bond Architects & Engineers Ltd.
(The BAE Group)
53 Bond Street
P.O. Box 6900
St. John's, Newfoundland
A1C 6H3

Project No. 86096

Date: October, 1986

PRE-TENDER
SCOPE OF WORK AND LOGISTICS
DEMOLITION AND SITE RESTORATION
FORMER DEW LINE RADAR SITES
LABRADOR

TABLE OF CONTENTS

1.0 INTRODUCTION

The intent of the pre-tender call is to provide prospective prime contractors with an opportunity to view the subject sites to assist in preparation of tenders for the following contract packages:

CP1 - Mid Canada Line Installation Sites

CP2 - Secondary Coastal Dew Line Installation

CP3 - Cartwright - Major Dew Line Installation

CP4 - Hopedale - Major Dew Line Installation

The contents of this pre-tender document represents a general overview of the scope of work and project logistics. This document will in no way relieve the Contractor of responsibility for exact site conditions.

In order to provide qualified prime contractors with a first hand look at the work requirements to restore the radar sites to an environmentally acceptable condition, an airplane charter has been tentatively scheduled for October 22, 1986.

A tentative time frame for the calling of tenders and performance of work is generally summarized as follows:

CP-1:

Tender Call: November 28, 1986
Contract Award: January 15, 1987

CP-2:

Tender Call: January 16, 1987
Contract Award: March 4, 1987

CP-3:

Tender Call: February 13, 1987
Contract Award: April 3, 1987

CP-4:

Tender Call: March 27, 1987
Contract Award: May 15, 1987

The construction season in Labrador for the performance of the subject restoration program is very short. It is envisaged that mobilization may be effected in June, 1987 (weather pending). Performance of work and demolibization at all sites must be completed no later than October, 1987.

2.0 MAJOR DEW LINE INSTALLATIONS

2.1 Work Scope

The two major Dew Line Installations are located at Cartwright and Hopedale. Each installation has an Upper Site containing the BMEWS station (entrance site and building) and TACAN station (the main complex with generator building, warehouses and living quarters). The Lower Site situated near the shoreline generally contains bulk fuel storage facilities to receive fuel delivered by marine transport.

Site clean-up and restoration to an environmentally acceptable standard. When initially constructed these facilities were very elaborate and totally self-contained. Since their abandonment, these installations have been vandalized and destroyed, with the remnants of the facilities strewn over the project site. Burial of all debris with in situ material is the principal objective of the site restoration program. This objective appears feasible in Cartwright. The lack of earth fill at the Hopedale site precludes burial. Therefore, at this site, stockpiling debris in a depression may be the only viable option.

Building structures, radar dishes, antennae towers, oil tanks, utility pipelines and electrical power equipment are to be dismantled. Combustible material is to be burned and the remaining residue covered with earth fill a minimum of 500 mm deep. Fuel drums are to be compacted prior to burial. Pressurized gas cylinders will also have to be disposed of in an acceptable manner.

Concrete foundations for buildings, towers and equipment, and support bases are to remain.

Table 2.1 provides general site demolition and restoration requirements for each of two (2) major Dew Line installations.

4.0 MID CANADA LINE INSTALLATION SITES

4.1 Work Scope

There are four (4) Doppler sites to be restored in an environmentally acceptable condition. Each Doppler location consists of an Upper Site containing radar equipment and ancillary support services and a Lower Site, several miles away, situated on the shores of a lake. The Lower Site is essentially a fuel storage facility from which fuel was hauled in winter to the Upper Site. The sites are remote and accessible only by helicopter at the Upper Site and by fixed wing or helicopter at the lower site.

It is planned that these sites be cleaned and tidied up as much as possible recognizing physical constraints in undertaking the restoration work. Fuel barrels would be compacted and stacked. Building materials, oil tanks, fuel lines and fallen towers would be dismantled and neatly stacked. Combustible debris would be burned.

Table 4.1 provides general site demolition and restoration work requirements for each of the four (4) Doppler locations under consideration.

TABLE 4.1

MID CANADA LINE INSTALLATION SITES - SITE DEMOLITION/DISPOSAL REQUIREMENTS

SITE #203	SITE #206	SITE #209	SITE #212
1. Upper Site	1. Upper Site	1. Upper Site	1. Upper Site
1.1 Metal framed buildings to be dismantled.	1.1 Metal framed buildings to be dismantled.	1.1 Metal frames building to be dismantled.	1.1 Site is completely burned out. Building metal frame and all debris to be dismantled.
1.2 Fallen antenna towers to be dismantled and stacked.	1.2 Fallen antenna towers to be dismantled and stacked.	1.2 Fallen antenna towers to be dismantled and stacked.	1.2 Fallen antenna towers to be dismantled and stacked.
1.3 Fuel lines and oil tanks to be dismantled and stacked.	1.3 Fuel lines and oil tanks to be dismantled and stacked.	1.3 Fuel lines and fuel tanks to be dismantled and stacked.	1.3 Fuel lines to be dismantled and stacked.
1.4 Fuel drums to be compacted and stockpiled.	1.4 Fuel drums to be compacted and stockpiled.	1.4 Fuel drums to be compacted and stockpiled.	1.4 Fuel drums to be compacted and stockpiled.
2. Lower Site	2. Lower Site	2. Lower Site	
2.1 Fuel drums to be compacted and stockpiled.	2.1 Fuel drums to be compacted and stockpiled.	2.1 Fuel drums to be compacted and stockpiled.	
2.2 Fuel lines and oil tanks to be dismantled and stacked.	2.2 Fuel lines and oil tanks to be dismantled and stacked.	2.2 Fuel lines and oil tanks to be dismantled and stacked.	
	2.3 Small metal frame buildings to be dismantled.	2.3 Buildings to be dismantled.	
	2.4 Log cabins to remain.		

4.2 Work Operations and Logistics Consideratons

1. There are no marine docking facilities or transport services.

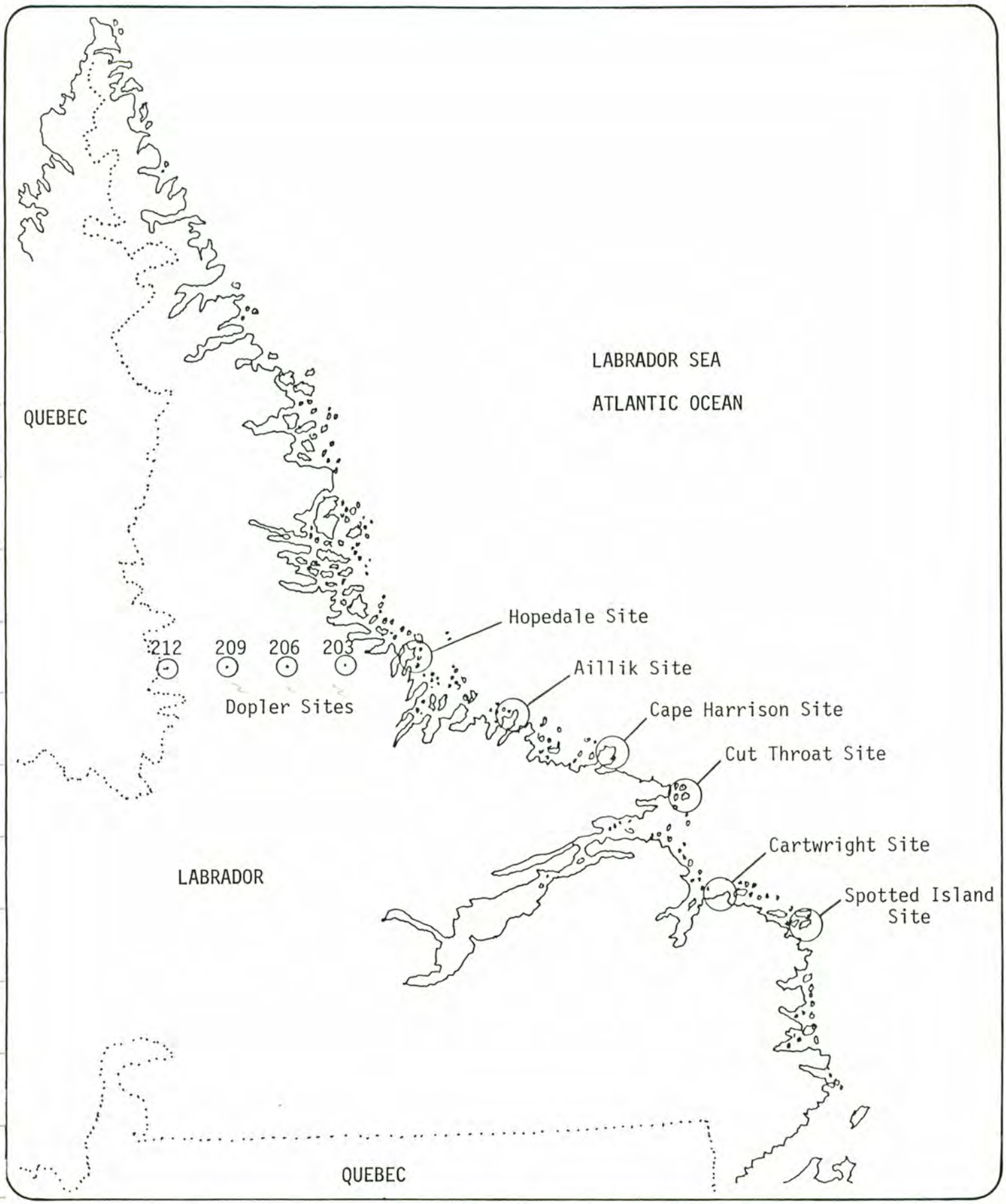
2. There is no landing strip for fixed wing aircraft except Site #212.

3. There are no helicopter refueling facilities. All fuel must be flown in along with construction equipment, tools and supplies.

4. Because of site remoteness and inaccessibility, the construction season would be limited to June through September, about four (4) months.

APPENDIX "A"

SITE LOCATION PLAN



PROJECT: Demolition and Site Restoration Former Dew Line Radar Sites	JOB No. 86096
TITLE: Site Location Map	SCALE:
DRAWN BY:	
DATE: October, 1986	

THE BAE GROUP

1.0 INTRODUCTION

The intent of the pre-tender call is to provide prospective prime contractors with an opportunity to view the subject sites to assist in preparation of tenders for the following contract packages:

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Tender Call: February 13, 1987
Contract Award: April 3, 1987

THE BAE GROUP

MINUTES OF MEETING

PROJECT: Dopler Site Restoration - CP#4 DATE: March 9, 1987

PROJECT NO. 86096-CP#4 LOCATION: BAE Group Boardroom

The following is a summary of subjects discussed and decisions reached at the above noted meeting. Please advise of any errors or omissions.

IN ATTENDANCE:

R. Vallis
G. Laing
G. Leja
D. Holley

Purpose of the meeting was to review particular requirements for the Dopler Site Restoration - CP#4.

ACTION BY

SITE 212

1. Air-lift heavy equipment to site.
2. Bury debris on site.
3. Designate upper site only for clean-up.
4. Exclude runway area, ramp and all structures at lower site.
5. Camp facilities: as required by Contractor.
6. First Aid/Communication, etc. to be provided at the site.
7. Existing building cannot be used as temporary camp facilities. Contractor must provide their own camp facilities.

SITE 209

- Upper Site

  1. Salvage of material is permissible except following:

     - 3 generators and associated electrical must be transported to border beacon and left in accessible location at runway.
     - generators must be totally discharged and approved by Engineer prior to air-lift.

ACTION BY

2. Dispose of all debris on site or lift to alternate site approved by Engineer.

- Lower Site:

1. Fuel oil drums - burn fuel, compact drums and disposal.

2. Burial in bog not acceptable.

SITE 206

- Upper Site

1. Similar to 209 except no equipment to be retained.

- Lower Site

1. Exclude log structures from demolition.

2. Controlled burning of oil from drums and tanks. All burning to be done under direction of Environment personnel.

3. Environment to witness burning at Site 206 only.

SITE 203

1. Similar to Site 209 except no equipment to be retained.

GENERAL

1. Control of air lifting debris over water was discussed. It was generally agreed that an Owner/Engineer's representative would accompany all such airlifting operations to ensure that material is not disposed of in the ocean.

2. Contractor's methodology should indicate sites selected for disposal.

3. BAE to confirm feasibility of lifting equipment to border beacon.

DEMOLITION AND SITE RESTORATION
FORMER DEW LINE RADAR SITES
CONTRACT PACKAGE - CP4
DOPLER SITES, LABRADOR
86096 - CP#4

FOR APPROVALS ONLY
NOT FOR CONSTRUCTION

SPECIFICATIONS FOR
DEMOLITION AND SITE RESTORATION
FORMER DEW LINE RADAR SITES
CONTRACT PACKAGE - CP4
DOPLER SITES, LABRADOR

PROJECT TEAM

OWNER:

Department of Environment
Government of Newfoundland and Labrador
Confederation Building
P.O. Box 4750
St. John's, Newfoundland
A1C 5T7

ENGINEER:

Bond Architects and Engineers Limited
P.O. Box 6900
53-55 Bond Street
St. John's, Newfoundland
A1C 6H3

DATE:

March 28, 1987

JOB NO.:

86096

SPECIFICATIONS FOR
DEMOLITION AND SITE RESTORATION
FORMER DEW LINE RADAR SITES
CONTRACT PACKAGE - CP4
DOPLER SITES - LABRADOR

LIST OF DRAWINGS

Project No.	Sheet No.	Description	Date
86096	SK-203-1	Site Location Plan Dopler Site 203	November, 1986
86096	SK-203-2	Operatons Building Dopler Site 203	November, 1986
86096	SK-206-1	Site Location Plan Dopler Site 206	November, 1986
86096	SK-206-2	Operations Building Dopler Site 206	November, 1986
86096	SK-209-1	Site Location Plan Dopler Site 209	November, 1986
86096	SK-209-2	Operations Building Dopler Site 209	November, 1986
86096	SK-212-1	Site Location Plan Dopler Site 212	November, 1986
86096	SK-212-2	Operations Building Dopler Site 212	November, 1986

.16 Removal and disposal of two (2) wood frame buildings and their contents at the lower site; a fuel pumphouse measuring 2.5 m by 2.85 m and the Accommodations Building measuring approximately 12.3 m by 6.0 m.

.17 Complete burial with suitable fill material, suitably graded to facilitate without significant surface erosion, of all debris and rubbish gathered for disposal from the defined cleanup zones.

1.3 Work Included for Dopler Site 209

.1 Purpose of clean-up work is to bring the upper and lower sites as close as possible to its original condition within the defined cleanup areas.

.2 Demolition, removal and burial of all building structures located at upper site.

.3 Removal and disposal of by burial of all building contents.

.4 Collection and disposal by burial of all loose scattered debris, fuel drums, small tanks, scrapped materials and equipment within 150 m radius measured from any point of the Operations Building foundation walls located at the upper site.

.5 Dismantling and disposal of cable trough and wood trestle, linking to the former antenna towers.

.6 Dismantling and disposal of two antenna towers, approximately 18 m and 63 m in length, including dish antenna affixed to the top of the towers.

.7 Dismantling and disposal of two smaller antenna towers, approximately 15 m in length.

.8 Demolition, removal and disposal of structural steel framed Operations Building, measuring approximately 18 m long by 8.4 m wide.

.9 Demolition, removal and disposal of wood framed Emergency Shelter, measuring approximately 7.4 m long by 6.1 m wide.

.10 Removal and disposal of nine (9) 1.25 m diameter by 2.75 m long fuel oil storage, and associated piping, valves and fittings.

.11 Removal and disposal of ventilated and non-ventilated pressure gas cylinders and ancillary equipment.

.12 Removal and burial of all former above ground utilities, power conductors, utility poles, pipe lines and pipe supports.

.13 Removal and disposal of all wood post foundations. Concrete foundations, if incurred, to remain however, steel baseplates are to be removed and anchor bolts cut flush with top of concrete foundations.

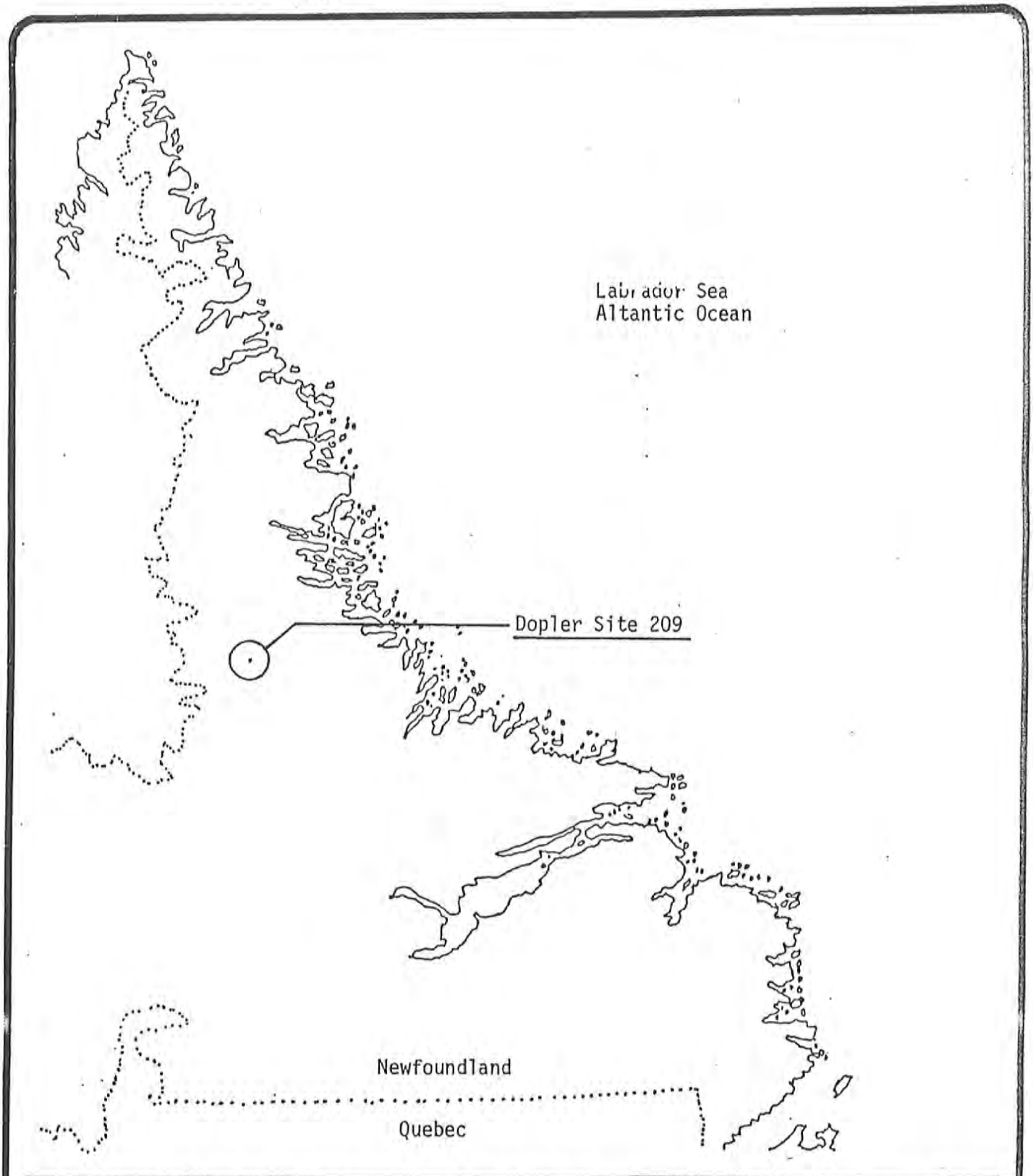
.14 Removal and disposal of seven (7) fuel storage tanks at the Lower Site on the shore of Bear Lake, along with associated fuel piping and supports, valves and fittings. Two (2) tanks measure approximately 1.75 m in diameter by 2.75 m long and five (5) tanks measure approximately 1.4 m in diameter by 2.75 m long.

.15 Collect and dispose of abandoned fuel oil drums located at the Lower Site. Cleanup zone to encompass an area of 100 m radius from the lower site primary fuel storage tankage and 100 m radius from Accommodations Building.

.16 Removal and disposal of two (2) wood frame buildings and their contents at the lower site, a fuel pumphouse measuring 2.5 m by 2.85 m and Accommodations Building measuring approximately 12 m by 6 m.

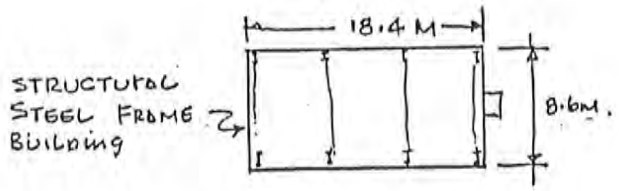
.17 Complete burial with suitable fill material, suitably graded to facilitate without significant surface erosion, of all debris and rubbish gathered for disposal from the defined cleanup zones.

.18 Salvage three (3) complete diesel generator sets, from the Operations Building, transport by airlift to Border Beacon, and provide temporary storage in accessible location adjacent to the gravel airstrip.

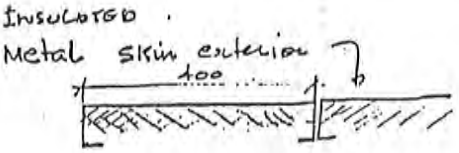


PROJECT Demolition & Site Restoration of Former Dew Line Radar Sites, Labrador			JOB NO. 86096
TITLE Site Location Plan - Dopler Site 209			PAGE SK-209-1
DIVISION Civil	DRAWN G.L.	CHECKED	DATE November, 1986

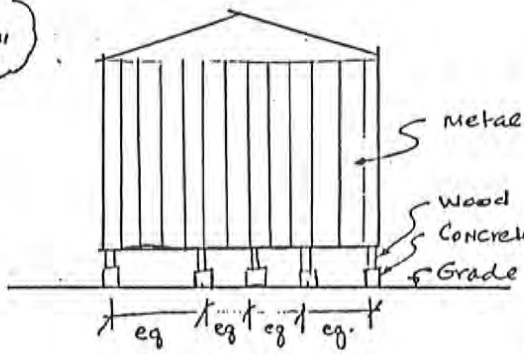
THE BAE GROUP
BOND ARCHITECTS and ENGINEERS LIMITED
BOND STREET P O BOX 6900 ST JOHN'S NF
A1C-6H3 TLX 016-4676 TEL (709) 722-4622



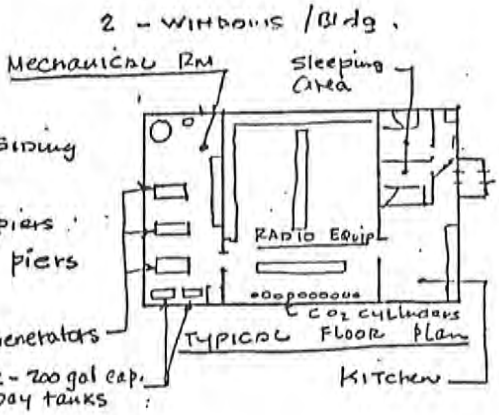
Plan



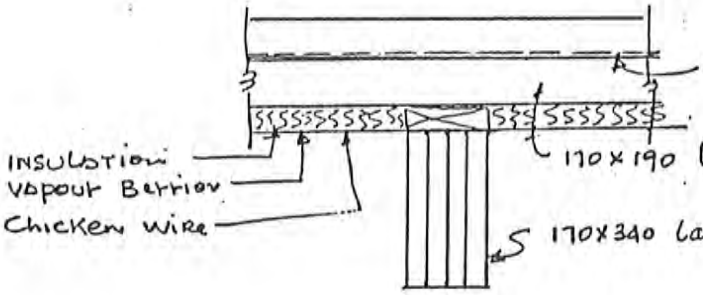
Ceiling height approx - 10'-0"



End Elevation

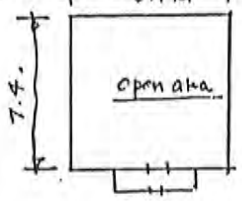


TYPICAL FLOOR Plan



TYPICAL SECTION THRU FLOOR. ——— NTS.

This Building has been torn down on site - 12.



EMERGENCY SHELTER Bldg

Building plumbing system was under the floor Heating system was from Heat reclaim system on the generator exhaust.

NOTE
This Building is all Wood frame CONSTRUCTION.

PROJECT Demolition & Site Restoration of Former Dew Line Radar Sites, Labrador			JOB NO. 86096.
TITLE Dopler Site 209 - Operations Building			PAGE SK-209-2
DIVISION Civil	DRAWN CL	CHECKED	DATE November, 1986

THE BAE GROUP
BOND ARCHITECTS and ENGINEERS LIMITED
BOND STREET P O BOX 6900 ST JOHN'S NF
A1C-6H3 TLX 016-4676 TEL (709) 722-4822

GOVERNMENT OF NEWFOUNDLAND & LABRADOR

Department of Environment
P. O. BOX 4750
ST. JOHN'S, NEWFOUNDLAND
A1C 5T7

OFFICE OF THE MINISTER

1987 05 25

Titan Holdings Limited
P.O. Box 7306
St. John's, NF
A1B 3Y5

Attention: Mr. B. Imhoff, P. Eng.

Dear Sir:

RE: Demolition and Site Restoration
Former Dew Line Radar Sites
Contract Package - CP4
203-Upper & Lower, 206-Upper & Lower, 209-Upper & Lower, 212-Upper Only.

Further to our review of tenders submitted for the captioned tender package, I am pleased to inform you that your tender, in the amount of $667,400.00 has been accepted.

Please forward the specified bonding and insurance policies to our consultant, The BAE Group, for review. Your bid security will be retained until these documents are received. Upon receipt of bonding and insurances a contract will be executed and a copy forwarded to you. Work will not be permitted to start until the bonding and insurances are received and formally approved by my Department and The BAE Group.

Yours truly,

John C. Butt
Minister

cc: Workmen's Compensation Board

cc: The BAE Group

TITAN HOLDINGS LTD.

July 13, 1987

The BAE Group
P.O. Box 6900
St. John's, NF
A1C 6H3

ATTENTION: Don J. Holley, P.Eng.

Dear Sir:

RE; Demolition and Site Restoration
Contract Package CP4
Dopler Sites
Credit for Moving Three Diesels

Titan Holdings Limited is prepared to offer a credit of $6,206.00 for moving the three diesels from site #209 to site #212. The following is a breakdown of the credit.

1. LABOUR
   2 men @ $17.11[1] * 120 hrs..... $4,106.00

2. HELICOPTER
   4 trips/diesel * 3 diesels * .25 hr/trip[2] * $700.00..... $2,100.00

   TOTAL..... $6,206.00

Note 1 This is Titan's loaded labour cost and includes a component for board and transportation.

Note 2 This .25 hour/trip is based on Titan's plan to sling the diesels in conjunction with our mobilization from site # 212 to site # 209. The helicopter would sling part of each diesel on each return trip and the time given is the extra flying time required.

☐ P. O. BOX 416
STATION A,
GOOSE BAY, NEWFOUNDLAND
AOP 1S0

☑ P.O. Box 8544
St. John's, Newfoundland
A1B 3P2

Should you wish to discuss any part of this credit in more detail, I may be reached at 722-9780.

Yours Very Truly,
Titan Holdings Limited

Per: Barry A. Imhoff, P.Eng.

file: CP4
CC: G. Davis Titan Holdings Limited
R. Vallis Department of Environment
W. Oakley The BAE Group

SITE RESTORATION
FORMER DEW LINE RADAR SITES
LABRADOR
STATUS REPORT #1
PERIOD ENDING JULY 31, 1987

SITE RESTORATION
FORMER DEW LINE RADAR SITES
LABRADOR
STATUS REPORT #1
PERIOD ENDING JULY 31, 1987

PROJECT TEAM

PREPARED FOR: Department of Environment
P. O. Box 4750
St. John's, Newfoundland
A1C 5T7

PREPARED BY: Bond Architects & Engineers Limited
(The BAE Group)
P.O. Box 6900
Third Floor
Baine Johnston Centre
10 Fort William Place
St. John's, Newfoundland
A1C 6H3

DATE: August 17, 1987

PROJECT NO. 86096

SECTION VI

Contract No. CP-4
- Dopler Sites

MONTHLY STATUS REPORT

Project No. 86096
Report No. 1
From: June 22, 1987
To: July 31, 1987

Client: Department of Environment Date Submitted: August 15, 1987

Project: Demolition and Site Restoration - Former Dew Line Radar Sites
Dopler Sites, Labrador - Contract Package CP-4

Consultant: Bond Architects & Engineers Limited (The BAE Group)

A. Tender Data:

Tender Closing Date: April 21, 1987
Contractor: Titan Holdings Limited
Completion Date: September 30, 1987

Contract Award Date: May 25, 1987
Contract Amount: $667,400.00
Change Order Amount: $ 18,484.66
Revised Contract Amount: $685,884.66
Revised Completion Date: Sept. 15/87

B. Construction Equipment Resources Deployed During Month:

- Site 212: Complete
- Site 209:

  (1) 2 - K18 Kobuta
  (2) 2 - ATV Quad Runners
  (3) 4 - Trailers
  (4) Miscellaneous small tools, equipment and pumps.

- Site 206: Not mobilized to date.
- Site 203: Not mobilized to date.

C. Construction Work Force Deployed During Month:

- Site 212: Complete
- Site 209:

  (1) 1 - Foreman
  (2) 3 - Labourers
  (3) 1 - Cook/Labourer

  Work Force demobilized on July 28, 1987 awaiting final inspection. remobilization of work force scheduled for August 5, 1987.

- Site 206: Not mobilized to date.
- Site 203: Not mobilized to date.

D. Summary of CCN/Change Order to Month End

CCN#	C.O.#	Description	Date Issued to Contractor	Amount Quoted	Consultant's Recommendations	Remarks
1	1	Additional site cleanup at Site 212.	N/A	$12,066.00	Approved	Change Order issued August 3, 1987.
2	2	Disposal of 21 drums and fuel at Site 209 (Lower).	N/A	$ 4,931.56	Approved	Change Order issued August 3, 1987.
3	3	Additional site cleanup at Site 209 (Upper).	N/A	$ 1,487.10	Approved	Change Order issued August 3, 1987.
4	4	Disposal of drums and debris at shoreline - Site 209 (Lower).	Aug. 4/87	$ 3,614.20	Under Review	
		TOTAL TO DATE		$22,098.86		

E. Summary of Progress

1. Work Progress to July 31, 1987:

.1 Site 212: All work complete.

.2 • Upper Site 209:

(a) All work as detailed in the specification has been 95% completed.

(b) Burial of a few drums, scattered debris and Emergency Shelter debris remaining to be completed.

• Lower Site 209

(a) All work as detailed in the specification has been 90% completed.

2. Construction Schedule

Total completion of the cleanup for Site 209 is approximately one week late. This is due to the Contractor closing down the project and sending work crews home for a one-week period. Contractor feels confident that they will continue on-schedule for completion of Site 206. There are three (3) days left for Contractor to complete work remaining on both the Upper and Lower Site 209.

3. Instructions Issued to Contractors

.1 Clean up drums and scattered debris along shoreline within contract boundary on Lower Site 209.

.2 Hand rake burial sites to ensure proper site restoration for both upper and lower sites.

.3 Complete burial of garbage and cans located near shorelines on Lower Site 209.

.4 Contractor to ensure that during ancillary cleanup no surface material is visible.

.5 Contractor asked to submit cost to supply labour and equipment to dispose of drums and scattered debris along shoreline, and other drums and debris outside contract limits.

F. Project Construction Costs

Contract: Dopler Sites - CP-4

Contract Description	Contract Amount	Change Orders Approved	Anticipated Change Orders	Const. Cost This Month	Const. Cost Month Ending	Percent Complete	Amount to Finish	Total Estimated to Completion
1. Site 212	$103,020.00	$12,066.00	-	$ 12,066.00	$112,926.00	98.1	$ 2,160.00	$115,086.00
2. Site 209	$195,030.00	$ 6,418.66	$3,614.30	$201,448.66	$201,448.66	98.2	$ 3,614.30	$205,062.96
3. Site 206	$218,600.00	-	-	$ 27,950.00	$ 27,950.00	12.8	$190,650.00	$218,600.00
4. Site 203	$150,750.00	-	-	-	-	0	$150,750.00	$150,750.00
TOTAL	$667,400.00	$18,484.66	$3,614.30	$241,464.66	$342,324.66	49.7	$347,174.30	$689,498.96

209

Photo # 1: Site ~~109~~ Upper. Material burial.

209

Photo # 2: Site ~~109~~ Upper. Demolition in progress.

Photo # 3: Site 109 Upper. Material burial.

Photo # 4: Site 109 Upper. Burning survival building.

Photo # 5: Site ~~109~~ 209 Upper. Final grading of site.

Photo # 6: Site ~~109~~ 209 Upper. Aerial view during demolition.

Photo # 7: Site ~~109~~ 209 Lower. Aerial view of final stages of the work.

Photo # 8: Site ~~109~~ 209 Lower. Burial in progress.

Photo # 9: Site ~~109~~ 209 Lower. Accomodation building area.

Photo # 10: Site ~~109~~ 209 Lower. Aerial view of the site.

Baine Johnston Centre
Third Floor, 10 Fort William Place
P. O. Box 6900, St. John's, NF
A1C 6H3 Tel: (709) 722-4622
Tlx: 016-4676 Fax# (709) 722-2733

THE BAE GROUP

86096.2C3 (CP4)

August 3, 1987

Department of Environment
Confederation Building
P.O. Box 4750
St. John's, Newfoundland
A1C 5T7

Attention: Mr. Randy Vallis

Dear Sir:

RE: Demolition & Site Restoration
Former Dew Line Radar Sites
Dopler Sites, Labrador
Contract Package - CP#4

Please find attached, for your approval, Change Order No. 3, in the amount of $1,487.10, on the above noted project.

This quotation has been reviewed by our office and we find the amount to be acceptable.

Please sign all three (3) copies of the Change Order Document, retain one (1) copy for your records and return the remaining two (2) copies to our office for distribution.

Yours very truly,

THE BAE GROUP

D.J. Holley, P. Eng.

DJH/amj

Enclosures

THE BAE GROUP

CHANGE ORDER

OWNER: Department of Environment

DATE: August 3, 1987

CHANGE ORDER NO. 3

CONTRACTOR: Titan Holdings Limited

PROJECT: Demolition & Site Restoration
Dopler Sites, Labrador - CP4

PROJECT NO. 86096-CP#4

YOUR QUOTATION FOR CONTEMPLATED CHANGE NOTICE NO. ____ IN THE AMOUNT OF _____ /100 DOLLARS ($_____) HAS BEEN ACCEPTED, RESULTING IN A REVISION OF THE CONTRACT PRICE.

DESCRIPTION OF CHANGE:

Site 209 (Upper)

Supply labour and equipment to execute additional site cleanup outside contract limits per attached breakdown (Reference: Titan's letter dated July 20, 1987).

(Scope of additional cleanup work was verified by BAE site representative prior to commencement).

ORIGINAL CONTRACT PRICE:			$ 667,400.00
Change Order Nos. 1 & 2	Debit:		$ 16,997.56
	Credit:		$ -
THIS CHANGE ORDER: 3	Debit: (X)	$ 1,487.10	
	Credit: ( )	$	$ 1,487.10
REVISED CONTRACT PRICE:			$ 685,884.66

THE BAE GROUP:
Per: _____
Date: 87-08-03

APPROVED BY OWNER:
Per: _____
Date: 1987 08 03

RECEIPT OF THIS CHANGE IS HEREBY ACKNOWLEDGED AND THE TERMS THEREOF AGREED TO:

CONTRACTOR: Per: _____ DATE: _____

BOND ARCHITECTS & ENGINEERS LIMITED

TITAN HOLDINGS LTD.

1987 07 20

The BAE Group
53 Bond Street
P. O. Box 6900
St. John's, NF
A1C 6H3

ATTENTION: DON J. HOLLEY, P. ENG.

Dear Sir:

RE: Demolition and Site Restoration
Contract Package CP4
Dopler Sites
Extra Work at 209 Upper

Attached please find a breakdown of the labour and equipment required to conduct the extra cleanup requested at Site # 209 Upper.

If you wish to discuss this further, I may be reached at 722-9780.

Yours very truly,
TITAN HOLDINGS LIMITED

Per: Barry A. Imhoff, P. Eng.

File: CP4
Enclosure
cc: G. Davis, Titan Holdings Limited
W. Oakley, The BAE Group
R. Vallis, Provincial Department of Environment

P. O. BOX 416
STATION A,
GOOSE BAY, NEWFOUNDLAND
AOP 1S0

P.O. Box 8544
St. John's, Newfoundland
A1B 3P2

DEMOLITION AND SITE RESTORATION, CONTRACT PACKAGE CP4

Extra Cleanup at Site # 209 Upper

ITEM	TIME	RATE	TOTAL
Foreman	5	21.47	$107.35
Labour	45	20.71	931.95
Kubota KH35	5	44.20	221.00
4W ATV	6	20.40	122.40
ATV Trailer	6	8.40	50.40
Metal Saws	6	4.00	24.00
Saw Blades	3	10.00	30.00
			$1487.10

ENVIRONMENTAL INSPECTION
ABANDONED MILITARY SITES IN LABRADOR

Prepared by: Toby Matthews
Environmental Management Division
Department of Environment and Labour
October 1996

1.0 INTRODUCTION

1.1 Purpose

To conduct files review and preliminary site assessment at selected former military sites in Labrador. U.S. and Canadian governments formerly operated the sites. The inspection of sites provides an update to 1986 cleanup contracts and to respond to media and public concerns over contamination identified at two of these sites.

1.2 Previous Work in the Area

In January 1986 as part of a Reversion of Land Letter of Agreement, the province accepted a $5.5 million offer from the Government of Canada for 13 listed sites. The Province in accepting these monies absolved the GOC of any further responsibility and liability for the cleanup of 13 sites identified.

In 1986, the province contracted cleanup of these sites. The BAE Group for the Province provided project management and to oversee two cleanup contractors, Titan and Eastern Demolition.

1.3 Selected Sites List

(1) Cartwright
(2) Hopedale
(3) Spotted Islands
(4) Hopedale Island
(5) Cape Makkovik (Allik)
(6) Cutthroat Island
(7) Cape Harrison
(8) North West Point (2 sites)
(9) BOA (Doppler Site 203, Upper and Lower)
(10) Harbour Lake (Doppler Site 206, Upper and Lower)
(11) Wild Boar (Doppler Site 209, Upper and Lower)
(12) Border Beacon (Doppler Site 212, Upper and Lower)
(13) St. Anthony

2.0 INSPECTION

2.1 Doppler Sites

The sites located inland Hopedale range from Border Beacon on the west to Hunt River on the east. They were operated as part of the Department of National Defence "Mid Canada Line" sites throughout northern Canada. Changes in frequency of electronic waves generated by the stations enabled Canada (DND) to detect domestic

and foreign aircraft into Canadian airspace. The sites were strategically located on high elevations and made use, of ponds and lakes for bases areas. Each station had an upper and lower area:

Site 212	Border Beacon	(Upper and Lower)
Site 209	Wild Boar	(Upper and Lower)
Site 206	Harbour Lake	(Upper and Lower)
Site 203	Boa	(Upper and Lower)

Doppler sites land transfers are summarized in Attachment. (IGA File 160.16.03 refers).

Doppler sites represent four of the list of thirteen sites and area that reverted to the Province of Newfoundland arising from negotiations with the Government of Canada in 1986. (January 28, 1986 correspondence from H.H. Stanley, DM, Executive Council to D.B. Dewar, DM, Department of National Defence refers).

2.1.1 Doppler Site 212: Border Beacon
Situated 55° 20" 01" (Lat) 63 degrees 16' 15" (Long)

The Government of Canada reportedly deactivated the site part of the Mid Canada Line in 1965. The site was operated as a weather station and had an airstrip (a gravel surface).

(a) Upper 212

TITAN, a cleanup contractor, under supervision of the BAE Group (the project manager) was contracted by the Department of Environment to carry out clean up of the site in 1986. At Upper 212, a wood and metal frame building was burned before the site cleanup contract.

Under the contract, Titan:

(1) Removed and buried the survival shack.
(2) Buried all garbage at the area garbage dump site.
(3) All residual fuel on site was burned off under a controlled burn.
(4) All fuel barrels were buried.
(5) Within the defined limits of the contract there were no items or objects left exposed.

In 1987, the BAE Group did a follow up inspection and observed minor soil settling in areas that were backfilled (to cover wastes).

Recommendation

1. Determine the lessees or owners of land (and the conditions of the leases) and buildings in the area through Government Services and Lands, Goose Bay and St. John's.

2. Consider another cleanup project at this site. A site assessment should include soil sampling at the major drum dump site, the oil stained areas near the airstrip, and at buildings near the lakeshore.

   The cleanup should include burn off residual fuels at the drum dump site. Burial of all garbage, bulk tanks, oil drums from the drum dump site and those near the site. Removal of debris from the shoreline of a small pond and backfill in the waste disposal site.

   Note: There was no indication of human occupancy or recent activity at the site.

2.1.2 Doppler 209 - Wild Boar
Situated 55° 24' 28", 62 ° 25' 00"

Site 209 on the Mid Canada Line was closed in 1965 by the Government of Canada. In 1986, the buildings, generator, fuel and fuel tank, tower and associated debris were demolished at the upper and lower sites. TITAN, the cleanup contractor in 1986, burned off residual fuel, cut tanks, demolished two buildings and buried all debris in a designated area of the site. Due to lack of soil and rugged terrain, various disposal pits or sites were necessary.

Inspection

Only a concrete slab and foundation footings of buildings and tower remain.

In a flyover of the area, several emptied, rusted barrels were observed over the cliff face. A few single empty rusted barrels were observed on a route to Lower 209.

At Lower Site 209 nothing remains.

Recommendation

No action required.

FACILITY LOCATION	SYSTEM	FINANCED & MANNED	DEACTIVATED	DOCUMENTATION	BUYER	CLEAN-UP PROBLEM
Cutthroat Island Lat 54-30 Long 57-07	NEAC Terminal MCL (Gap Filler)	USAF	1962	Properties CCE/Prop to CADC 716 date 8 Jan 62. File No. 10-F26	Buildings sold to Newfoundland Construction and Development Corp. Ltd. This company was to make arrangements with the Newfoundland Gov't for use of buildings on site.	Structures in various states of disrepair, 45 gallon and solid waste fuel dump and large fuel tank. Transformer with possible PCB liquid.
Cape Harrision	Radar & Communications					Felled towers, machinery, thousands of 45 gallon drums (empty) and one half-full drum.
North West Point (Lake Melville) 2 sites		USAF	1966	CADC S.O. 323890 and 333104 (1972)	Land was returned to province by D Prop letter 7830-G66 TD 105P (D Prop 4) 2 May 84. Buildings sold to Lincoln Construction of Happy Valley and Transport Canada.	Single felled tower plus 30 rusted 45 gallon drums (empty).
St. Anthony	Radar & Communications	USAF	1970	CADC S.O. 329148 17 May 72 and CADC S.O. 329898	Ministry of Transport (Canadian National Telecommunications) acquired some of the buildings on the site and the rest were sold by CADC to the Newfoundland Dept. of Public Works. Land transferred to Newfoundland by PC 1971-1933, 14 Sep 71.	
Fox Harbour	NEAC Terminal MCL (Gap Filler)	USAF	1962	Properties CCE/Prop to CADC 716 dated 8 Jan 62. File No. 10-F26	Buildings sold to Newfoundland Construction and Development Co. This company was to make arrangements with the Newfoundland Gov't for use of the buildings on site.	Debris, sewage tanks, dykes.
3203 Boa 55-25-48 60-58-50	MCL	Canada	1965		Land reverted to Newfoundland. Facilities sold to Newfoundland and Labrador Power Commission.	Buildings, generators, large quantities of fuel in tanks and drums.
3207 Harbour Lake 55-18-45 61-49-28	MCL	Canada	1965	S.O. 209753 9 Mar 65	Land Reverted to Newfoundland. Facilities sold to Newfoundland and Labrador Power Commission.	Buildings, generators, large quantities of fuel in tanks and drums.
(3209) Wild Boar 55-24-28 62-25-00	MCL	Canada	1965	S.O. 209753 9 Mar 65	Land reverted to Newfoundland Facilities sold to Newfoundland and Labrador Power Commission	Buildings, generators, large quantities of fuel in tanks and drums.
Wild Border Beacon 55-20-01 63-16-15	MCL	Canada	1965		Facilities at site transferred to Transport Canada 31 Mar 84. Transport CAnada to cancel provincial reservation on land.	Buildings, generators, large quantities of fuel in tanks and drums.
Typical Doppler Site:	- Living quarters, equipment room, diesel room - Heliport and diesel fuel in above ground storage tanks.					

Doppler Site 209 "Wild Boar"

SAGLEK:

To Canada:	M.C. 163-'65 (M.A.&R. 8-'65)	1965 (1965)
To Nfld:	P.C. 1976-2983 M.C. 1111-'77	1976 1977

Conveyed along with Hopedale to the Department of National Defense. Conditions included mineral and gas rights for the Province and a return clause stating that when lands no longer used by DND, they will be assumed by Newfoundland.

Reference is in Federal Reservation Book (FRB), Vol. 2 Folio 46/49.

HUNT RIVER - BORDER BEACON (INLAND HOPEDALE):

To Canada:	M.C. 20-'57 (M.&R. 3-'57)	1957 (1957)
To Nfld:	(M.A.&R. 3(c)-'65) P.C. 1965-1125	(1965) 1965

Conveyed to DND in connection with Mid Canada Line N gotiation on Lot 212 indicates it was transferred to the control of the Department of Transport (Federal). The other lots were transferred back to the Province on June 18, 1965 by federal P.C. (See M.A.&R. 3(c)-'65) and approved 29-10-1965 but no M.C. has been found for any of the lots. Conditions of original transfer were that the lands of all times had to be used for the purposes of an in connection with mid Canada Line and were to revert to Newfoundland in the event that they ceased to be used for that purpose.

Reference is in FRB Volume 1, Folio 50.

HOPEDALE

To Canada:	M.C. 163-'65 (M.A.&R. 8-'65)	1965 (1965)
To Nfld:	P.C. 1976-2983 M.C. 111-'77	1976 1977

Conveyed along with Saglek to DND. Conditions are same as for Saglek.

Reference is in FRB Volume 2, 46/49.

CHURCH ISLAND: No records available.

CAPE AILLIK (MAKKOVIK):

To Canada:	M.C. 697-'57 (M.&.R. 39(c)'57)	1957 (1957)
To Nfld:	M.C. 203-'63	1963

Two pieces of land transferred to Canada for use by DND in connection with mid Canada Line. Area A is 16.64 acres; Area B is 104.23 acres. Use and conditions the same as for Inland Hopedale.

Reference is in FRB Volume 1, Folio 60.

Environment Canada Responses

Newfoundland Labrador

Government of Newfoundland and Labrador
Department of Environment & Conservation

Pollution Prevention Division
(Environment)

March 3, 2015

RE: Phase I Environmental Site Assessment
Government of Newfoundland & Labrador
Former United States (US) Military Site
Site 209 – Doppler Detection Station, NL (Call Sign WILD BOAR)

To Whom It May Concern:

As a representative of the primary owner of the above listed property, I certify that Conestoga-Rovers & Associates (CRA) has been contracted to complete a Phase I Environmental Site Assessment on the above-noted property.

The site was established as part of the Mid-Canada Line, a network of communication posts across Canada funded by the United States Air Force. The Site was activated in the late 1950's and continued to operate until the mid 1960's.

The property was originally transferred from the Province of Newfoundland and Labrador to the Government of Canada in the 1950's after which permission was granted to the US Government for their use. Operations ceased in 1965 when the property reverted back to the Government of Canada. It is my understanding the Site was transferred back to the Province of Newfoundland & Labrador in 1986.

The former Site is located at 55° 24' North Latitude and 62° 25' West Longitude. A site location map illustrating the approximate location of the property is attached.

Please release any information pertaining to this property to CRA.

Sincerely,

Christa Curnew

Ms. Christa Curnew, M.Env. Sci., P.Eng.
Project Manager – Impacted Sites
Pollution Prevention Division
Department of Environment and Conservation
Government of Newfoundland & Labrador

c.c. Brian Luffman, CRA

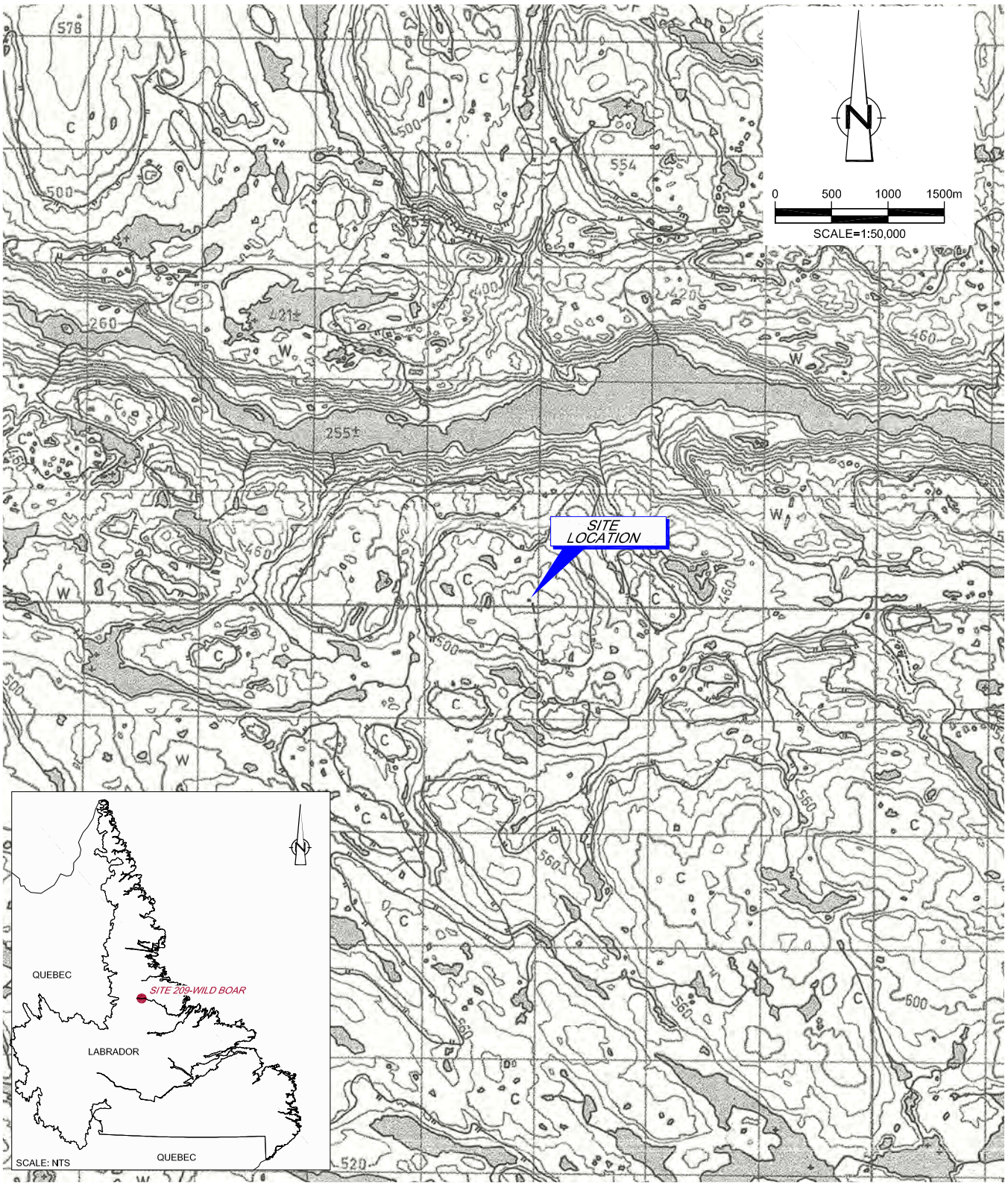


figure 1

SITE LOCATION MAP
PHASE I ENVIRONMENTAL SITE ASSESSMENT
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Site 209-Wild Boar, Labrador, NL

089758-00(009) GN-NL001

Environment Canada Environnement Canada

Terrasses de la Chaudière
10 Wellington Street, 4th Floor
Gatineau, Québec K1A 0H3

Your File Votre référence
ID: 307338

Our File Notre référence
E-2015-00416 / TL

June 17, 2015

Mr. Peter Gillingham
Conestoga-Rovers & Associates Ltd.
1118 Topsail Road
P.O. Box: 8353
Mt. Pearl, Newfoundland and Labrador A1B 3N7

Dear Mr. Gillingham,

This is to acknowledge receipt on June 17, 2015 of your request under the *Access to Information Act* for:

> "Owner: Government of Newfoundland and Labrador
>
> Address: The former United States Military Site 209 - Doppler Detection Station (Wild Boar), NL.
>
> Please review your records for the Site and provide us with any available information, such as the following:
> 1. underground storage tank registration, or records of tank decommissioning;
> 2. knowledge or records of past environmental infractions; and/or,
> 3. any known existing environmental concerns.
>
> Authorization: {Christa Curnew}"

Please note that this also serves as a receipt for the $5.00 application fee.

We have started processing your request and will contact you as soon as possible. Please find enclosed our principles for assisting your request.

If you have any questions regarding this request, do not hesitate to contact me at 819-953-9390. Please quote the above file number on all future correspondence concerning this request.

Yours sincerely,

Travis Lamothe
Access to Information and Privacy Secretariat

Enclosure

Our principles for assisting your request

In processing your request under the *Access to Information Act* or *Privacy Act*, we will:

1. Process your request without regard to your identity.
2. Offer reasonable assistance throughout the request process.
3. Provide information on the *Access to Information Act* or *Privacy Act*, including information on the processing of your request and your right to complain to the Information Commissioner of Canada or Privacy Commissioner of Canada.
4. Inform you as appropriate and without undue delay when your request needs to be clarified.
5. Make every reasonable effort to locate and retrieve the requested records/personal information under the control of Environment Canada.
6. Apply limited and specific exemptions to the requested records/personal information.
7. Provide accurate and complete responses.
8. Provide timely access to the requested information/personal information.
9. Provide records/personal information in the format and official language requested, as appropriate.
10. Provide an appropriate location to examine the requested information/personal information.

Environment Canada | Environnement Canada

Terrasses de la Chaudière
10 Wellington Street, 4th Floor
Gatineau, Québec K1A 0H3

Your File Votre référence
ID: 307338
Our File Notre référence
E-2015-00416 / TL

July 17, 2015

Mr. Peter Gillingham
Conestoga-Rovers & Associates Ltd.
1118 Topsail Road
P.O. Box: 8353
Mt. Pearl, Newfoundland and Labrador
A1B 3N7

Dear Mr. Gillingham,

This is further to your request under the *Access to Information Act* (the Act) for:

"Owner: Government of Newfoundland and Labrador

Address: The former United States Military Site 209 - Doppler Detection Station (Wild Boar), NL

Please review your records for the Site and provide us with any available information, such as the following:
1. underground storage tank registration, or records of tank decommissioning;
2. knowledge or records of past environmental infractions; and/or,
3. any known existing environmental concerns.

Authorization: {Christa Curnew}"

Pursuant to paragraphs 9(1)(a) and (b) of the Act (copy attached), an extension of 60 days is required beyond the statutory 30-day limit allowed for the processing of your request. Due to the large number of records/significant search of records involved, meeting the original time limit would unreasonably interfere with the operations of the Department. Consultations with other government institutions are also required and cannot reasonably be completed within the original time limit.

Please be advised that you are entitled to complain to the Information Commissioner concerning the processing of your request within sixty days of the receipt of this notice. In the event you decide to avail yourself of this right, your notice of complaint should be addressed to:

Information Commissioner of Canada
30 Victoria Street
Gatineau, Québec K1A 1H3

.../2

EXTENSION OF TIME LIMITS

9.(1) The head of a government institution may extend the time limit set out in section 7 or subsection 8(1) in respect of a request under this Act for a reasonable period of time, having regard to the circumstances, if

(a) the request is for a large number of records or necessitates a search through a large number of records and meeting the original time limit would unreasonably interfere with the operations of the government institution,

(b) consultations are necessary to comply with the request that cannot reasonably be completed within the original time limit, or

(c) notice of the request is given pursuant to subsection 27(1)

by giving notice of the extension and, in the circumstances set out in paragraph (a) or (b), the length of the extension, to the person who made the request within thirty days after the request is received, which notice shall contain a statement that the person has a right to make a complaint to the Information Commissioner about the extension.

Notice of extension to Information Commissioner

(2) Where the head of a government institution extends a time limit under subsection (1) for more than thirty days, the head of the institution shall give notice of the extension to the Information Commissioner at the same time as notice is given under subsection (1).

Appendix C
Property Title Search Information

CONFIDENTIAL

REPORT ON PCB SPILLS AND GENERAL ENVIRONMENTAL MISMANAGEMENT AT EX-USAF BASES IN LABRADOR

Resource Programs Division
Intergovernmental Affairs Secretariat
Government of Newfoundland and Labrador

April 15, 1981

SAGLEK:

To Canada:	M.C. 163-'65 (M.A.&R. 8-'65)	1965 (1965)
To Nfld:	P.C. 1976-2983 M.C. 111-'77	1976 1977

Conveyed along with Hopedale to the Department of National Defense. Conditions included mineral and gas rights for the Province and a return clause stating that when lands no longer used by DND, they will be assumed by Newfoundland.

Reference is in Federal Reservation Book (FRB), Vol. 2 Folio 46/49.

HUNT RIVER - BORDER BEACON (INLAND HOPEDALE):

To Canada:	M.C. 20-'57 (M.&R. 3-'57)	1957 (1957)
To Nfld:	(M.A.&R. 3(c)-'65) P.C. 1965-1125	(1965) 1965

Conveyed to DND in connection with Mid Canada Line N gotiation on Lot 212 indicates it was transferred to the control of the Department of Transport (Federal). The other lots were transferred back to the Province on June 18, 1965 by federal P.C. (See M.A.&R. 3(c)-'65) and approved 29-10-1965 but no M.C. has been found for any of the lots. Conditions of original transfer were that the lands of all times had to be used for the purposes of an in connection with mid Canada Line and were to revert to Newfoundland in the event that they ceased to be used for that purpose.

Reference is in FRB Volume 1, Folio 50.

HOPEDALE

To Canada:	M.C. 163-'65 (M.A.&R. 8-'65)	1965 (1965)
To Nfld:	P.C. 1976-2983 M.C. 111-'77	1976 1977

Conveyed along with Saglek to DND. Conditions are same as for Saglek.

Reference is in FRB Volume 2, 46/49.

CHURCH ISLAND: No records available.

CAPE AILLIK (MAKKOVIK):

To Canada:	M.C. 697-'57 (M.&.R. 39(c)'57)	1957 (1957)
To Nfld:	M.C. 203-'63	1963

Two pieces of land transferred to Canada for use by DND in connection with mid Canada Line. Area A is 16.64 acres; Area B is 104.23 acres. Use and conditions the same as for Inland Hopedale.

Reference is in FRB Volume 1, Folio 60.

P.C. 1965-1125

CANADA

PRIVY COUNCIL

APPROVED

Deputy Governor - General

AT THE GOVERNMENT HOUSE AT OTTAWA

FRIDAY, the 18th day of JUNE, 1965.

JUN 18 1965

PRESENT:

HIS EXCELLENCY

THE GOVERNOR GENERAL IN COUNCIL.

WHEREAS by Provincial Newfoundland Order in Council 20-1957 of February 1, 1957 five parcels of Provincial land containing 77.87 acres situated at Labrador, Newfoundland were set aside for use by the Department of National Defence in connection with their Doppler Detection Site 203 and Lakehead Resupply Sites 203, 206, 209 and 212, located in the Province, subject to the condition that if the said land ceased to be used for the purpose they were required they would revert to the Government of Newfoundland;

AND WHEREAS the Department of National Defence has declared surplus their installations at the aforementioned sites and have requested that the necessary action be taken to return to the Province of Newfoundland the lands involved;

AND WHEREAS the facilities at Site 212 are now under the control and administration of the Department of Transport and the continued use of the lands at that site is consequently required;

AND WHEREAS the Province of Newfoundland has agreed to the said lands at Site 212 being excepted from the lands to be returned to the Province.

THEREFORE, His Excellency the Governor General in Council, on the recommendation of the Minister of Transport, is pleased hereby to transfer to Her Majesty in Right of the Province of Newfoundland the administration and control of the lands more particularly described in the schedule hereto.

S Trans. (4) 22-6-65

1965 1125

SCHEDULE

ALL THAT piece or parcel of land situate near the southern side of a lake on Hunt's River about 12 miles southwest of Jack Lane Bay in the District of Labrador North. Beginning at a point marked by an iron post one-half inch in diameter and to which is attached a metal tag inscribed Stat. No. 1, the said point having a latitude of fifty-five degrees twenty-six minutes fifty-seven seconds north and longitude of sixty degrees fifty-eight minutes thirty-two seconds west; thence running north thirty-four degrees twenty-five minutes east seven hundred and forty-seven feet and four-tenths of a foot to a point marked by an iron post to which is attached a metal tag inscribed station No. 2; thence north seventy degrees forty-one minutes east four hundred and ten feet to a point marked by an iron post to which is attached a metal tag inscribed station No. 3; thence south forty-six degrees twenty-five minutes east two hundred and twenty feet and five-tenths of a foot to a point marked by an iron post to which is attached a metal tag inscribed station No. 4; thence south thirty-six degrees fifty-two minutes west two hundred and three feet and nine-tenths of a foot to a point marked by an iron post to which is attached a metal tag inscribed station No. 5; thence south thirty-nine degrees forty-six minutes west nine hundred and thirty-nine feet and seven-tenths of a foot to an iron post to which is attached a metal tag inscribed station No. 6; thence north forty degrees forty-three minutes west three hundred and seventy-six feet and three-tenths of a foot more or less to the point of beginning and containing an area of nine point eight five acres, all bearings being astronomic.

AND ALSO all that piece or parcel of land situate near the southern side of a lake on Hunt's River at a point about 12 miles southwest of Jack Lane Bay in the District of Labrador North. Beginning at a point about six hundred feet south of a lake, the said point being marked by a wooden post set in the ground at latitude fifty-five degrees twenty-eight minutes north and longitude sixty degrees fifty-eight minutes west; thence running north twenty-six degrees twenty-one minutes west five hundred and twenty-eight feet and two-tenths of a foot to a point marked by a wooden post; thence north nineteen degrees one minute east

1965 1125

four hundred and sixty-nine feet and eight-tenths of a foot to a point marked by a wooden post; thence north seventy-four degrees thirteen minutes east six hundred and ninety-one feet and eight-tenths of a foot to a point marked by a wooden post; thence south twenty-one degrees ten minutes east five hundred and twenty-three feet and seven-tenths of a foot; thence south fifty-one degrees twenty-four minutes west nine hundred and eighty-nine feet and six-tenths of a foot more or less to the point of beginning and containing an area of fourteen point eight nine acres, all bearings being astronomic.

AND ALSO all that piece or parcel of land situate about four miles north of the river which flows into Ujutok Bay and about eighty miles northwest of the mouth of the said river in the District of Labrador North. Beginning at a point on the southeastern shore of a small lake marked by an iron post one-half inch in diameter the said point being in Latitude fifty-five degrees twenty-eight minutes north and Longitude sixty-two degrees thirty-five minutes west; thence running south forty-four degrees twenty-six minutes west four hundred and ninety-one feet and six-tenths of a foot to a point marked by an iron post inscribed No. 2; thence south twenty-one degrees forty-one minutes west three hundred and eighty-nine feet and three-tenths of a foot to a point marked by an iron post; thence south five degrees thirty-one minutes east five hundred and thirty-feet and three tenths of a foot to a point marked by an iron post; thence north seventy-one degrees eleven minutes east two hundred and eighty feet and nine-tenths of a foot toa point marked by an iron post; thence north forty-three degrees forty-five minutes east four hundred and eighty-three feet and three-tenths of a foot to a point marked by an iron post; thence north seventy-seven degrees forty-nine minutes east three hundred and forty-eight feet and one-tenth of a foot to a point marked by an iron post; thence north thirty-four degrees forty minutes west eight hundred and eighty-four feet and three-tenths of a foot more or less to the point of beginning; reserving nevertheless out of the above described area the portion of the lake which is included in the area above described together with a

space thirty-three feet wide extending along the shoreline thereof, the said lot containing an area of fourteen point four six acres, all bearings being astronomic.

ALSO ALL that piece or parcel of land situate on the eastern shore of a lake about 55 miles northwest of the mouth of the river flowing into Ujutok Bay in the District of Labrador North. Beginning at a point marked by a wooden post about six hundred feet south of a lake the said point being in latitude 55° 27' north and longitude 61° 47' west; thence running north thirty three degrees fifty six minutes west five hundred and twenty one feet and five tenths of a foot to a point marked by a wooden post; thence north nineteen degrees fifty one minutes west six hundred and ninety nine feet and four tenths of a foot to a point marked by a wooden post; thence running north forty degrees thirty eight minutes east nine hundred feet and two tenths of a foot to a point marked by a wooden post; thence north eighty eight degrees forty nine minutes east four hundred and ninety one feet and eight tenths of a foot to a point marked by a wooden post, thence south seventeen degrees seven minutes west one thousand eight hundred and sixty six feet and three tenths of a foot more or less to the point of beginning; all bearings being astronomic.

Appendix D
Aerial Photographs

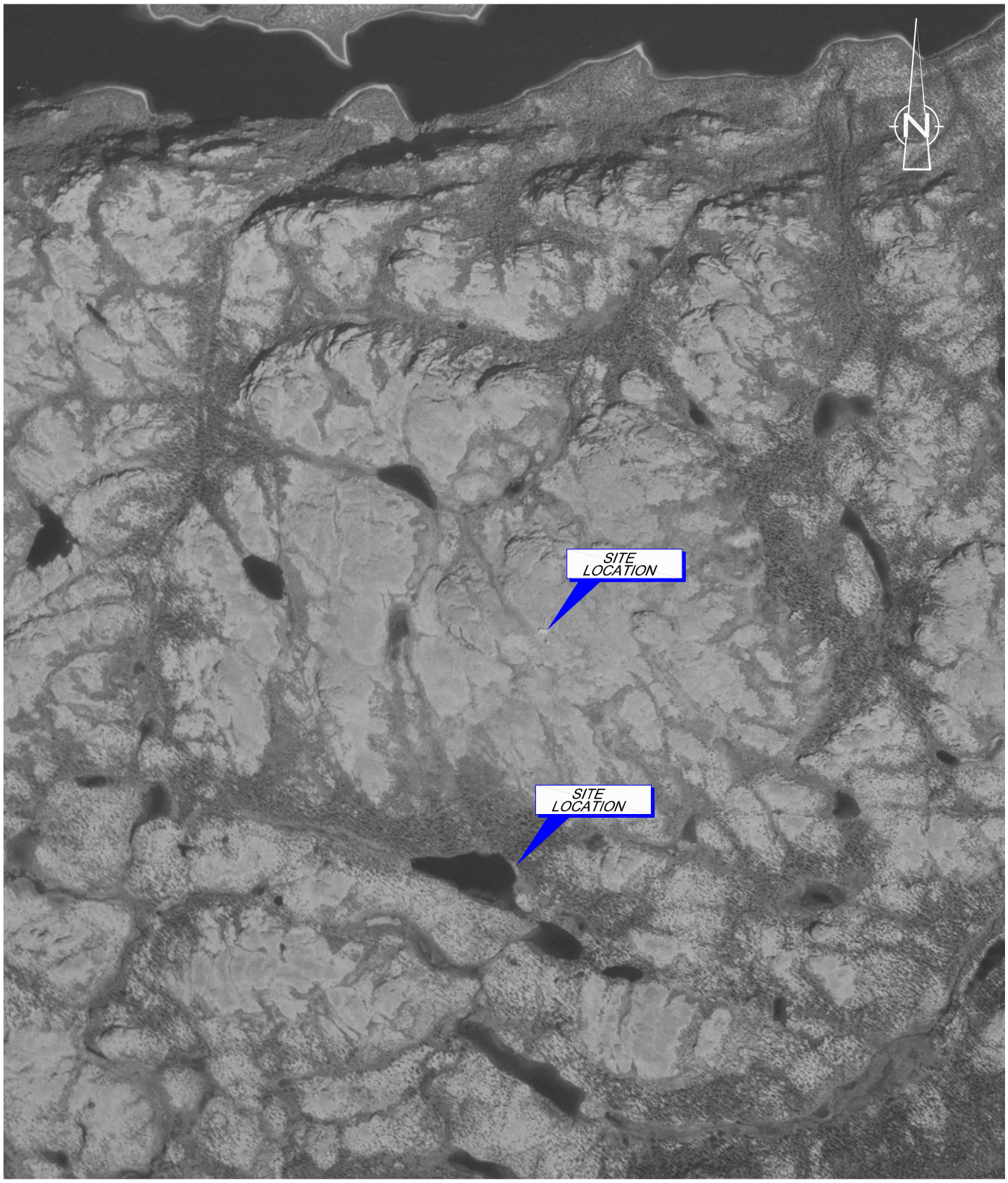


figure D1

AERIAL PHOTOGRAPH - 1968
PHASE I ENVIRONMENTAL SITE ASSESSMENT
FORMER UNITED STATES MILITARY SITE
Site 209-Wild Boar, Labrador, NL

GHD