
ENVIRONMENTAL ASSESSMENT REGISTRATION

PORT HARMON CHANNEL AND HARBOUR DREDGING

Submitted to:

Department of Environment
Environmental Assessment Division

May 2004



ENVIRONMENTAL ASSESSMENT REGISTRATION

PORT HARMON CHANNEL AND HARBOUR DREDGING

Prepared for:

Department of Environment
Environmental Assessment Division
PO Box 8700
St. John's, NF
A1B 4J6

Prepared by:

BAE-Newplan Group Limited
1133 Topsail Road
Mount Pearl, Newfoundland
A1N 5G2

May 2004

Environmental Assessment Registration
Port Harmon Channel and Harbour Dredging

Project No.: 722101

Title: ENVIRONMENTAL ASSESSMENT REGISTRATION,
PORT HARMON CHANNEL AND HARBOUR DREDGING

Client: Port Harmon Authority Limited

A	04/05/28		Environmental Registration	GW	RB/BC	RB
Rev.	Date yyyy/mm/dd	Page No.	Description	Prepared By	Reviewed By	Approved By

TABLE OF CONTENTS

1.0	NAME OF THE UNDERTAKING	1
2.0	PROPONENT	1
2.1	Name of Corporate Body	1
2.2	Address	1
2.3	Contact.....	1
2.4	Principal Contact Person for Purposes of Environmental Registration	1
3.0	THE UNDERTAKING	1
3.1	Nature of the Undertaking.....	1
3.2	Need for the Undertaking.....	2
4.0	DESCRIPTION OF THE UNDERTAKING	2
4.1	Geographic Location	2
4.2	Physical Features.....	2
4.3	Overview of the Dredging Process	2
4.4	Operation	3
4.5	Potential Source of Pollutants During Construction	3
4.5.1	Mitigation Measures.....	3
4.5.2	Potential Valued Ecosystem Interactions and Mitigation.....	4
5.0	OCCUPATIONS.....	5
6.0	APPROVAL REQUIRED FOR THE UNDERTAKING	5
7.0	BACKGROUND INFORMATION.....	6
7.1	Project Related Documents	6
7.2	Summary of Findings	6
7.3	Conclusions and Recommendations.....	7
8.0	SCHEDULE FOR RELEASE FROM ENVIRONMENTAL ASSESSMENT	7
9.0	FUNDING	7

APPENDICES

Appendix A – Maps and Sketches

Appendix B – Previous Sampling Locations

1.0 NAME OF THE UNDERTAKING

Port Harmon Channel and Harbour Dredging

2.0 PROPONENT

2.1 *Name of Corporate Body*

Port Harmon Authority Limited

2.2 *Address*

Port Harmon Authority Limited
PO Box 100
Stephenville, NL
A2N 2Y7

2.3 *Contact*

Name: Mr. Cecil Stein, P.Eng.
Official Title: President
Address: As above
Telephone #: (709) 643-5626
Fax #: (709) 643-6454

2.4 *Principal Contact Person for Purposes of Environmental Registration*

Mr. Ray Bailey, P. Eng.
BAE ♦ Newplan Group Limited
1133 Topsail Road
Mount Pearl, NF
A1N 5G2
Telephone #: (709) 368-0118
Fax #: (709) 368-3541

3.0 THE UNDERTAKING

3.1 *Nature of the Undertaking*

The purpose of the proposed project is to reinstate the chartered depth of Port Harmon Channel and Harbour to 10.7 m below Low Normal Tide (LNT). To achieve the chartered depth, it has been proposed that the harbour sediments be dredged to a maximum elevation of -11.0 m. Dredging to an elevation of -11.0 m is deemed necessary to compensate for the accuracy of the survey equipment and an allowance for future infilling to ensure the chartered depth is maintained for a period of five to ten years without the requirement for additional maintenance dredging.

3.2 *Need for the Undertaking*

To deepen the depth of the channel and return the port back to a minimum level of safe operation condition.

4.0 DESCRIPTION OF THE UNDERTAKING

4.1 *Geographic Location*

Port Harmon is located in the Town of Stephenville, Newfoundland and Labrador (NL), on the west coast of Newfoundland (see Appendix A, Figure 1). The port consists of a public wharf, upland area, and two breakwaters, one on both the north and south sides of the harbour entrance.

The area of the port to be dredged includes the turning basin adjacent to the dock, and the entire length of the approach channel (see Appendix A, Figure 2).

4.2 *Physical Features*

The shipping channel at the entrance to Port Harmon, and the approach to the dock, have been previously dredged to a depth of -10 m. The remainder of the inner harbour has been, for the most part, undisturbed, ranging in depth from 0.2 to 5.0 m (JWEL 1996). Substrate in the harbour ranges from soft mud and silt towards the centre of the harbour to coarse sand and gravels near the shoreline.

4.3 *Overview of the Dredging Process*

The proposed dredging project to be carried out at Port Harmon will repeat previous dredging activities carried out at the site in 1980 and 1992. Dredge limits have been identified and are provided in Appendix A, Figure 2. To reinstate the chartered depth of -10.7 m, the channel will be dredged to a depth of -11.0 m. This depth is required to compensate for the accuracy of the survey equipment and an allowance for future infilling. This is to ensure the chartered depth is maintained for five to ten years without the requirement of additional dredging maintenance. Approximately 70,000 cubic meters of Class B material will be removed from the harbour and approach channel by contractors using a Trailing Hopper Suction Dredger (THSD).

Prior to dredging the harbour sediments, a sediment-sampling program will be conducted of the harbour sediments throughout the proposed dredging area. Dependant on the results of the sediment-sampling program and regulatory approval, it is proposed that the dredged spoils will be disposed both on land (two areas) and in the ocean (two areas). If all dredged materials cannot be adequately disposed of at these locations, it is proposed to dispose the remaining material at the previous dredged spoil deposit area located on the western side of the harbour. See Appendix A, Figure 2 for proposed dredged spoil disposal areas. If the results of the sediment-sampling program reveal levels of contamination above applicable criteria, alternative disposal options will be reviewed at that time.

4.4 Operation

The operation section is not applicable, as all disturbance will occur during the dredging period only and will not affect post dredging port operations.

4.5 Potential Source of Pollutants During Construction

The potential sources of pollutants are generally those associated with channel and harbour dredging operations. Adherence to permit conditions and application of sound construction practices will protect against the release of pollutants into the surrounding environment.

Strict monitoring and sound construction practices will control activities to minimize risks associated with:

- silt and sediment;
- risk of fuel, lubricant and hydraulic fluid release;
- airborne emissions from dredging equipment; and
- noise pollution from dredging activities.

4.5.1 Mitigation Measures

Mitigation measures to reduce the environmental concerns associated with construction activities include:

- A sediment-sampling program will be conducted prior to dredging to determine the environmental quality of the harbour sediments. Dredge spoils will be disposed in accordance with regulatory agency requirements. If offsite disposal is required, the dredge spoils will be transported to an approved disposal facility using watertight trucks.
- Work will be scheduled to avoid periods of heavy precipitation. Erosion control structures (temporary matting, geotextiles filter fabric) are to be used, if necessary, to prevent erosion and silty runoff during the dredging and spoil disposal program.
- Solid waste disposal practices will be in compliance with the *Environmental Protection Act* and associated regulations. Any construction debris generated during the course of the project will not be permitted to be disposed of on site but will be contained in steel boxes on site for disposal at a municipal solid waste disposal facility. Where possible, construction waste will be recycled.
- All machinery will be inspected for leakage of lubricants or fuel and must be in good working order. Any accidental spills or leaks will be promptly contained, cleaned up, and reported to the 24-hour environmental emergencies report system (1-800-563-2444).
- All fuel handling and storage will be in compliance with *The Storage and Handling of Gasoline and Associated Products Regulations*. Also, to minimize the risk of fuel,

lubricant or hydrocarbon release, construction equipment will not be permitted to be re-fuelled within 30 m of any water body. If fuel storage is necessary, it will be stored only in approved containers with all necessary permits in place. Basic petroleum spill clean-up equipment will be on-site and made accessible to all contractors and/or employees.

- Equipment exhaust systems will be maintained to provide emissions to the standard designed for by the equipment manufacturer.
- Exhaust systems will be maintained to ensure noise levels are within the design specifications of the machinery.

4.5.2 Potential Valued Ecosystem Interactions and Mitigation

Soil, Surface Water, and Groundwater Resources

Dredging activities have the potential to contaminate and/or disturb soil, surface water, and groundwater resources.

A sediment-sampling program will be conducted prior to dredging to determine the environmental quality of the harbour sediments. Dredge spoils will be disposed in accordance with regulatory agency requirements. If offsite disposal is required, the dredge spoils will be transported to an approved disposal facility using watertight trucks.

All machinery will be inspected for leakage of lubricants or fuel and must be in good working order.

Work will be scheduled to avoid periods of heavy precipitation. Erosion control structures are to be used, if necessary, to prevent erosion and silty runoff during the dredging and spoil disposal program.

Fish and Fish Habitat

Dredging activities have the potential to introduce sediment and pollutants to the marine environment that may have a negative impact on fish resources and habitat.

Dredging will be carried out during low wind/wave conditions and be suspended whenever conditions cause sediment to be visible outside the immediate project area.

Air Quality

Construction activities have the potential to result in nuisance impacts due to increase noise and air pollution.

Equipment exhaust systems will be maintained to provide emissions and noise levels to the standard designed for by the equipment manufacturer. If necessary, equipment will be fitted with noise suppression devices and air filters to reduce noise and exhaust emissions.

Navigation

All attempts will be made to minimize any disruption to the navigation of marine vessels within the project area in compliance with *The Navigable Waters Protection Act* and the associated *Navigable Waters Works Regulations*.

Public Safety

Access to the work area will be controlled and restricted to project personnel.

5.0 OCCUPATIONS

It is expected there will be approximately eleven people employed throughout the course of the channel dredging project.

National Occupational Classification*	Positions # Anticipated	Description
0711	1	Construction Manager
7611	3	Labourers (Deckhands)
2154	1	Surveyors
7217	1	Contractors and Supervisors, Heavy Equipment Construction Crews
7219	1	Contractors and Supervisors, Other Construction Trades, Installers, Repairers, and Servicers
2264	1	Inspector
7421	3	Heavy Equipment Operators

* National Occupational Classification has replaced the Canadian Classification and Dictionary of Occupations (CCDO).

6.0 APPROVAL REQUIRED FOR THE UNDERTAKING

The permits, approvals, and authorizations that may be necessary for the undertaking include:

PERMIT, APPROVAL OR AUTHORIZATION	ISSUING AGENCY
● Approval for the Undertaking	Department of Environment
● Certificate of Approval for Construction (Alter a Body of Water)	Department of Environment
● Certificate of Approval for the Storage and Handling of Gasoline and Associated Products	Department of Environment
● Certificate of Approval for Disposal Site Conditions.	Department of Environment

7.0 BACKGROUND INFORMATION

7.1 *Project Related Documents*

Transport Canada, 2003. Port Harmon Port Improvements – Canadian Environmental Assessment Act Screening Report.

MGI Limited, 2002. Environmental Status Report – Transport Canada Harbours & Ports – Wharf Port Harmon, Stephenville, NL.

Transport Canada, 1999. Marine Sediment Quality Report – Federal Public Harbour of Stephenville, NL.

MGI Limited, 1997. Phase III/IV Environmental Site Assessment – Transport Canada Wharf Facility, Stephenville, NL.

MGI Limited, 1997. Phase II Environmental Site Assessment – Transport Canada Wharf Facility, Stephenville, NL.

Jacques Whitford Environmental Limited, 1996. Baseline Environmental Assessment – Public Harbour, Stephenville, NL.

7.2 *Summary of Findings*

Sediment samples taken from the bottom of the harbour adjacent to the dock prior to the 1992 dredging program revealed elevated levels of zinc (up to 330 mg/kg), lead (up to 49 mg/kg), chromium (up to 149 mg/kg), PCB's (up to 0.033 mg/kg), total oil and grease (up to 395 mg/kg), and nickel (up to 27 mg/kg). Sediment samples taken from the shipping channel prior to the 1980 dredging program revealed elevated levels of copper (23 mg/kg), PCBs (0.0853 mg/kg), total oil and grease (up to 24.6 mg/kg), and DDT (up to 0.0166 mg/kg) (JWEL 1996).

As part of obtaining baseline environmental site assessment information, Transport Canada conducted a sediment-sampling program at Port Harmon in 1998 (Transport Canada 1999). See Appendix B for sampling locations. Total Petroleum Hydrocarbon (TPH) was detected in seven of the thirteen samples taken along the wharf face and the shipping channel ranging from 45 to 1,240 mg/kg, all are above Ocean Dumping Criteria and one sample was above the *NL Contaminated Sites Cleanup Criteria* for commercial/industrial sites (1,000 mg/kg). The highest concentrations were detected adjacent to the southern end of the dock. Benzo[a]pyrene (1.11 mg/kg) was also detected at levels above the *CCME Canadian Environmental Quality Guidelines* (Commercial Land Use) (0.7 mg/kg) in this area.

As part of an environmental status report prepared in September 2002 (MGI Limited 2002), MGI Limited conducted an additional sediment-sampling program underneath and around the perimeter of the dock. See Appendix B for sampling locations. Results revealed that levels of TPH (3,420 mg/kg) underneath the south side of the dock exceeded the *NL Contaminated Sites Cleanup Criteria* for commercial/industrial sites

(1,000 mg/kg). Benzo [a]pyrene (2.8 mg/kg) was also detected at levels above the *CCME Canadian Environmental Quality Guidelines* (Commercial Land Use) (0.7 mg/kg) in this area.

7.3 **Conclusions and Recommendations**

A review of the background information revealed the potential for environmental contamination of marine sediments within the boundaries of the proposed dredge area, especially in the vicinity of the dock. Based on these findings, it is recommended that a sediment-sampling program be conducted at the subject property prior to any dredging of harbour sediment to obtain current data on the environmental quality of marine sediments at Port Harmon. This information will be used, in consultation with regulatory agencies, to determine disposal options for the dredged materials.

8.0 **SCHEDULE FOR RELEASE FROM ENVIRONMENTAL ASSESSMENT**

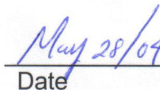
Construction of this project is scheduled to begin in July 2004 with a completion date of December 2004. In order to meet this proposed scheduling, the requirements of the *Environmental Assessment Act* must be completed as soon as possible.

9.0 **FUNDING**

Financing of this project is expected from the Port Harmon Authority Limited.



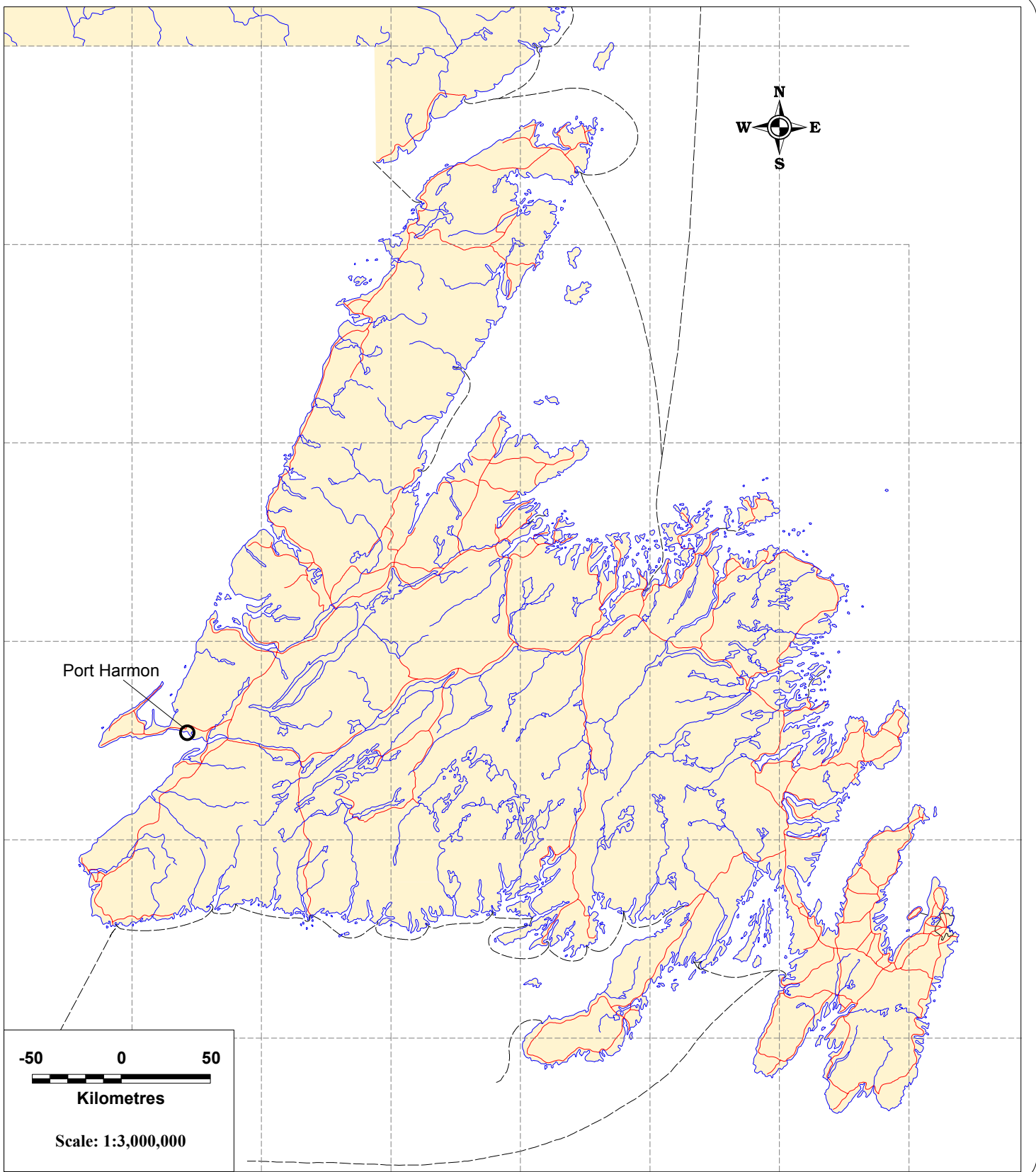
Ray Bailey, P. Eng.
BAE-Newplan Group Ltd.



Date

APPENDIX A

Maps and Sketches



CLIENT
Department of Environment

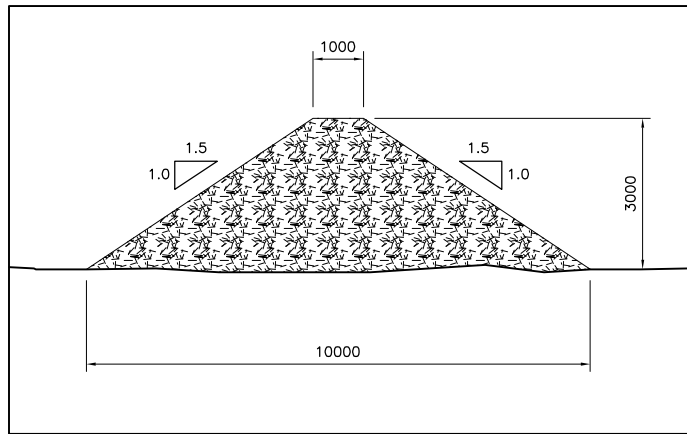
PROJECT
Environmental Assessment Registration

DRAWING TITLE
Figure 1. Port Harmon, Newfoundland

 **SNC • LAVALIN**
1133 Topsail Road
Mount Pearl, NL A1N 5G2
Tel: (709) 368-0118
Fax: (709) 368-5410

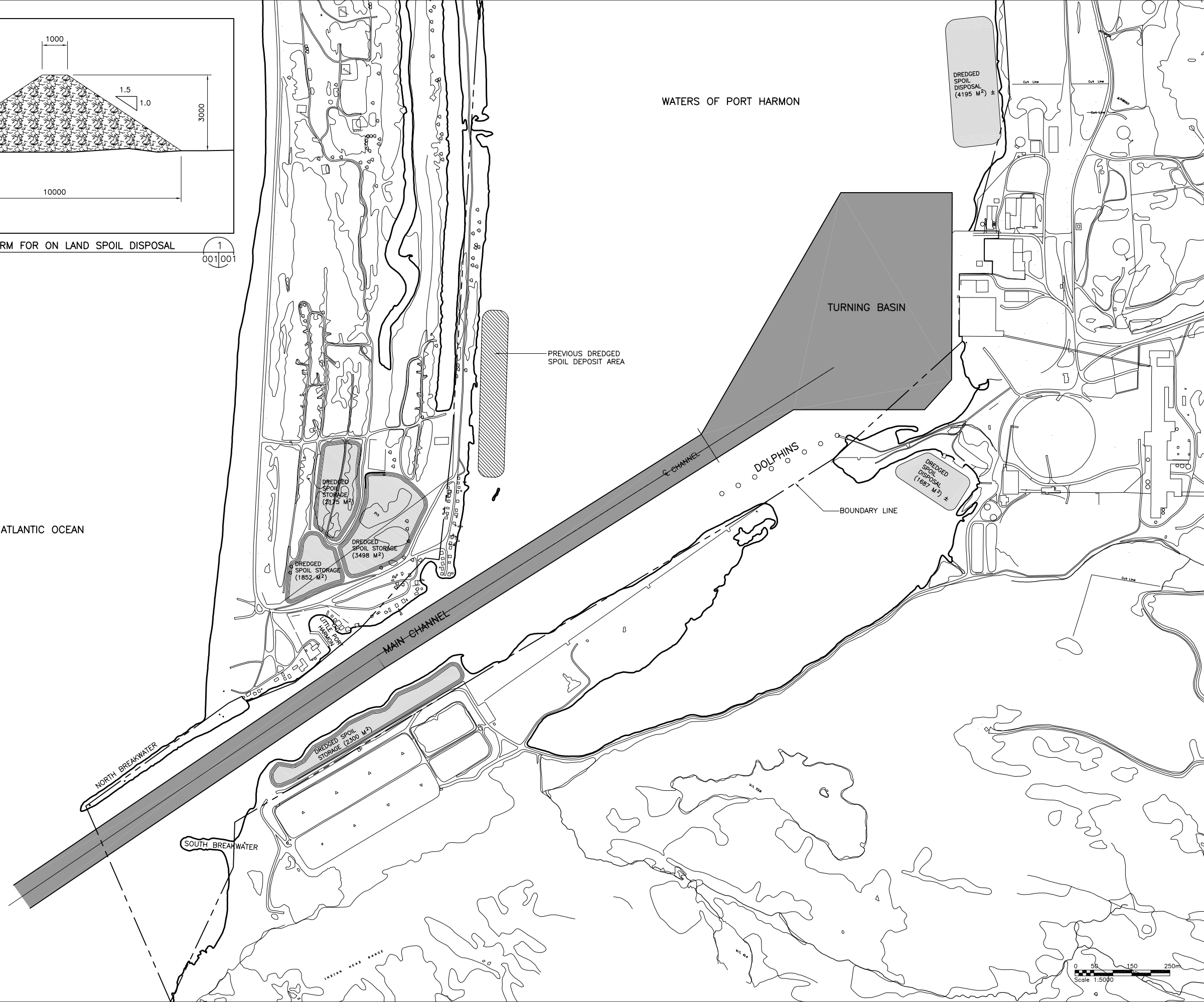
DESIGNED GW	DATE 05/25/04	CHECKED	DATE
DRAWN VNC	DATE 05/25/04	APPROVED	DATE
SCALE		PROJECT NO. 722101	
FILENAME Figure_01-Point Harmon.WOR			

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND CONDITIONS ON SITE BEFORE PROCEEDING WITH ANY PORTION OF THIS WORK. REPRODUCTIONS OF THIS DRAWING MAY HAVE BEEN REDUCED OR ENLARGED. REFER TO GRAPHIC SCALE. DO NOT SCALE DRAWINGS FOR CONSTRUCTION.



TYP. CONTAINMENT BERM FOR ON LAND SPOIL DISPOSAL
Scale 1:75

File name: 722101DW1XXMAXX001.DWG Date: 2004/04/28 @ 09:53
REFERENCE FILES: 2101MA01, 2101MA02, 2101MA03, 2101MA04, 2101MA05



LEGEND:
 DENOTES AREA TO BE DREDGED
 TOTAL AREA = 437558 ± M²
 DREDGED SPOIL DISPOSAL AREAS

REV.	REVISIONS	REVISED BY	APP. BY	DATE

NORTH

PROFESSIONAL STAMP
 REGISTERED PROFESSIONAL ENGINEER
 W. S. COLLINS
 SIGNATURE
 DATE

PERMIT HOLDER STAMP
 PROVINCE OF NEWFOUNDLAND
 PERMIT HOLDER CLASS "A"
 This Permit Allows
BAE • NEWPLAN GROUP LIMITED
 To practice Professional Engineering in Newfoundland and Labrador.
 Permit No. as issued by APEDGN X0085 which is valid for the year 2004.

BAE • NEWPLAN GROUP LIMITED
 1133 TOPSAIL ROAD, MOUNT PEARL, NF A1N 5G2
 TEL: (709) 368-0118, FAX: 368-3541

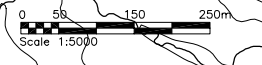
CLIENT
PORT HARMON AUTHORITY LIMITED

PROJECT
CHANNEL DREDGING

TITLE
FIG. 2 OVERALL SITE PLAN SHOWING LIMITS OF DREDGING AND DISPOSAL SITES

DESIGNED BY	W.S.C.	CHECKED BY	W.S.C.	DATE
DRAWN BY	J.M.C.	APPROVED BY		DATE
SCALE	AS SHOWN	BNG PROJ. No.	722101	
		CLIENT PROJ. No.		

DRAWING No. **DW1 - XX - MA - XX - 001** REV. **A**



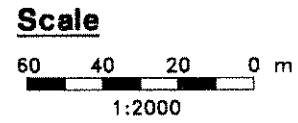
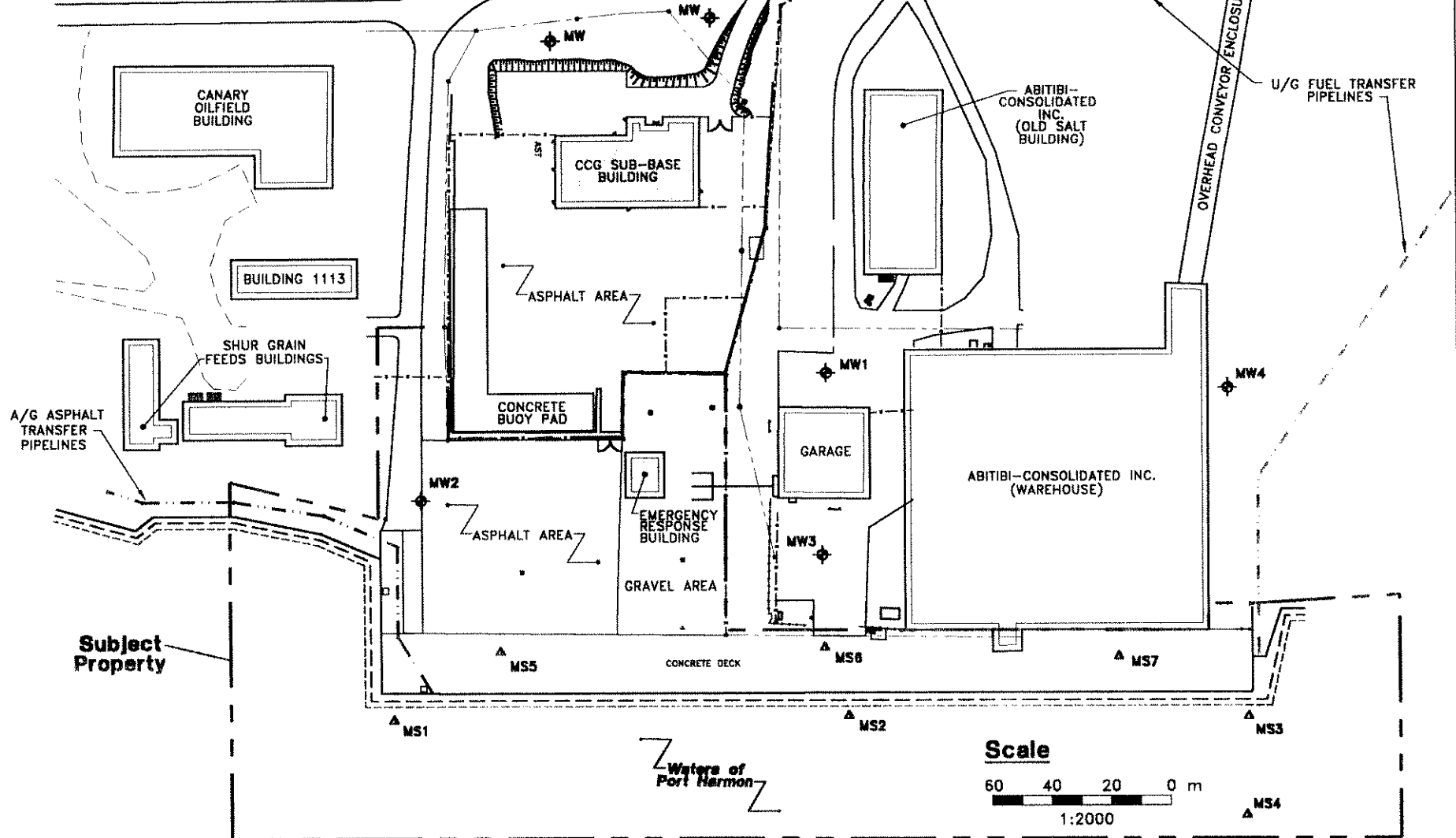
APPENDIX B

Previous Sampling Locations

MGI Limited 2002

General Notes

1. DIMENSIONS OF THIS DRAWING WERE TAKEN FROM FIELD MEASUREMENTS AND/OR EXISTING DRAWINGS AND ARE APPROXIMATE ONLY.



Legend

- MW - MONITOR WELL
- MS - SEDIMENT SAMPLE

 A member of the Family of Companies	TITLE	PROJECT NO.	
	PROJECT	FIGURE NO.	
Site Plan Environmental Status Report Transport Canada Wharf Facility Port Harmon, Stephenville, NF	SCALE	DATE	
	1:2000	Oct. 2002	2

Transport Canada 1998

