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ABANDONMENT AND RESTORATION PLAN
Geotechnical Investigation
Nanisivik Naval Facility
Nanisivik, Nunavut

File: Project No. 121612300.

August 18, 2010

Executive Summary

On behalf of Defence Construction Canada, Stantec Consulting Ltd. is conducting a geotechnical investigation to support infrastructure at the naval facility in Nanisivik, Nunavut. The geotechnical drilling program is being completed in support of construction of the Nanisivik Naval Facility. The project activities will primarily involve land-based small diameter drilling at various locations around the Mine Port Facility and a test pitting program at potential borrow areas. Marine based drilling may be required in the area of the existing wharf facilities; this will be determined following evaluation of data collected from the land based drilling at the wharf in August/September 2010. Marine based drilling would take place on the sea ice, likely in 2011. Stantec will supervise the drilling with its subcontractor Logan Geotech Inc.

This Abandonment and Restoration Plan will be kept on site and followed by Stantec and Logan Drilling upon completion of project activities.

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LIST OF APPENDICES

1.0 Project Description

Stantec Consulting Ltd. has been retained by Defence Construction Canada to complete a geotechnical investigation at the Nanisivik Naval Facility at Nanisivik, Nunavut. Logan Drilling Limited has been contracted to drill boreholes to collect samples under the direction of Stantec. The geotechnical investigation will include land based boreholes for the assessment and upgrading of the existing wharf facilities and several upland facilities including tank farms, heliport, base structures and mechanical facilities. Potential borrow pit areas will be investigated through a test pitting program using a rubber tired backhoe or tracked excavator. One to two test pits, up to 4 m deep, will be dug per borrow area and immediately backfilled once samples are collected. The test pitting program will help characterize granular material present in each borrow area.

1.1 WORK SCHEDULE

Mobilization

The drilling equipment will be transported by sea to Nanisivik and is scheduled to arrive on August 24, 2010 in two sea containers.

Drilling

The drill will be assembled on August 24 and 25 and the drilling program will continue for an estimated 2 weeks ending in the second week of September.

Test Pitting

Test Pitting will be conducted during a period of 2 to 3 days some time during the two weeks that the crew are on site between August 24 and September 10.

Demobilization

The drill and all equipment and supplies will be repacked in the sea containers at the end of the drilling program and stored on site until shipped out by sea or transported to the airport for airlift.

2.0 Work Plan and Abandonment and Restoration

2.1 DRILL SITES

The geotechnical investigation will include land based boreholes for the assessment and upgrading of the existing wharf facilities and several upland facilities including tank farms, heliport, base structures and mechanical facilities. Proposed borehole locations at the Mine Port Facility are provided in the attached figure.

Marine based drilling may be required in the area of the existing wharf facilities; this will be determined following evaluation of data collected from the land based drilling at the wharf in August/September 2010. Marine based drilling would take place on the sea ice, likely in 2011 if determined necessary. Stantec will complete drilling with its subcontractor Logan Geotech Inc. (Logan). Boreholes associated with the wharf will be drilled to a depth of 5 m into permafrost or a maximum of 40 m. Upland boreholes for tank foundations will be drilled to a minimum of 5 m into bedrock or 25 m below proposed founding elevation, whichever occurs first. For other structures, Stantec will drill 5 m below proposed founding level. Upland boreholes will be advanced using flight augers where appropriate to minimize the use of water Casing and diamond coring methods will be used to sample bedrock and permafrost where possible. Most soil sampling will be conducted using split spoons and standard penetration testing methods. Bedrock will be cored in NQ size. All soil samples and rock core will be logged on site daily and packaged for shipment to the laboratory; samples will be shipped out at the end of the drilling program.

Upon completion of drilling each borehole will be backfilled with native material and casing will be removed. Any waste will be removed to the municipal landfill for disposal. Thermistor strings will be left in place in 5 of the boreholes located on the DFO controlled port site to obtain ground temperature readings and monitor permafrost. These instruments will be marked and protected with a steel locked standpipe.

2.2 TEST PITS

Potential borrow pit areas will be investigated through a test pitting program using a rubber tired backhoe or tracked excavator. One to two test pits, up to 4 m deep, will be dug per borrow area and immediately backfilled once samples are collected. Potential borrow areas near the Mine Port Facility are provided in the attached figure.

Upon completion of sample collection, test pits will be immediately backfilled and graded to original grade.

2.3 EQUIPMENT

All equipment and supplies remaining at the end of the project will be repacked in the sea containers locked and secured for shipment off Baffin Island. There will be no camp associated with this work. All workers will stay in Arctic Bay 28 Km away.

2.4 DEMOBILIZATION

Project equipment will be demobilized to a storage site in Arctic Bay or within the Naval facility. The equipment will be demobilized from site by air or during the 2011 ocean navigation season.

2.5 FINAL INSPECTION

Prior to leaving the site at the end of the project, all drill locations and test pit sites will be inspected to ensure abandonment and restoration activities have been completed. Photographs of each borehole and test pit location will be taken.

3.0 Closure

This report was prepared by Nick Lawson, B.Sc. and reviewed by Dan McQuinn, P.Eng. Should you have any questions, please do not hesitate to call us at 867-920-2216.

Yours very truly,

STANTEC CONSULTING LTD.

Nick Lawson
Principal, Environmental Management

for Dan McQuinn
Project Manager

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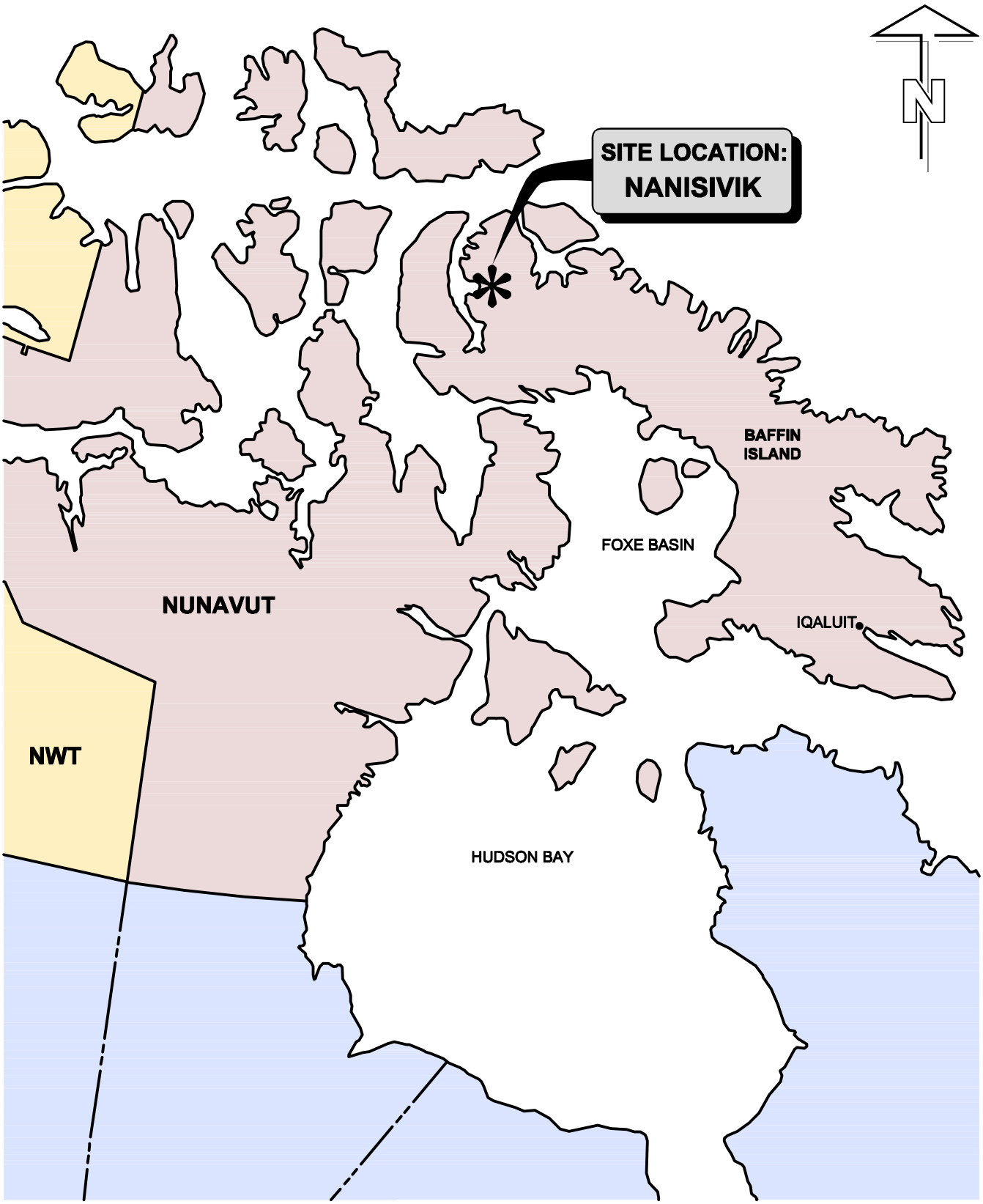
APPENDIX A
Site Plans



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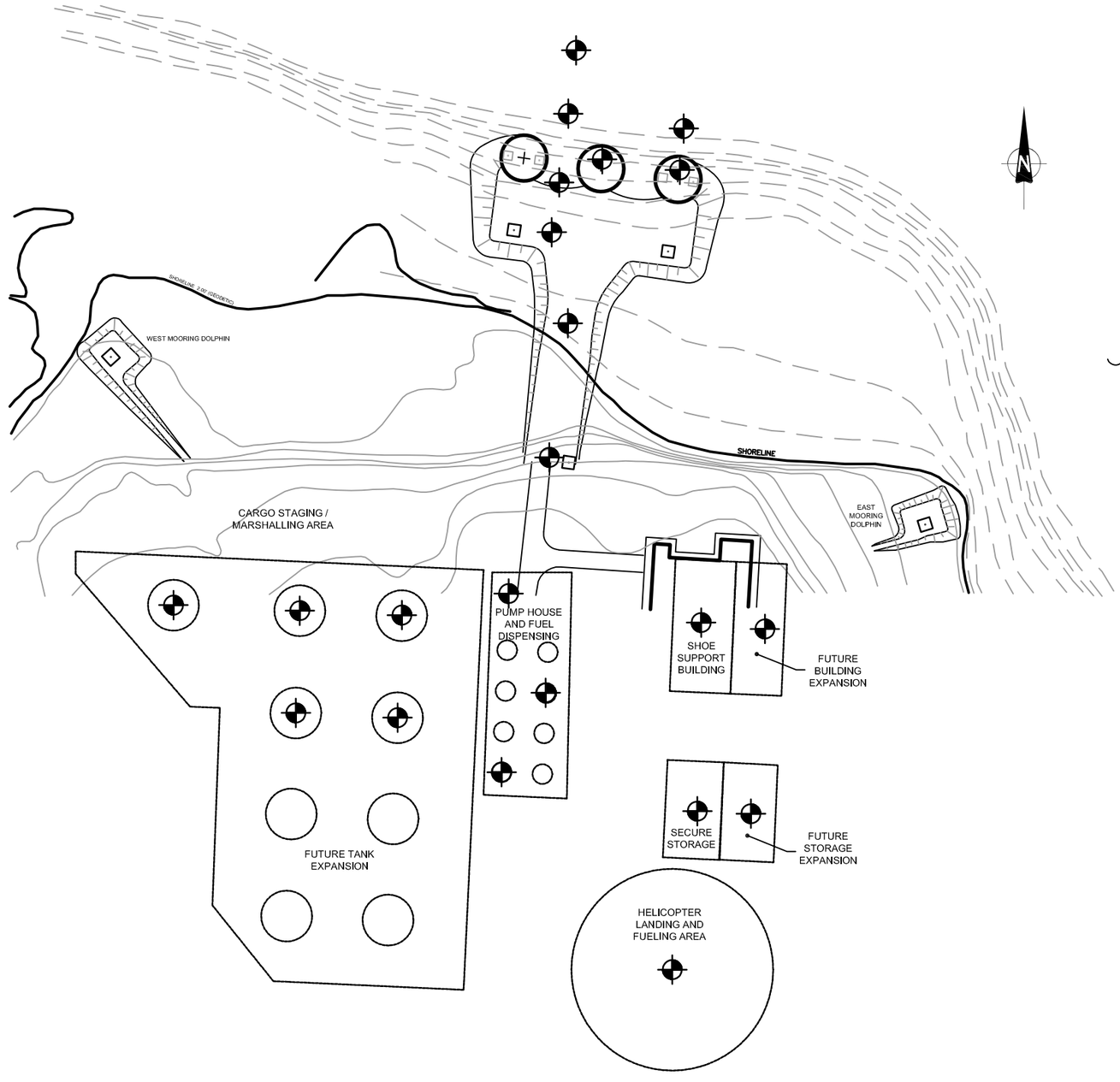
Public Works and Government Services Canada
Nanisivik DND Dock Site
Desktop Geotechnical Investigation

AECOM

Site Location Plan

Figure - 1



LEGEND

⊕ PROPOSED 2010 BOREHOLE LOCATION

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC LIMITED REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

Reference:
DWG. No. 09157-GE-DSK-0001, REV. P1, DATED 23/12/09 BY WORLEY PARSONS WESTMAR.

Job No.:	121611451
Scale:	1:2500
Date:	2010/03/22
Dwn. By:	BSP
App'd By:	

Client: WORLEY PARSONS WESTMAR

Site Address: NANISIVIK, NUNAVUT

Project: NANISIVIK WHARF GEOTECHNICAL STUDY

Drawing Title: PROPOSED BOREHOLE LOCATION PLAN

Dwg. No.: 2

Stantec

SCALE: NTS

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POTENTIAL BORROW AREAS

Public Works and Government Services Canada
Nanisivik DND Dock Site
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Potential Borrow Areas

Figure - 3

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