Project: Marine Geotechnical Investigation
Location: Harbour Grace, NL
Client: Public Works and Government Services
Drilling Supervisor: K. Williams

Log of Geotech Borehole: BH #1

Project No: 453
Date: October 31, 2005

Depth below LNT (m)	Symbol	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
0		0 m LNT	0					
20		Harbour Bottom (6.16 m)	-6.16					

Standard Penetration Test "N" Value per 300 mm: 20 40 60 80

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

Drilling Method: NW/NQ Casing/Coring
Driller: Barker's Construction Ltd.
Datum: 0 m LNT
Sheet: 1 of 2

Project: Marine Geotechnical Investigation
Location: Harbour Grace, NL
Client: Public Works and Government Services
Drilling Supervisor: K. Williams

Log of Geotech Borehole: BH #1

Project No: 453
Date: October 31, 2005

Depth below LNT (m)	Symbol	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
8		Sank 2.3 m into soft sediment	-8.46					
9		SPT: 0.5/0.5/22/14 Sand with Organic material from the layer above	-9.07	SS	1	22	40	
10		Broken Rock and Boulders	-10.1					
10		SPT: 14/25/50 for 5" (Refusal) CFEM: Sand and Gravel, trace Silt and/or Clay	-10.5	SS	2	75	50	
11		Cobbles and Boulders	-11.7					
12		SPT: 50 for 4" (Refusal) SS3, "N" Value 50, Recovery 0%		SS	3	50	0	
13		Cobbles and Boulders / Broken Rock	-13.3					
13		SPT: 26/50 for 5" (Refusal) Gravel	-13.6	SS	4	50	23	
14		End of Borehole						

Standard Penetration Test "N" Value per 300 mm: 20 40 60 80

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Drilling Method: NW/NQ Casing/Coring
Driller: Barker's Construction Ltd.
Datum: 0 m LNT
Sheet: 2 of 2

Project: Marine Geotechnical Investigation
Location: Harbour Grace, NL
Client: Public Works and Government Services
Drilling Supervisor: K. Williams

Log of Geotech Borehole: BH #2

Project No: 453
Date: October 30, 2005

Depth below LNT (m)	Symbol	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
0		0 m LNT	0					
3		Harbour Bottom (3.87 m)	-3.87					
4		Sank 0.13 m into soft sediment						
4		SPT: 1/3/50 for 4" (Refusal) CFEM: Sand and Gravel, trace Silt and/or Clay	-4.41	SS	1	53	34	
5		Cobbles and Boulders / Broken Rock	-5.6					
6		SPT: 50 for 1" (Refusal) Gravel SS2, "N" Value 50, Recovery 33%		SS	2	50	33	
6		Cobbles and Boulders / Broken Rock						

Standard Penetration Test "N" Value per 300 mm: 20 40 60 80

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Drilling Method: NW/NQ Casing/Coring
Driller: Barker's Construction Ltd.
Datum: 0 m LNT
Sheet: 1 of 2

Project: Marine Geotechnical Investigation
Location: Harbour Grace, NL
Client: Public Works and Government Services
Drilling Supervisor: K. Williams

Log of Geotech Borehole: BH #2

Project No: 453
Date: October 30, 2005

Depth below LNT (m)	Symbol	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
24		SPT: 50 for 4" (Refusal) Gravel	-7.23	SS	3	50	15	
8		Cobbles and Boulders / Broken Rock	-8.78					
9		SPT: 50 for 2" (Refusal) Gravel SS4, "N" Value 50, Recovery 100%		SS	4	50	100	
10		Cobbles and Boulders / Broken Rock	-10.3					
10		SPT: 50 for 3" (Refusal) Gravel SS5, "N" Value 50, Recovery 33%		SS	5	50	33	
11		Cobbles and Boulders / Broken Rock	-11.7					
12		End of Borehole						

Standard Penetration Test "N" Value per 300 mm: 20 40 60 80

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Drilling Method: NW/NQ Casing/Coring
Driller: Barker's Construction Ltd.
Datum: 0 m LNT
Sheet: 2 of 2

Project: Marine Geotechnical Investigation
Location: Harbour Grace, NL
Client: Public Works and Government Services
Drilling Supervisor: K. Williams

Log of Geotech Borehole: BH #3

Project No: 453
Date: October 27, 2005

Depth below LNT (m)	Symbol	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
0		0 m LNT	0					
2		Harbour Bottom (2.09 m)	-2.09					
2		Sank 0.2 m into soft sediment	-2.28					
3		SPT: 1/4/9/32 CFEM: Gravelly Sand, trace Silt and/or Clay	-2.89	SS	1	13	21	
4		Cobbles and Boulders	-3.81					
4		SPT: 37/50 for 4" (Refusal) CFEM: Sand and Gravel, trace Silt and/or Clay	-4.06	SS	2	50	65	
5		Cobbles and Boulders	-5.28					
5		SPT: 38/50 for 2" (Refusal) CFEM: Gravel and Sand, trace Silt and/or Clay	-5.48	SS	3	50	81	

Standard Penetration Test "N" Value per 300 mm: 20 40 60 80

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Drilling Method: NW/NQ Casing/Coring
Driller: Barker's Construction Ltd.
Datum: 0 m LNT
Sheet: 1 of 2

Project: Marine Geotechnical Investigation
Location: Harbour Grace, NL
Client: Public Works and Government Services
Drilling Supervisor: K. Williams

Log of Geotech Borehole: BH #3

Project No: 453
Date: October 27, 2005

Depth below LNT (m)	Symbol	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
21		Cobbles and Boulders / Broken Rock	-6.85	SS	6	50	0	
7		SPT: 50 for 1" (Refusal) SS4, "N" Value 50, Recovery 0%						
23		Cobbles and Boulders / Broken Rock	-7.89					
8		Bedrock: Siltstone	-8.48	RC			100	49
8		SPT: 50 for 2" (Refusal) SS5, "N" Value 50, Recovery 0%		SS	7	50	0	0
9		Bedrock: Siltstone	-9.52	RC			100	79
10		End of Borehole		RC			90	86

Standard Penetration Test "N" Value per 300 mm: 20 40 60 80

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Drilling Method: NW/NQ Casing/Coring
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Datum: 0 m LNT
Sheet: 2 of 2

Project: Marine Geotechnical Investigation
Location: Harbour Grace, NL
Client: Public Works and Government Services
Drilling Supervisor: K. Williams

Log of Geotech Borehole: BH #4

Project No: 453
Date: October 28, 2005

Depth below LNT (m)	Symbol	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
0		0 m LNT	0					
2		Harbour Bottom (2.16 m)	-2.16					
3		Sank 0.85 m into soft sediment	-3.01					
3		SPT: 5/43/50 for 3" (Refusal) CFEM: Gravel and Sand, trace Silt and/or Clay	-3.39	SS	1	93	43	
4		Cobbles and Boulders / Broken Rock	-4.13					
4		SPT: 50 for 2" (Refusal) Gravel SS2, "N" Value 50, Recovery 38%		SS	2	50	38	
5		Cobbles and Boulders / Broken Rock	-5.76					
6		SPT: 50 for 2" (Refusal) Gravel SS3, "N" Value 50, Recovery 50%		SS	3	50	50	
6		Cobbles and Boulders / Broken Rock	-7.1					

Standard Penetration Test "N" Value per 300 mm: 20 40 60 80

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Drilling Method: NW/NQ Casing/Coring
Driller: Barker's Construction Ltd.
Datum: 0 m LNT
Sheet: 1 of 2

Project: Marine Geotechnical Investigation
Location: Harbour Grace, NL
Client: Public Works and Government Services
Drilling Supervisor: K. Williams

Log of Geotech Borehole: BH #4

Project No: 453
Date: October 28, 2005

Depth below LNT (m)	Symbol	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
24		SPT: 32/39/50 for 6" (Refusal) Gravel	-7.56	SS	4	89	14	
8		Cobbles and Boulders	-8.04					
8		Bedrock: Siltstone	-8.6	RC			85	26
9		SPT: 50 for 2" (Refusal) Gravel SS5, "N" Value 50, Recovery 50%		SS	5	50	50	
9		Bedrock: Siltstone	-9.97	RC			100	0
10		End of Borehole		RC			94	60

Standard Penetration Test "N" Value per 300 mm: 20 40 60 80

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Driller: Barker's Construction Ltd.
Datum: 0 m LNT
Sheet: 2 of 2

Public Works and Government Services Canada / Travaux Publics et Services gouvernementaux Canada

PROVINCE OF NEWFOUNDLAND
PERMIT HOLDER
This Permit Allows
AFN ENGINEERING INC.
To practice Professional Engineering In Newfoundland and Labrador. Permit No. as issued by APEGNL F0292. which is valid for the year 2014.

STAMP
REGISTERED PROFESSIONAL ENGINEER
NEIL C. HUNT
SIGNATURE
DATE Aug 15/14
NEWFOUNDLAND & LABRADOR

B	ISSUED FOR TENDER	13/08/14
A	ISSUED FOR 33% REVIEW	09/05/14
revisions		date

project / projet

WHARF EXTENSION
HARBOUR GRACE, NL

drawing / dessin

BOREHOLE LOGS

designed N.H. / conçu
date AUGUST 13, 2014
drawn P.H. / dessiné
date AUGUST 13, 2014
approved / approuvé
date
Tender / Soumission
PWGSC Project Manager / Administrateur de projets TPSGC
project number / no. du projet
R.071732.001
drawing no. / no. du dessin
C7 OF 8

PWGSC B1 (2004)

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