



## BOREHOLE RESULTS

SOUTH WATER CAYE RESERVE/MARFUND.KFW

TWIN CAYE SOIL INVESTIGATION

## TWIN CAYE SOIL INVESTIGATION – BOREHOLE RESULTS

### Introduction

This geotechnical report provides information on soil investigation done for South Water Caye Reserve/Marfund.KFW at Twin Caye, 15 miles from Dangriga Town. GeoTech Belize was contracted by Mr. Samuel Novelo to conduct dynamic penetration tests to assess the existing soil characteristics for that location.

### The Objective

The objectives of the investigation are as follows:

- Investigate load bearing capacity of native soil
- Investigate depth to bedrock from existing grade

### Scope of Investigation

It was proposed to conduct a total of two boreholes to assess field conditions. The location was identified by Mr. Samuel Novelo. Dynamic penetration tests were performed at these locations to determine load bearing capacity of the soil and the depth to bedrock.

### Methodology

#### Borehole

- Dynamic Penetration Test was conducted using an LMSR – HK hydraulic dynamic probing rig with blows per 10cm readings being recorded. Readings would then be correlated to  $N_{spt}$  and bearing capacity values. The dynamic penetration test (DPH) was done in accordance with BS 1377 - Part 9.
- An assumed soil classification and other test results are summarized in the appended Borehole log.

### Observations

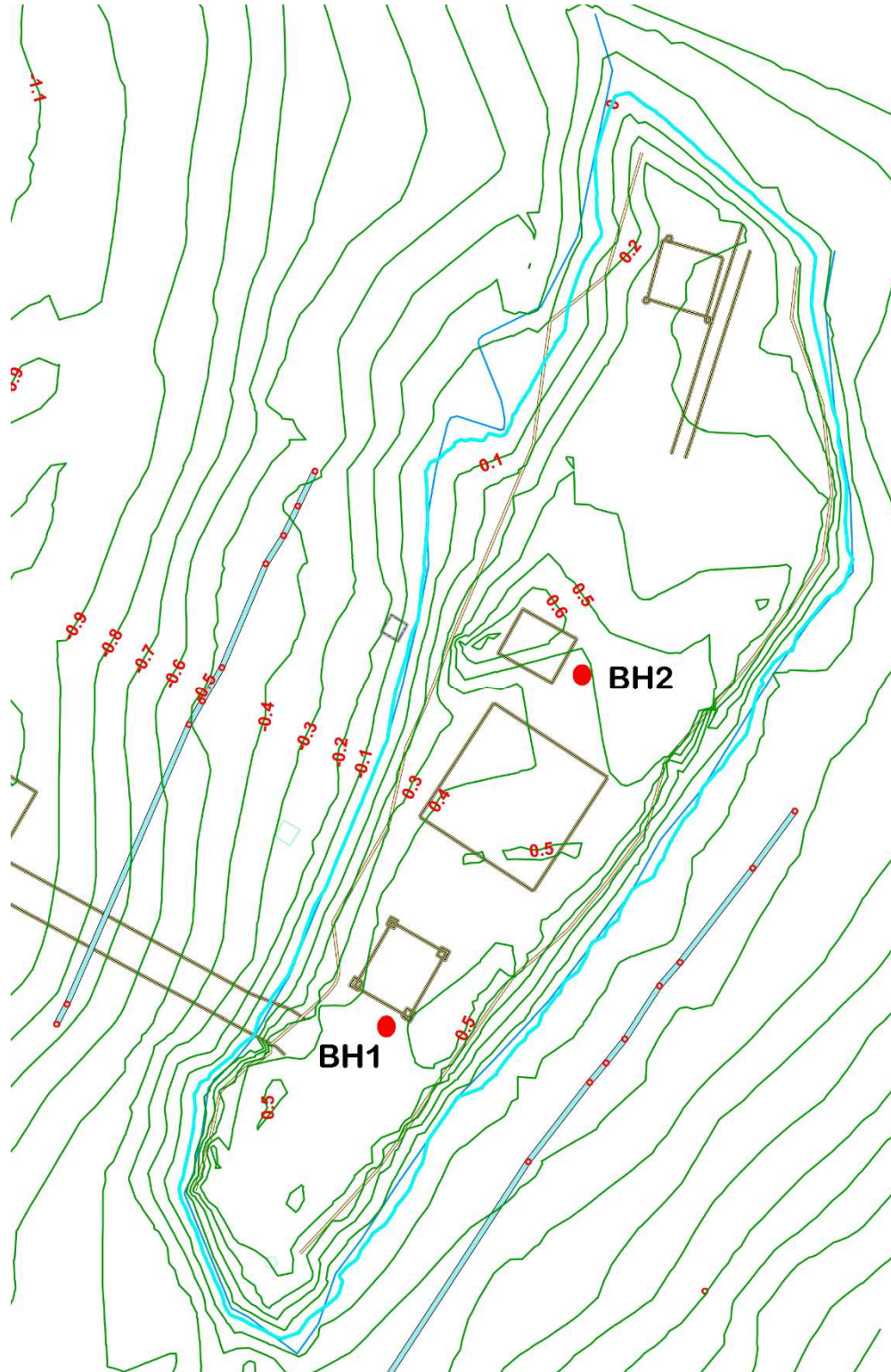
#### Boreholes

- Based on observations at borehole 1 it is assumed that the Ground Water Table is at a depth of 1.2m and assumed bedrock was observed to be at a depth of 9.4 meters. At borehole 2 the Ground Water Table is at a depth of 6.2m and assumed bedrock was observed to be at a depth of 10 meters.

Photos



Location Plan



# BORE HOLE LOG



**BORING NO. BH-1**

**PROJECT:** Twin Caye Soil Investigation  
**CLIENT:** South Water Caye Reserve - Marfund.KFW  
**LOCATION:** Twin Caye  
**DRILLER:** Marlon Patnett  
**DRILLING METHOD:** Dynamic Probing (Heavy)

**PROJECT NO.:** 044002  
**DATE:** 23/03/2017  
**ELEVATION:** NA  
**LOGGED BY:** Amybell Yorke Gillett  
**GROUND WATER TABLE (m):** 1.2

File: 044002 Date Printed: 25/03/2017

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DEPTH (meters)	DEPTH (feet)	Sampler Graphic	USCS	Description	Bearing Capacity (KPa)	Test Results				% Moisture	Liquid Limit	Plastic Limit	Plasticity Index	Dry Density (Mg/m <sup>3</sup> )	% Fines	% Sand	% Gravel
						Plastic Limit	Water Content -	Liquid Limit	Penetration -								
0	0		ML	Very Loose Assumed Silt	94.6												
0.4	2		VS	Very Loose Assumed Peat	46.8												
0.8			ML	Very Loose Assumed Silt	0.0												
1.2	4				128.1												
1.6	6				84.9												
2			VS	Very Loose Assumed Peat	42.2												
2.4	8				39.0												
2.8					0.0												
3.2	10				38.62												
					0.0												
					0.0												

**LEGEND**  
 ■ Bag Sample  
 ■ Core Cutter Sample  
 ▨ Window Sample  
 ▾ Static Water Table

# BORE HOLE LOG



**BORING NO. BH-1**

**PROJECT:** Twin Caye Soil Investigation  
**CLIENT:** South Water Caye Reserve - Marfund.KFW  
**LOCATION:** Twin Caye  
**DRILLER:** Marlon Patnett  
**DRILLING METHOD:** Dynamic Probing (Heavy)

**PROJECT NO.:** 044002  
**DATE:** 23/03/2017  
**ELEVATION:** NA  
**LOGGED BY:** Amybell Yorke Gillett  
**GROUND WATER TABLE (m):** 1.2

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DEPTH (meters)	DEPTH (feet)	Sampler Graphic	USCS	Description	Bearing Capacity (KPa)	Test Results				% Moisture	Liquid Limit	Plastic Limit	Plasticity Index	Dry Density (Mg/m <sup>3</sup> )	% Fines	% Sand	% Gravel		
						Plastic Limit	Water Content -	Liquid Limit	Penetration -										
3.6	12		ML	Very Loose Assumed Silt	35.57														
4	14				33.24														
4.4	14				0.0														
4.8	16				0.0														
5.2	18				0.0														
5.6	18				0.0														
6	20				0.0														
6.4	22				0.0														
6.8	22				0.0														
								27.1											

**LEGEND** Bag Sample Core Cutter Sample Window Sample Static Water Table

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# BORE HOLE LOG



**BORING NO. BH-1**

**PROJECT:** Twin Caye Soil Investigation  
**CLIENT:** South Water Caye Reserve - Marfund.KFW  
**LOCATION:** Twin Caye  
**DRILLER:** Marlon Patnett  
**DRILLING METHOD:** Dynamic Probing (Heavy)

**PROJECT NO.:** 044002  
**DATE:** 23/03/2017  
**ELEVATION:** NA  
**LOGGED BY:** Amybell Yorke Gillett  
**GROUND WATER TABLE (m):** 1.2

File: 044002 Date Printed: 25/03/2017

DEPTH (meters)	DEPTH (feet)	Sampler Graphic	USCS	Description	Bearing Capacity (KPa)	Test Results		% Moisture	Liquid Limit	Plastic Limit	Plasticity Index	Dry Density (Mg/m <sup>3</sup> )	% Fines	% Sand	% Gravel				
						Plastic Limit	Liquid Limit												
7.2	24		CL	Medium Dense Assumed Sandy Clay	53.9														
7.6					53.8														
8	26				53.63														
8.4					76.3														
8.8	28				50.7														
9.2	30				526.8														
9.6	32				120.3	VG	Very Dense Assumed Gravel with Sand	336.0											
10					632.0			75.1	65.2	65.2	71.1	94.8	88.9	197.5					
10.4	34				752.3														
						ROCK	Assumed Bedrock, Penetration of 5mm @ 5 blows	1670											

**LEGEND** Bag Sample Core Cutter Sample Window Sample Static Water Table

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# BORE HOLE LOG



**BORING NO. BH-2**

**PROJECT:** Twin Caye Soil Investigation  
**CLIENT:** South Water Caye Reserve - Marfund.KFW  
**LOCATION:** Twin Caye  
**DRILLER:** Marlon Patnett  
**DRILLING METHOD:** Dynamic Probing (Heavy)

**PROJECT NO.:** 044002  
**DATE:** 23/03/2017  
**ELEVATION:** NA  
**LOGGED BY:** Amybell Yorke Gillett  
**GROUND WATER TABLE (m):** 6.2

File: 044002 Date Printed: 25/03/2017

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DEPTH (meters)	DEPTH (feet)	Sampler Graphic	USCS	Description	Bearing Capacity (KPa)	Test Results		% Moisture	Liquid Limit	Plastic Limit	Plasticity Index	Dry Density (Mg/m <sup>3</sup> )	% Fines	% Sand	% Gravel		
						Plastic Limit	Liquid Limit										
0	0		ML	Loose Assumed Silt													
				Very Loose Assumed Silt	141.9												
0.4						47.1											
	2					46.8											
0.8						0.0											
1.2	4				Medium Dense Assumed Silt	213.6											
						169.8											
1.6																	
	6				Very Loose Assumed Silt	168.8											
2					78.1												
					0.0												
2.4	8				0.0												
					0.0												
2.8																	
	10				35.9												
3.2					35.7												

**LEGEND** Bag Sample Core Cutter Sample Window Sample Static Water Table



# BORE HOLE LOG



**BORING NO. BH-2**

**PROJECT:** Twin Caye Soil Investigation  
**CLIENT:** South Water Caye Reserve - Marfund.KFW  
**LOCATION:** Twin Caye  
**DRILLER:** Marlon Patnett  
**DRILLING METHOD:** Dynamic Probing (Heavy)

**PROJECT NO.:** 044002  
**DATE:** 23/03/2017  
**ELEVATION:** NA  
**LOGGED BY:** Amybell Yorke Gillett  
**GROUND WATER TABLE (m):** 6.2

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						Plastic Limit	Water Content -	Liquid Limit	Penetration -									
3.6	12	Graphitic	VS	Very Loose Assumed Peat	0.0													
4	14				0.0													
4.4	16				0.0													
4.8	18				0.0													
5.2	20				0.0													
5.6	22				0.0													
6					0.0													
6.4					0.0													
6.8					28.6													
					27.1													

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							Plastic Limit	Liquid Limit								
7.2	24					27.0										
7.6						26.9										
8	26					26.8										
8.4				ML	Loose Assumed Silt	76.1										
8.8						50.6										
9.2	30			CL	medium Dense Assumed Sandy Clay	336.9										
9.6				ROCK	Assumed Bedrock, Penetration of 4mm @ 5 blows	192.0										
10						2199										
10.4	34															

**LEGEND**
 Bag Sample 
 Core Cutter Sample 
 Window Sample 
 Static Water Table