Log of Borehole: BH1

Project: Marine Geotechnical Investigation
Client: DFO
Location: Long Cove, NL
Project No: 3084
Date: March 9, 2016

Depth below LNT (m)	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
0	0 m LNT	0					
7	Harbour Bottom (-2.248 m LNT).	-2.25					
8	SPT: 2 / 1 / 28 / 25 for 0.11 m, bouncing (Refusal). CFEM: Sandy Gravel, some Silt, trace Clay.	-2.87	SS	1	29	53	
10	Overburden: silty sand and gravel.	-3.13	OB	--		48	
11	SS2: "N" Value = 52; Recovery = 33%. SPT: 8 for 0.08 m / 52 for 0.0 m, bouncing (Refusal). Rock in split spoon shoe.	-3.57	SS	2	52	33	
11			OB	--		95	0
12	Overburden: gravel.						
13			RC	--		100	0
14			RC	--		81	0
15			RC	--		100	50
18	Bedrock: red mudstone.		RC	--		100	55
21			RC	--		100	85
23		-7.12					
24	End of Borehole						

Fracflow Consultants Inc.
154 Major's Path
St. John's, NL A1A 5A1
Phone: (709) 739-7270
Fax: (709) 753-5101

Drilling MethodNW casing / NQ coring
Driller:Formation Drilling Ltd.
Datum:LNT
Sheet: 1 of 1

Log of Borehole: BH2

Project: Marine Geotechnical Investigation
Client: DFO
Location: Long Cove, NL
Project No: 3084
Date: March 8, 2016

Depth below LNT (m)	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
0	0 m LNT	0					
6	Harbour Bottom (-1.873 m LNT).	-1.87					
7	SS1: "N" Value = 52; Recovery = 88%. SPT: 10 for 0.11 m / 52 for 0.0 m, bouncing (Refusal). Silty sand and gravel, shell fragments.		SS	1	52	88	
8	Bedrock: red mudstone.	-2.43	RC	--		100	0
8	SS2: "N" Value = 52; Recovery = 0%. SPT: 52 for 0.0 m, bouncing (Refusal). No sample recovery.		SS	2	52	0	
10			RC	--		91	0
12	Bedrock: red mudstone.		RC	--		99	0
13			RC	--		100	36
14			RC	--		100	28
15		-4.63					
16	End of Borehole						

Fracflow Consultants Inc.
154 Major's Path
St. John's, NL A1A 5A1
Phone: (709) 739-7270
Fax: (709) 753-5101

Drilling MethodNW casing / NQ coring
Driller:Formation Drilling Ltd.
Datum:LNT
Sheet: 1 of 1

Log of Borehole: BH3

Project: Marine Geotechnical Investigation
Client: DFO
Location: Long Cove, NL
Project No: 3084
Date: March 10, 2016

Depth below LNT (m)	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
0	0 m LNT	0					
13	Harbour Bottom (-4.053 m LNT).	-4.05					
15	Split spoon sank 0.23 m into soft sediment under own weight before SPT. SPT: 3 / 5 / 5 / 5. Shell fragments.	-4.89	SS	1	10	2	
19	No recovery.	-5.83	OB	--		0	
20	SPT: 9 / 11 / 13 / 5. CFEM: Sandy Gravel, some Silt, trace Clay.	-6.32	SS	2	24	8	
23	Overburden: gravel and cobble.	-7.18	OB	--		57	
24	Bedrock: red mudstone.		RC	--		91	0
26			RC	--		90	37
29			RC	--		94	52
33			RC	--		97	59
35		-10.6					
36	End of Borehole						

Fracflow Consultants Inc.
154 Major's Path
St. John's, NL A1A 5A1
Phone: (709) 739-7270
Fax: (709) 753-5101

Drilling MethodNW casing / NQ coring
Driller:Formation Drilling Ltd.
Datum:LNT
Sheet: 2 of 2

NOTES

1. HARD BOTTOM AND BEDROCK ELEVATIONS SHOWN ON DRAWINGS ARE TO BE CONSIDERED APPROXIMATE ONLY. THE BOREHOLE INFORMATION PROVIDED REPRESENT THE SOIL CONDITIONS AT THE BOREHOLE LOCATIONS ONLY. ANY INTERPRETATION OF AND FROM THE BOREHOLE INFORMATION IS SOLEY THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR TO BASE COST FOR HARBOUR DREDGING/CRIBSEAT EXCAVATION AND ASSOCIATED RISKS ACCORDINGLY.

Fisheries and Oceans Canada / Pêches et Océans Canada

SMALL CRAFT HARBOURS

PROVINCE OF NEWFOUNDLAND AND LABRADOR
PEG Newfoundland and Labrador
PERMIT HOLDER
This Permit Allows
Meridian Engineering Inc.
Member No. 04378
To practice Professional Engineering in Newfoundland and Labrador.
Permit No. as issued by PEG: 30453
which is valid for the year 2016.

REGISTERED PROFESSIONAL ENGINEER
PEG Newfoundland and Labrador
16/08/30
NEWFOUNDLAND & LABRADOR

revisions		date
C	RE-ISSUED FOR TENDER	16/08/30
B	ISSUED FOR TENDER	16/06/23
A	ISSUED FOR 99% REVIEW	16/05/06

project / projet
MARGINAL WHARF RECONSTRUCTION LONG COVE, NL

drawing / dessin
BOREHOLE LOGS

designed / concu: C. FISHER
date: APRIL, 2016
drawn / dessine: R. SNOW
date: APRIL, 2016
approved / approuve
date
Tender / Soumission
DFO Project Manager / Administrateur de projets MPO
project number / no. du projet: 721329
drawing no. / no. du dessin: C9 OF 11