Project: Marine Geotechnical Investigation
Location: St. John's, NL
Client: Public Works Government Services Canada
Drilling Supervisor: David Howlett

Log of Geotech Borehole: BH6

Project No: 390
Date: November 24, 2006

Depth below LNT (m)	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
	Harbour Bottom (12.42 m)	-12.4					
	SPT: 5 / 11 / 5 / 1 CFEM: Sand and Gravel, some Silt and/or Clay	-13	SS	1	16	33	
	Boulders	-14.4					
	Spoon sank 0.40 m under own weight	-14.7					
	SPT: 1 / 1 / 14 / 16 CFEM: Sand, some Gravel, trace Silt and/or Clay	-15.3	SS	2	15	38	

Standard Penetration Test "N" Value per 300 mm

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: NES Ltd.
Datum: 0 m LNT
Sheet: 2 of 3

Project: Marine Geotechnical Investigation
Location: St. John's, NL
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Drilling Supervisor: David Howlett

Log of Geotech Borehole: BH6

Project No: 390
Date: November 24, 2006

Depth below LNT (m)	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
	Boulders or broken bedrock A split spoon sample could not be collected at the specified interval since the hole was deepened as the up-coning material was washed out of the casing.	-17.6					
	SPT: 50 for 0.00 m (Refusal) No Sample Recovery SS3, "N" Value = 50, Recovery = 0%		SS	3	50	0	
			RC	—		100	40
	Bedrock: Red sandstone		RC	—		100	0
			RC	—		100	58
	End of Borehole	-20.8					

Standard Penetration Test "N" Value per 300 mm

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Drilling Method: NW/NQ Casing/Coring
Driller: NES Ltd.
Datum: 0 m LNT
Sheet: 3 of 3

Project: Marine Geotechnical Investigation
Location: St. John's, NL
Client: Public Works Government Services Canada
Drilling Supervisor: David Howlett

Log of Geotech Borehole: BH7

Project No: 390
Date: November 26, 2006

Depth below LNT (m)	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
	0 m LNT	0					

Standard Penetration Test "N" Value per 300 mm

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St. John's, NL A1A 5A1
Phone: (709) 739-7270
Fax: (709) 753-5101

Drilling Method: NW/NQ Casing/Coring
Driller: NES Ltd.
Datum: 0 m LNT
Sheet: 1 of 2

Project: Marine Geotechnical Investigation
Location: St. John's, NL
Client: Public Works Government Services Canada
Drilling Supervisor: David Howlett

Log of Geotech Borehole: BH7

Project No: 390
Date: November 26, 2006

Depth below LNT (m)	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
	Harbour Bottom (9.13 m)	-9.13					
	SPT: 2 / 50 for 0.13 m (Refusal) Black organic sediments	-9.41	SS	1	50	45	
			RC	—		95	11
			RC	—		96	58
	Bedrock: Grayish red sandstone		RC	—		97	89
	End of Borehole	-12.3					

Standard Penetration Test "N" Value per 300 mm

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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: NES Ltd.
Datum: 0 m LNT
Sheet: 2 of 2

Project: Marine Geotechnical Investigation
Location: St. John's, NL
Client: Public Works Government Services Canada
Drilling Supervisor: David Howlett

Log of Geotech Borehole: BH9

Project No: 390
Date: November 26, 2006

Depth below LNT (m)	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
	0 m LNT	0					
	Harbour Bottom (4.77 m)	-4.77					
	SPT: 50 for 0.05 m (Refusal) No Sample Recovery SS1, "N" Value = 50, Recovery = 0%		SS	1	50	0	
	Broken red sandstone with 0% RQD	-6.14					
			RC	—		96	20
	Bedrock: Red sandstone		RC	—		92	61

Standard Penetration Test "N" Value per 300 mm

Fracflow Consultants Inc.
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Phone: (709) 739-7270
Fax: (709) 753-5101

Drilling Method: NW/NQ Casing/Coring
Driller: NES Ltd.
Datum: 0 m LNT
Sheet: 1 of 2

Project: Marine Geotechnical Investigation
Location: St. John's, NL
Client: Public Works Government Services Canada
Drilling Supervisor: David Howlett

Log of Geotech Borehole: BH9

Project No: 390
Date: November 26, 2006

Depth below LNT (m)	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
			RC	—		95	56
		-9.19					
	End of Borehole						

Standard Penetration Test "N" Value per 300 mm

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Fax: (709) 753-5101

Drilling Method: NW/NQ Casing/Coring
Driller: NES Ltd.
Datum: 0 m LNT
Sheet: 2 of 2

Project: Marine Geotechnical Investigation
Location: St. John's, NL
Client: Public Works Government Services Canada
Drilling Supervisor: David Howlett

Log of Geotech Borehole: BH10

Project No: 390
Date: November 22, 2006

Depth below Ground Surface (m)	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
	Ground Surface	2.3					
	Fill and Boulders Gray sandstone boulders	0.17					
	SPT: 4 / 6 / 2 / 6 No Sample Recovery	-0.44	SS	1	8	0	
	Gray sandstone boulders	-1.38					
	SPT: 16 / 12 / 5 / 3 No Sample Recovery	-1.99	SS	2	17	0	
	Gray sandstone boulders	-2.88					
	SPT: 3 / 2 / 2 / 3 Gravel	-3.49	SS	3	4	17	
	Gray sandstone boulders	-4.4					
	SPT: 12 / 3 / 1 / 7 CFEM: Gravelly Sand, trace Silt and/or Clay	-5.01	SS	4	4	33	
	Red sandstone boulders with cobble size rock fragments						

Standard Penetration Test "N" Value per 300 mm

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Drilling Method: NW/NQ Casing/Coring
Driller: NES Ltd.
Datum: Geodetic
Sheet: 1 of 3

Project: Marine Geotechnical Investigation
Location: St. John's, NL
Client: Public Works Government Services Canada
Drilling Supervisor: David Howlett

Log of Geotech Borehole: BH10

Project No: 390
Date: November 22, 2006

Depth below Ground Surface (m)	Geologic Description	Elevation (m)	Sample Type	Sample No.	"N" Value	Recovery (%)	RQD (%)
		-5.93					
	SPT: 7 / 4 / 15 / 50 for 0.05 m (Refusal) Gravel	-6.43	SS	5	19	20	
	Red sandstone boulders	-7.48					
	SPT: 7 / 1 / 8 / 50 for 0.03 m (Refusal) No Sample Recovery	-7.96	SS	6	9	0	
	Red sandstone boulders	-8.95					
	SPT: 50 for 0.03 m (Refusal) No Sample Recovery SS7, "N" Value = 50, Recovery = 0%		SS	7	50	0	
	Red sandstone boulders	-10.5					
	SPT: 1 / 50 for 0.00 m (Refusal) No Sample Recovery SS8, "N" Value = 50, Recovery = 0%		SS	8	50	0	
	Red sandstone boulders	-12					
	SPT: 50 for 0.03 m (Refusal) No Sample Recovery SS9, "N" Value = 50, Recovery = 0%		SS	9	50	0	
	Red sandstone boulders	-13.5					

Standard Penetration Test "N" Value per 300 mm

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Drilling Method: NW/NQ Casing/Coring
Driller: NES Ltd.
Datum: Geodetic
Sheet: 2 of 3

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, as a Permit No. as issued by APEGNL F0292 which is valid for the year 2019

STAMP
REGISTERED PROFESSIONAL ENGINEER
NEIL C. HUNT
SIGNATURE
1/7/19
DATE
NEWFOUNDLAND & LABRADOR

revisions		date
E	ISSUED FOR TENDER	1/7/19
D	RE-ISSUED FOR 99% REVIEW	12/19/18
C	ISSUED FOR 99% REVIEW	11/6/18
B	ISSUED FOR 66% REVIEW	10/19/18
A	ISSUED FOR REVIEW	8/17/18

project / projet
HARBOUR DEVELOPMENT
PROSSER ROCK, NL

drawing / dessin
BOREHOLE LOGS

designed / conçu: N.H.
date: JANUARY 7, 2019
drawn / dessiné: P.H.
date: JANUARY 7, 2019
approved / approuvé: N.H.
date: JANUARY 7, 2019
Tender / Soumission
PWGSC Project Manager / Administrateur de projets TPSGC
project number / no. du projet: R.100138.001
drawing no. / no. du dessin: C21

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