



GEOTECHNICAL REPORT

Client:

MAR FUND / PACT

Project:

TWIN CAYE SOIL
INVESTIGATION #2

Location:

Twin Caye, South Water Caye Marine
Reserve

Date:

October 25th, 2019

CONTENTS

TWIN CAYE SOIL INVESTIGATION #2	2
Introduction	2
The Objective	2
Scope of Investigation	2
Methodology.....	2
Borehole	2
Observations.....	2
Boreholes (BH).....	2
Photos.....	3
Location Plan.....	4
Appendix	5
Boreholes Logs.....	5

TWIN CAYE SOIL INVESTIGATION #2

Introduction

This geotechnical report provides information on soil investigation done for MAR FUND/PACT for the construction of two proposed wooden structures on Twin Caye in the Stann Creek District. GeoTech Belize was contracted by a representative from MAR FUND to conduct a geotechnical survey to assess the existing soil characteristics for the design of a foundation for the proposed structures.

The Objective

The objectives of the investigation are as follows:

- Investigate load bearing capacity of native soil
- Investigate depth to ground water table
- Investigate depth to bedrock

Scope of Investigation

It was proposed to conduct a total of two boreholes to assess field conditions. All locations were specified by the personnel on site and set out by GeoTech Belize technicians. Weather conditions was very hot and humid. Sea conditions from Dangriga Town to Twin Caye was choppy.

Methodology

Borehole

- Dynamic Penetration Tests were 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.
- GPS readings were taken using a handheld Garmin GPSMap 78 to record approximate location of boreholes.

Observations

Boreholes (BH)

- At Borehole 1 (BH1) assumed bedrock was observed at a depth of 10.1m
- At Borehole 2 (BH2) assumed bedrock was observed at a depth of 14.9m
- Soil condition was soft and wet due to high water table.

Photos



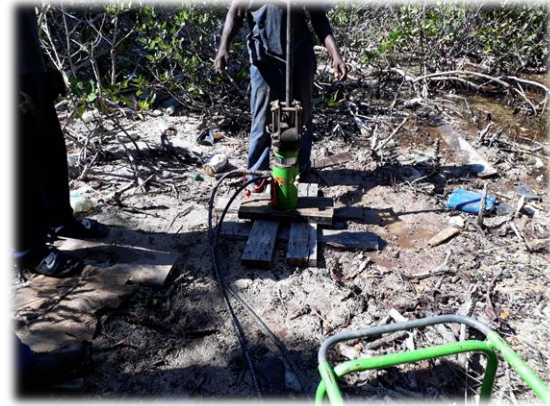
Attaching pipes to being driven @ BH1



Extracting pipes after test @ BH1



Attaching pipes to being driven @ BH2



Extracting pipes after test @ BH2



Equipment in Fisheries Department boat



Small pier at Twin Caye

Location Plan



Appendix
Boreholes Logs

Coordinates are in WGS84 Datum.

BORE HOLE LOG

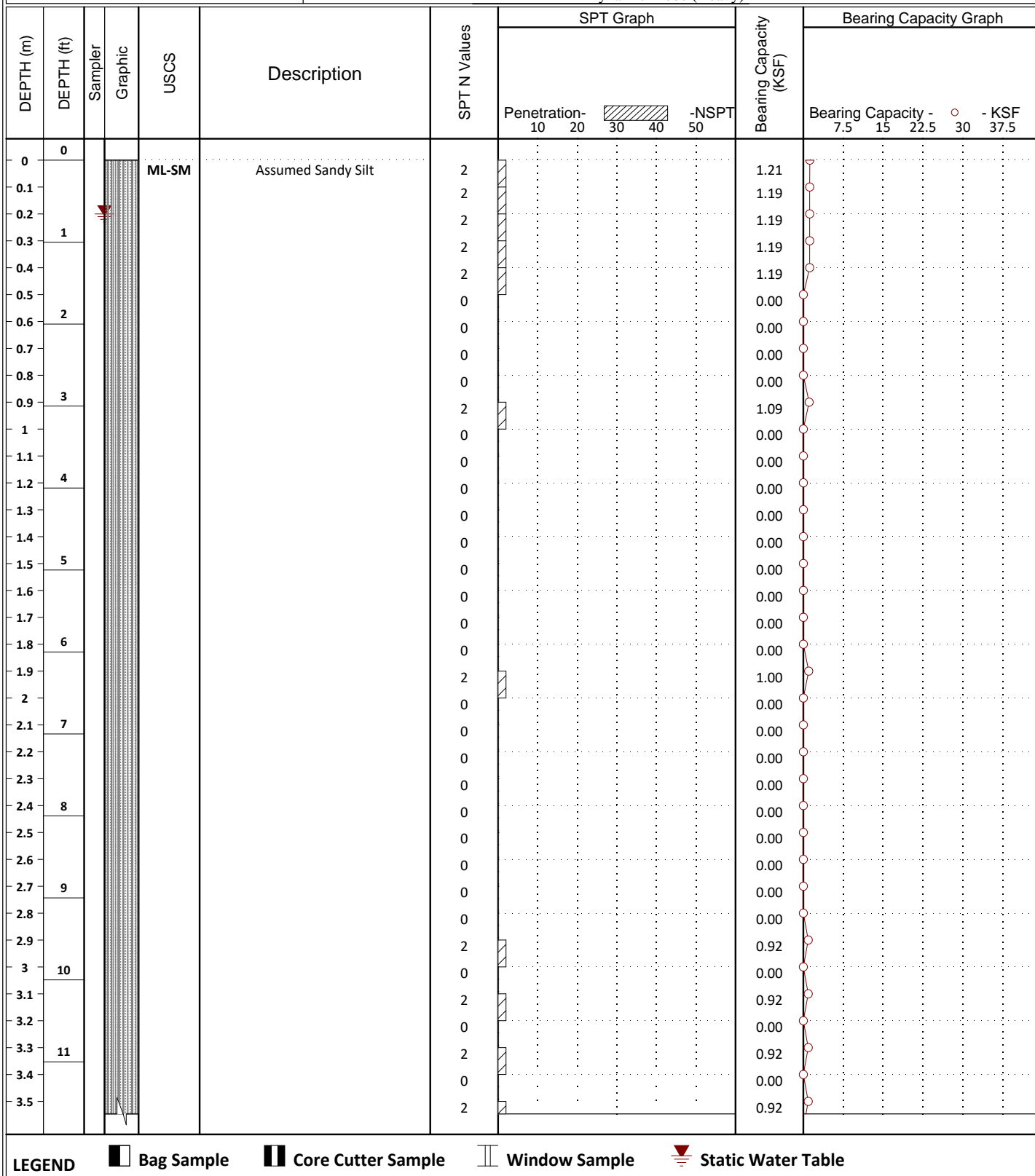


BORING NO. BH1

PROJECT: Twin Caye Soil Investigation #2
 CLIENT: MAR FUND / PACT
 LOCATION: South Water Caye Marine Reserve
 DRILLER: John Rubio
 DRILLING METHOD: Dynamic Probe (Heavy)

PROJECT NO.: 091002
 DATE: 21-Oct-2019
 DEPTH: 10.1m
 LOGGED BY: Amybell Yorke Gillett
 GROUND WATER TABLE (m): 0.2

File: 091002 Date Printed: 24/10/2019



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

LEGEND Bag Sample Core Cutter Sample Window Sample Static Water Table

Coordinates are in WGS84 Datum.

BORE HOLE LOG



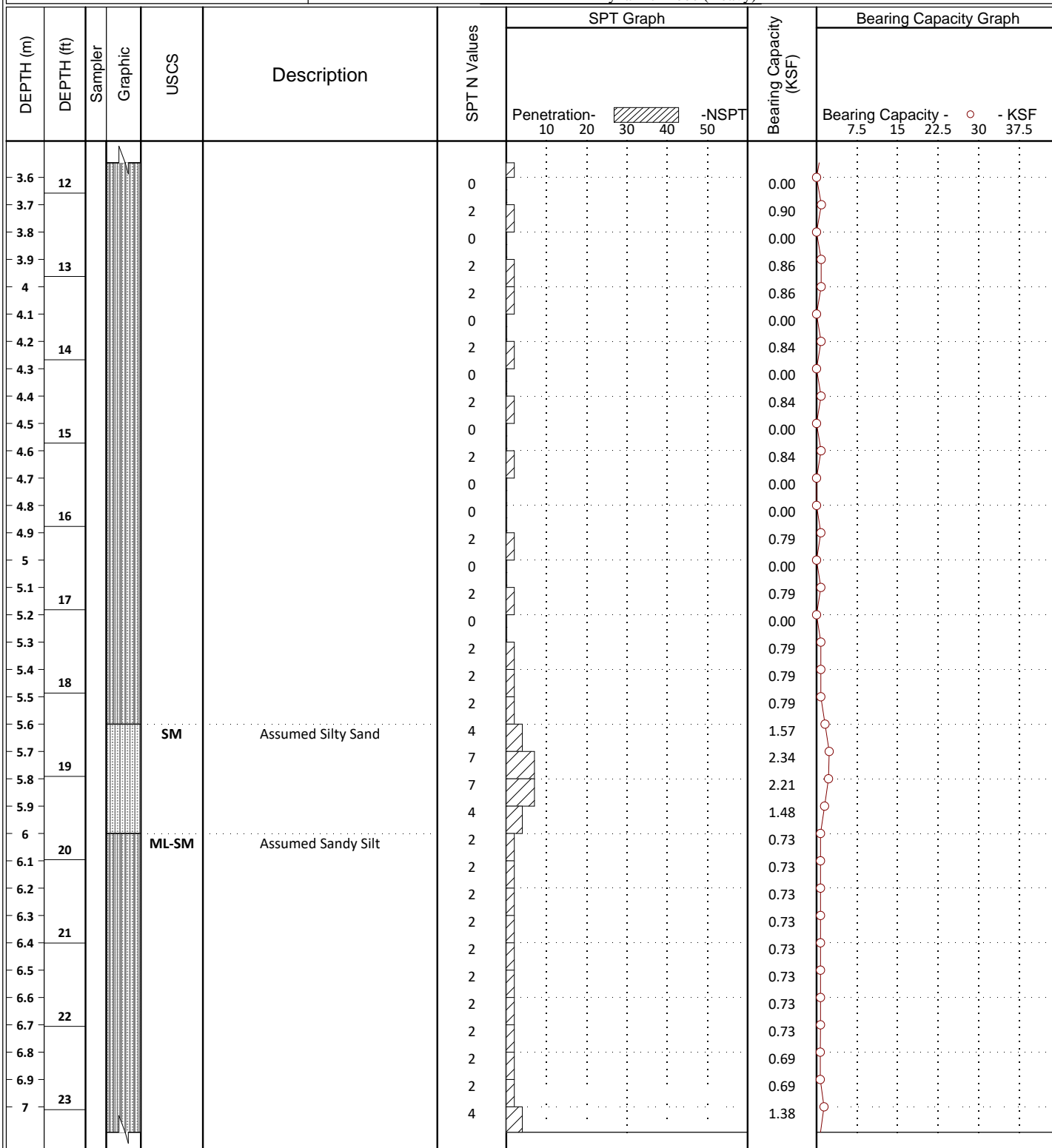
BORING NO. BH1

North: 1860411 East: 382212

File: 091002 Date Printed: 24/10/2019

PROJECT: Twin Caye Soil Investigation #2
 CLIENT: MAR FUND / PACT
 LOCATION: South Water Caye Marine Reserve
 DRILLER: John Rubio
 DRILLING METHOD: Dynamic Probe (Heavy)

PROJECT NO.: 091002
 DATE: 21-Oct-2019
 DEPTH: 10.1m
 LOGGED BY: Amybell Yorke Gillett
 GROUND WATER TABLE (m): 0.2



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

LEGEND Bag Sample Core Cutter Sample Window Sample Static Water Table

Coordinates are in WGS84 Datum.

BORE HOLE LOG



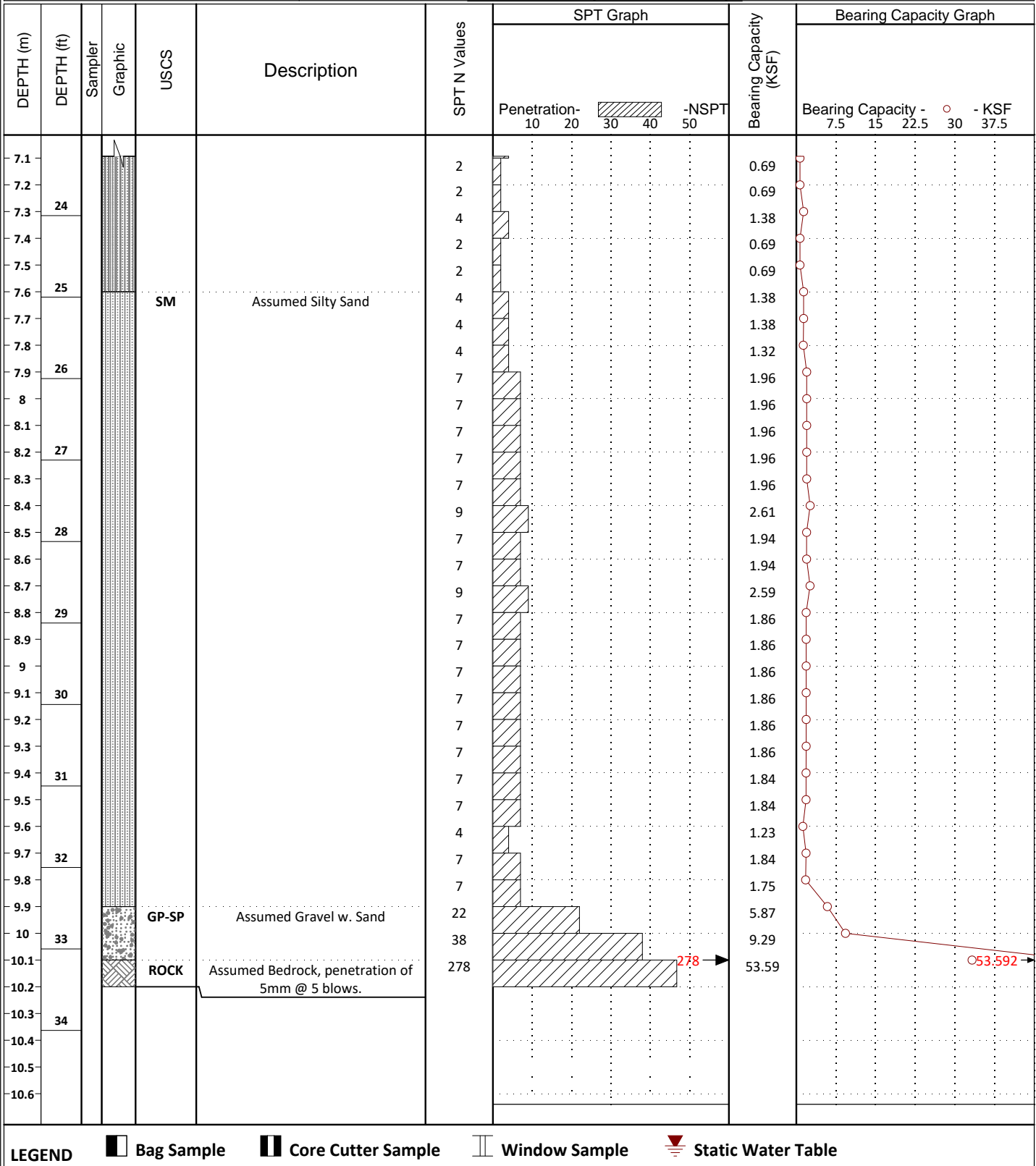
BORING NO. BH1

PROJECT: Twin Caye Soil Investigation #2
 CLIENT: MAR FUND / PACT
 LOCATION: South Water Caye Marine Reserve
 DRILLER: John Rubio
 DRILLING METHOD: Dynamic Probe (Heavy)

PROJECT NO.: 091002
 DATE: 21-Oct-2019
 DEPTH: 10.1m
 LOGGED BY: Amybell Yorke Gillett
 GROUND WATER TABLE (m): 0.2

File: 091002

Date Printed: 24/10/2019



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

LEGEND Bag Sample Core Cutter Sample Window Sample Static Water Table

Coordinates are in WGS84 Datum.

BORE HOLE LOG



BORING NO. BH2

PROJECT: Twin Caye Soil Investigation #2
 CLIENT: MAR FUND / PACT
 LOCATION: South Water Caye Marine Reserve
 DRILLER: John Rubio
 DRILLING METHOD: Dynamic Probe (Heavy)

PROJECT NO.: 091002
 DATE: 21-Oct-2019
 DEPTH: 14.9m
 LOGGED BY: Amybell Yorke Gillett
 GROUND WATER TABLE (m): GL

File: 091002 Date Printed: 24/10/2019

DEPTH (m)	DEPTH (ft)	Sampler	Graphic	USCS	Description	SPT N Values	SPT Graph		Bearing Capacity (KSF)	Bearing Capacity Graph	
							Penetration- 10 20 30 40 50	-NSPT		Bearing Capacity - 7.5 15 22.5 30 37.5	- KSF
0	0			ML-SM	Assumed Sandy Silt	2			1.21		
0.1						0			0.00		
0.2						0			0.00		
0.3	1					0			0.00		
0.4						0			0.00		
0.5						0			0.00		
0.6	2					0			0.00		
0.7						0			0.00		
0.8						0			0.00		
0.9	3					2			1.09		
1						0			0.00		
1.1						0			0.00		
1.2	4					0			0.00		
1.3						0			0.00		
1.4						0			0.00		
1.5	5					0			0.00		
1.6						0			0.00		
1.7						0			0.00		
1.8	6					0			0.00		
1.9						2			1.00		
2						0			0.00		
2.1	7					0			0.00		
2.2						0			0.00		
2.3						0			0.00		
2.4	8					0			0.00		
2.5						0			0.00		
2.6						0			0.00		
2.7	9					0			0.00		
2.8						0			0.00		
2.9						2			0.92		
3	10					0			0.00		
3.1						0			0.00		
3.2						2			0.92		
3.3	11					0			0.00		
3.4						2			0.92		
3.5						0			0.00		

LEGEND Bag Sample Core Cutter Sample Window Sample Static Water Table

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

Coordinates are in WGS84 Datum.

BORE HOLE LOG



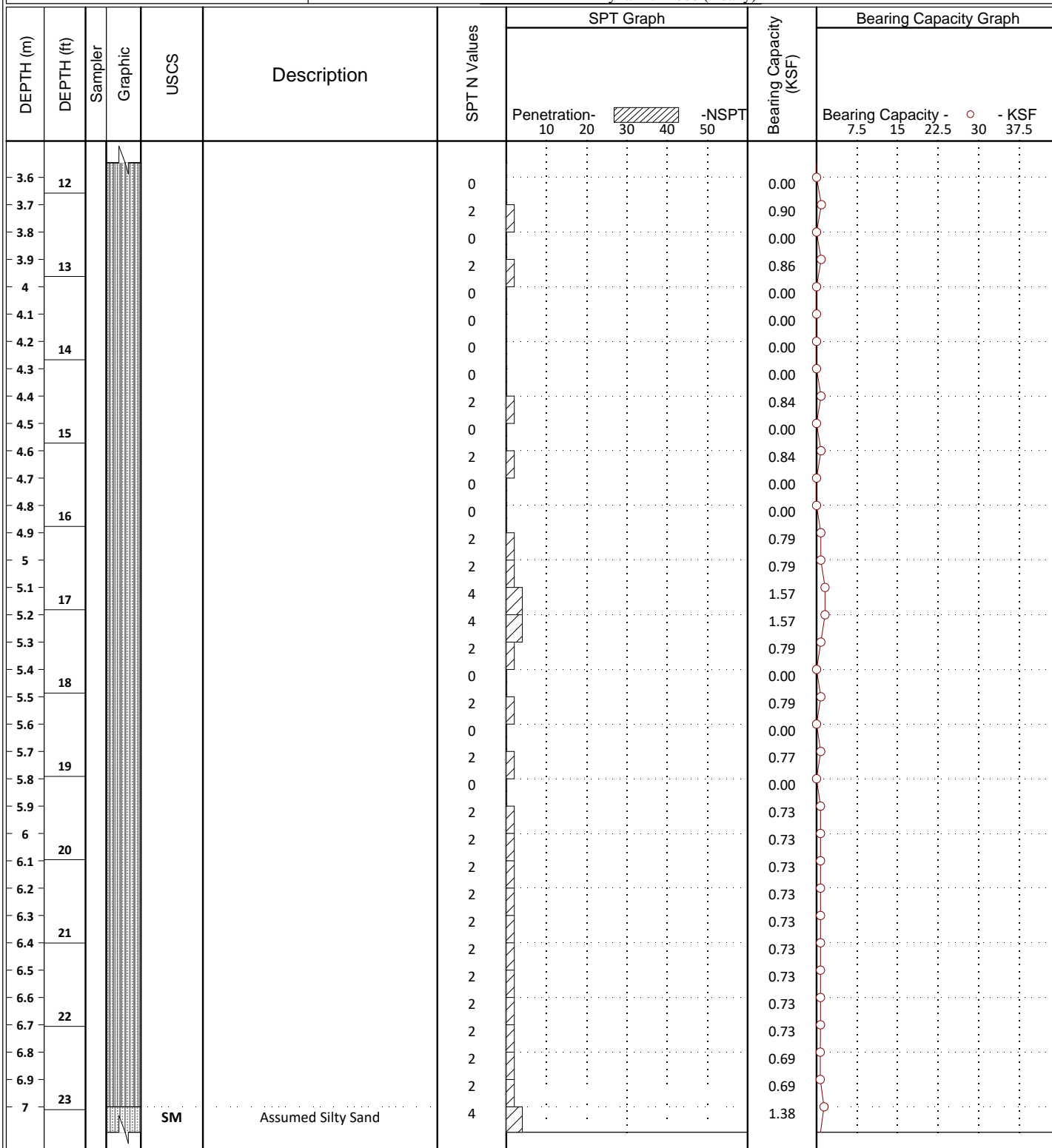
BORING NO. BH2

PROJECT: Twin Caye Soil Investigation #2
 CLIENT: MAR FUND / PACT
 LOCATION: South Water Caye Marine Reserve
 DRILLER: John Rubio
 DRILLING METHOD: Dynamic Probe (Heavy)

PROJECT NO.: 091002
 DATE: 21-Oct-2019
 DEPTH: 14.9m
 LOGGED BY: Amybell Yorke Gillett
 GROUND WATER TABLE (m): GL

File: 091002

Date Printed: 24/10/2019



LEGEND

- Bag Sample
- Core Cutter Sample
- Window Sample
- Static Water Table

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

Coordinates are in WGS84 Datum.

BORE HOLE LOG



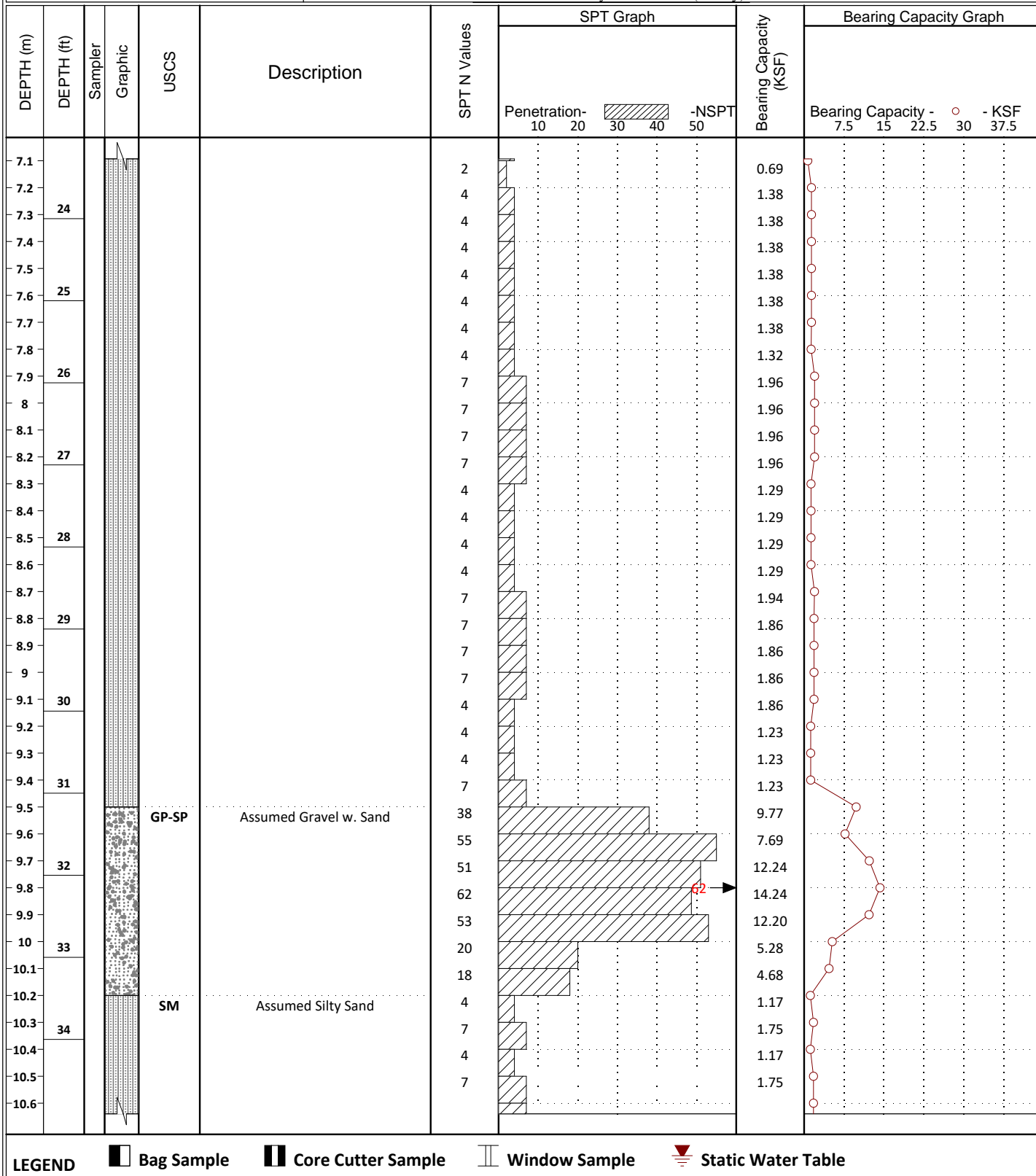
BORING NO. BH2

PROJECT: Twin Caye Soil Investigation #2
CLIENT: MAR FUND / PACT
LOCATION: South Water Caye Marine Reserve
DRILLER: John Rubio
DRILLING METHOD: Dynamic Probe (Heavy)

PROJECT NO.: 091002
DATE: 21-Oct-2019
DEPTH: 14.9m
LOGGED BY: Amybell Yorke Gillett
GROUND WATER TABLE (m): GL

File: 091002

Date Printed: 24/10/2019



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

LEGEND Bag Sample Core Cutter Sample Window Sample Static Water Table

Coordinates are in WGS84 Datum.

BORE HOLE LOG



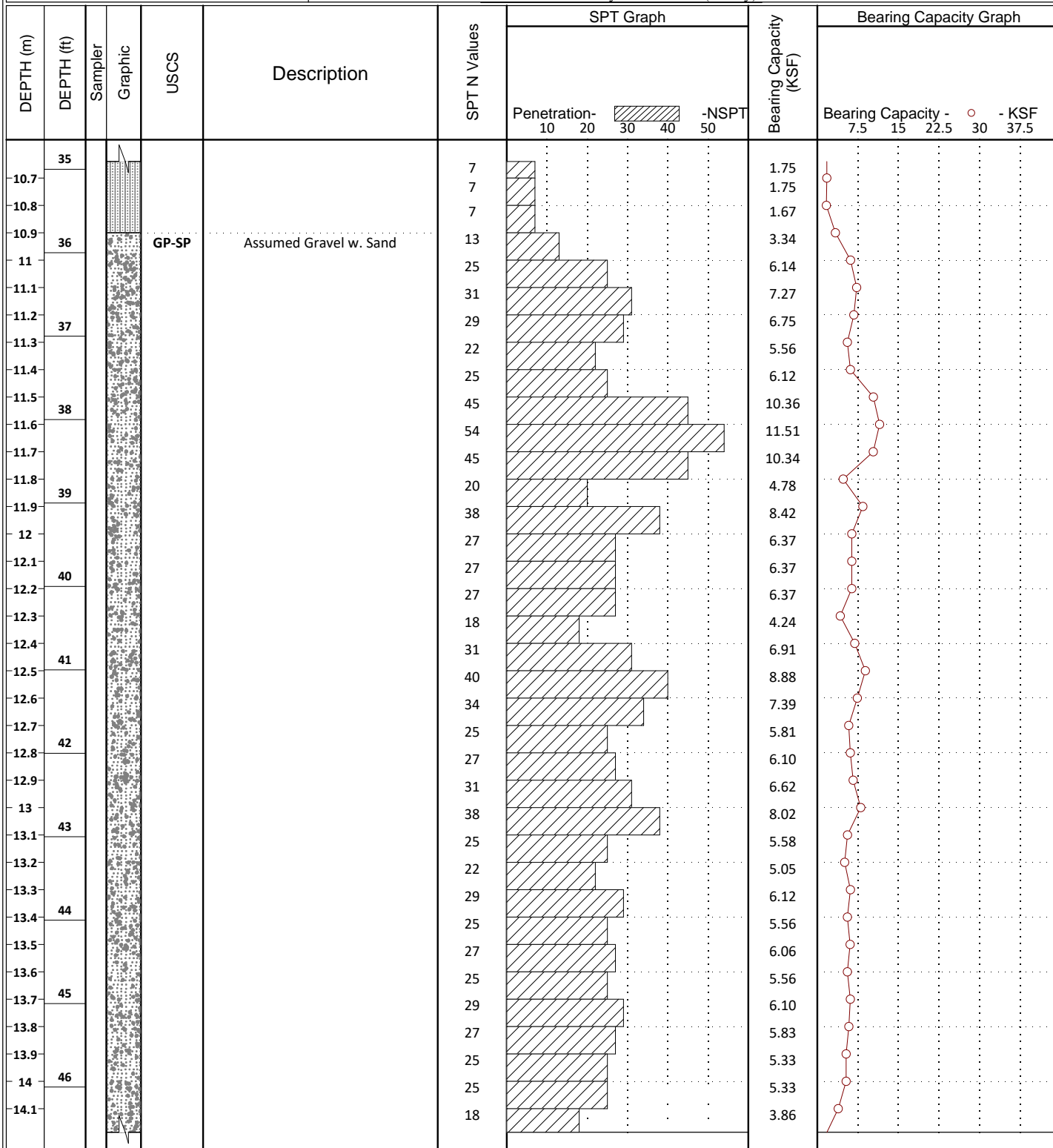
BORING NO. BH2

PROJECT: Twin Caye Soil Investigation #2
CLIENT: MAR FUND / PACT
LOCATION: South Water Caye Marine Reserve
DRILLER: John Rubio
DRILLING METHOD: Dynamic Probe (Heavy)

PROJECT NO.: 091002
DATE: 21-Oct-2019
DEPTH: 14.9m
LOGGED BY: Amybell Yorke Gillett
GROUND WATER TABLE (m): GL

File: 091002

Date Printed: 24/10/2019



LEGEND Bag Sample Core Cutter Sample Window Sample Static Water Table

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

Coordinates are in WGS84 Datum.

BORE HOLE LOG



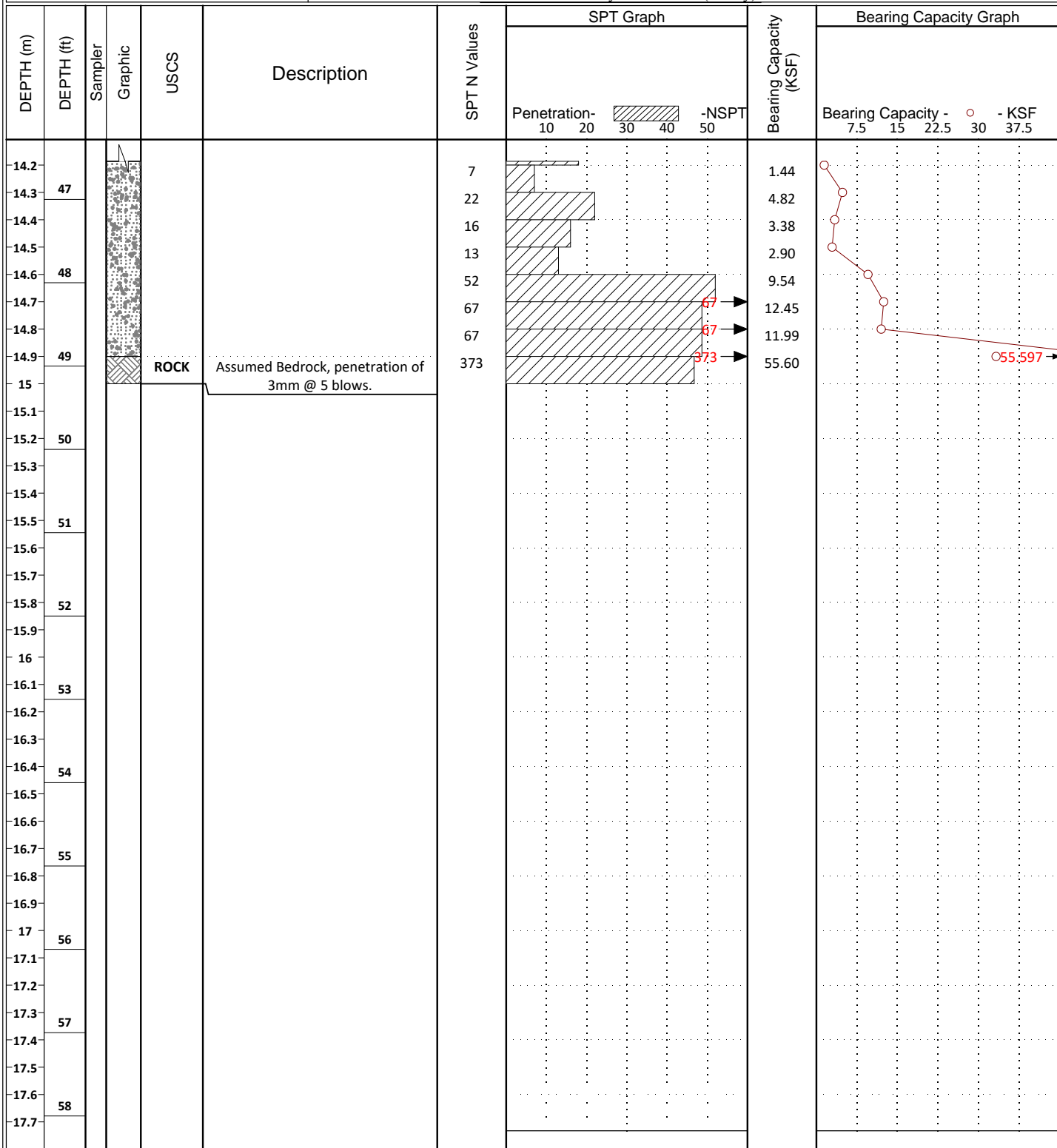
BORING NO. BH2

PROJECT: Twin Caye Soil Investigation #2
CLIENT: MAR FUND / PACT
LOCATION: South Water Caye Marine Reserve
DRILLER: John Rubio
DRILLING METHOD: Dynamic Probe (Heavy)

PROJECT NO.: 091002
DATE: 21-Oct-2019
DEPTH: 14.9m
LOGGED BY: Amybell Yorke Gillett
GROUND WATER TABLE (m): GL

File: 091002

Date Printed: 24/10/2019



LEGEND

- Bag Sample
- Core Cutter Sample
- Window Sample
- Static Water Table

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