

BESSBOROUGH, CORK

APPENDIX 7

Land, Soils & Geology



VOLUME III | APPENDICES

BESSBOROUGH, CORK

APPENDIX 7

Land, Soils & Geology

- Appendix 7-1 - Ground Investigation Report prepared by Priority Geotechnical Ltd, Issue date February 2022

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Issue date February 2022



Our Ref: JMS/Rp/P21239 + attachments (*.pdf)

16th March, 2022

JB Barry & Partners Limited

3 Eastgate Road,
Eastgate Business Park,
Little Island,
Co. Cork,
T45 KH74.

Re: Bessborough SHD Sites, Site Investigation, Factual report.

Introduction

In November 2021, Priority Geotechnical (PGL) were requested by JB Barry & Partners Limited acting on behalf of their client Estuary View Enterprises to undertake a site investigation as part of the Bessborough SHD Sites project.



Objectives

The objective of the site investigation contract is to determine the ground and groundwater conditions in order to inform the engineering design solutions for the proposed development.

Scope

The original scope of the site investigation, which was specified by JB Barry & Partners, comprised of:

- 06Nr. Cable percussion boreholes;
- Trial pits;
- Surveying of 'as-built' levels and co-ordinates;
- All associated sampling;
- All associated laboratory works;
- Associated reporting;

The final site works as completed is outlined, herein. This geotechnical data report presents the fieldworks records with regard to the site investigation for the Bessborough SHD Sites Project. The report should be read in conjunction with the exploratory records, the photographic records and the laboratory test data accompanying this report.

Site Works

This investigation was carried out in accordance with Eurocode 7- Geotechnical Design Part 2, ground investigation and testing (BS EN 1997-2: 2007) and the relevant British Standards (BS 5930 (2015) Code of Practice for Site Investigation and BS 1377, Method of Tests for Soil for Civil Engineering Purposes, *in situ* Tests Parts 1 to 9).

The direct intrusive fieldworks were undertaken from the 10th and 17th January, 2022 to under the supervision of PGL, Engineering Geologist(s). Details of the plant and equipment used are detailed on the relevant exploratory records, accompanying this report.

Cable Percussion Boreholes

Six (06) cable percussion boreholes were drilled to depths 4.4m below existing ground level (bgl) to 9.1m bgl using PGL's Dando 2000 Rig and 200mm diameter casing. The logs are accompanying this factual report.

Location	Depth (m bgl)	Date (dd/mm/yyyy)
BH01	4.4	13/01/2022
BH02	9.1	10/01/2022
BH03	8.4	12/01/2022
BH04	7.3	14/01/2022
BH05	7.4	17/01/2022
BH06	7.0	13/01/2022

Chiselling				
Location	Depth Top (m bgl)	Depth Base (m bgl)	Duration (hh:mm)	Tool
BH01	1.20	1.30	01:00	Chisel.
	4.30	4.40	01:00	Chisel.
BH02	2.75	2.90	01:00	Chisel.
	8.90	9.10	01:00	Chisel.
BH03	4.90	5.00	01:00	Chisel.
	8.30	8.40	01:00	Chisel.
BH04	3.80	4.00	01:00	Chisel.
	7.20	7.30	01:00	Chisel.
BH05	6.70	6.90	01:00	Chisel.
	7.30	7.40	01:00	Chisel.
BH06	5.75	5.95	01:00	Chisel.
	6.90	7.00	01:00	Chisel.

Trial Pits

Seven (07) trial pits were excavated to depths 0.3m bgl to 4.6m bgl using a 14t tracked excavator. The exploratory logs and photographic records accompany this factual report.

Location	Depth (m bgl)	Date (dd/mm/yyyy)
TP01	3.9	11/01/2022
TP02	3.2	10/01/2022
TP03	4.5	11/01/2022
TP04	4.5	13/01/2022
TP05	4.5	14/01/2022
TP06	0.3	12/01/2022
TP06A	4.6	12/01/2022

Sampling

A total of sixty two (62) bulk disturbed samples (B) and twenty two (22) small disturbed samples (D) were recovered from the exploratory holes in accordance with Geotechnical Investigation and Sampling – Sampling Methods and Groundwater Measurements (EN ISO 22475-1:2006).

In-Situ Testing

Standard Penetration Tests (SPT)

A total of thirty nine (39) standard penetration tests, were carried out in the cable percussion boreholes using the 60° solid cone (CPT) in place of the standard split barrel sampler. The data was presented on the relevant logs accompanying this factual report.

Falling Head Tests

Two (02) *in situ* falling head permeability tests were carried out in boreholes; in accordance with BS5930: 1999, Section 4: Cl. 25.4, within the superficial deposits over duration of one (1) hour. The processed test data was presented on the relevant borehole log presented accompanying this factual report. The shape or intake factor, *f* was derived from the condition at the base of the borehole at the test depth and test geometry as per Hvorslev (1951).

$$k = \frac{A \log_e (H_0 / H_1)}{fd \quad t}$$

Generally for all tests the specific depth range of the test was the deposits below the depth of casing. A mean *k* measured ($k_H = k_V$), permeability in the soil was assumed equal in both horizontal and vertical direction, ($k_H / k_V = 1.$). The test geometry provided a shape factor, *f* for the test undertaken in the standpipe well.

Dynamic Probing

PGL's Competitor dynamic probing rig was used to undertake dynamic probing (DP(H); 50kg drop weight, 500mm drop height) in general accordance with Geotechnical Investigation and Testing, Part 2, Dynamic probing, BS EN ISO 22476-2:2005. The blows per 100mm (N_{100H}) were recorded to refusal being 25blows without progress over 100mm. Six (06) number dynamic probes progressed to refusal at depths 2.7m bgl to 8.8m bgl. The exploratory logs accompany this factual report.

Location	Refusal depth, m bgl
DP01	3.7
DP02	8.8
DP03	2.7
DP04	5.0
DP05	3.0
DP06	3.5

Survey and Drawings

The 'as built' exploration locations were surveyed to the Ordnance Survey Irish Transverse Mercator system of co-ordinates (ITM) and elevations to Malin Head datum and shown on the relevant exploratory logs and the Exploratory Location Plans (P21239-SI-A, P21239-SI-01) accompanying this report.

Location	Easting	Northing	Ground Level (mOD)	Final Depth (m bgl)	Date Start (dd/mm/yyyy)
BH01	171820.78	70468.88	16.64	4.40	13/01/2022
BH02	171741.94	70395.18	13.07	9.10	10/01/2022
BH03	171738.42	70311.70	11.49	8.40	12/01/2022
BH04	172026.44	70364.45	12.50	7.30	14/01/2022
BH05	172034.00	70300.87	12.21	7.40	17/01/2022
BH06	171946.00	70338.05	13.57	7.00	13/01/2022
DP01	171821.58	70465.48	16.54	3.70	13/01/2022
DP02	171742.31	70392.88	12.93	8.80	13/01/2022
DP03	171735.89	70311.95	11.53	2.70	13/01/2022
DP04	172027.93	70363.86	12.40	5.00	13/01/2022
DP05	172033.97	70304.80	12.21	3.00	14/01/2022
DP06	171944.50	70343.17	13.61	3.50	13/01/2022
TP01	171822.48	70466.73	16.60	3.90	11/01/2022
TP02	171742.96	70394.13	13.04	3.20	10/01/2022
TP03	171736.67	70314.17	11.80	4.50	11/01/2022
TP04	172026.89	70362.36	12.35	4.50	13/01/2022
TP05	172033.99	70303.02	12.21	4.50	14/01/2022
TP06	171940.73	70337.93	13.69	0.30	12/01/2022
TP06A	171944.88	70339.22	13.61	4.60	12/01/2022

Laboratory Testing

Laboratory testing was ongoing at the time of reporting.

Published Geology

A search of the Geological Survey data base and 1:100,000 mapping (Sheet 25) identified two (02) major lithological units defining the area. The majority of the site is underlain by Waulsortian Limestones (WA) described as massive unbedded Lime-Mudstones. The Little Island Formation (LI) is mapped to the north and defined by massive and crinoidal fine Limestone.

Teagasc subsoil mapping indicates that the area is underlain by Made Ground deposits. The National Groundwater Vulnerability mapping indicates the area mostly has a rating of high vulnerability.

Ground and Groundwater Conditions

The full details of the ground conditions encountered are provided for on the exploratory records accompanying this report. The records provide descriptions, in accordance with BS 5930 (2015) and Eurocode 7, Geotechnical Investigation and Testing, Identification and classification of soils, Part 1, Identification and description (EN ISO 14688-1:2002),– Identification and Classification of Soil, Part 2: Classification Principles (EN ISO 14688-2:2004) and Identification and Classification of Rock, Part 1: Identification & Description (EN ISO 14689-1:2004) of the materials encountered, *in situ* testing and details of the samples taken, together with any observations made during the ground investigation.

Groundwater levels may be subject to diurnal, seasonal and climatic variations and can also be affected by drainage conditions, tidal variations etc. Low volume groundwater flow may be cut-off by borehole casing as it progresses in stiff glacial deposits. The duration trial pit excavations remain open may not be sufficient to allow for low volume flow to present. The groundwater regime should be assessed from standpipe well installations.

Groundwater was encountered at depths 3.10m bgl to 3.90m bgl during the period of fieldworks within the extent of the borehole and pit excavations, summarised below. The exploratory locations were backfilled with grout, gravel and arisings.

SUMMARY OF GROUNDWATER

Location	Depth Strike (m bgl)	Remarks	Standpipe (Y/N)
BH01	-	None encountered.	N
BH02	-	None encountered.	Y
BH03	-	None encountered.	N
BH04	-	None encountered.	N
BH05	-	None encountered.	N
BH06	-	None encountered.	Y
TP01	-	None encountered.	N
TP02	-	None encountered.	N
TP03	-	None encountered.	N
TP04	3.9	Trickle rate of flow	N
TP05	3.9	Slow rate of flow	N
TP06	-	None encountered.	N
TP06A	3.1	Trickle rate of flow	N

Two (02) number 50mm dia. HDPE standpipe wells were constructed to allow for groundwater monitoring. The construction details are summarised below.

SUMMARY OF STANDPIPE CONSTRUCTION

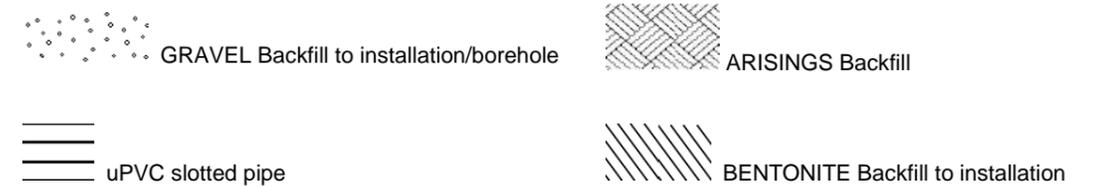
Location	Depth Top (m bgl)	Depth Base (bgl)	Diameter (mm)	Pipe Type	Pipe Details
BH02	0.00	2.00	50	PLAIN	Plain.
	2.00	8.50	50	SLOTTED	Slotted.
BH06	0.00	3.50	50	PLAIN	Plain.
	3.50	7.00	50	SLOTTED	Slotted.

Exploratory locations were backfilled with their arisings or gravel and bentonite for locations with monitoring wells. Backfill details are displayed graphically on the accompanying logs and summarised below.

SUMMARY OF STANDPIPE DIPS

Location	08/02/2022
	Depth (m bgl)
BH02	Dry
BH06	4.4

SUMMARY OF BACKFILL



Should you have any queries in relation to the data collected and presented herein, please do not hesitate to contact our office.

Yours sincerely,
 For **Priority Geotechnical**,

James McSweeney BSc
Engineering Geologist

No responsibility can be held by PGL for ground conditions between exploratory locations. The exploratory logs provide for ground profiles and configuration of strata relevant to the investigation depths achieved during the fieldworks. Caution shall be taken when extrapolating between such exploratory locations. No liability is accepted for ground conditions extraneous to the exploratory locations.

No account has been taken of potential subsidence or ground movement due to mineral extraction, mining works or karstification below or in proximity to the site, unless specifically addressed.

This report has been prepared for Employer and their Representative as outline, herein. The information should not be used without their prior written permission. PGL accepts no responsibility or liability for this document being used other than for the purposes for which it was intended.



Priority Geotechnical Site



JOB NAME:

Bessborough SHD

Sheet Title:

EXPLORATORY LOCATION LAYOUT

JOB NUMBER:

P21239

DRAWING NUMBER:

P21239-SI-A

DRAWN BY:

Gary Curtin

DATE:

08/12/2021

SCALE:

1:2000 ON A3

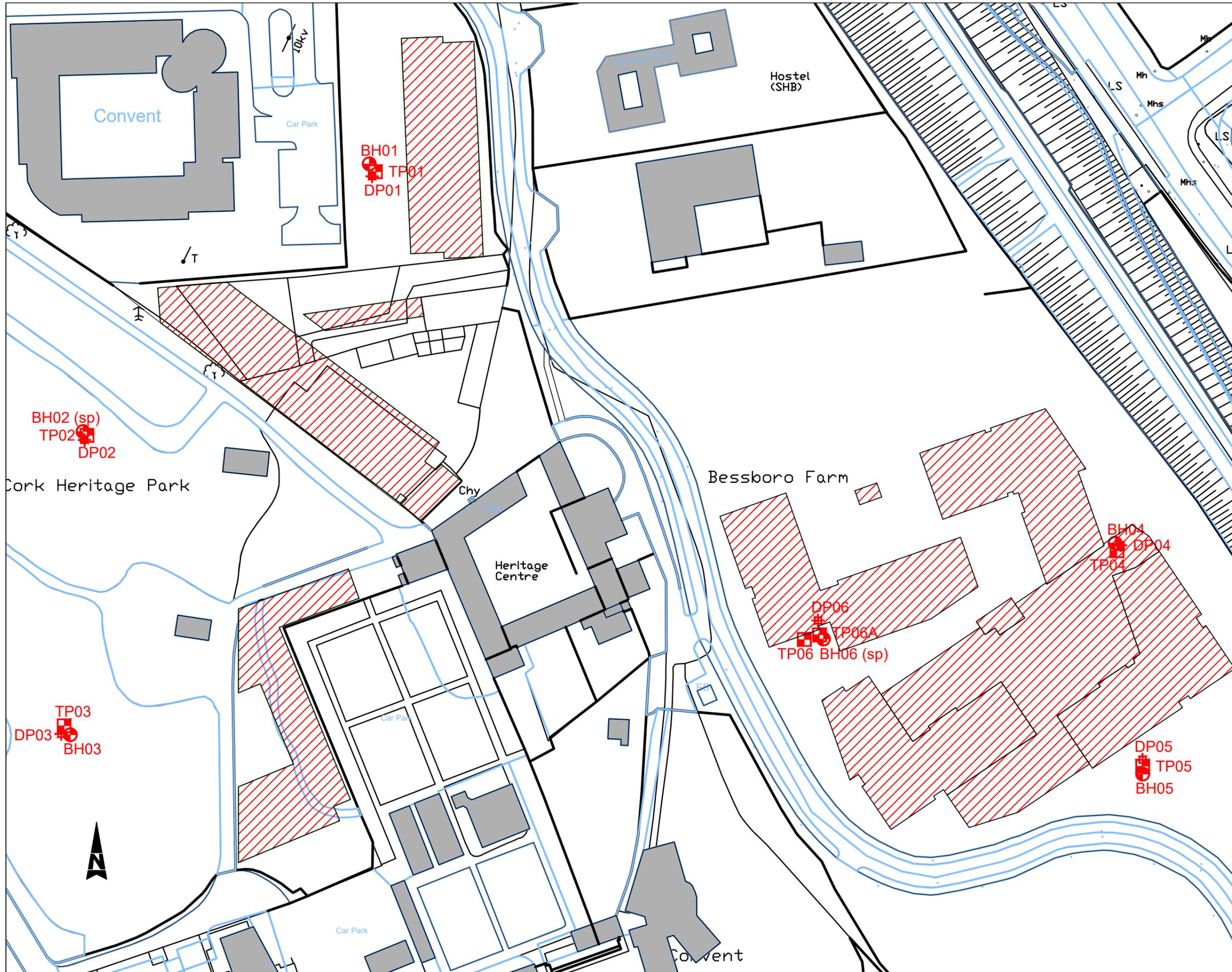
APPROVED:

GH

REVISION:

D01





KEY:

- TP00 Denotes Trial Pit location
- BH00 Denotes Borehole location
- DP00 Denotes Dynamic Probe location

Coordinates shown on ING.

TP01	171822.5	70466.7	16.6
TP02	171743	70394.1	13.04
TP03	171736.7	70314.2	11.8
TP04	172026.9	70362.4	12.35
TP05	172034	70303	12.213
TP06	171940.7	70337.9	13.69
TP06A	171944.9	70339.2	13.61
BH01	171820.8	70468.9	16.64
BH02 (sp)	171741.9	70395.2	13.07 stand pipe
BH03	171738.4	70311.7	11.49
BH04	172026.4	70364.5	12.5
BH05	172034	70300.9	12.21
BH06 (sp)	171946	70338.1	13.57 stand pipe
DP01	171821.6	70465.5	16.54
DP02	171742.3	70392.9	12.93
DP03	171735.9	70312	11.53
DP04	172027.9	70363.9	12.4
DP05	172034	70304.8	12.21
DP06	171944.5	70343.2	13.61

JOB NAME:
Bessborough SHD

Sheet Title:
EXPLORATION LOCATION PLAN

JOB NUMBER:
P21239

DRAWING NUMBER:
P21239-SI-01

DRAWN BY:
Gary Curtin

DATE:
05/12/2021

SCALE: 1:1000 ON A3	APPROVED: GH
------------------------	-----------------

REVISION:
D01



KEY TO SYMBOLS ON EXPLORATORY HOLE RECORDS

All linear dimensions are in metres or millimetres

DESCRIPTIONS

** Drillers Description
Friable Easily crumbled

SAMPLES

U() Undisturbed 102mm diameter sample, () denotes number of blows to drive sampler
 U()F, U()P F- not recovered, P-partially recovered
 U38 Undisturbed 38mm diameter sample
 P(F), (P) Piston sample - disturbed
 B Bulk sample - disturbed
 D Jar Sample - disturbed
 W Water Sample
 CBR California Bearing Ratio mould sample
 ES Chemical Sample for Contamination Analysis
 SPTLS Standard Penetration Test S lump sample from split sampler

CORE RECOVERY AND ROCK QUALITY

TCR Total Core Recovery (% of Core Run)
 SCR Solid Core Recovery (length of core having at least one full diameter as % of core run)
 RQD Rock Quality Designation (length of solid core greater than 100mm as % of core run)
 Where there is insufficient space for the TCR, SCR and RQD, the results may be found in the remarks column
 If Fracture Spacing in mm (Minimum/Average/Maximum) NI - non intact, NR - no recovery
 AZCL Assumed Zone of Core Loss
 NI Non intact

GROUNDWATER

▽ Groundwater strike
 ▼ Groundwater level after standing period
 Date/Water Date of shift (day/month)/Depth to water at end of previous shift shown above the date and depth to water at beginning of shift given below the date

INSITU TESTING

S Standard Penetration Test - split barrel sampler
 C Standard Penetration Test - solid 60° cone
 SW Self Weight Penetration
 Ivp, HVp (R) In Situ Vane Test, Hand Vane Test (R) demonstrates remoulded strength
 K(F), (C), (R), (P) Permeability Test
 HP Hand Penetrometer Test

MEASURED PROPERTIES

N Standard Penetration Test - blows required to drive 300mm after seating drive
 x/y Denotes x blows for y mm within the Standard Penetration Test
 x*/y Denotes x blows for y mm within the seating drive
 c_u Undrained Shear Strength (kN/m²)
 CBR California Bearing Ratio

ROTARY DRILLING SIZES

Index Letter	Nominal Diameter (mm)	
	Borehole	Core
N	75	54
H	99	76
P	120	92
S	146	113



Key Sheet

					Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie			Drilled By PC		Borehole No. BH01	
					Logged By CS		Sheet 1 of 1				
Project Name: Bessboro SHD				Project No. P21239		Co-ords: 171821E - 70469N			Hole Type CP		
Location: Mahon, Cork				Level: 16.64 m OD			Scale 1:50				
Client: Estuary View Ent. Ltd					Date: 13/01/2022 - 14/01/2022						
Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description			
		Depth (m bgl)	Type	Results							
		0.00 - 1.00	B					Brown red, slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded. Driller describes: Fill clay with limestone boulders.			
		1.00 - 2.00 1.00	B SPT (C)	65 (5,10/65 for 150mm)	1.00	15.64		Firm, brown red, slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded. Cobbles are sub-angular, limestone with dia 63-80mm. <i>1.20m - 1.30m: Driller noted: Boulders. Increased SPT blow counts locally.</i>	1		
		2.00 - 3.00 2.00	B SPT (C)	N=15 (3,3/4,4,3,4)					2		
		3.00 - 4.00 3.00	B SPT (C)	N=15 (3,3/4,4,3,4)	3.00	13.64		Firm, brown red, slightly sandy slightly gravelly CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded. Cobbles are sub-rounded, limestone with dia 63-120mm. Driller describes: Hard gravelly clay with boulders.	3		
		4.00	SPT (C)	90 (9,10/90 for 225mm)	4.40	12.24		End of Borehole at 4.400m			
											4
											5
											6
											7
											8
											9
Groundwater:					Hole Information:			Chiselling Details:			
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)	Duration (hh:mm)	Tool
				None encountered.	4.40	200	200	1.20	1.30	01:00	Chisel.
					Equipment: Dando 2000						
Remarks: Cable percussion borehole terminated at 4.40m bgl.							Shift Data:				
							GW (m bgl)	Shift	Depth (m bgl)	Remarks	
								13/01/2022 08:00	0.00	Start of shift.	
							Dry	13/01/2022 18:00	2.00	End of shift.	
							Dry	14/01/2022 08:00	2.00	Start of shift.	
							Dry	14/01/2022 18:00	4.40	End of borehole.	

 Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie				Drilled By PC Logged By CS		Borehole No. BH02 Sheet 1 of 1																					
Project Name: Bessboro SHD		Project No.: P21239		Co-ords: 171742E - 70395N		Hole Type: CP																					
Location: Mahon, Cork		Level: 13.07 m OD		Scale: 1:50																							
Client: Estuary View Ent. Ltd				Date: 10/01/2022 - 11/01/2022																							
Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description																			
		Depth (m bgl)	Type	Results																							
		0.00 - 1.00	B					Brown red, slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded. Driller describes: Gravel clay.																			
		1.00 - 2.00 1.00	B SPT (C)	N=6 (1,1/1,1,2,2)	1.00	12.07		Soft, brown red, slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded. Driller describes: Gravelly clay.																			
		2.00 - 3.00 2.00	B SPT (C)	N=7 (1,1/1,2,2,2)				2.00m - 3.00m: Driller noted: Boulders.																			
		3.00 - 4.00 3.00	B SPT (C)	N=12 (3,3/2,3,3,4)	3.00	10.07		Firm to stiff, brown red, slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded. Cobbles are sub-rounded, Limestone with dia 63-170mm dia.																			
		4.00 - 5.00 4.00	B SPT (C)	N=21 (4,4/5,5,6,5)																							
		5.00 - 6.00 5.00	B SPT (C)	N=24 (5,6/5,6,7,6)	5.00	8.07		Stiff, brown red, slightly sandy slightly gravelly CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded. Cobbles are sub-rounded, limestone with dia 63-170. Driller describes: boulders.																			
		6.00 - 7.00 6.00	B SPT (C)	N=29 (6,6/7,7,8,7)																							
		7.00 - 8.00 7.00	B SPT (C)	N=33 (7,7/8,8,9,8)																							
		8.00	SPT (C)	N=32 (7,8/9,5,9,9)																							
					9.10	3.97		End of Borehole at 9.100m																			
Groundwater: Struck (m bgl) Rose to (m bgl) After (mins) Sealed (m bgl) Comment None encountered.				Hole Information: Depth (m bgl) Hole Dia (mm) Casing Dia (mm) 9.10 200 200			Chiselling Details: <table border="1"> <tr> <th>Top (m)</th> <th>Base (m)</th> <th>Duration (ht:mm)</th> <th>Tool</th> </tr> <tr> <td>2.75</td> <td>2.90</td> <td>01:00</td> <td>Chisel.</td> </tr> <tr> <td>8.90</td> <td>9.10</td> <td>01:00</td> <td>Chisel.</td> </tr> </table>		Top (m)	Base (m)	Duration (ht:mm)	Tool	2.75	2.90	01:00	Chisel.	8.90	9.10	01:00	Chisel.							
Top (m)	Base (m)	Duration (ht:mm)	Tool																								
2.75	2.90	01:00	Chisel.																								
8.90	9.10	01:00	Chisel.																								
Equipment: Dando 2000.				Remarks: Cable percussion borehole terminated at 9.10m bgl.																							
Shift Data: <table border="1"> <tr> <th>GW (m bgl)</th> <th>Shift</th> <th>Depth (m bgl)</th> <th>Remarks</th> </tr> <tr> <td></td> <td>10/01/2022 08:00</td> <td>0.00</td> <td>Start of shift.</td> </tr> <tr> <td></td> <td>10/01/2022 18:00</td> <td>0.00</td> <td>End of shift.</td> </tr> <tr> <td></td> <td>11/01/2022 08:00</td> <td>0.00</td> <td>Start of shift.</td> </tr> <tr> <td></td> <td>Dry 11/01/2022 18:00</td> <td>9.10</td> <td>End of borehole.</td> </tr> </table>				GW (m bgl)	Shift	Depth (m bgl)	Remarks		10/01/2022 08:00	0.00	Start of shift.		10/01/2022 18:00	0.00	End of shift.		11/01/2022 08:00	0.00	Start of shift.		Dry 11/01/2022 18:00	9.10	End of borehole.				
GW (m bgl)	Shift	Depth (m bgl)	Remarks																								
	10/01/2022 08:00	0.00	Start of shift.																								
	10/01/2022 18:00	0.00	End of shift.																								
	11/01/2022 08:00	0.00	Start of shift.																								
	Dry 11/01/2022 18:00	9.10	End of borehole.																								

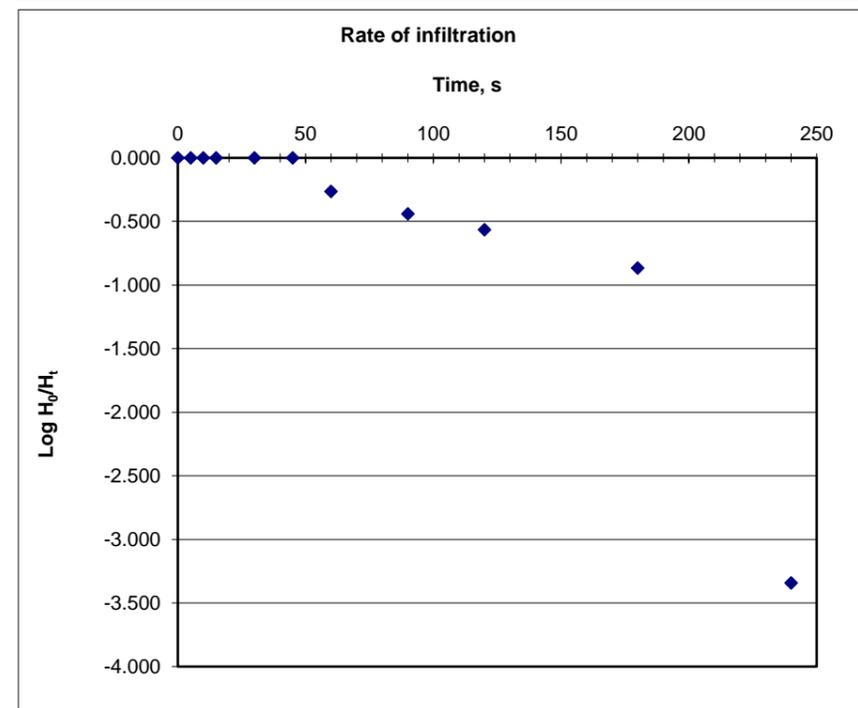
 Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie				Drilled By PC Logged By CS		Borehole No. BH03 Sheet 1 of 1														
Project Name: Bessboro SHD		Project No.: P21239		Co-ords: 171738E - 70312N		Hole Type: CP														
Location: Mahon, Cork		Level: 11.49 m OD		Scale: 1:50																
Client: Estuary View Ent. Ltd				Date: 12/01/2022 - 12/01/2022																
Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description												
		Depth (m bgl)	Type	Results																
		0.00 - 1.00	B					Soft becoming firm, brown red, slightly sandy slightly gravelly CLAY.												
		1.00 - 2.00 1.00	B SPT (C)	N=7 (1,1/1,2,2,2)																
		2.00 - 3.00 2.00	B SPT (C)	N=7 (1,1/2,2,1,2)																
		3.00 - 4.00 3.00	B SPT (C)	N=10 (2,3/3,2,3,2)																
		4.00 - 5.00 4.00	B SPT (C)	N=20 (3,4/4,5,5,6)	4.00	7.49		Stiff, brown red, slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse.												
		5.00 - 6.00 5.00	B SPT (C)	N=26 (6,7/6,6,7,7)	5.00	6.49		Stiff, brown red, slightly sandy slightly gravelly CLAY with low cobble content. Cobbles are sub-angular to sub-rounded, Limestone with dia 63-80mm.												
		6.00 - 7.00 6.00	B SPT (C)	N=28 (7,6/6,8,7,7)	6.00	5.49		Stiff, brown red, slightly sandy slightly gravelly CLAY with low cobble content. Cobbles are sub-angular to sub-rounded, Limestone with dia 63-80mm. 6.00m - 8.40m: Driller noted Boulder content.												
		7.00 - 8.00 7.00	B SPT (C)	N=34 (7,8/8,9,8,9)																
		8.00 - 8.40 8.00	B SPT (C)	40 (9,10/40 for 150mm)	8.40	3.09		End of Borehole at 8.400m												
Groundwater: Struck (m bgl) Rose to (m bgl) After (mins) Sealed (m bgl) Comment None encountered.				Hole Information: Depth (m bgl) Hole Dia (mm) Casing Dia (mm) 8.40 200 200			Chiselling Details: <table border="1"> <tr> <th>Top (m)</th> <th>Base (m)</th> <th>Duration (ht:mm)</th> <th>Tool</th> </tr> <tr> <td>4.90</td> <td>5.00</td> <td>01:00</td> <td>Chisel.</td> </tr> <tr> <td>8.30</td> <td>8.40</td> <td>01:00</td> <td>Chisel.</td> </tr> </table>		Top (m)	Base (m)	Duration (ht:mm)	Tool	4.90	5.00	01:00	Chisel.	8.30	8.40	01:00	Chisel.
Top (m)	Base (m)	Duration (ht:mm)	Tool																	
4.90	5.00	01:00	Chisel.																	
8.30	8.40	01:00	Chisel.																	
Equipment: Dando 2000.				Remarks: Cable percussion borehole terminated at 8.40m bgl.																
Shift Data: <table border="1"> <tr> <th>GW (m bgl)</th> <th>Shift</th> <th>Depth (m bgl)</th> <th>Remarks</th> </tr> <tr> <td></td> <td>12/01/2022 08:00</td> <td>0.00</td> <td>Start of shift.</td> </tr> <tr> <td></td> <td>Dry 12/01/2022 18:00</td> <td>8.40</td> <td>End of borehole.</td> </tr> </table>				GW (m bgl)	Shift	Depth (m bgl)	Remarks		12/01/2022 08:00	0.00	Start of shift.		Dry 12/01/2022 18:00	8.40	End of borehole.					
GW (m bgl)	Shift	Depth (m bgl)	Remarks																	
	12/01/2022 08:00	0.00	Start of shift.																	
	Dry 12/01/2022 18:00	8.40	End of borehole.																	

P21239 Falling head permeability test

Location **Bessborough SHD**
 BH ID **BH03** H_w/H_o **2.20**
 Test **1**
 Casing diameter **200 mm**
 Casing depth **2.00 m**
 Borehole depth **2.20 m**
 GW Influence **2.20 m bgl**
 Date **12/01/2022**

Min	Sec	depth, m bgl	vol, cu.m	H _t	log H ₀ /H _t
0	0	0.000	0.00000	2.200	0.000
0.083	5	0.000	0.00000	2.200	0.000
0.17	10	0.000	0.00000	2.200	0.000
0.25	15	0.000	0.00000	2.200	0.000
0.5	30	0.000	0.00000	2.200	0.000
0.75	45	0.000	0.00000	2.200	0.000
1	60	1.000	0.03140	1.200	-0.263
1.5	90	1.400	0.04396	0.800	-0.439
2	120	1.600	0.05024	0.600	-0.564
3	180	1.900	0.05966	0.300	-0.865
4	240	2.199	0.06905	0.001	-3.342

$k_{mean} = 1.12E-03 \text{ ms}^{-1}$
 $k_H = k_V$



pgl priority geotechnical		Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie			Drilled By PC	Borehole No. BH04		
Project Name: Bessboro SHD		Project No. P21239	Co-ords: 172026E - 70364N		Logged By CS	Sheet 1 of 1		
Location: Mahon, Cork			Level: 12.50 m OD		Hole Type CP			
Client: Estuary View Ent. Ltd			Date: 14/01/2022 - 14/01/2022		Scale 1:50			
Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing			Depth (m bgl)	Level (mOD)	Legend	Stratum Description
		Depth (m bgl)	Type	Results				
		1.00 - 2.00 1.00	B SPT (C)	N=9 (1,1/2,2,3,2)	1.00	11.50	[Pattern]	Dark brown, slightly sandy slightly gravelly SILT with plant material.
		2.00 - 3.00 2.00	B SPT (C)	N=9 (2,2/2,3,2,2)	2.00	10.50	[Pattern]	Firm, dark brown, slightly sandy slightly gravelly SILT. Sand is fine to coarse. Gravel is fine to coarse.
		2.00 - 3.00 2.00	B SPT (C)	N=9 (2,2/2,3,2,2)	2.00	10.50	[Pattern]	Firm, brown, slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded. Cobbles are sub-angular to sub-rounded, Limestone with dia 63-120mm.
		3.00 - 4.00 3.00	B SPT (C)	N=14 (2,3/3,4,3,4)	3.00	9.50	[Pattern]	Firm to stiff, brown, slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded. Cobbles are sub-angular to sub-rounded, Limestone with dia 63-120mm. Driller describes: boulders.
		4.00 - 5.00 4.00	B SPT (C)	N=22 (4,4/5,6,5,6)	4.00	8.50	[Pattern]	
		5.00 - 6.00 5.00	B SPT (C)	N=29 (6,5/7,7,8,7)	5.00	7.50	[Pattern]	Stiff, brown, slightly sandy slightly gravelly silty CLAY with low cobble and boulder content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded. Cobbles are sub-angular to sub-rounded, Limestone with dia 63-70mm. Boulders are sub-rounded, Limestone with dia 200.
		6.00 - 7.00 6.00	B SPT (C)	N=37 (7,8/8,9,9,11)	6.00	6.50	[Pattern]	Stiff, brown, slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded. Cobbles are sub-angular to sub-rounded, Limestone with dia 63-90mm.
		7.00	SPT (C)	75 (10,15/75 for 150mm)	7.30	5.20	[Pattern]	End of Borehole at 7.300m
Groundwater:					Hole Information:		Chiselling Details:	
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)
				None encountered.	7.30	200	200	3.80
					Equipment:	Dando 2000.		Base (m)
							Duration (ht:mm)	
							01:00	
							Tool	
							Chisel.	
							Chisel.	
Remarks:					Shift Data:		Remarks	
Cable percussion borehole terminated at 7.30m bgl.					GW (m bgl)	Shift	Depth (m bgl)	Remarks
					Dry	14/01/2022 08:00	0.00	Start of shift.
						14/01/2022 18:00	7.30	End of borehole.

		Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie			Drilled By PC	Borehole No. BH05 Sheet 1 of 1	
					Logged By CS		
Project Name: Bessboro SHD		Project No.: P21239		Co-ords: 172034E - 70301N		Hole Type: CP	
Location: Mahon, Cork		Level: 12.21 m OD				Scale: 1:50	
Client: Estuary View Ent. Ltd				Date: 17/01/2022 - 17/01/2022			
Well Backfill	Water Strike (m bgl)	Sample and In Situ Testing		Depth (m bgl)	Level (mOD)	Legend	Stratum Description
		Depth (m bgl)	Type				
	0.00 - 1.00	B					Firm becoming stiff, brown red, slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded.
	1.00 - 2.00 1.00	B SPT (C)	N=8 (1,1/2,2,2,2)				
	2.00 - 3.00	B					
	3.00	SPT (C)	N=13 (2,3/3,4,3,3)				
	4.00 - 5.00 4.00	B SPT (C)	N=16 (3,4/3,4,4,5)				
	5.00 - 6.00 5.00	B SPT (C)	N=30 (5,6/7,7,8,8)	5.00	7.21		Stiff, brown red, slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded. Cobbles are sub-angular to sub-rounded, 63-120mm dia., Limestone lithology.
	6.00 - 7.00 6.00	B SPT (C)	N=38 (7,8/9,9,10,10)	6.00	6.21		Stiff, brown red, slightly sandy slightly gravelly CLAY with low cobble content and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded. Cobbles are sub-angular to sub-rounded, 63-120mm dia., Limestone lithology. Boulders are sub-angular, 200-250mm dia., Limestone lithology.
	7.00	SPT (C)	90 (9,10/90 for 225mm)	7.40	4.81		End of Borehole at 7.400m

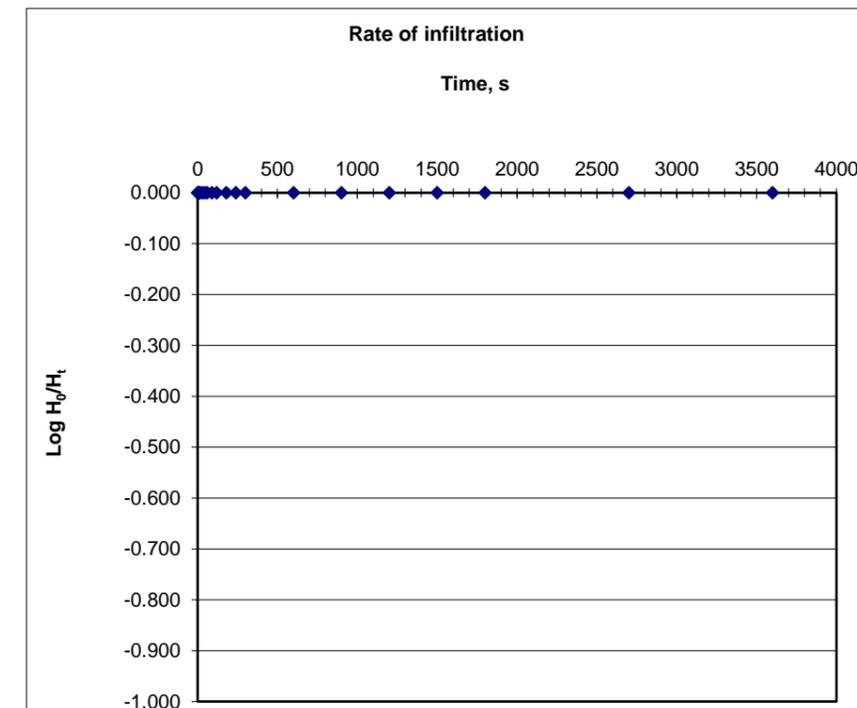
Groundwater:					Hole Information:			Chiselling Details:			
Struck (m bgl)	Rose to (m bgl)	After (mins)	Sealed (m bgl)	Comment	Depth (m bgl)	Hole Dia (mm)	Casing Dia (mm)	Top (m)	Base (m)	Duration (ht:mm)	Tool
				None encountered.	7.40	200	200	6.70	6.90	01:00	Chisel.
								7.30	7.40	01:00	Chisel.
Equipment: Dando 2000											
Remarks:					Shift Data:						
Cable percussion borehole terminated at 7.40m bgl, obstruction.					GW (m bgl)	Shift	Depth (m bgl)	Remarks			
						17/01/2022 08:00	0.00	Start of shift.			
						Dry	17/01/2022 18:00	7.40	End of borehole.		

P21239 Falling head permeability test

Location **Bessborough SHD**
 BH ID **BH05** H_w/H_o **2.00**
 Test **1**
 Casing diameter **200 mm**
 Casing depth **1.50 m**
 Borehole depth **2.00 m**
 GW Influence **2.00 m bgl**
 Date **17/01/2022**

Min	Sec	depth, m bgl	vol, cu.m	H _t	log H ₀ /H _t
0	0	0.000	0.00000	2.000	0.000
0.083	5	0.000	0.00000	2.000	0.000
0.17	10	0.000	0.00000	2.000	0.000
0.25	15	0.000	0.00000	2.000	0.000
0.5	30	0.000	0.00000	2.000	0.000
0.75	45	0.000	0.00000	2.000	0.000
1	60	0.000	0.00000	2.000	0.000
1.5	90	0.000	0.00000	2.000	0.000
2	120	0.000	0.00000	2.000	0.000
3	180	0.000	0.00000	2.000	0.000
4	240	0.000	0.00000	2.000	0.000
5	300	0.000	0.00000	2.000	0.000
10	600	0.000	0.00000	2.000	0.000
15	900	0.000	0.00000	2.000	0.000
20	1200	0.000	0.00000	2.000	0.000
25	1500	0.000	0.00000	2.000	0.000
30	1800	0.000	0.00000	2.000	0.000
45	2700	0.000	0.00000	2.000	0.000
60	3600	0.000	0.00000	2.000	0.000

$k_{mean} = k_H = k_V$ **ms⁻¹**



Notes:
 No Change in groundwater level observed after 60 mins. Infiltration rate not determined.

Photographic Record



Number: TP01

Project Bessborough SHD
 Project No P21239
 Engineer J.B. Barry & Partners

Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie						Trial Pit No TP02 Sheet 1 of 1	
Project Name: Bessboro SHD			Project No. P21239		Co-ords: 171743E - 70394N Level: 13.04m OD		Date 10/01/2022
Location: Mahon, Cork					Dimensions (m): 1.00 x 3.20		Scale 1:25
Client: Estuary View Ent. Ltd					Depth: 3.20m BGL		Logged OD
Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
Water Strike & Backfill	0.30			0.30	12.74		(TOPSOIL) Soft to firm, brown, slightly sandy slightly gravelly SILT with grass and rootlets. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to rounded.
	0.50 - 1.00 0.50 - 1.00	B D					(MADE GROUND) Soft to firm, light brown, slightly sandy slightly gravelly SILT with medium cobble content, medium boulder content and pottery fragments. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to rounded. Cobbles are angular to sub-rounded. Boulders are angular to sub-rounded.
	1.20 - 2.30 1.20 - 2.30	B D		1.20	11.84		Soft, light purple brown, slightly gravelly silty SAND. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to rounded.
	2.30 - 3.20 2.30 - 3.20	B D		2.30	10.74		Soft to firm, purple brown, slightly sandy gravelly CLAY with medium cobble content and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to rounded. Cobbles are sub-rounded to rounded. Boulders are sub-rounded to rounded.
				3.20	9.84		End of Pit at 3.200m

Stability: Poor
 Plant: 14T track machine
 Backfill: Arisings.

Groundwater: None encountered.

Remarks: Trial pit terminated at 3.20m bgl due to collapsing walls.

Photographic Record



Priority Geotechnical Ltd.
Tel: 021 4631600
Fax: 021 4638690
www.prioritygeotechnical.ie

Trial Pit No
TP03
Sheet 1 of 1

Project Name: Bessboro SHD **Project No.:** P21239 **Co-ords:** 171737E - 70314N
Level: 11.80m OD **Date:** 11/01/2022

Location: Mahon, Cork **Dimensions (m):** 1.20 x 3.80 **Scale:** 1:25

Client: Estuary View Ent. Ltd **Depth:** 4.50m BGL **Logged OD**



Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
	0.50 - 1.50 0.50 - 1.50	B D		0.35	11.45	[Diagonal Hatching]	(TOPSOIL) Soft, dark brown, slightly sandy slightly gravelly SILT with grass and rootlets. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to rounded.
	1.50 - 2.50 1.50 - 2.50	B D		1.10	10.70	[Cross-hatching]	(MADE GROUND) Soft to firm, purple brown, slightly sandy gravelly CLAY with medium cobble content and rare pottery and glass fragments. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to rounded. Cobbles are sub-rounded to rounded.
	2.50 - 3.50 2.50 - 3.50	B D				[Circular Pattern]	(ASSUMED NATURAL) Soft to firm, purple brown, slightly sandy gravelly CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to rounded. Cobbles are sub-rounded to rounded.
	3.50 - 4.50 3.50 - 4.50	B D				[Circular Pattern]	
				4.50	7.30		End of Pit at 4.500m

Stability: Moderate **Plant:** 14T track machine **Groundwater:** None encountered.
Backfill: Arisings.
Remarks: Trial pit terminated 4.50m bgl, scheduled depth.

Number: TP02 **Project:** Bessborough SHD
Project No: P21239
Engineer: J.B. Barry & Partners

Photographic Record



Number: TP03

Project Bessborough SHD
 Project No P21239
 Engineer J.B. Barry & Partners

		Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie			Trial Pit No TP04 Sheet 1 of 1			
Project Name: Bessboro SHD		Project No.: P21239	Co-ords: 172027E - 70362N Level: 12.35m OD		Date: 13/01/2022			
Location: Mahon, Cork			Dimensions (m): 3.60 1.10		Scale: 1:25 Logged OD			
Client: Estuary View Ent. Ltd			Depth: 4.50m BGL					
Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	0.30			0.30	12.05		(TOPSOIL) Soft to firm, brown, slightly sandy slightly gravelly SILT with grass and rootlets. Sand is fine to coarse. Gravel is fine to medium, sub-angular to sub-rounded.	
	0.50 - 1.50 0.50 - 1.50	B D		0.70	11.65		(MADE GROUND): Soft, brown slightly silty slightly gravelly SAND with plastic waste. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to rounded.	
	1.50 - 2.50 1.50 - 2.50	B D		1.50	10.85		(ASSUMED NATURAL): Soft, brown, slightly silty slightly gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to rounded.	
	2.50 - 3.50 2.50 - 3.50	B D						
	3.50 - 4.50 3.50 - 4.50	B D						
				4.50	7.85		End of Pit at 4.500m	
Stability: Moderate Plant: 14T track machine Backfill: Arisings.					Groundwater: 3.90m: Trickle rate of flow			
Remarks: Trial pit terminated at 4.50m bgl, scheduled depth.								

Photographic Record



Number:	TP04	Project	Bessborough SHD
		Project No	P21239
		Engineer	J.B. Barry & Partners

		Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie			Trial Pit No TP05 Sheet 1 of 1		
Project Name: Bessboro SHD		Project No. P21239	Co-ords: 172034E - 70303N Level: 12.21m OD		Date 14/01/2022		
Location: Mahon, Cork			Dimensions (m): 4.10 1.20		Scale 1:25		
Client: Estuary View Ent. Ltd			Depth: 4.50m BGL		Logged OD		
Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
[Water Strike & Backfill Column]	0.30			0.30	11.91	[Diagonal Hatching]	(TOPSOIL) Soft to firm, brown, slightly sandy slightly gravelly SILT with grass and rootlets. Sand is fine to coarse. Gravel is fine to medium, sub-angular to sub-rounded.
	0.70 - 1.50 0.70 - 1.50	B D		0.70	11.51	[Cross-hatching]	(MADE GROUND) Soft to firm, brown orange, slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to rounded.
	1.50 - 2.50 1.50 - 2.50	B D				[Circular Pattern]	Firm to stiff, purple brown, slightly sandy slightly gravelly CLAY with medium cobble content and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to rounded. Cobbles are sub-rounded to rounded. Boulders are sub-rounded to rounded. (Assumed Natural).
	2.50 - 3.50 2.50 - 3.50	B D				[Circular Pattern]	
	3.50 - 4.50 3.50 - 4.50	B D				[Circular Pattern]	
				4.50	7.71		End of Pit at 4.500m
Stability: Good Plant: 14T track machine Backfill: Arisings.						Groundwater: 3.90m: Slow rate of flow	
Remarks: Trial pit terminated at 4.50m bgl, scheduled depth.							

Photographic Record



Number:	TP05	Project	Bessborough SHD
		Project No	P21239
		Engineer	J.B. Barry & Partners

		Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie			Trial Pit No TP06 Sheet 1 of 1		
Project Name: Bessboro SHD		Project No. P21239	Co-ords: 171941E - 70338N Level: 13.69m OD		Date 12/01/2022		
Location: Mahon, Cork			Dimensions (m): 3.40 1.10		Scale 1:25		
Client: Estuary View Ent. Ltd			Depth: 0.30m BGL		Logged OD		
Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
				0.15	13.54		(TOPSOIL) Soft to firm, slightly sandy slightly gravelly SILT with grass and rootlets.
				0.30	13.39		(MADE GROUND) Firm to stiff, light blue grey, slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, sub-angular. Concrete Slab - drain/sewer access cover. End of Pit at 0.300m
Stability: Good Plant: 14T track machine Backfill: Arisings.							Groundwater: None encountered.
Remarks: Trial pit terminated at 0.30m bgl, due to encountering a concrete slab covering an apparent un-used drain. Pit relocated.							

Photographic Record



Number: TP06

Project Bessborough SHD
 Project No P21239
 Engineer J.B. Barry & Partners

Project Name:		Project No.	Co-ords:		Trial Pit No		
Bessboro SHD		P21239	171945E - 70339N		TP06A		
Location:		Level:		Date	Sheet 1 of 1		
Mahon, Cork		13.61m OD		12/01/2022			
Client:		Dimensions (m):		Scale	Logged		
Estuary View Ent. Ltd		3.80 1.10		1:25	OD		
Client:		Depth:					
		4.60m BGL					
Water Strike & Backfill	Samples & In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
[Pattern]	0.10			0.10	13.51	[Pattern]	(TOPSOIL) Soft to firm, slightly sandy slightly gravelly SILT with grass and rootlets.
	0.50 - 1.45	B				[Pattern]	(MADE GROUND) Soft to firm, slightly sandy slightly gravelly CLAY with low cobble content and waste (pottery fragments, glass, plastics). Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to rounded. Cobbles are sub-rounded to rounded.
	1.50 - 2.50	B		1.45	12.16	[Pattern]	Soft to firm, slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to rounded. Cobbles are sub-rounded to rounded.
	2.50 - 3.50	D				[Pattern]	
[Pattern]	2.50 - 3.50	B				[Pattern]	
	3.50 - 4.50	D				[Pattern]	
[Pattern]	3.50 - 4.50	B				[Pattern]	
[Pattern]	3.50 - 4.50	D				[Pattern]	
				4.60	9.01	[Pattern]	End of Pit at 4.600m
Stability: Good					Groundwater: 3.10m: Trickle rate of flow		
Plant: 14T track machine							
Backfill: Arisings.							
Remarks: Trial pit terminated at 4.60m bgl, scheduled depth.							

Photographic Record



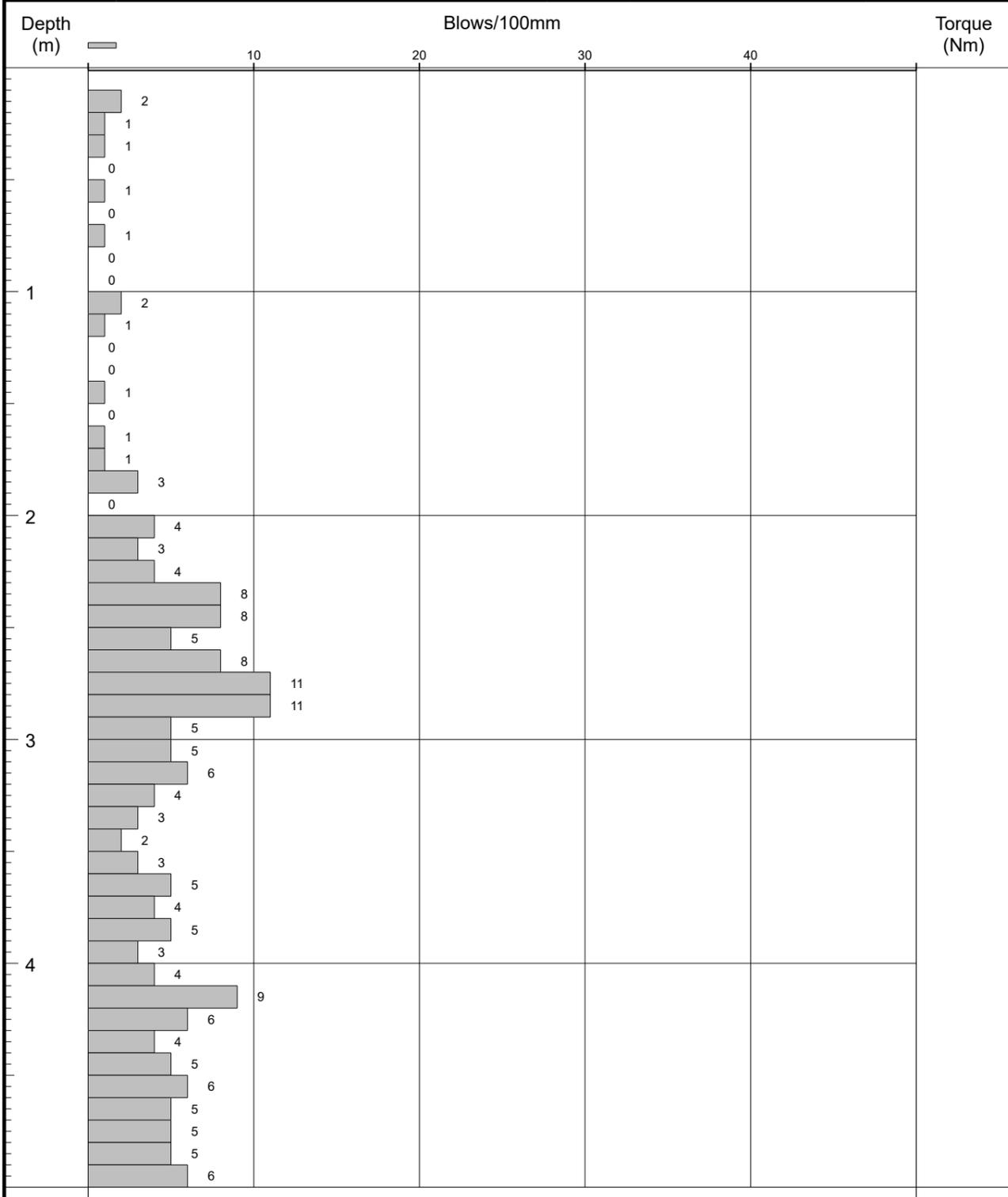
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TP06A

Project Bessborough SHD
Project No P21239
Engineer J.B. Barry & Partners

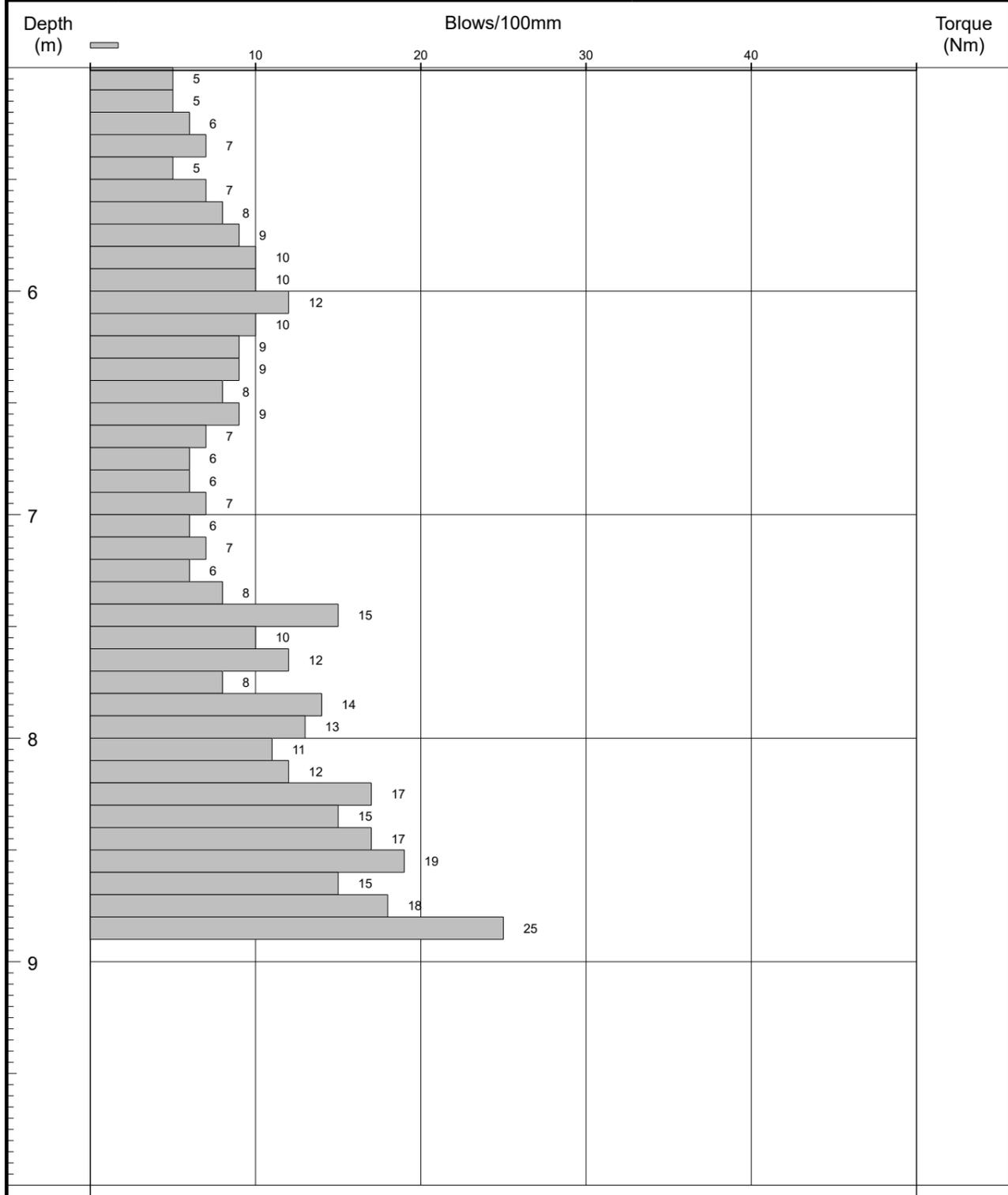
		Priority Geotechnical Ltd. Tel: 021 4631600 Fax: 021 4638690 www.prioritygeotechnical.ie		Probe No DP01 Sheet 1 of 1																																																																																																																											
Project Name: Bessboro SHD		Project No. P21239	Co-ords: 171822E - 70465N	Hole Type DP																																																																																																																											
Location: Mahon, Cork			Level: 16.54m OD	Scale 1:25																																																																																																																											
Client: Estuary View Ent. Ltd			Dates: 13/01/2022	Logged By LM																																																																																																																											
<table border="1"> <thead> <tr> <th>Depth (m)</th> <th>Blows/100mm</th> <th>Torque (Nm)</th> </tr> </thead> <tbody> <tr><td>0.0 - 0.1</td><td>2</td><td></td></tr> <tr><td>0.1 - 0.2</td><td>1</td><td></td></tr> <tr><td>0.2 - 0.3</td><td>2</td><td></td></tr> <tr><td>0.3 - 0.4</td><td>2</td><td></td></tr> <tr><td>0.4 - 0.5</td><td>5</td><td></td></tr> <tr><td>0.5 - 0.6</td><td>8</td><td></td></tr> <tr><td>0.6 - 0.7</td><td>4</td><td></td></tr> <tr><td>0.7 - 0.8</td><td>2</td><td></td></tr> <tr><td>0.8 - 0.9</td><td>1</td><td></td></tr> <tr><td>0.9 - 1.0</td><td>1</td><td></td></tr> <tr><td>1.0 - 1.1</td><td>2</td><td></td></tr> <tr><td>1.1 - 1.2</td><td>3</td><td></td></tr> <tr><td>1.2 - 1.3</td><td>3</td><td></td></tr> <tr><td>1.3 - 1.4</td><td>3</td><td></td></tr> <tr><td>1.4 - 1.5</td><td>7</td><td></td></tr> <tr><td>1.5 - 1.6</td><td>3</td><td></td></tr> <tr><td>1.6 - 1.7</td><td>3</td><td></td></tr> <tr><td>1.7 - 1.8</td><td>2</td><td></td></tr> <tr><td>1.8 - 1.9</td><td>2</td><td></td></tr> <tr><td>1.9 - 2.0</td><td>2</td><td></td></tr> <tr><td>2.0 - 2.1</td><td>2</td><td></td></tr> <tr><td>2.1 - 2.2</td><td>3</td><td></td></tr> <tr><td>2.2 - 2.3</td><td>4</td><td></td></tr> <tr><td>2.3 - 2.4</td><td>4</td><td></td></tr> <tr><td>2.4 - 2.5</td><td>3</td><td></td></tr> <tr><td>2.5 - 2.6</td><td>3</td><td></td></tr> <tr><td>2.6 - 2.7</td><td>2</td><td></td></tr> <tr><td>2.7 - 2.8</td><td>4</td><td></td></tr> <tr><td>2.8 - 2.9</td><td>7</td><td></td></tr> <tr><td>2.9 - 3.0</td><td>15</td><td></td></tr> <tr><td>3.0 - 3.1</td><td>11</td><td></td></tr> <tr><td>3.1 - 3.2</td><td>16</td><td></td></tr> <tr><td>3.2 - 3.3</td><td>18</td><td></td></tr> <tr><td>3.3 - 3.4</td><td>17</td><td></td></tr> <tr><td>3.4 - 3.5</td><td>15</td><td></td></tr> <tr><td>3.5 - 3.6</td><td>25</td><td></td></tr> <tr><td>3.6 - 3.7</td><td></td><td></td></tr> <tr><td>3.7 - 3.8</td><td></td><td></td></tr> <tr><td>3.8 - 3.9</td><td></td><td></td></tr> <tr><td>3.9 - 4.0</td><td></td><td></td></tr> </tbody> </table>					Depth (m)	Blows/100mm	Torque (Nm)	0.0 - 0.1	2		0.1 - 0.2	1		0.2 - 0.3	2		0.3 - 0.4	2		0.4 - 0.5	5		0.5 - 0.6	8		0.6 - 0.7	4		0.7 - 0.8	2		0.8 - 0.9	1		0.9 - 1.0	1		1.0 - 1.1	2		1.1 - 1.2	3		1.2 - 1.3	3		1.3 - 1.4	3		1.4 - 1.5	7		1.5 - 1.6	3		1.6 - 1.7	3		1.7 - 1.8	2		1.8 - 1.9	2		1.9 - 2.0	2		2.0 - 2.1	2		2.1 - 2.2	3		2.2 - 2.3	4		2.3 - 2.4	4		2.4 - 2.5	3		2.5 - 2.6	3		2.6 - 2.7	2		2.7 - 2.8	4		2.8 - 2.9	7		2.9 - 3.0	15		3.0 - 3.1	11		3.1 - 3.2	16		3.2 - 3.3	18		3.3 - 3.4	17		3.4 - 3.5	15		3.5 - 3.6	25		3.6 - 3.7			3.7 - 3.8			3.8 - 3.9			3.9 - 4.0		
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Project Name: Bessboro SHD	Project No.: P21239	Co-ords: 171742E - 70393N	Hole Type: DP
Location: Mahon, Cork	Level: 12.93m OD		Scale: 1:25
Client: Estuary View Ent. Ltd	Dates: 13/01/2022		Logged By: LM

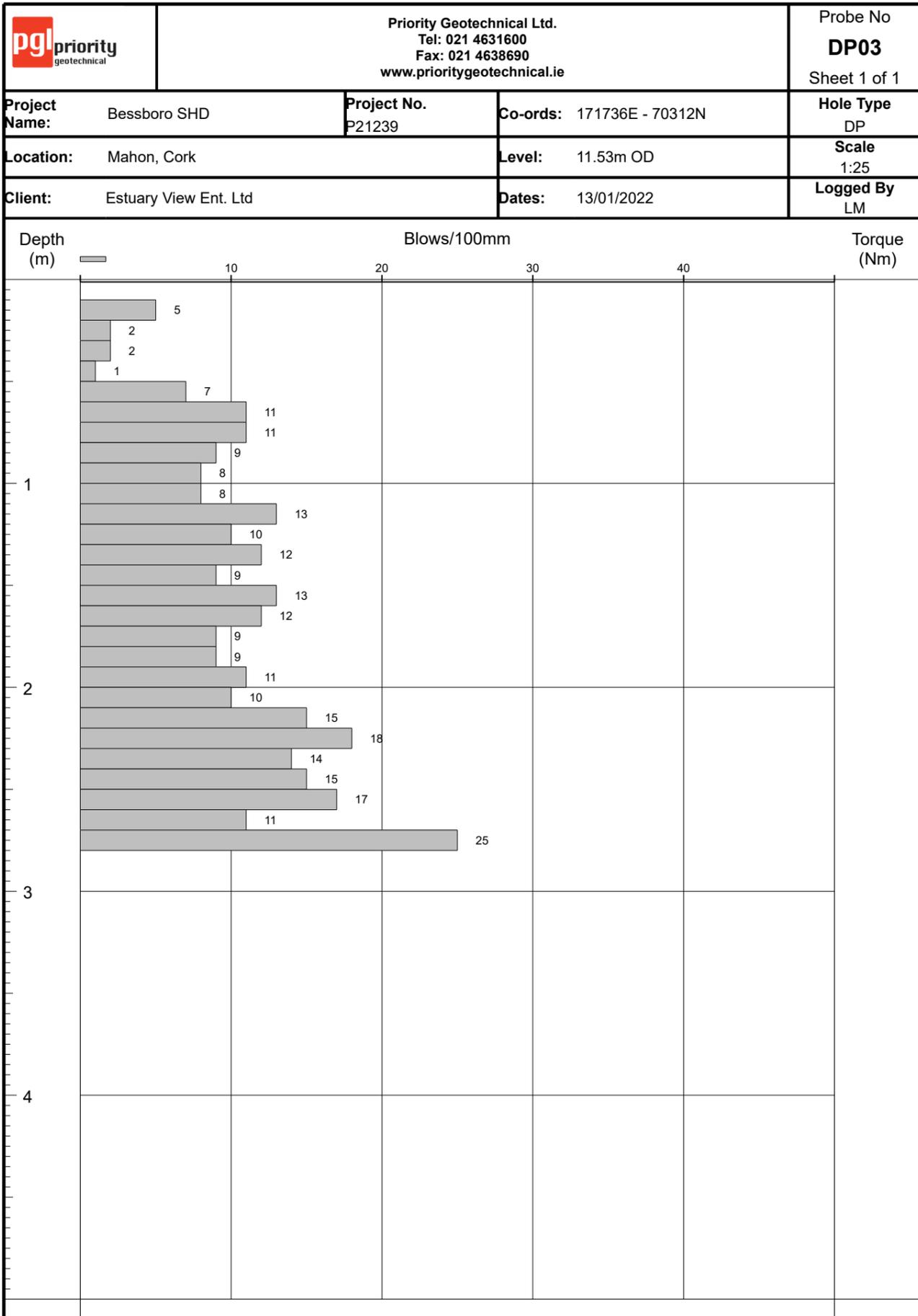


Remarks: Dynamic probe terminated at 8.80m bgl, refusal.	Fall Height (mm): 500	Cone Base Dia. (mm): 45
	Hammer Mass (Kg): 50.0	Cone Angle (Deg): 90
	Probe Type: DPH	Final Depth (m bgl): 8.80

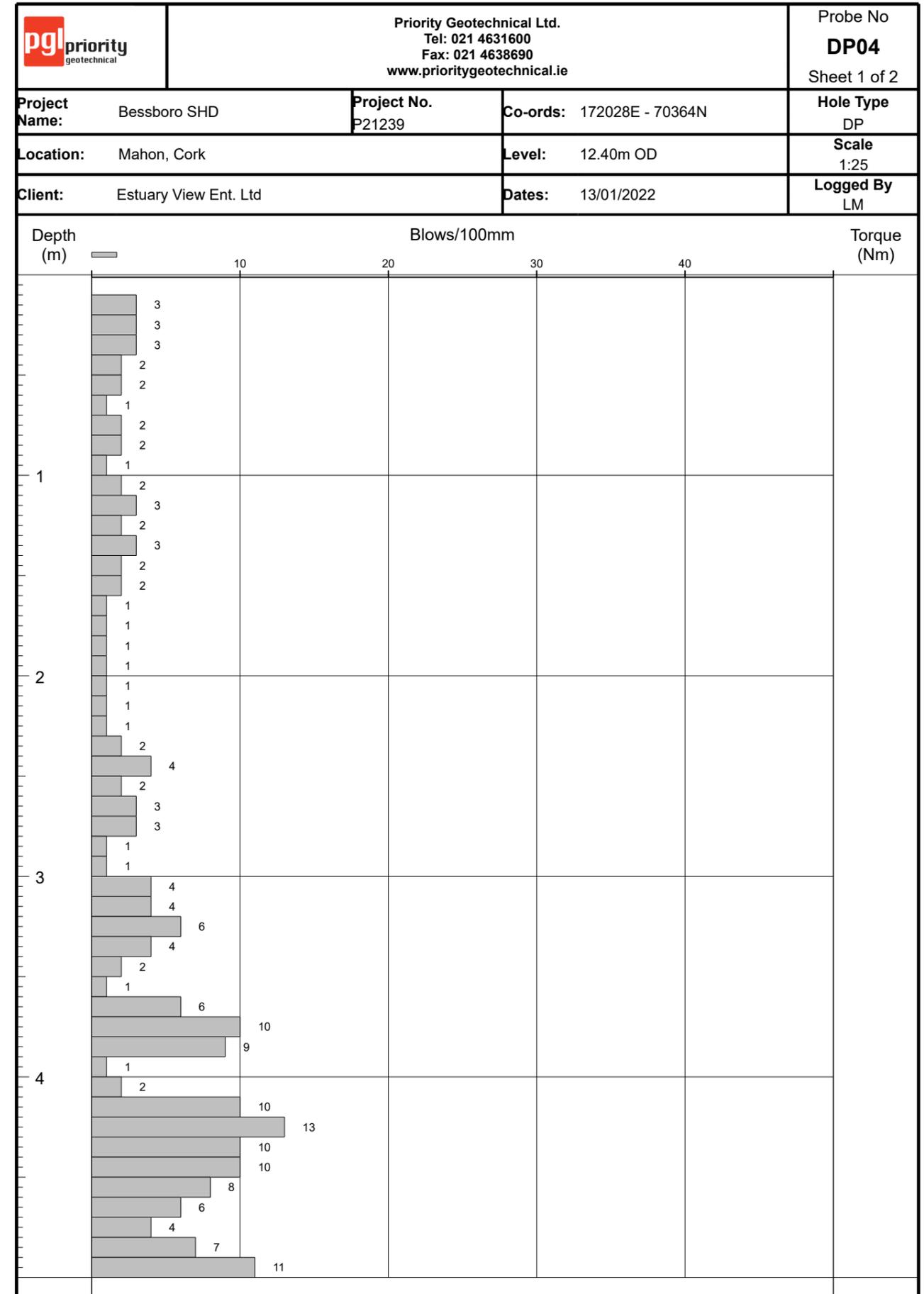
Project Name: Bessboro SHD	Project No.: P21239	Co-ords: 171742E - 70393N	Hole Type: DP
Location: Mahon, Cork	Level: 12.93m OD		Scale: 1:25
Client: Estuary View Ent. Ltd	Dates: 13/01/2022		Logged By: LM



Remarks: Dynamic probe terminated at 8.80m bgl, refusal.	Fall Height (mm): 500	Cone Base Dia. (mm): 45
	Hammer Mass (Kg): 50.0	Cone Angle (Deg): 90
	Probe Type: DPH	Final Depth (m bgl): 8.80

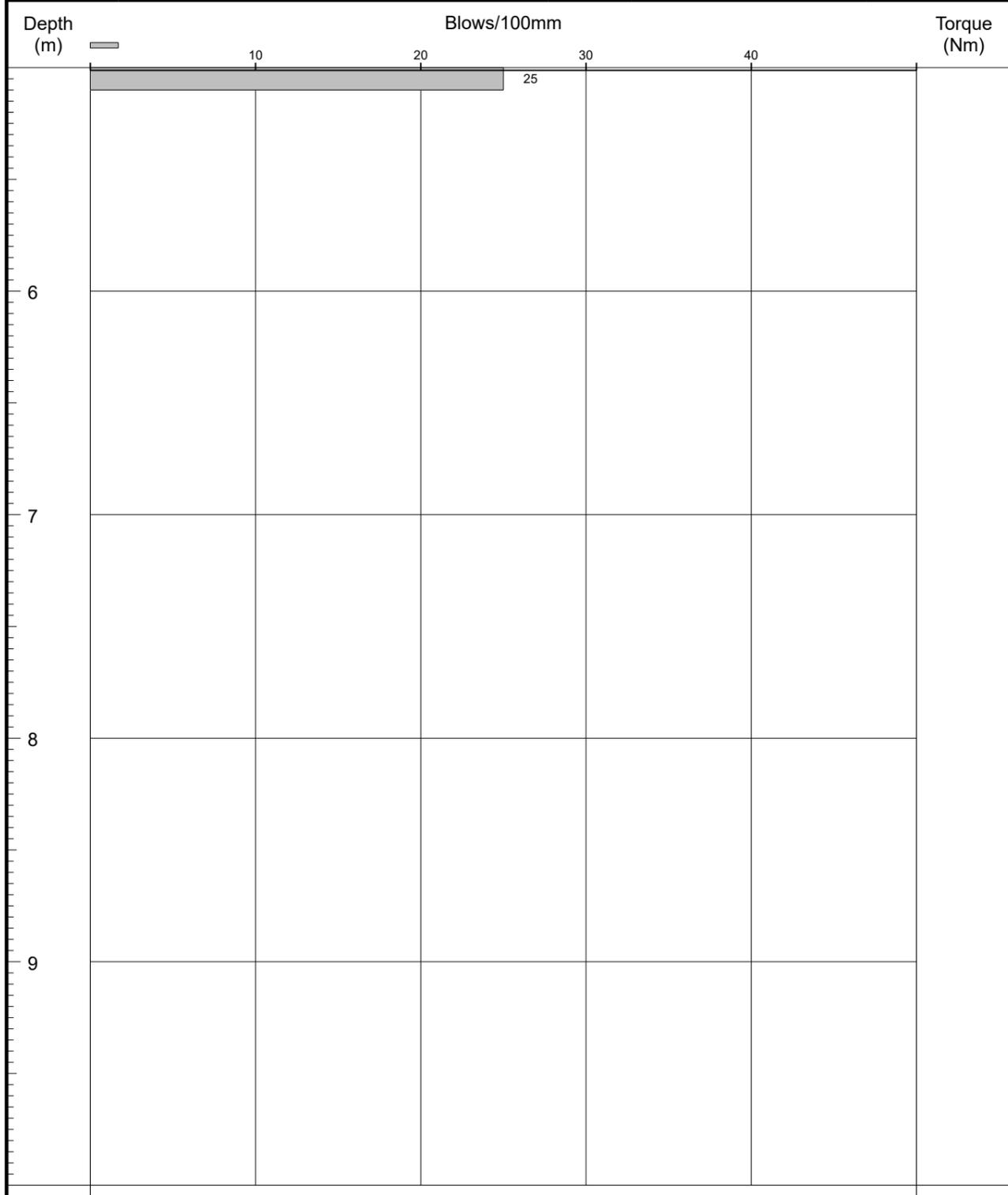


Remarks: Dynamic probe terminated at 2.70m bgl, refusal.	Fall Height (mm): 500	Cone Base Dia. (mm): 45
	Hammer Mass (Kg): 50.0	Cone Angle (Deg): 90
	Probe Type: DPH	Final Depth (m bgl): 2.70



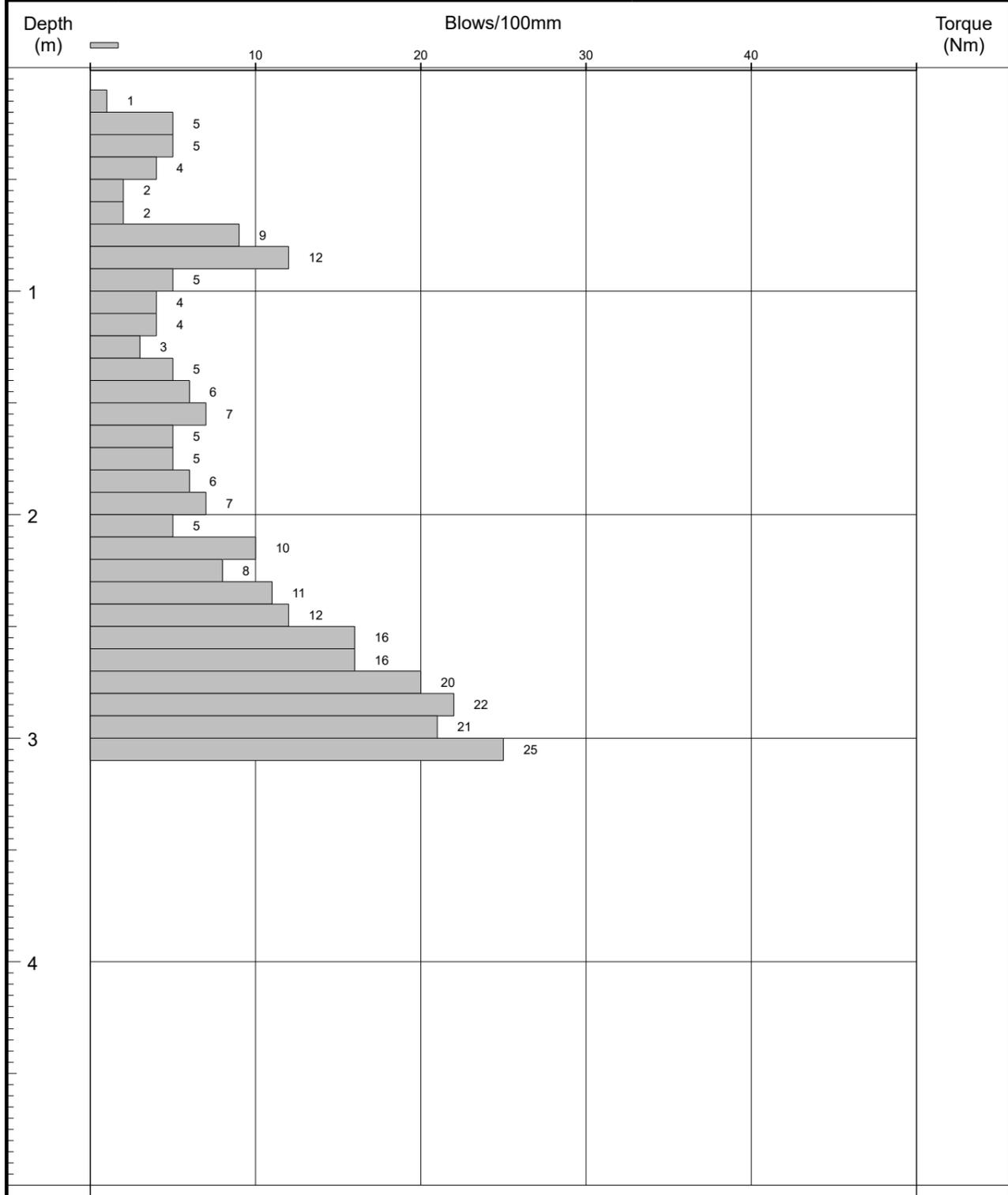
Remarks: Dynamic probe terminated at 5.00m bgl, refusal.	Fall Height (mm): 500	Cone Base Dia. (mm): 45
	Hammer Mass (Kg): 50.0	Cone Angle (Deg): 90
	Probe Type: DPH	Final Depth (m bgl): 5.00

Project Name: Bessboro SHD	Project No.: P21239	Co-ords: 172028E - 70364N	Hole Type: DP
Location: Mahon, Cork	Level: 12.40m OD		Scale: 1:25
Client: Estuary View Ent. Ltd	Dates: 13/01/2022		Logged By: LM



Remarks: Dynamic probe terminated at 5.00m bgl, refusal.	Fall Height (mm): 500	Cone Base Dia. (mm): 45	
	Hammer Mass (Kg): 50.0	Cone Angle (Deg): 90	
	Probe Type: DPH	Final Depth (m bgl): 5.00	

Project Name: Bessboro SHD	Project No.: P21239	Co-ords: 172034E - 70305N	Hole Type: DP
Location: Mahon, Cork	Level: 12.21m OD		Scale: 1:25
Client: Estuary View Ent. Ltd	Dates: 14/01/2022		Logged By: LM



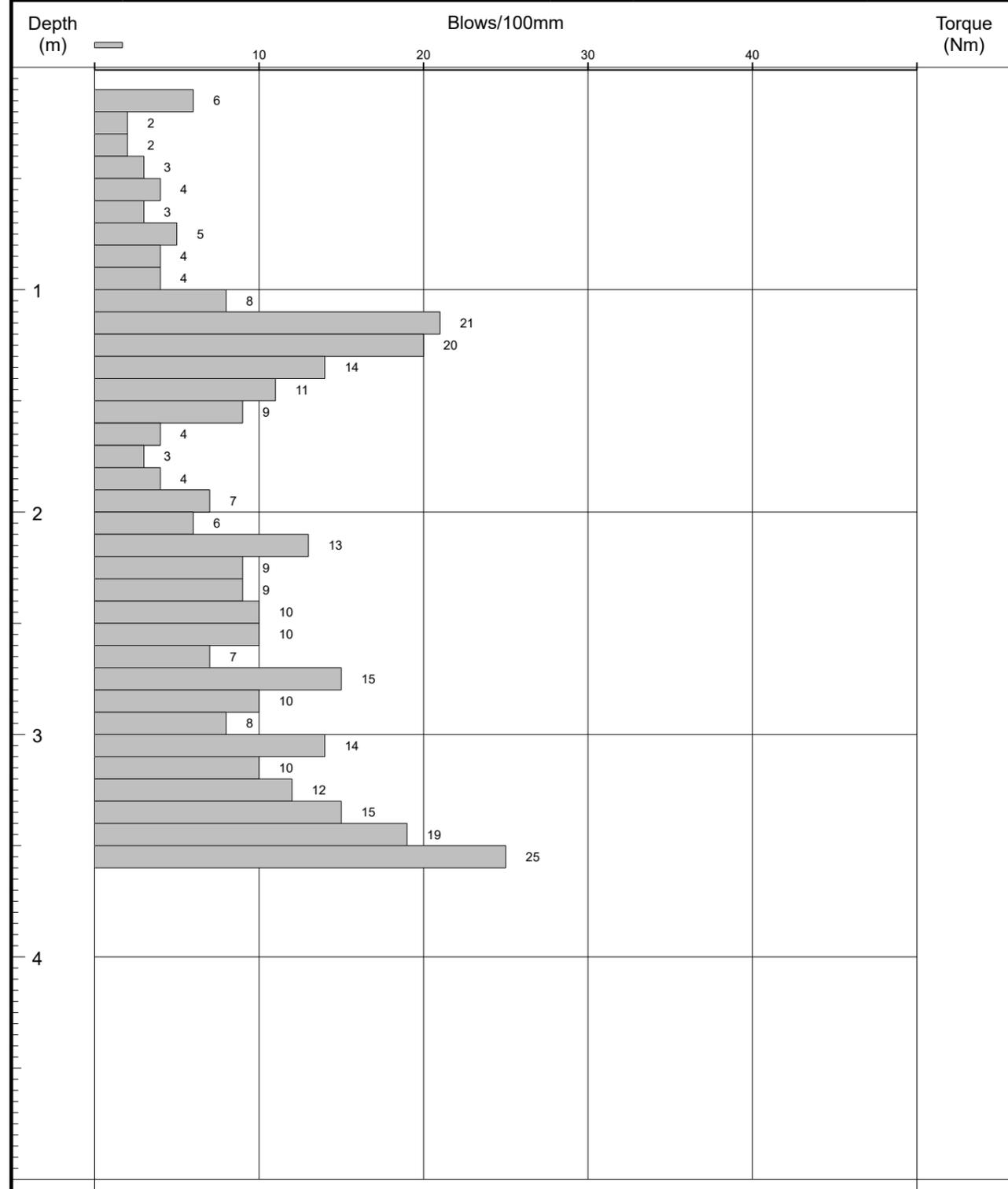
Remarks: Dynamic probe terminated at 3.00m bgl, refusal.	Fall Height (mm): 500	Cone Base Dia. (mm): 45	
	Hammer Mass (Kg): 50.0	Cone Angle (Deg): 90	
	Probe Type: DPH	Final Depth (m bgl): 3.00	



Priority Geotechnical Ltd.
 Tel: 021 4631600
 Fax: 021 4638690
 www.prioritygeotechnical.ie

Probe No
DP06
 Sheet 1 of 1

Project Name: Bessboro SHD	Project No.: P21239	Co-ords: 171944E - 70343N	Hole Type: DP
Location: Mahon, Cork		Level: 13.61m OD	Scale: 1:25
Client: Estuary View Ent. Ltd		Dates: 13/01/2022	Logged By: LM



Remarks: Dynamic probe terminated at 3.50m bgl, refusal.	Fall Height (mm): 500	Cone Base Dia. (mm): 45
	Hammer Mass (Kg): 50.0	Cone Angle (Deg): 90
	Probe Type: DPH	Final Depth (m bgl): 3.50