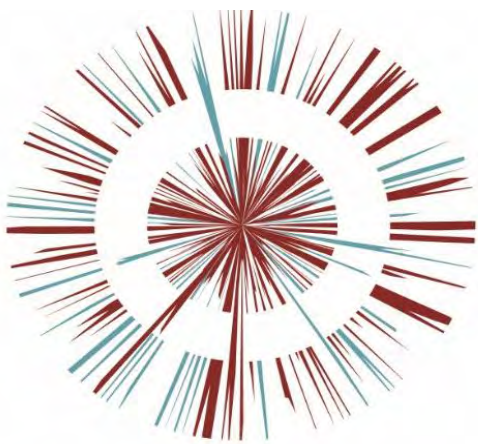




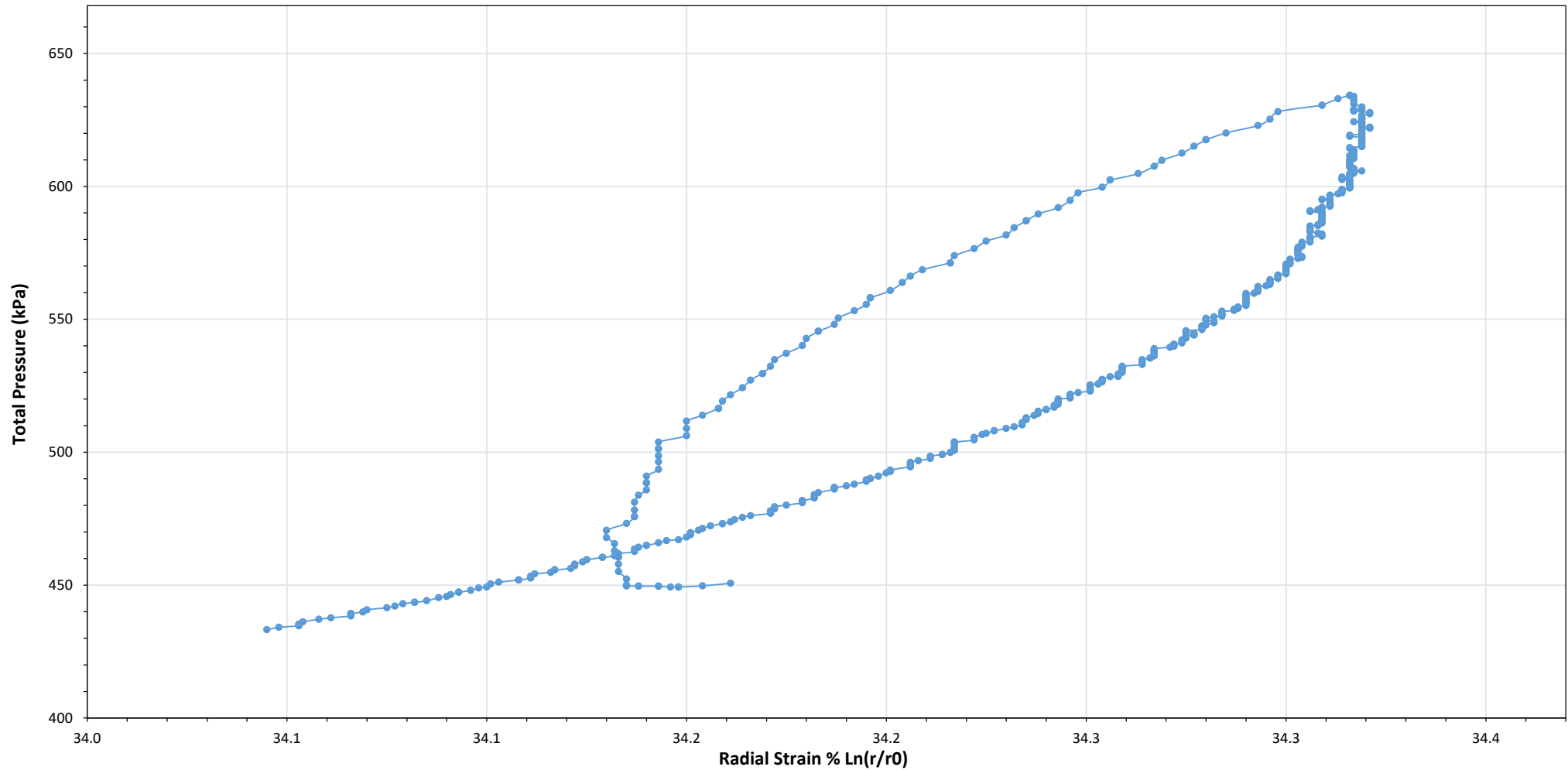
OMEGA ZONE 8, ST HELENS

Omega St Helens Ltd / T J Morris Ltd



Ground Investigation Report
& Remediation Strategy
Appendix D Part 17
OPP DOC. 2.21

Loop 4 Total Pressure with Radial Cavity Strain



Project Ref: 107284

Client: Geotechnics

Client Ref:

Location: Warrington, UK

Drainage behaviour: #N/A

Test type: FDPM

Loop duration: -9.1 mins

Shear modulus Gur: 4394.8 MPa

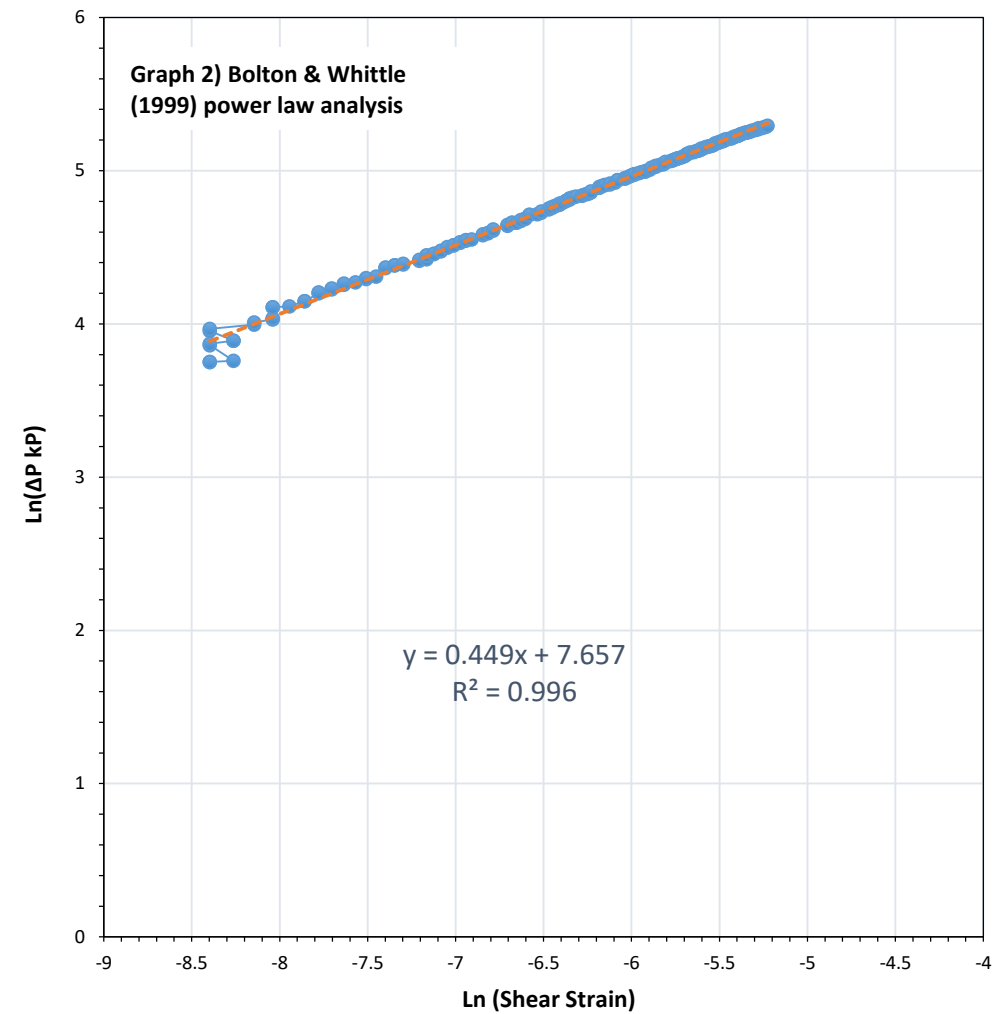
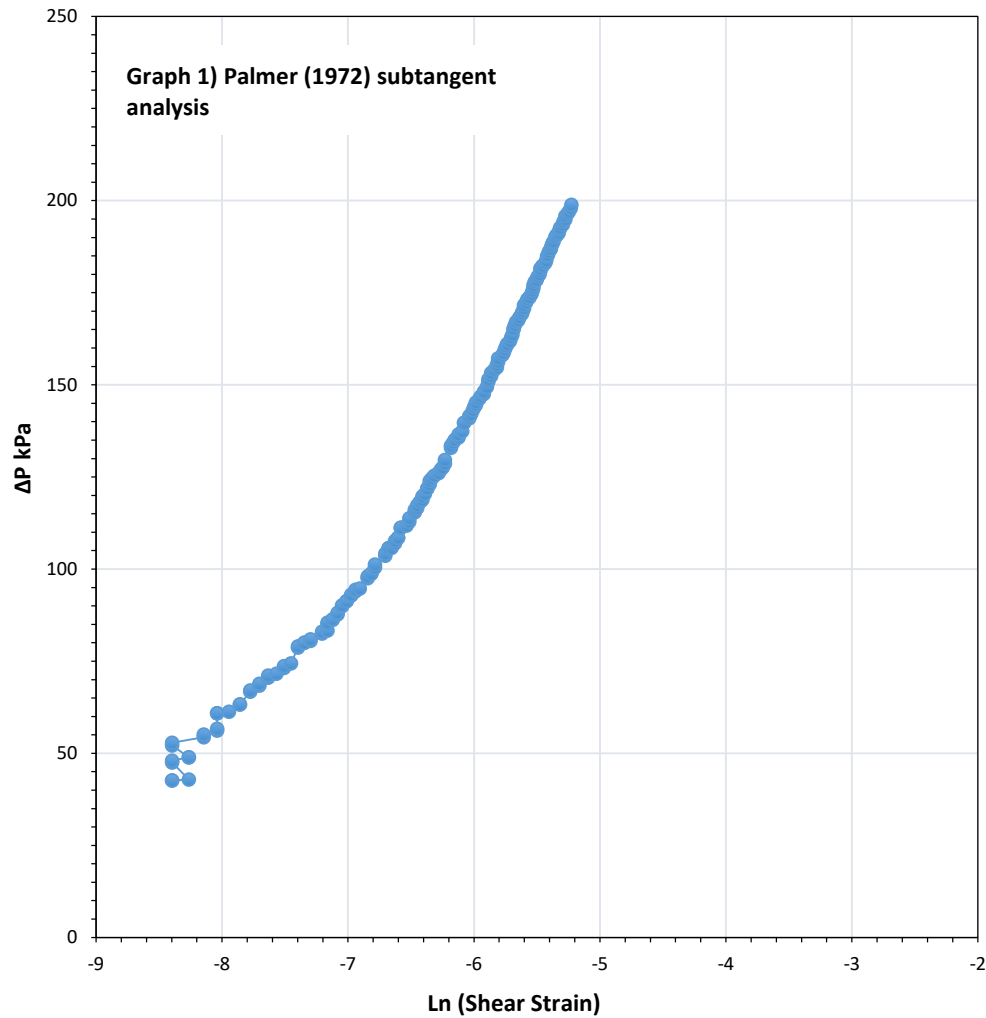
Cavity strain range: 0.12 %

Location ID: **CPTP8B01**

Depth: **5.5 m**

Comments:

Loop 4 Non-Linear Stress-Strain Analysis



Project Ref: 107284

Client: Geotechnics

Client Ref:

Location: Warrington, UK

Obtained Power Law Parameters (right hand side graph)

Non-linearity exponent (β) (gradient): 0.449

Intercept (η): 2.116 MPa

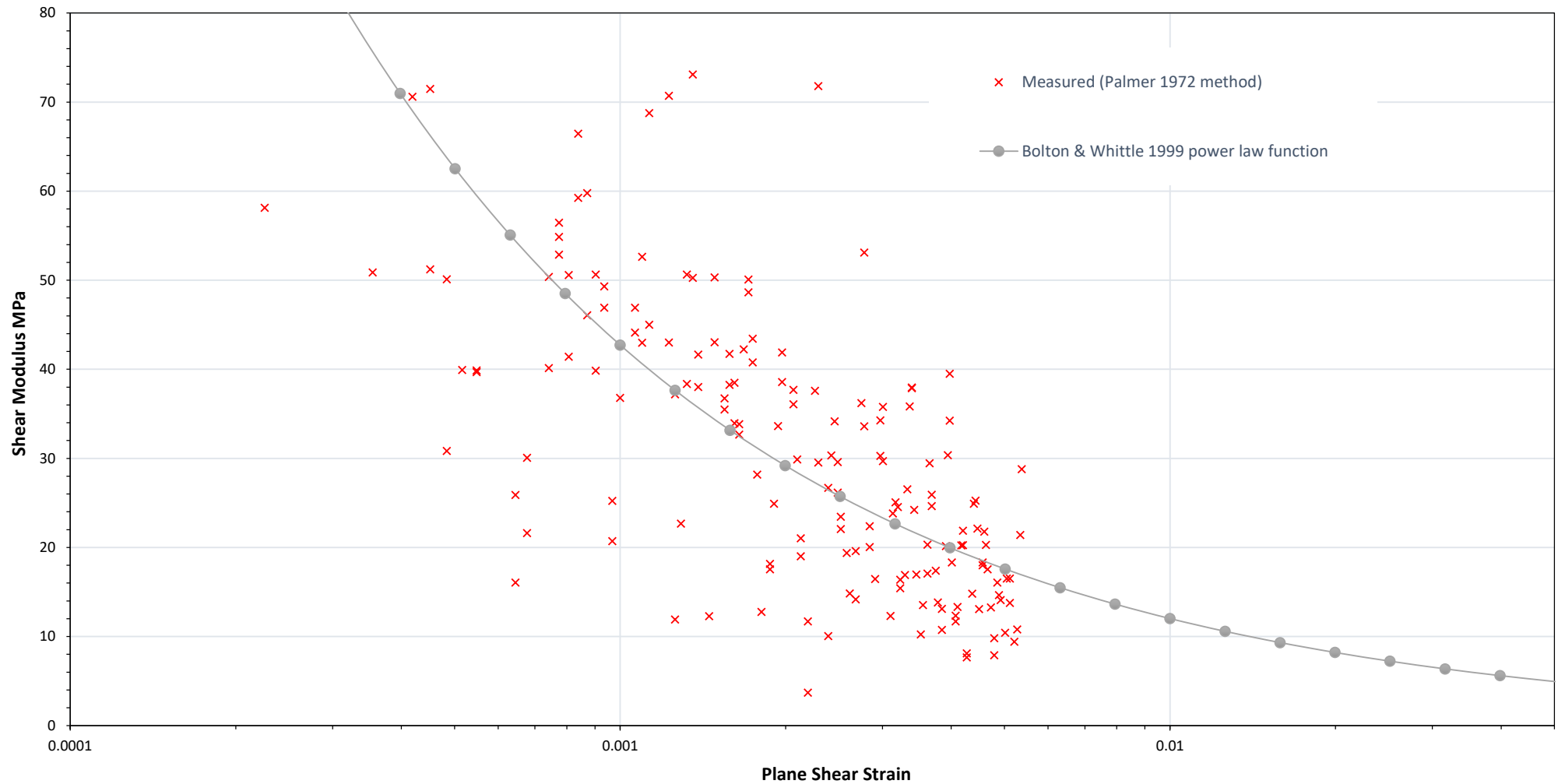
Shear stress constant α ($\beta \cdot \eta$): 0.95 MPa

Location ID: CPTP8B01

Depth: 5.5 m

Comments:

Loop 4 Non-Linear Analysis - Secant Shear Modulus with Plane Shear Strain



Project Ref: 107284

Client: Geotechnics

Client Ref:

Location: Warrington, UK

Bolton & Whittle 1999 power law parameters applied

Non-linearity exponent (β): 0.449

Intercept (η): 2.116 MPa

Shear stress constant $\alpha = (\beta * \eta)$: 0.95 MPa

Location ID: CTP8B01

Depth: 5.5 m

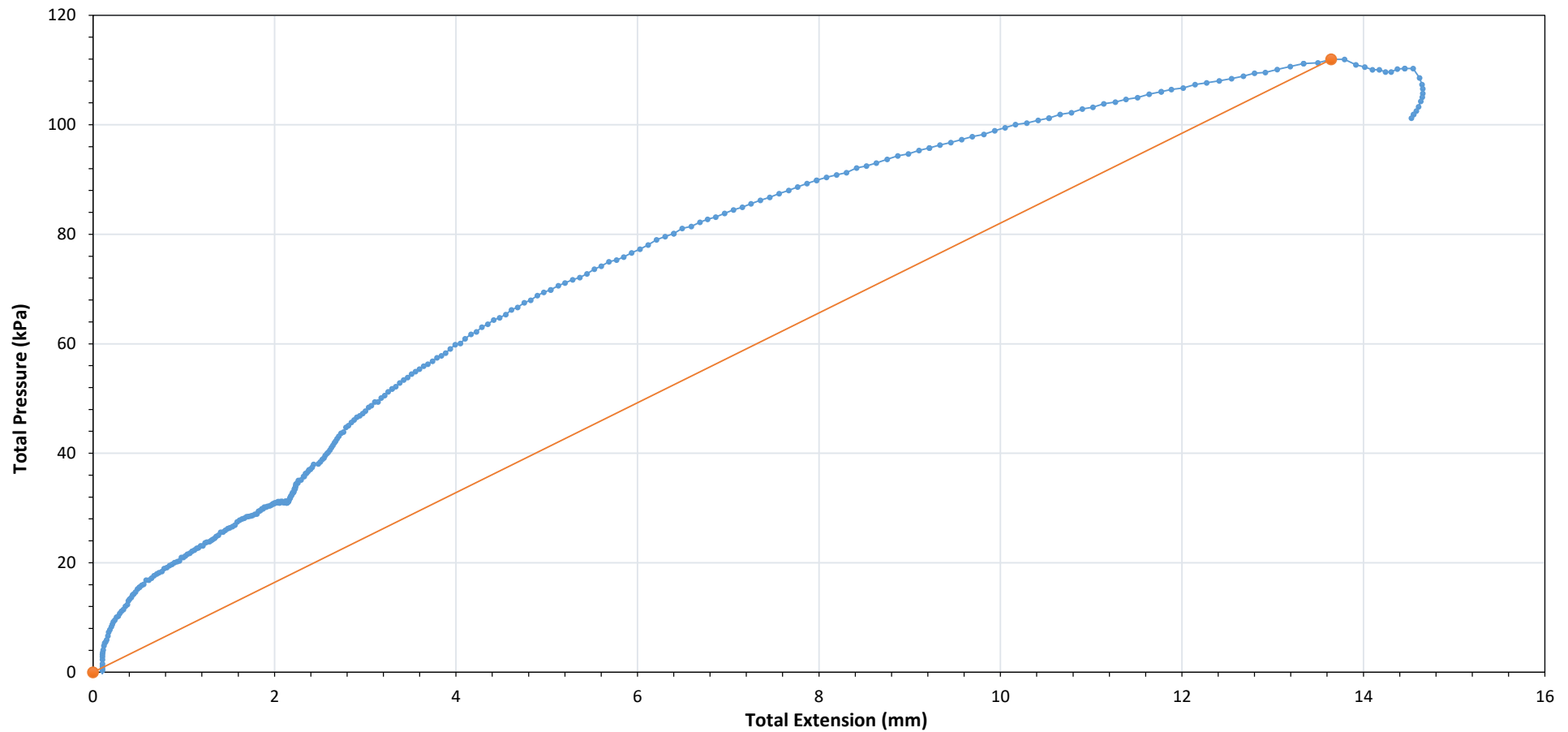
Comments:

APPENDIX G PRESSUREMETER CALIBRATIONS

LIST OF FIGURES:

Location ID	Pages included
CPTP8A01	1
CPTP8A04A	1
CPTP8B01	1

Pressuremeter Membrane Calibration - Pressure with Extension



Project Ref: 107284

Client: Geotechnics

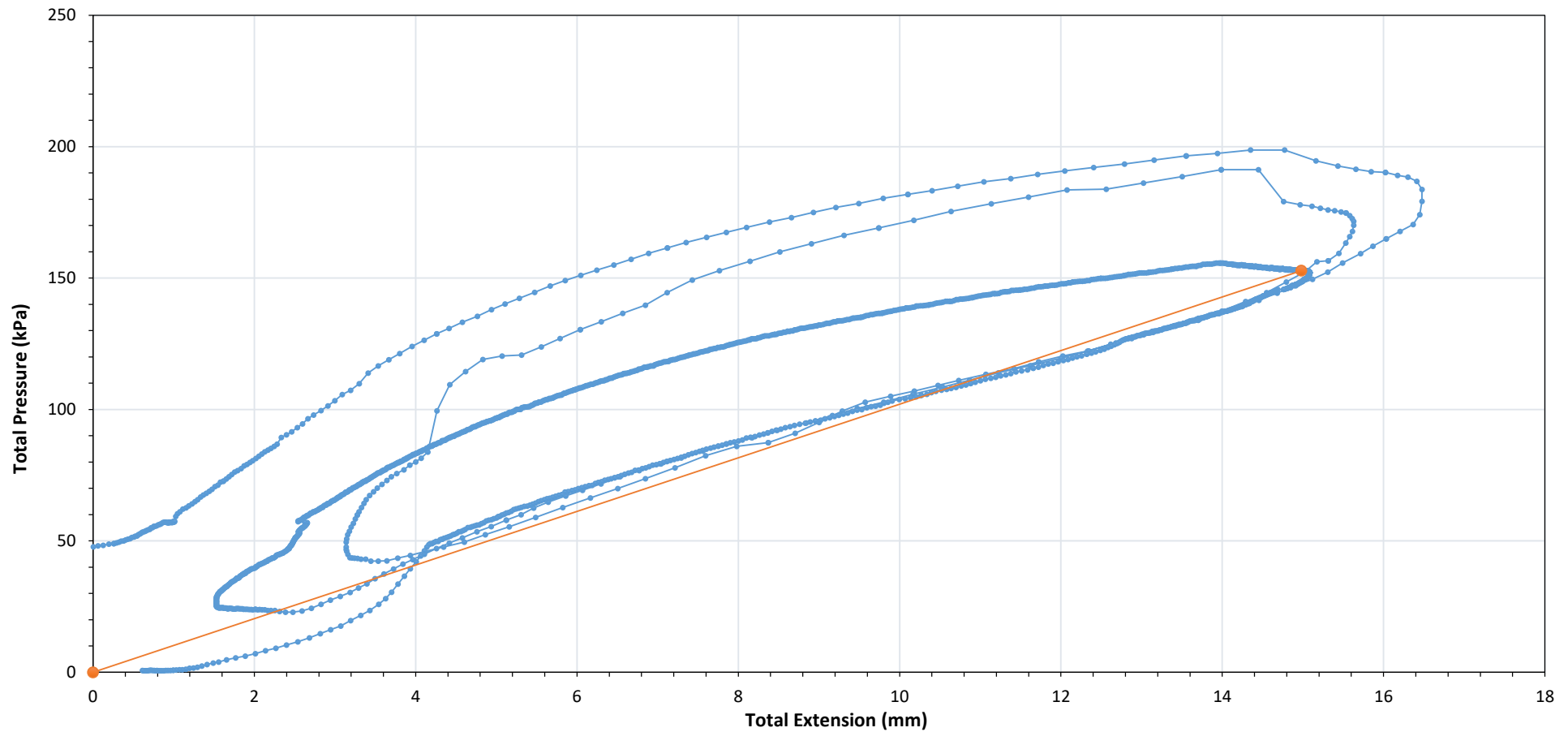
Test Engineer: PC

Date: 27/09/2019

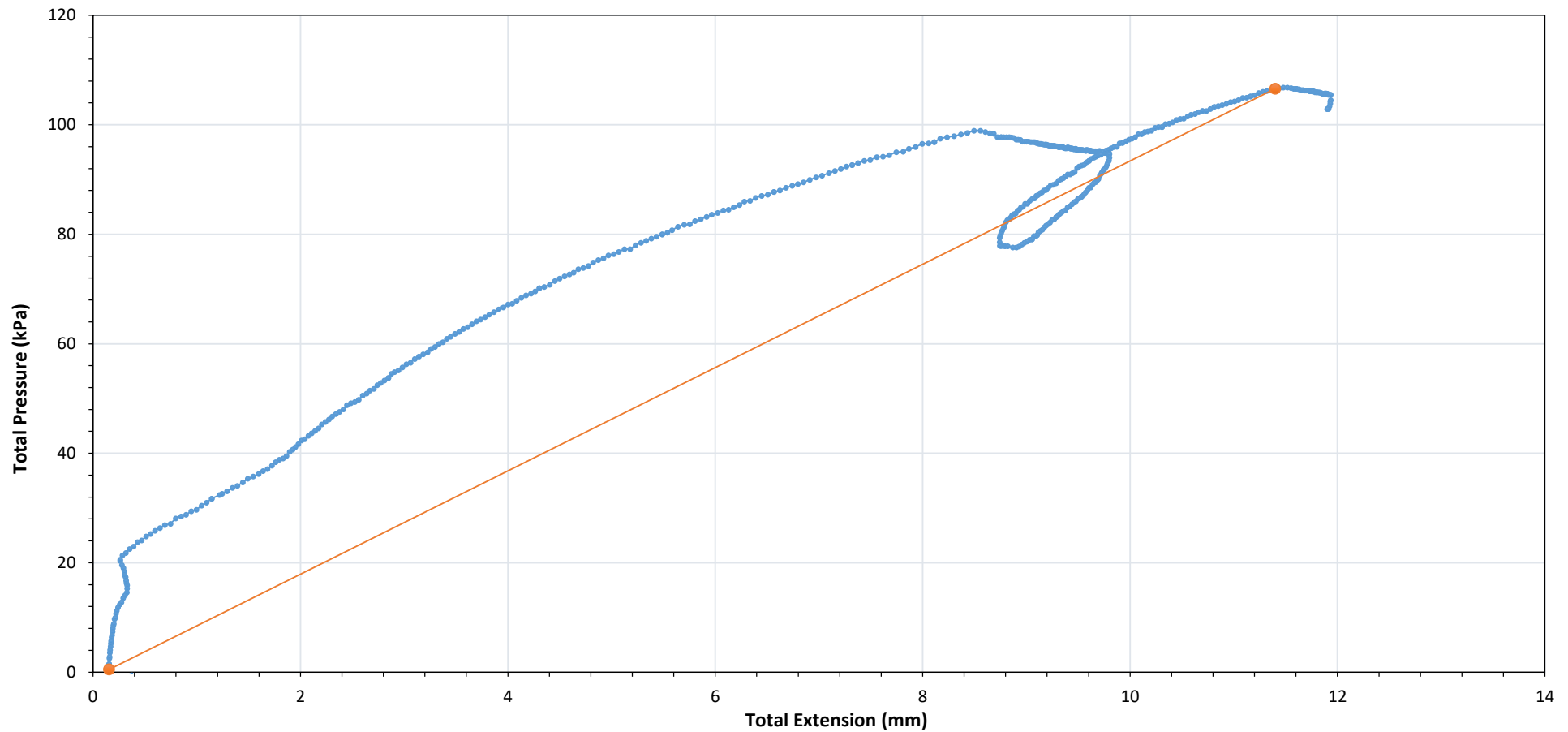
Calibration gradient: 8.2 kPa/mm

Calibration ID: CPTP8A01 CAL2

Comments:

**Project Ref:** 107284**Calibration gradient:** 10.2 kPa/mm**Calibration ID:** CPTP8A04A CAL1**Client:** Geotechnics**Comments:****Test Engineer:** PC**Date:** 30/09/2019

Pressuremeter Membrane Calibration - Pressure with Extension



Project Ref: 107284

Calibration gradient: 9.44 kPa/mm

Calibration ID: CPTP8B01 CAL2

Client: Geotechnics

Comments:

Test Engineer: PC

Date: 26/09/2019

BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **CPT8A01**
 Client **WSP** National Grid Coordinates **354708.3 E** **390661.3 N** Ground Level **25.31 m OD**

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD	
0.00 - 0.30	B				Crops over TOPSOIL: Soft dark brown slightly sandy clay with some rootlets.	G.L.		25.31	
0.00 - 0.30	D								
0.30 - 1.20	B				Soft yellowish brown sandy SILT.	0.30		25.01	
0.30 - 1.20	D								
0.30	ES								
1.00	ES				End of Borehole	1.20		24.11	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			18/09/19 18/09/19	08:00 18:00						None encountered.

Remarks  Inspection pit hand excavated to 1.20m depth and no services were found.
 ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Logged by **MM**

Figure **1 of 1**
18/12/2019

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

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BOREHOLE RECORD - Hand-dug Pit

Project OMEGA DEVELOPMENT GI				Engineer WSP				Borehole Project No CPT8A02 PN194027			
Client WSP				National Grid Coordinates 354749.6 E 390698.5 N				Ground Level 25.84 m OD			

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD	
0.00 - 0.30	B				Grass over TOPSOIL: Very soft slightly sandy slightly gravelly clay with some rootlets. Gravel is angular to subangular coarse of brick fragments. MADE GROUND: Soft to firm brown sandy clay with occasional pockets of charcoal.	G.L.		25.84	
0.00 - 0.30	D								
0.20	ES					0.30		25.54	
0.30 - 1.20	B								
0.30 - 1.20	D								
1.00	ES				End of Borehole	1.20		24.64	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			18/09/19 18/09/19	08:00 18:00						None encountered.

Remarks Inspection pit hand excavated to 1.20m depth and no services were found. ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.														Logged by MM Figure 1 of 1 18/12/2019	
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Symbols and abbreviations are explained on the accompanying key sheet.
 All dimensions are in metres.

Logged in accordance with BS5930:2015

BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI**

Engineer **WSP**

Borehole Project No **CPT8A03**
PN194027

Client **WSP**

National Grid Coordinates **354779.8 E**
390751.3 N

Ground Level **26.05** m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.00 - 0.40	B				Crops over TOPSOIL: Very soft dark brown slightly sandy clay with many rootlets and a strong organic odour. Soft reddish brown slightly sandy slightly gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mudstone and sandstone.		G.L.		26.05
0.00 - 0.40	D						0.40		25.65
0.20	ES								
0.40 - 1.20	B								
0.40 - 1.20	D				End of Borehole		1.20		24.85
1.00	ES								

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			18/09/19 18/09/19	08:00 18:00						None encountered.

Remarks **Inspection pit hand excavated to 1.20m depth and no services were found.**
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Logged by **MM**

Figure **1 of 1**
18/12/2019

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

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BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **CPT8A04**
 Client **WSP** National Grid Coordinates **354795.8 E** **390589.2 N** Ground Level **24.97 m OD**

Sampling			Properties			Strata	Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %		Description	Depth	Legend	Level m OD
0.00- 0.35	B					Crops over TOPSOIL: Very soft dark brown slightly sandy clay with many rootlets.	G.L.		24.97
0.00- 0.35	D						0.35		
0.30	ES					Reddish brown mottled light grey slightly sandy slightly gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mudstone and sandstone.			
0.35- 1.20	B								
0.35- 1.20	D								
1.00	ES					End of Borehole	1.20		23.77

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			19/09/19 19/09/19	08:00 18:00						None encountered.

Remarks  Inspection pit hand excavated to 1.20m depth and no services were found.
 ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **MM**

Figure **1 of 1**
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BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **CPT8A05**
 Client **WSP** National Grid Coordinates **354841.8 E** **390645.1 N** Ground Level **25.18** m OD

Sampling			Properties		Strata			Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description			Depth	Legend	Level m OD
0.00 - 0.30	B				Crops over TOPSOIL: Very soft dark brown slightly sandy clay with many rootlets. MADE GROUND: Firm slightly sandy slightly gravelly CLAY. Gravel is angular medium of sandstone and brick fragments.			G.L.		25.18
0.00 - 0.30	D							0.30		24.88
0.30 - 1.20	B									
0.30 - 1.20	D									
0.30	ES				End of Borehole			1.20		23.98
1.00	ES									

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			18/09/19 18/09/19	08:00 18:00						None encountered.

Remarks  Inspection pit hand excavated to 1.20m depth and no services were found.
 ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

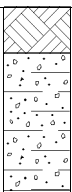
Logged by **MM**

Figure **1 of 1**
18/12/2019



BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **CPT8A06**
 Client **WSP** National Grid Coordinates **354865.2 E** **390675.9 N** Ground Level **25.13 m OD**

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD	
0.00 - 0.30	B				Grass over TOPSOIL: Very soft dark brown slightly sandy clay with some rootlets.	G.L.		25.13	
0.00 - 0.30	D								
0.20	ES				Firm reddish brown slightly sandy slightly gravelly CLAY. Gravel is subrounded to rounded fine of mudstone.	0.30		24.83	
0.30 - 1.20	B								
0.30 - 1.20	D				End of Borehole				
1.00	ES					1.20		23.93	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			20/09/19 20/09/19	08:00 18:00						None encountered.

Remarks  Inspection pit hand excavated to 1.20m depth and no services were found.
 ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **MM**

Figure **1 of 1**
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BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **CPT8A07**
 Client **WSP** National Grid Coordinates **354896.2 E** **390722.4 N** Ground Level **25.02** m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.00 - 0.20	B				Grass over TOPSOIL: Very soft dark brown slightly sandy clay with some rootlets. MADE GROUND: Reddish brown mottled yellow and black slightly sandy slightly gravelly clay with occasional pockets of charcoal. Gravel is angular to subangular fine to medium of sandstone, and brick fragments.		G.L.		25.02
0.00 - 0.20	D						0.20		24.82
0.20 - 1.20	B								
0.20 - 1.20	D								
0.20	ES				End of Borehole		1.20		23.82
1.20	ES								

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			18/09/19 18/09/19	08:00 18:00						None encountered.

Remarks  Inspection pit hand excavated to 1.20m depth and no services were found.
 ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **MM**

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BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **CPT8A08**
 Client **WSP** National Grid Coordinates **354982.7 E** **390726.3 N** Ground Level **23.89** m OD

Sampling			Properties		Strata			Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description			Depth	Legend	Level m OD
					Crops over TOPSOIL: Dark brown slightly sandy slightly gravelly clay with some rootlets. Gravel is subrounded to rounded fine to coarse of sandstone. At 0.25m, subangular to angular medium to coarse gravel of sandstone, concrete, and brick. End of Borehole			G.L.		23.89
								0.25		23.64

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.25	0.40	Inspection Pit	MM/AJ	G.L. 0.25			19/09/19	08:00 18:00						None encountered.

Remarks  Inspection pit terminated at a depth of 0.25m depth due to possible service encounter, pit moved to CPT8A08A.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged by **MM**

Figure **1 of 1**
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Logged in accordance with BS5930:2015

BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI**

Engineer **WSP**

Borehole Project No **CPT8A08A**
PN194027

Client **WSP**

National Grid Coordinates **354931.4 E**
390765.1 N

Ground Level **24.47** m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.00 - 0.35	B				Crops over TOPSOIL: Very soft dark brown slightly sandy slightly gravelly clay with many rootlets. Gravel is angular to rounded fine of sandstone and brick fragments.		G.L.		24.47
0.00 - 0.35	D								
0.20	ES						0.35		24.12
0.35 - 1.20	B								
0.35 - 1.20	D				Firm reddish brown mottled grey, yellow, and black slightly sandy slightly gravelly CLAY. Gravel is subrounded fine to medium of mudstone and sandstone.				
1.00	ES				End of Borehole		1.20		23.27

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			19/09/19 19/09/19	08:00 18:00						None encountered.

Remarks **Inspection pit hand excavated to 1.20m depth and no services were found.**
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Logged by **MM**

Figure **1 of 1**
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Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

geotechnics

BOREHOLE RECORD - Hand-dug Pit

Project OMEGA DEVELOPMENT GI

Engineer WSP

Borehole Project No CPT8A09
PN194027

Client WSP

National Grid Coordinates 354951.2 E
390611.7 N

Ground Level 25.11 m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.00 - 0.40	B				Grass over TOPSOIL: Very soft dark brown slightly sandy clay with some rootlets and a strong organic odour. MADE GROUND: Soft to firm reddish brown slightly sandy slightly gravelly clay. Gravel is subangular medium of brick fragments.		G.L.		25.11
0.00 - 0.40	D						0.40		24.71
0.20	ES								
0.40 - 1.20	B								
0.40 - 1.20	D				End of Borehole		1.20		23.91
1.00	ES								

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			19/09/19 19/09/19	08:00 18:00						None encountered.

Remarks  Inspection pit hand excavated to 1.20m depth and no services were found.
 ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Logged by MM

Figure 1 of 1
18/12/2019

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015



BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **CPT8A10**
 Client **WSP** National Grid Coordinates **354985.4 E** **390646.7 N** Ground Level **24.82** m OD
 Scale **1:50**

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.00 - 0.40	B				Crops over TOPSOIL: Very soft slightly sandy slightly gravelly clay with many rootlets. Gravel is angular medium of brick fragments. Soft to firm reddish brown slightly sandy CLAY. End of Borehole		G.L.		24.82
0.00 - 0.40	D						0.40		24.42
0.20	ES								
0.40 - 1.20	B								
0.40 - 1.20	D								
1.00	ES						1.20		23.62

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			19/09/19 19/09/19	08:00 18:00						None encountered.

Remarks **INS** Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **MM**

Figure **1 of 1**
18/12/2019

geotechnics

BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **CPT8A11**
 Client **WSP** National Grid Coordinates **355020.6 E** **390689.4 N** Ground Level **23.77** m OD
 Scale **1:50**

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.00 - 0.40	B				Grass over TOPSOIL: Soft dark brown slightly sandy slightly gravelly clay with some rootlets. Gravel is subrounded fine to medium of sandstone. Firm reddish brown slightly sandy CLAY.		G.L.		23.77
0.00 - 0.40	D								
0.20	ES						0.40		23.37
0.40 - 1.20	B								
0.40 - 1.20	D								
1.00	ES				End of Borehole		1.20		22.57

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			19/09/19 19/09/19	08:00 18:00						None encountered.

Remarks  Inspection pit hand excavated to 1.20m depth and no services were found.
 ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **MM**

Figure **1 of 1**
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BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI**

Engineer **WSP**

Borehole Project No **CPT8B01
PN194027**

Client **WSP**

National Grid Coordinates **355083.7 E
390736.6 N**

Ground Level **23.22 m OD**

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.00 - 0.20	B				Crops over TOPSOIL: Soft dark brown slightly sandy clay with many rootlets. Soft to firm light grey mottled orange and black slightly sandy slightly gravelly CLAY. Gravel is fine to coarse angular to subrounded of sandstone.		G.L.		23.22
0.00 - 0.20	D						0.20		23.02
0.20 - 1.00	B								
0.20 - 1.00	D								
0.20	ES				End of Borehole				
1.00	ES						1.20		22.02

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			17/09/19 17/09/19	08:00 18:00						None encountered.

Remarks **Inspection pit hand excavated to 1.20m depth and no services were found.**
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Logged by **MM**

Figure **1 of 1**
18/12/2019

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

geotechnics

BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **CPT8B02**
 Client **WSP** National Grid Coordinates **355140.0 E** **390794.9 N** Ground Level **22.93** m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.00 - 0.30	B				Crops over TOPSOIL: Soft dark brown sandy CLAY with some rootlets. Firm dark brown slightly sandy slightly gravelly CLAY. Gravel is subrounded to rounded fine to coarse of sandstone. End of Borehole		G.L.		22.93
0.00 - 0.30	D						0.30		22.63
0.00 - 0.30	ES								
0.30 - 1.20	B								
0.30 - 1.20	D								
0.30 - 1.20	ES						1.20		21.73

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			17/09/19 17/09/19	08:00 18:00	1.10					seepage - no rise.

Remarks  Inspection pit hand excavated to 1.20m depth and no services were found.
 ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **MM**

Figure **1 of 1**
18/12/2019



BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **CPT8B03**
 Client **WSP** National Grid Coordinates **355143.1 E** **390638.9 N** Ground Level **22.94** m OD
 Scale **1:50**

Sampling			Properties			Strata	Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %		Description	Depth	Legend	Level m OD
0.00- 0.40	B					Crops over TOPSOIL: Very soft dark brown slightly sandy clay with some rootlets.	6.L.		22.94
0.00- 0.40	D								
0.20	ES						0.40		
0.40- 1.20	B					Firm orangish brown mottled greyish black and yellow slightly gravelly CLAY. Gravel is subrounded to rounded fine to medium of sandstone.			
0.40- 1.20	D								22.54
1.00	ES								
						End of Borehole	1.20		21.74

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			17/09/19 17/09/19	08:00 18:00						None encountered.

Remarks **Inspection pit hand excavated to 1.20m depth and no services were found.**
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **MM**

Figure **1 of 1**
18/12/2019

geotechnics

BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **CPTP8A01**
 Client **WSP** National Grid Coordinates **354747.9 E** **390623.8 N** Ground Level **24.85** m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD	
0.00 - 0.30	B				Crops over TOPSOIL: Very soft dark brown slightly sandy clay with some rootlets.	G.L.		24.85	
0.00 - 0.30	D								
0.20	ES				MADE GROUND: Firm reddish brown mottled yellow and black slightly sandy slightly gravelly clay. Gravel is subangular to subrounded fine to medium of sandstone and brick fragments.	0.30		24.55	
0.30 - 1.20	B								
0.30 - 1.20	D				End of Borehole				
1.00	ES					1.20		23.65	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			19/09/19 19/09/19	08:00 18:00						None encountered.

Remarks  Inspection pit hand excavated to 1.20m depth and no services were found.
 ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **MM**

Figure **1 of 1**
18/12/2019



BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **CPTP8A02**
 Client **WSP** National Grid Coordinates **354823.1 E** **390713.4 N** Ground Level **25.99** m OD
 Scale **1:50**

Sampling			Properties			Strata			Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %		Description	Depth	Legend	Level m OD		
0.00- 0.30	B					Grass over TOPSOIL: Very soft dark brown slightly sandy slightly gravelly clay with some rootlets. Gravel is subrounded to rounded medium of sandstone. Orangish brown slightly silty fine to coarse SAND with occasional pockets of soft grey clay. End of Borehole	G.L.		25.99		
0.00- 0.30	D						0.30		25.69		
0.20	ES										
0.30- 1.20	B										
0.30- 1.20	D										
1.00	ES						1.20		24.79		
</											

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			20/09/19 20/09/19	08:00 18:00						None encountered.

Remarks  Inspection pit hand excavated to 1.20m depth and no services were found.
 ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **MM**

Figure **1 of 1**
18/12/2019



BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **CPTP8A03**
 Client **WSP** National Grid Coordinates **354899.3 E** **390640.0 N** Ground Level **24.92 m OD**

Sampling			Properties		Strata			Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description			Depth	Legend	Level m OD
0.00- 0.25	B				Crops over TOPSOIL: Very soft dark brown slightly sandy clay with some rootlets. Firm reddish brown mottled light grey slightly sandy CLAY.			G.L.		24.92
0.00- 0.25	D							0.25		24.67
0.20	ES									
0.25- 1.20	B									
0.25- 1.20	D				End of Borehole					
1.00	ES							1.20		23.72

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			20/09/19 20/09/19	08:00 18:00						None encountered.

Remarks  Inspection pit hand excavated to 1.20m depth and no services were found.
 ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **MM**

Figure **1 of 1**
18/12/2019



BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **CPTP8A04**
 Client **WSP** National Grid Coordinates **354948.9 E** **390690.2 N** Ground Level **24.70** m OD

Sampling			Properties		Strata				Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description				Depth	Legend	Level m OD
					Grass over TOPSOIL: Dark brown slightly sandy clay with some rootlets. At 0.30m, angular to subangular medium to coarse gravel of sandstone, concrete, and brick fragments. End of Borehole				G.L.		24.70
									0.30		24.40

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.30	0.40	Inspection Pit	MM/AJ	G.L. 0.30			19/09/19	08:00 18:00						None encountered.

Remarks  Inspection pit terminated at a depth of 0.30m depth due to possible service encounter, pit was re-dug at the location of CPTP8A04A.

Logged by **MM**

Figure **1 of 1**
18/12/2019

Symbols and abbreviations are explained on the accompanying key sheet.

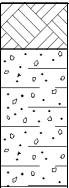
All dimensions are in metres.

Logged in accordance with BS5930:2015

geotechnics

BOREHOLE RECORD - Hand-dug Pit

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **CPTP8A04A**
 Client **WSP** National Grid Coordinates **354929.8 E** **390762.8 N** Ground Level **24.66 m OD**
 Scale **1:50**

Sampling			Properties			Strata	Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %		Description	Depth	Legend	Level m OD
0.00- 0.30	B					Crops over TOPSOIL: Very soft dark brown slightly sandy clay with some rootlets.	G.L.		24.66
0.00- 0.30	D					Soft to firm reddish brown mottled black slightly sandy slightly gravelly CLAY. Gravel is subrounded to rounded fine to medium of mudstone and sandstone.	0.30		24.36
0.20	ES								
0.30- 1.20	B								
0.30- 1.20	D								
1.00	ES					End of Borehole	1.20		23.46

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	MM/AJ	G.L. 1.20			19/09/19 19/09/19	08:00 18:00						None encountered.

Remarks  Inspection pit hand excavated to 1.20m depth and no services were found.
 ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **MM**

Figure **1 of 1**
18/12/2019



BOREHOLE RECORD - Hand-dug Pit

Project OMEGA DEVELOPMENT GI

Engineer WSP

Borehole Project No CPTP8B01
PN194027

Client WSP

National Grid Coordinates 355075.3 E
390661.7 N

Ground Level 23.70 m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.00 - 0.20	B				Crops over TOPSOIL: Soft dark brown slightly sandy clay. Soft to firm light grey mottled orange and black slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of sandstone.		G.L.		23.70
0.00 - 0.20	D						0.20		23.50
0.20 - 1.00	B								
0.20 - 1.00	D								
0.20	ES				End of Borehole				
1.00	ES						1.20		22.50

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20		Inspection Pit	MM	G.L. 1.20			17/09/19 17/09/19	08:00 18:00						None encountered.

Remarks  Inspection pit hand excavated to 1.20m depth and no services were found.

Logged by MM

Figure 1 of 1
18/12/2019

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015



APPENDIX 8

**Plate Load Tests
&
Plate Load Test Trial Pit Records**

Test carried out in accordance with
BS 1377-9:1990 & Design Manual for Roads & Bridges IAN 73/06 Revision 1 (2009)

Test Results

Applied Stress at 1.25mm Settlement	29.0 kN/m ²
Modulus of Subgrade Reaction	18.7 MN/m ² /m
Equivalent CBR Value	1.5 %

GEOTECHNICS
geotechnical and geoenvironmental specialists

Test carried out in accordance with
BS 1377-9:1990 & Design Manual for Roads & Bridges IAN 73/06 Revision 1 (2009)

Test Results

Applied Stress at 1.25mm Settlement	27.1 kN/m ²
Modulus of Subgrade Reaction	17.4 MN/m ² /m
Equivalent CBR Value	1.4 %

GEOTECHNICS
geotechnical and geoenvironmental specialists

Test carried out in accordance with
BS 1377-9:1990 & Design Manual for Roads & Bridges IAN 73/06 Revision 1 (2009)

Test Results

Applied Stress at 1.25mm Settlement	37.8 kN/m ²
Modulus of Subgrade Reaction	24.3 MN/m ² /m
Equivalent CBR Value	2.4 %

GEOTECHNICS
geotechnical and geoenvironmental specialists

Test carried out in accordance with
BS 1377-9:1990 & Design Manual for Roads & Bridges IAN 73/06 Revision 1 (2009)

Test Results

Applied Stress at 1.25mm Settlement	14.6 kN/m ²
Modulus of Subgrade Reaction	9.4 MN/m ² /m
Equivalent CBR Value	0.5 %

GEOTECHNICS
geotechnical and geoenvironmental specialists

INSITU TESTING - Plate Load TestForm INS016 Rev I
Sheet I - Test Results

Project	Omega Development GI	Test Location	PL8A05
		Project No	PN194027
Client	WSP	Date	14 October 2019
		Test No	I

Test carried out in accordance with
BS 1377-9:1990 & Design Manual for Roads & Bridges IAN 73/06 Revision I (2009)

Soil Description	POSSIBLE MADE GROUND: Sand with some clay pockets.	Plate Diameter (mm)	600
Test Depth (m bgl)	0.45	Kentledge Type	8 Tonne Tracked Excavator
Carried out by	AOJ	Checked by	TB

Test Results

Applied Load (kN)	Applied Stress (kN/m ²)	Average Plate Settlement (mm)	Applied Stress vs Average Plate Settlement
0.00	0.00	0.00	
3.06	10.82	0.30	
3.70	13.09	0.51	
4.68	16.55	0.80	
5.34	18.89	1.04	
5.71	20.19	1.25	
6.72	23.77	1.51	
7.54	26.67	1.76	
8.42	29.78	2.03	
0.00	0.00	1.48	

Applied Stress at 1.25mm Settlement	20.2 kN/m ²
Modulus of Subgrade Reaction	13.0 MN/m ² /m
Equivalent CBR Value	0.8 %

Remarks

Test carried out in accordance with
BS 1377-9:1990 & Design Manual for Roads & Bridges IAN 73/06 Revision 1 (2009)

Test Results

Applied Stress at 1.25mm Settlement	21.5 kN/m ²
Modulus of Subgrade Reaction	13.8 MN/m ² /m
Equivalent CBR Value	0.9 %

GEOTECHNICS
geotechnical and geoenvironmental specialists

INSITU TESTING - Plate Load TestForm INS016 Rev I
Sheet I - Test Results

Project	Omega Development GI	Test Location	PL8A07
		Project No	PN194027
Client	WSP	Date	14 October 2019
		Test No	I

Test carried out in accordance with
BS 1377-9:1990 & Design Manual for Roads & Bridges IAN 73/06 Revision I (2009)

Soil Description	Firm CLAY.	Plate Diameter (mm)	600
Test Depth (m bgl)	0.45	Kentledge Type	8 Tonne Tracked Excavator
Carried out by	AOJ	Checked by	TB

Test Results

Applied Load (kN)	Applied Stress (kN/m ²)	Average Plate Settlement (mm)	Applied Stress vs Average Plate Settlement
0.00	0.00	0.00	
3.06	10.82	0.25	
4.40	15.56	0.53	
5.30	18.74	0.76	
6.03	21.33	1.03	
6.77	23.94	1.25	
8.06	28.51	1.56	
8.83	31.23	1.76	
10.14	35.86	2.03	
0.00	0.00	1.40	

Applied Stress at 1.25mm Settlement	23.9 kN/m ²
Modulus of Subgrade Reaction	15.4 MN/m ² /m
Equivalent CBR Value	1.1 %

Remarks

INSITU TESTING - Plate Load TestForm INS016 Rev I
Sheet I - Test Results

Project	Omega Development GI	Test Location	PL8A08
		Project No	PN194027
Client	WSP	Date	14 October 2019
		Test No	I

Test carried out in accordance with
BS 1377-9:1990 & Design Manual for Roads & Bridges IAN 73/06 Revision I (2009)

Soil Description	Firm CLAY.	Plate Diameter (mm)	600
Test Depth (m bgl)	0.45	Kentledge Type	8 Tonne Tracked Excavator
Carried out by	AOJ	Checked by	TB

Test Results

Applied Load (kN)	Applied Stress (kN/m ²)	Average Plate Settlement (mm)	Applied Stress vs Average Plate Settlement
0.00	0.00	0.00	
3.24	11.46	0.26	
4.39	15.53	0.50	
5.62	19.88	0.76	
6.79	24.01	1.01	
7.86	27.80	1.25	
8.92	31.55	1.50	
10.07	35.62	1.75	
11.25	39.79	2.00	
0.00	0.00	0.68	

Applied Stress at 1.25mm Settlement	27.8 kN/m ²
Modulus of Subgrade Reaction	17.9 MN/m ² /m
Equivalent CBR Value	1.4 %

Remarks

Test carried out in accordance with
BS 1377-9:1990 & Design Manual for Roads & Bridges IAN 73/06 Revision 1 (2009)

Test Results

Applied Stress at 1.25mm Settlement	27.3 kN/m ²
Modulus of Subgrade Reaction	17.6 MN/m ² /m
Equivalent CBR Value	1.4 %

GEOTECHNICS
geotechnical and geoenvironmental specialists

INSITU TESTING - Plate Load TestForm INS016 Rev I
Sheet I - Test Results

Project	Omega Development GI	Test Location	PL8A10
		Project No	PN194027
Client	WSP	Date	15 October 2019
		Test No	I

Test carried out in accordance with
BS 1377-9:1990 & Design Manual for Roads & Bridges IAN 73/06 Revision I (2009)

Soil Description	Firm CLAY.	Plate Diameter (mm)	600
Test Depth (m bgl)	0.45	Kentledge Type	8 Tonne Tracked Excavator
Carried out by	AOJ	Checked by	TB

Test Results

Applied Load (kN)	Applied Stress (kN/m ²)	Average Plate Settlement (mm)	Applied Stress vs Average Plate Settlement
0.00	0.00	0.00	
6.29	22.25	0.27	
7.78	27.52	0.52	
9.32	32.96	0.76	
10.84	38.34	1.07	
12.05	42.62	1.25	
13.38	47.32	1.50	
15.21	53.79	1.79	
16.38	57.93	2.00	
0.00	0.00	0.60	

Applied Stress at 1.25mm Settlement	42.6 kN/m ²
Modulus of Subgrade Reaction	27.4 MN/m ² /m
Equivalent CBR Value	3.0 %

Remarks

INSITU TESTING - Plate Load TestForm INS016 Rev I
Sheet I - Test Results

Project	Omega Development GI	Test Location	PL8A11
		Project No	PN194027
Client	WSP	Date	14 October 2019
		Test No	I

Test carried out in accordance with
BS 1377-9:1990 & Design Manual for Roads & Bridges IAN 73/06 Revision I (2009)

Soil Description	MADE GROUND: Soft clay.	Plate Diameter (mm)	600
Test Depth (m bgl)	0.45	Kentledge Type	8 Tonne Tracked Excavator
Carried out by	AOJ	Checked by	TB

Test Results

Applied Load (kN)	Applied Stress (kN/m ²)	Average Plate Settlement (mm)	Applied Stress vs Average Plate Settlement
0.00	0.00	0.00	
2.75	9.73	0.25	
3.76	13.30	0.51	
5.01	17.72	0.80	
5.78	20.44	1.00	
6.37	22.53	1.25	
7.74	27.37	1.50	
8.61	30.45	1.72	
10.31	36.46	2.01	
0.00	0.00	1.54	

Applied Stress at 1.25mm Settlement	22.5 kN/m ²
Modulus of Subgrade Reaction	14.5 MN/m ² /m
Equivalent CBR Value	1.0 %

Remarks

Test carried out in accordance with
BS 1377-9:1990 & Design Manual for Roads & Bridges IAN 73/06 Revision 1 (2009)

Test Results

Applied Stress at 1.25mm Settlement	26.8 kN/m ²
Modulus of Subgrade Reaction	17.3 MN/m ² /m
Equivalent CBR Value	1.3 %

GEOTECHNICS
geotechnical and geoenvironmental specialists

INSITU TESTING - Plate Load TestForm INS016 Rev I
Sheet I - Test Results

Project	Omega Development GI	Test Location	TP8B01
		Project No	PN194027
Client	WSP	Date	25 September 2019
		Test No	I

Test carried out in accordance with
BS 1377-9:1990 & Design Manual for Roads & Bridges IAN 73/06 Revision I (2009)

Soil Description	MADE GROUND: Firm clay.	Plate Diameter (mm)	600
Test Depth (m bgl)	0.45	Kentledge Type	8 Tonne Tracked Excavator
Carried out by	AOJ	Checked by	TB

Test Results

Applied Load (kN)	Applied Stress (kN/m ²)	Average Plate Settlement (mm)	Applied Stress vs Average Plate Settlement
0.00	0.00	0.00	
1.39	4.92	0.15	
3.86	13.65	0.51	
4.84	17.12	0.73	
6.20	21.93	0.99	
7.51	26.56	1.26	
8.92	31.55	1.50	
10.05	35.54	1.76	
11.12	39.33	2.00	
0.00	0.00	0.60	

Applied Stress at 1.25mm Settlement	26.6 kN/m ²
Modulus of Subgrade Reaction	17.1 MN/m ² /m
Equivalent CBR Value	1.3 %

Remarks

Project	Omega Development GI	Test Location	TP8B11
		Project No	PN194027
Client	WSP	Date	25 September 2019
		Test No	1

Test carried out in accordance with
BS 1377-9:1990 & Design Manual for Roads & Bridges IAN 73/06 Revision 1 (2009)

Soil Description	Firm CLAY.	Plate Diameter (mm)	600
Test Depth (m bgl)	0.45	Kentledge Type	8 Tonne Tracked Excavator
Carried out by	AOJ	Checked by	TB

Test Results

[illegible]

Applied Stress at 1.25mm Settlement	33.7 kN/m ²
Modulus of Subgrade Reaction	21.7 MN/m ² /m
Equivalent CBR Value	2.0 %

Remarks

INSITU TESTING - Plate Load TestForm INS016 Rev I
Sheet I - Test Results

Project	Omega Development GI	Test Location	TP8B17
		Project No	PN194027
Client	WSP	Date	25 September 2019
		Test No	I

Test carried out in accordance with
BS 1377-9:1990 & Design Manual for Roads & Bridges IAN 73/06 Revision I (2009)

Soil Description	Soft to firm CLAY.	Plate Diameter (mm)	600
Test Depth (m bgl)	0.45	Kentledge Type	8 Tonne Tracked Excavator
Carried out by	AOJ	Checked by	TB

Test Results

Applied Load (kN)	Applied Stress (kN/m ²)	Average Plate Settlement (mm)	Applied Stress vs Average Plate Settlement
0.00	0.00	0.00	
2.16	7.64	0.25	
3.45	12.20	0.50	
4.36	15.42	0.75	
5.34	18.89	1.02	
6.30	22.28	1.27	
7.08	25.04	1.51	
8.04	28.44	1.77	
9.02	31.90	2.01	
0.00	0.00	0.56	

Applied Stress at 1.25mm Settlement	22.3 kN/m ²
Modulus of Subgrade Reaction	14.3 MN/m ² /m
Equivalent CBR Value	1.0 %

Remarks

BOREHOLE RECORD - Plate Load Testing

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **PL8A01**
PN194027
 Client **WSP** National Grid Coordinates **354715.5 E**
390584.6 N Ground Level **23.89** m OD

Sampling			Properties		Strata			Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description			Depth	Legend	Level m OD
0.00- 0.40	B				Grass over TOPSOIL: Soft brown slightly sandy gravelly clay with some rootlets. Gravel is angular to subrounded fine to coarse of sandstone, siltstone, mudstone and coal. Firm brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular to rounded fine to coarse of sandstone, mudstone and coal. End of Borehole			G.L.		23.89
0.40	D							0.40 0.41		23.49 23.48

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.41		Trial Pit		G.L. 0.41		DRY	15/10/19 15/10/19	08:00 18:00						None encountered.

Remarks  Plate Load Test carried out at 0.40m depth.

Logged by **JN**

Figure **1 of 1**
18/12/2019

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015



BOREHOLE RECORD - Plate Load Testing

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **PL8A02**
 Client **WSP** National Grid Coordinates **354789.9 E** **390674.5 N** Ground Level **26.00** m OD

Sampling			Properties		Strata			Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description			Depth	Legend	Level m OD
0.00 - 0.40	B				Crops over TOPSOIL: Soft brown slightly sandy slightly gravelly clay with many rootlets. Gravel is angular to subrounded fine to coarse of sandstone, siltstone, mudstone and quartz. Firm reddish brown mottled yellow slightly sandy slightly gravelly CLAY. Gravel is subangular to rounded fine to coarse of sandstone, mudstone, quartz and coal. End of Borehole			G.L.		26.00
0.40	D							0.40 0.41		25.60 25.59

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.41		Trial Pit		G.L. 0.41		DRY	15/10/19 15/10/19	08:00 18:00						None encountered.

Remarks  Plate Load Test carried out at 0.40m depth.

Logged by **JN**

Figure **1 of 1**
18/12/2019

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

geotechnics

BOREHOLE RECORD - Plate Load Testing

Project OMEGA DEVELOPMENT GI				Engineer WSP				Borehole Project No PL8A03 PN194027			
Client WSP				National Grid Coordinates 354697.8 E 390742.6 N				Ground Level 26.10 m OD			

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %		Description	Depth	Legend	Level m OD
0.00- 0.40	B					Grass over TOPSOIL: Soft brown slightly sandy gravelly clay with a low cobble content and some rootlets. Gravel is angular to subrounded fine to coarse of sandstone, siltstone, mudstone, quartz and brick fragments. MADE GROUND: Soft yellowish brown sandy clay. End of Borehole	G.L.		26.10
0.40	D						0.40 0.41		25.70 25.69

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.41		Trial Pit		G.L. 0.41		DRY	15/10/19 15/10/19	08:00 18:00						None encountered.

Remarks  Plate Load Test carried out at 0.40m depth.

Logged by **JN**
 Figure **1 of 1**
 18/12/2019


Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:2015

BOREHOLE RECORD - Plate Load Testing

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **PL8A04**
 Client **WSP** National Grid Coordinates **354853.6 E** **390755.9 N** Ground Level **25.35** m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.00 - 0.40	B				Grass over TOPSOIL: Soft brown slightly sandy gravelly clay with a low cobble content and many rootlets. Gravel is angular to subrounded fine to coarse of sandstone, siltstone, mudstone, quartz and rare fragments of ceramics. Firm yellowish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to rounded fine to coarse of sandstone, mudstone and quartz. End of Borehole		G.L.		25.35
0.40	D						0.40 0.41		24.95 24.94

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.41		Trial Pit		G.L. 0.41			15/10/19 15/10/19	08:00 18:00						None encountered.

Remarks  Plate Load Test carried out at 0.40m depth.

Logged by **JN**

Figure **1 of 1**
18/12/2019

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015



BOREHOLE RECORD - Plate Load Testing

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **PL8A05**
 Client **WSP** National Grid Coordinates **355021.0 E** **390770.4 N** Ground Level **23.86** m OD
 Scale **1:50**

Sampling			Properties		Strata			Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description			Depth	Legend	Level m OD
0.00- 0.40	B				Crops over TOPSOIL: Soft brown slightly sandy slightly gravelly clay with rare rootlets. Gravel is angular to subrounded fine to coarse of sandstone, siltstone, mudstone and quartz. POSSIBLE MADE GROUND: Yellowish brown slightly gravelly sand with some clayey pockets. Gravel is subrounded to rounded fine to medium of mudstone. End of Borehole			G.L.		23.86
0.40	D							0.40 0.41		23.46 23.45

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.41		Trial Pit		G.L. 0.41		DRY	14/10/19 14/10/19	08:00 18:00						None encountered.

Remarks  Plate Load Test carried out at 0.40m depth.

Logged by **JN**

Figure **1 of 1**
18/12/2019

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015



BOREHOLE RECORD - Plate Load Testing

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **PL8A06**
 Client **WSP** National Grid Coordinates **354923.4 E** **390672.3 N** Ground Level **24.90** m OD
 Scale **1:50**

Sampling			Properties		Strata				Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description				Depth	Legend	Level m OD
0.00- 0.40	B				Crops over TOPSOIL: Soft brown slightly sandy slightly gravelly clay with some rootlets. Gravel is angular to subrounded fine to coarse of sandstone, siltstone, mudstone and quartz. POSSIBLE MADE GROUND: Yellowish brown clayey fine to medium sand. End of Borehole				G.L.		24.90
0.40	D								0.40 0.41		24.50 24.49

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.41		Trial Pit		G.L. 0.41		DRY	14/10/19 14/10/19	08:00 18:00						None encountered.

Remarks  Plate Load Test carried out at 0.40m depth.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **JN**

Figure **1 of 1**
18/12/2019



BOREHOLE RECORD - Plate Load Testing

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **PL8A07**
 Client **WSP** National Grid Coordinates **354871.4 E** **390602.4 N** Ground Level **24.91** m OD
 Scale **1:50**

Sampling			Properties		Strata			Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description			Depth	Legend	Level m OD
0.00- 0.40	B				Crops over TOPSOIL: Soft brown slightly sandy slightly gravelly clay with many rootlets. Gravel is angular to subrounded fine to coarse of sandstone, siltstone, mudstone and quartz. Firm brown slightly sandy slightly gravelly CLAY. Gravel is subrounded to rounded fine to coarse of sandstone, mudstone and coal. End of Borehole			G.L.		24.91
0.40	D							0.40 0.41		24.51 24.50

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.41		Trial Pit		G.L. 0.41			14/10/19 14/10/19	08:00 18:00						None encountered.

Remarks **AGS** Plate Load Test carried out at 0.40m depth.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **JN**

Figure **1 of 1**
18/12/2019

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BOREHOLE RECORD - Plate Load Testing

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **PL8A08**
 Client **WSP** National Grid Coordinates **355034.3 E** **390616.8 N** Ground Level **24.01** m OD
 Scale **1:50**

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.00- 0.40	B				Crops over TOPSOIL: Soft brown slightly sandy slightly gravelly clay with some rootlets. Gravel is angular to subrounded fine to coarse of sandstone, siltstone, mudstone and quartz. Firm reddish brown slightly sandy slightly gravelly CLAY. Gravel is subrounded to rounded fine to coarse of sandstone and mudstone. End of Borehole		G.L.		24.01
0.40	D						0.40 0.41		23.61 23.60

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.41		Trial Pit		G.L. 0.41			14/10/19 14/10/19	08:00 18:00						None encountered.

Remarks  Plate Load Test carried out at 0.40m depth.

Logged by **JN**

Figure **1 of 1**
18/12/2019

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015



BOREHOLE RECORD - Plate Load Testing

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **PL8A10**
 Client **WSP** National Grid Coordinates **354948.4 E** **390541.1 N** Ground Level **25.33** m OD
 Scale **1:50**

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.00- 0.40	B				Grass over TOPSOIL: Soft brown slightly sandy slightly gravelly clay with many rootlets. Gravel is angular to subrounded fine to coarse of sandstone, siltstone, mudstone and occasional brick fragments. Firm reddish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of sandstone and mudstone. End of Borehole		G.L.		25.33
0.40	D						0.40 0.41		24.93 24.92

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.41		Trial Pit		G.L. 0.41			15/10/19 15/10/19	08:00 18:00						None encountered.

Remarks  Plate Load Test carried out at 0.40m depth.

Logged by **JN**

Figure **1 of 1**
18/12/2019

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015



BOREHOLE RECORD - Plate Load Testing

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **PL8A11**
PN194027
 Client **WSP** National Grid Coordinates **354971.4 E**
390806.5 N Ground Level **24.22** m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.00- 0.40	B				Crops over TOPSOIL: Soft brown slightly sandy slightly gravelly clay with many rootlets. Gravel is angular to subrounded fine to coarse of sandstone, siltstone, mudstone and quartz. MADE GROUND: Soft dark brown slightly sandy slightly gravelly clay. Gravel is subangular to subrounded fine to coarse of sandstone, mudstone and brick fragments. End of Borehole		G.L.		24.22
0.40	D						0.40 0.41		23.82 23.81

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.41		Trial Pit		G.L. 0.41			14/10/19 14/10/19	08:00 18:00						None encountered.

Remarks  Plate Load Test carried out at 0.40m depth.

Logged by **JN**

Figure **1 of 1**
18/12/2019

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015



BOREHOLE RECORD - Plate Load Testing

Project **OMEGA DEVELOPMENT GI** Engineer **WSP** Borehole Project No **PL8B01**
 Client **WSP** National Grid Coordinates **355137.7 E** **390701.5 N** Ground Level **23.12** m OD
 Scale **1:50**

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.00 - 0.40	B				Crops over TOPSOIL: Soft brown slightly sandy slightly gravelly clay with some rootlets. Gravel is angular to subrounded fine to coarse of sandstone, siltstone, mudstone and quartz. MADE GROUND: Brown slightly gravelly slightly silty fine to medium sand. Gravel is angular to rounded fine to medium of sandstone and brick fragments. End of Borehole		G.L.		23.12
0.40	D						0.40 0.41		22.72 22.71

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.41		Trial Pit		G.L. 0.41			14/10/19 14/10/19	08:00 18:00						None encountered.

Remarks  Plate Load Test carried out at 0.40m depth.

Logged by **JN**

Figure **1 of 1**
18/12/2019

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015



APPENDIX 9

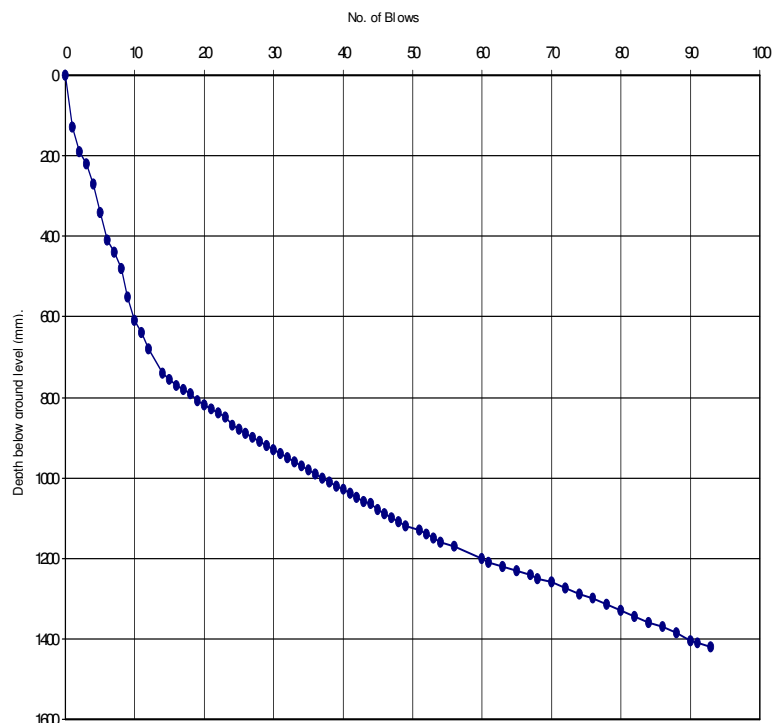
Dynamic Cone Penetration Tests

Location No.	DCP8A01
Project No.	PN194027
Test No.	1
Test Date	25/10/2019

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	140	0	1	22	2	160	840	1	43	2	380	1060
1	1	1	270	130	1	23	2	170	850	1	44	2	385	1065
1	2	1	330	190	1	24	2	190	870	1	45	2	400	1080
1	3	1	360	220	1	25	2	200	880	1	46	2	410	1090
1	4	1	410	270	1	26	2	210	890	1	47	2	420	1100
1	5	1	480	340	1	27	2	220	900	1	48	2	430	1110
1	6	1	550	410	1	28	2	230	910	1	49	2	440	1120
1	7	1	580	440	1	29	2	240	920	2	51	2	450	1130
1	8	1	620	480	1	30	2	250	930	1	52	2	460	1140
1	9	1	690	550	1	31	2	260	940	1	53	2	470	1150
1	10	1	750	610	1	32	2	270	950	1	54	2	480	1160
1	11	1	780	640	1	33	2	280	960	2	56	2	490	1170
1	12	1	820	680	1	34	2	290	970	4	60	2	520	1200
2	14	1	880	740	1	35	2	300	980	1	61	2	530	1210
1	15	2	75	755	1	36	2	310	990	2	63	2	540	1220
1	16	2	90	770	1	37	2	320	1000	2	65	2	550	1230
1	17	2	100	780	1	38	2	330	1010	2	67	2	560	1240
1	18	2	110	790	1	39	2	340	1020	1	68	2	570	1250
1	19	2	130	810	1	40	2	350	1030	2	70	2	580	1260
1	20	2	140	820	1	41	2	360	1040	2	72	2	595	1275
1	21	2	150	830	1	42	2	370	1050	2	74	2	610	1290

Test Started at	0.00 m
Operator	MM
Checked by	

Rod No.	Zero Reading (mm)
1	140
2	60

[illegible]

Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Rev 1 (2009).
DCP8A01 was located adjacent to Trial Pit TP8A01.

Printed: 27/11/2019

GEOTECHNICS

In Situ Testing - Dynamic Cone Penetration Test

Project OMEGA DEVELOPMENT GI

Client WSP

Location No. DCP8A02

Project No. PN194027

Test No. 1

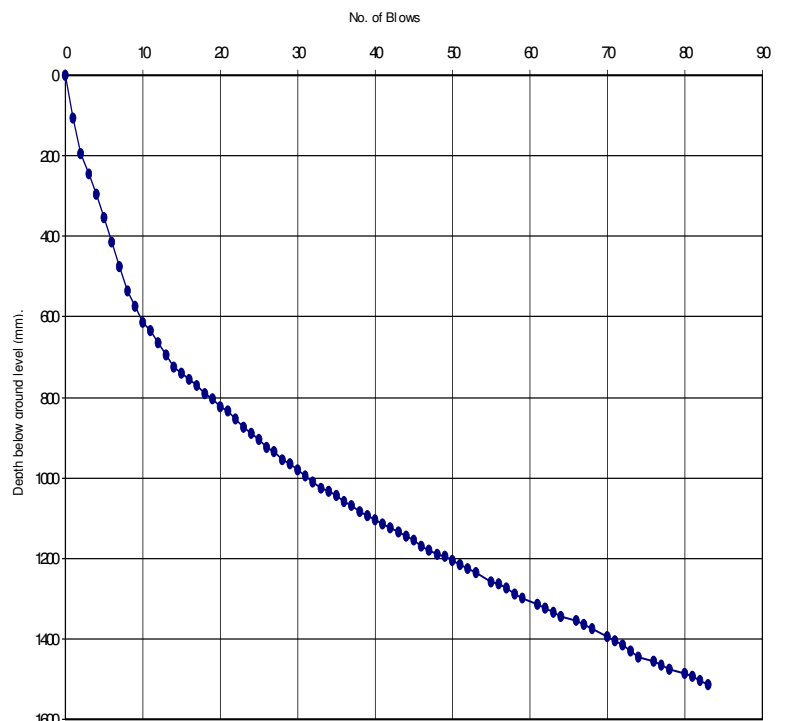
Test Date 25/10/2019

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	155	0	1	21	2	150	835	1	42	2	440	1125
1	1	1	260	105	1	22	2	170	855	1	43	2	450	1135
1	2	1	350	195	1	23	2	190	875	1	44	2	460	1145
1	3	1	400	245	1	24	2	205	890	1	45	2	470	1155
1	4	1	450	295	1	25	2	220	905	1	46	2	485	1170
1	5	1	510	355	1	26	2	240	925	1	47	2	495	1180
1	6	1	570	415	1	27	2	250	935	1	48	2	505	1190
1	7	1	630	475	1	28	2	270	955	1	49	2	510	1195
1	8	1	690	535	1	29	2	280	965	1	50	2	520	1205
1	9	1	730	575	1	30	2	295	980	1	51	2	530	1215
1	10	1	770	615	1	31	2	310	995	1	52	2	540	1225
1	11	1	790	635	1	32	2	325	1010	1	53	2	550	1235
1	12	1	820	665	1	33	2	340	1025	2	55	2	575	1260
1	13	1	850	695	1	34	2	350	1035	1	56	2	580	1265
1	14	1	880	725	1	35	2	360	1045	1	57	2	590	1275
1	15	2	55	740	1	36	2	375	1060	1	58	2	605	1290
1	16	2	70	755	1	37	2	385	1070	1	59	2	615	1300
1	17	2	85	770	1	38	2	400	1085	2	61	2	630	1315
1	18	2	105	790	1	39	2	410	1095	1	62	2	640	1325
1	19	2	120	805	1	40	2	420	1105	1	63	2	650	1335
1	20	2	140	825	1	41	2	430	1115	1	64	2	660	1345

Test Started at	0.00 m
Operator	MM
Checked by	

Rod No.	Zero Reading (mm)
1	155
2	40

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	195	0	2	98	2.4
195	615	2	10	53	4.6
615	725	10	14	28	9.1
725	1070	14	37	15	17.3
1070	1515	37	83	10	27.4



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Rev 1 (2009).
DCP8A02 was located adjacent to Trial Pit TP8A02.

Printed: 27/11/2019

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project OMEGA DEVELOPMENT GI

Client WSP

Location No. DCP8A03

Project No. PN194027

Test No. 1

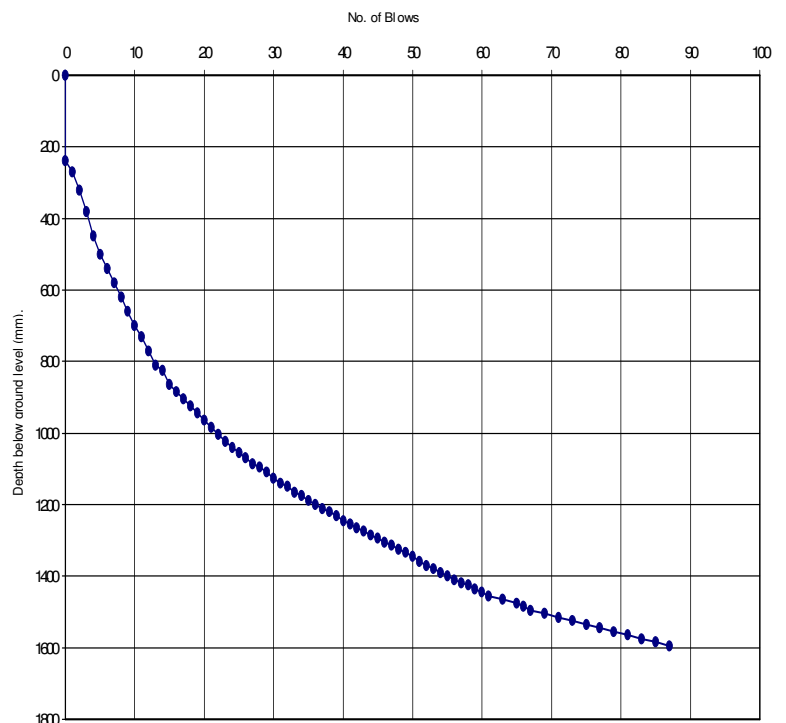
Test Date 25/10/2019

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
2	63	2	710	1465
2	65	2	720	1475
1	66	2	730	1485
1	67	2	740	1495
2	69	2	750	1505
2	71	2	760	1515
2	73	2	770	1525
2	75	2	780	1535
2	77	2	790	1545
2	79	2	800	1555
2	81	2	810	1565
2	83	2	820	1575
2	85	2	830	1585
2	87	2	840	1595

Test Started at	0.00 m
Operator	MM
Checked by	

Rod No.	Zero Reading (mm)
1	80
2	55

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	240	0	0		
240	770	0	12	44	5.5
770	1005	12	22	24	10.7
1005	1140	22	31	15	17.3
1140	1455	31	61	11	25.2
1455	1595	61	87	5	51.0



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Rev 1 (2009).

DCP8A03 was located adjacent to TP8A04.

Rods sank under self-weight to 0.24m depth.

Printed: 27/11/2019

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project OMEGA DEVELOPMENT GI

Client WSP

Location No. DCP8A04

Project No. PN194027

Test No. 1

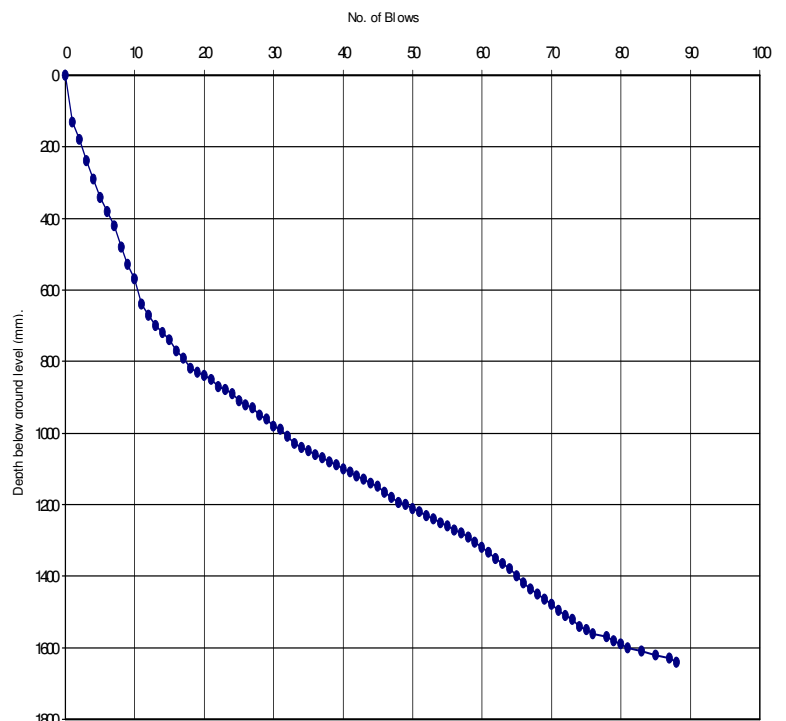
Test Date 25/10/2019

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	70	0	1	21	2	90	850	1	42	2	360	1120
1	1	1	200	130	1	22	2	110	870	1	43	2	370	1130
1	2	1	250	180	1	23	2	120	880	1	44	2	380	1140
1	3	1	310	240	1	24	2	130	890	1	45	2	390	1150
1	4	1	360	290	1	25	2	150	910	1	46	2	405	1165
1	5	1	410	340	1	26	2	160	920	1	47	2	420	1180
1	6	1	450	380	1	27	2	170	930	1	48	2	435	1195
1	7	1	490	420	1	28	2	190	950	1	49	2	440	1200
1	8	1	550	480	1	29	2	200	960	1	50	2	450	1210
1	9	1	600	530	1	30	2	220	980	1	51	2	460	1220
1	10	1	640	570	1	31	2	230	990	1	52	2	470	1230
1	11	1	710	640	1	32	2	250	1010	1	53	2	480	1240
1	12	1	740	670	1	33	2	270	1030	1	54	2	490	1250
1	13	1	770	700	1	34	2	280	1040	1	55	2	500	1260
1	14	1	790	720	1	35	2	290	1050	1	56	2	510	1270
1	15	1	810	740	1	36	2	300	1060	1	57	2	520	1280
1	16	1	840	770	1	37	2	310	1070	1	58	2	530	1290
1	17	1	860	790	1	38	2	320	1080	1	59	2	545	1305
1	18	1	890	820	1	39	2	330	1090	1	60	2	560	1320
1	19	2	70	830	1	40	2	340	1100	1	61	2	575	1335
1	20	2	80	840	1	41	2	350	1110	1	62	2	590	1350

Test Started at	0.00	m
Operator	MM	
Checked by		

Rod No.	Zero Reading (mm)
1	70
2	60

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	130	0	1	130	1.8
130	670	1	12	49	4.9
670	820	12	18	25	10.1
820	1195	18	48	13	20.9
1195	1365	48	63	11	23.2
1365	1550	63	75	15	16.8
1550	1640	75	88	7	39.1



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Rev 1 (2009).
DCP8A04 was located adjacent to TP8A08.

Printed: 27/11/2019

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project OMEGA DEVELOPMENT GI

Client WSP

Location No. DCP8A04

Project No. PN194027

Test No. 1

Test Date 25/10/2019

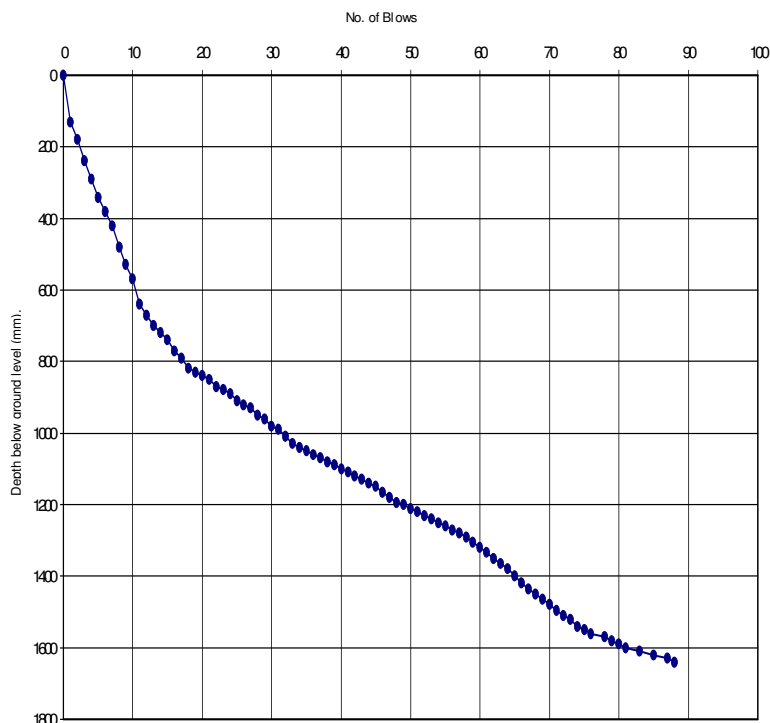
Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
1	63	2	605	1365
1	64	2	620	1380
1	65	2	640	1400
1	66	2	660	1420
1	67	2	675	1435
1	68	2	690	1450
1	69	2	705	1465
1	70	2	720	1480
1	71	2	735	1495
1	72	2	750	1510
1	73	2	760	1520
1	74	2	780	1540
1	75	2	790	1550
1	76	2	800	1560
2	78	2	810	1570
1	79	2	820	1580
1	80	2	830	1590
1	81	2	840	1600
2	83	2	850	1610
2	85	2	860	1620
2	87	2	870	1630

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
1	88	2	880	1640

Test Started at	0.00	m
Operator	MM	
Checked by		

Rod No.	Zero Reading (mm)
1	70
2	60

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	130	0	1	130	1.8
130	670	1	12	49	4.9
670	820	12	18	25	10.1
820	1195	18	48	13	20.9
1195	1365	48	63	11	23.2
1365	1550	63	75	15	16.8
1550	1640	75	88	7	39.1



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Rev 1 (2009).
DCP8A04 was located adjacent to TP8A08.

Printed: 27/11/2019

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project OMEGA DEVELOPMENT GI

Client WSP

Location No. DCP8A05

Project No. PN194027

Test No. 1

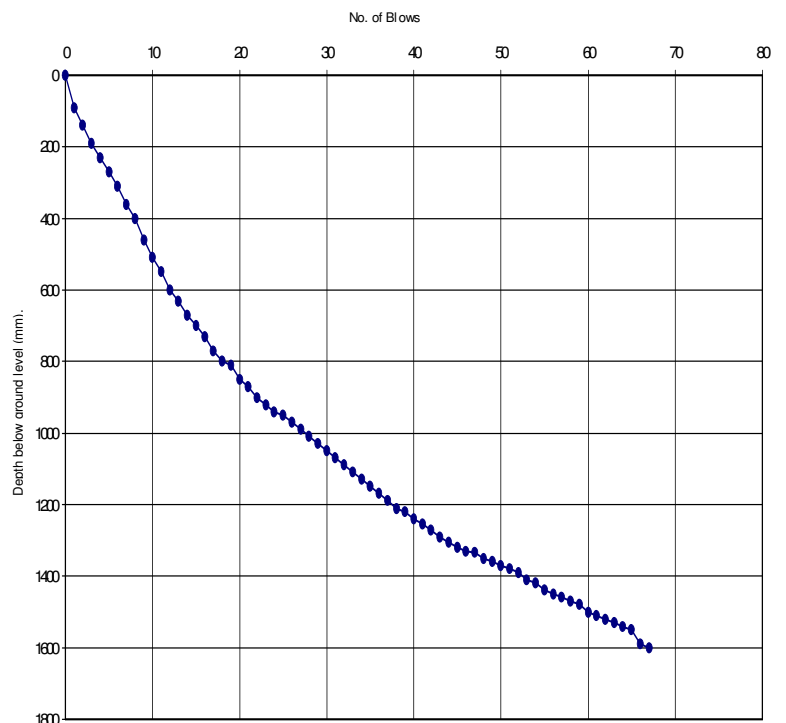
Test Date 25/10/2019

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
1	63	2	790	1530
1	64	2	800	1540
1	65	2	810	1550
1	66	2	850	1590
1	67	2	860	1600

Test Started at	0.00 m
Operator	MM
Checked by	

Rod No.	Zero Reading (mm)
1	90
2	60

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	600	0	12	50	4.8
600	900	12	22	30	8.3
900	1305	22	44	18	13.9
1305	1550	44	65	12	22.5
1550	1600	65	67	25	10.1



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Rev 1 (2009).
DCP8A05 was located adjacent to TP8A11.

Printed: 27/11/2019

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project OMEGA DEVELOPMENT GI

Client WSP

Location No. DCP8B01

Project No. PN194027

Test No. 1

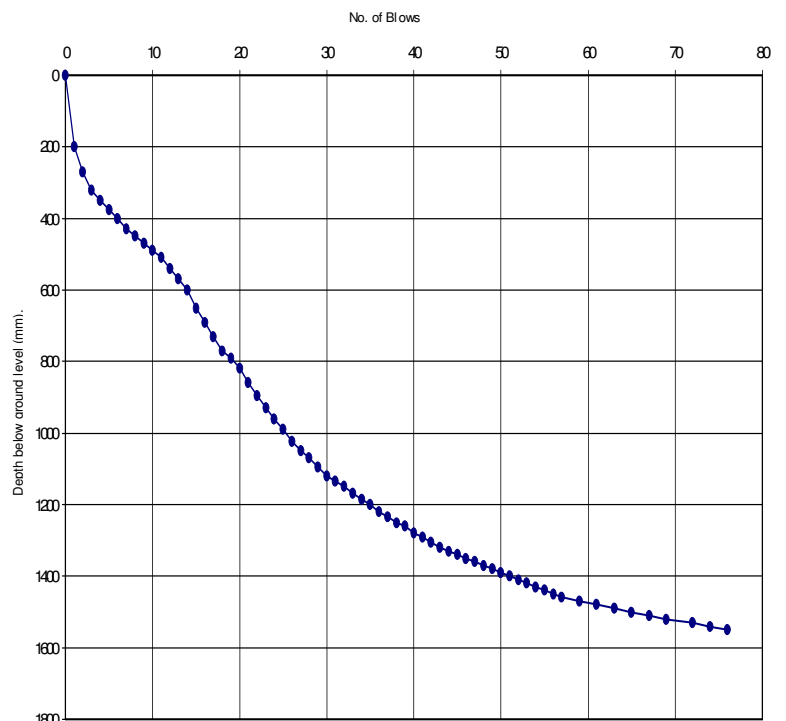
Test Date 30/10/2019

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	110	0	1	21	2	140	860	1	42	2	585	1305
1	1	1	310	200	1	22	2	175	895	1	43	2	600	1320
1	2	1	380	270	1	23	2	210	930	1	44	2	610	1330
1	3	1	430	320	1	24	2	240	960	1	45	2	620	1340
1	4	1	460	350	1	25	2	270	990	1	46	2	630	1350
1	5	1	485	375	1	26	2	305	1025	1	47	2	640	1360
1	6	1	510	400	1	27	2	330	1050	1	48	2	650	1370
1	7	1	540	430	1	28	2	350	1070	1	49	2	660	1380
1	8	1	560	450	1	29	2	375	1095	1	50	2	670	1390
1	9	1	580	470	1	30	2	400	1120	1	51	2	680	1400
1	10	1	600	490	1	31	2	415	1135	1	52	2	690	1410
1	11	1	620	510	1	32	2	430	1150	1	53	2	700	1420
1	12	1	650	540	1	33	2	450	1170	1	54	2	710	1430
1	13	1	680	570	1	34	2	465	1185	1	55	2	720	1440
1	14	1	710	600	1	35	2	480	1200	1	56	2	730	1450
1	15	1	760	650	1	36	2	500	1220	1	57	2	740	1460
1	16	1	800	690	1	37	2	515	1235	2	59	2	750	1470
1	17	1	840	730	1	38	2	530	1250	2	61	2	760	1480
1	18	1	880	770	1	39	2	540	1260	2	63	2	770	1490
1	19	2	70	790	1	40	2	560	1280	2	65	2	780	1500
1	20	2	100	820	1	41	2	570	1290	2	67	2	790	1510

Test Started at	0.00 m
Operator	MM
Checked by	

Rod No.	Zero Reading (mm)
1	110
2	50

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	270	0	2	135	1.7
270	600	2	14	28	9.1
600	1050	14	27	35	7.1
1050	1305	27	42	17	15.1
1305	1460	42	57	10	25.6
1460	1550	57	76	5	58.3



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Rev 1 (2009).
DCP8B01 was located adjacent to TP8B03.

Printed: 27/11/2019

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project OMEGA DEVELOPMENT GI

Client WSP

Location No. DCP8B01

Project No. PN194027

Test No. 1

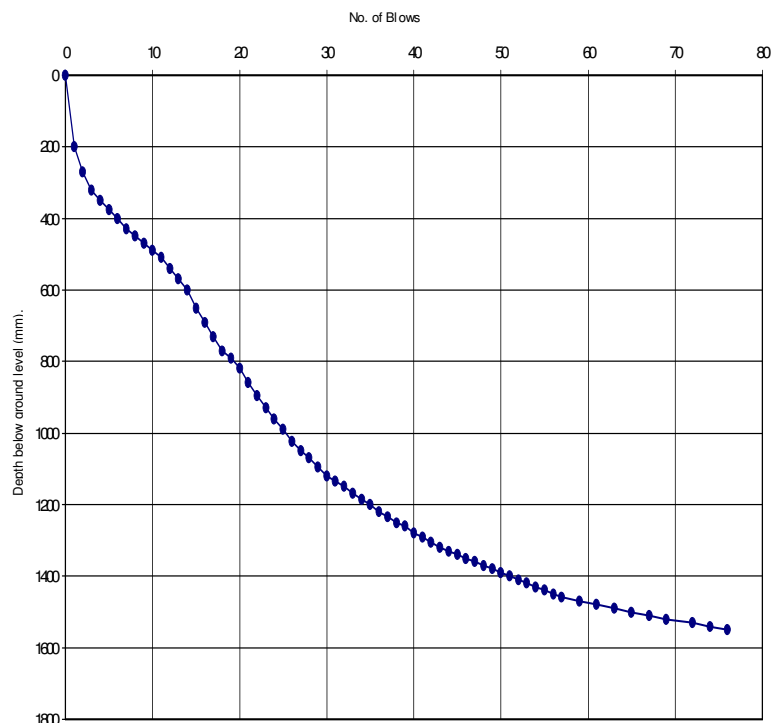
Test Date 30/10/2019

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
2	69	2	800	1520
3	72	2	810	1530
2	74	2	820	1540
2	76	2	830	1550

Test Started at	0.00 m
Operator	MM
Checked by	

Rod No.	Zero Reading (mm)
1	110
2	50

Depth bgl (mm) Top	Base	Blows No. Top	Base	DCP mm/blow	CBR %
0	270	0	2	135	1.7
270	600	2	14	28	9.1
600	1050	14	27	35	7.1
1050	1305	27	42	17	15.1
1305	1460	42	57	10	25.6
1460	1550	57	76	5	58.3



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Rev 1 (2009).
DCP8B01 was located adjacent to TP8B03.

Printed: 27/11/2019

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project OMEGA DEVELOPMENT GI

Client WSP

Location No. DCP8B02

Project No. PN194027

Test No. 1

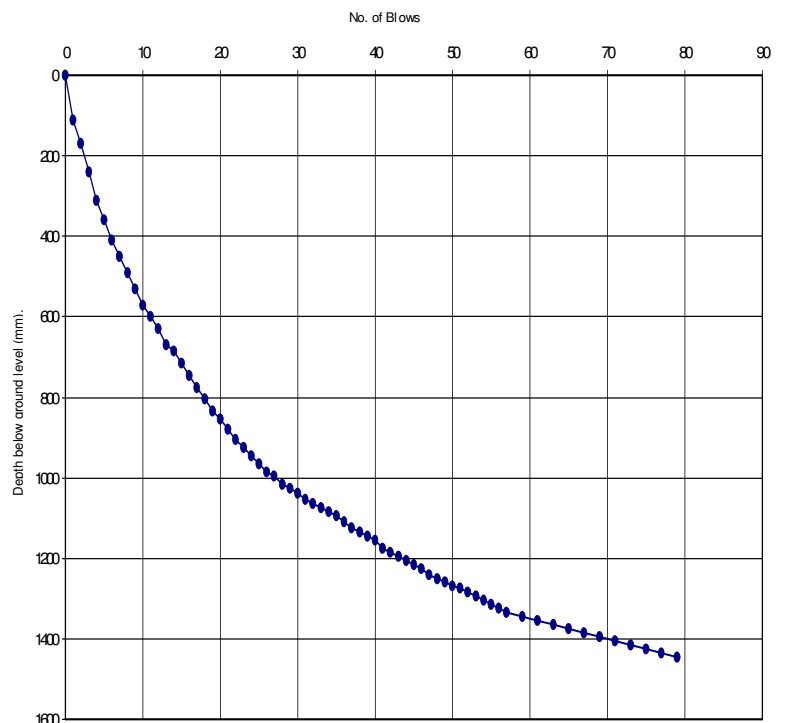
Test Date 30/10/2019

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
2	69	2	790	1395
2	71	2	800	1405
2	73	2	810	1415
2	75	2	820	1425
2	77	2	830	1435
2	79	2	840	1445

Test Started at	0.00 m
Operator	MM
Checked by	

Rod No.	Zero Reading (mm)
1	210
2	65

Depth bgl (mm) Top	Base	Blows No. Top	Base	DCP mm/blow	CBR %
0	410	0	6	68	3.5
410	685	6	14	34	7.2
685	985	14	26	25	10.1
985	1335	26	57	11	23.3
1335	1445	57	79	5	55.1



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Rev 1 (2009).
DCP8B02 was located adjacent to TP8B05.

Printed: 27/11/2019

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project OMEGA DEVELOPMENT GI

Client WSP

Location No. DCP8B04

Project No. PN194027

Test No. 1

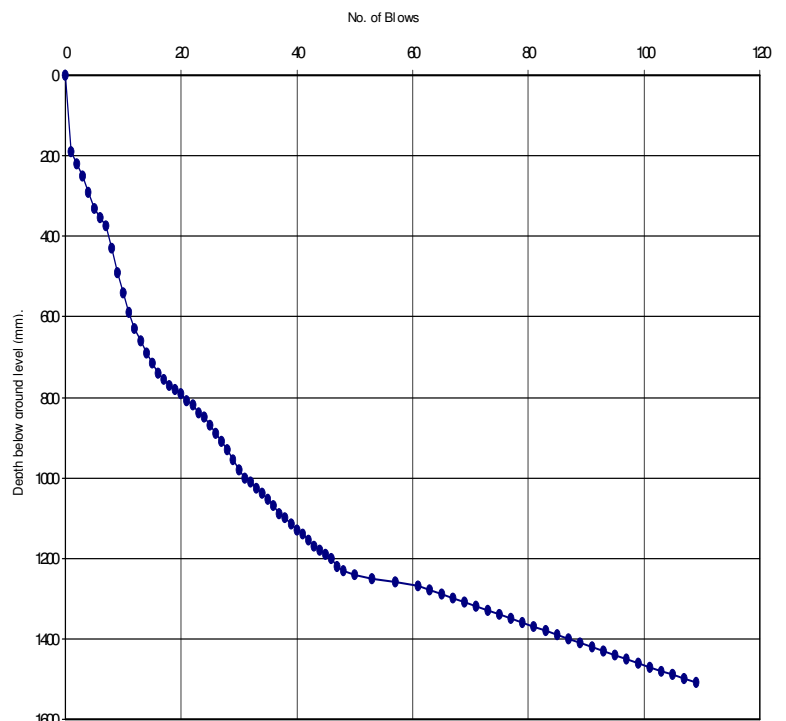
Test Date 30/10/2019

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	160	0	1	21	2	140	810	1	42	2	485	1155
1	1	1	350	190	1	22	2	150	820	1	43	2	500	1170
1	2	1	380	220	1	23	2	170	840	1	44	2	510	1180
1	3	1	410	250	1	24	2	180	850	1	45	2	520	1190
1	4	1	450	290	1	25	2	200	870	1	46	2	530	1200
1	5	1	490	330	1	26	2	220	890	1	47	2	550	1220
1	6	1	515	355	1	27	2	240	910	1	48	2	560	1230
1	7	1	535	375	1	28	2	260	930	2	50	2	570	1240
1	8	1	590	430	1	29	2	285	955	3	53	2	580	1250
1	9	1	650	490	1	30	2	310	980	4	57	2	590	1260
1	10	1	700	540	1	31	2	330	1000	4	61	2	600	1270
1	11	1	750	590	1	32	2	340	1010	2	63	2	610	1280
1	12	1	790	630	1	33	2	355	1025	2	65	2	620	1290
1	13	1	820	660	1	34	2	370	1040	2	67	2	630	1300
1	14	1	850	690	1	35	2	385	1055	2	69	2	640	1310
1	15	2	45	715	1	36	2	400	1070	2	71	2	650	1320
1	16	2	70	740	1	37	2	420	1090	2	73	2	660	1330
1	17	2	85	755	1	38	2	430	1100	2	75	2	670	1340
1	18	2	100	770	1	39	2	445	1115	2	77	2	680	1350
1	19	2	110	780	1	40	2	460	1130	2	79	2	690	1360
1	20	2	120	790	1	41	2	470	1140	2	81	2	700	1370

Test Started at	0.00	m
Operator	MM	
Checked by		

Rod No.	Zero Reading (mm)
1	160
2	20

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	190	0	1	190	1.2
190	540	1	10	39	6.3
540	740	10	16	33	7.4
740	820	16	22	13	19.5
820	1000	22	31	20	12.7
1000	1230	31	48	14	19.2
1230	1270	48	61	3	92.1
1270	1510	61	109	5	55.1



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Rev 1 (2009).
DCP8B04 was located adjacent to TP8B09.

Printed: 27/11/2019

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project OMEGA DEVELOPMENT GI

Client WSP

Location No. DCP8B04

Project No. PN194027

Test No. 1

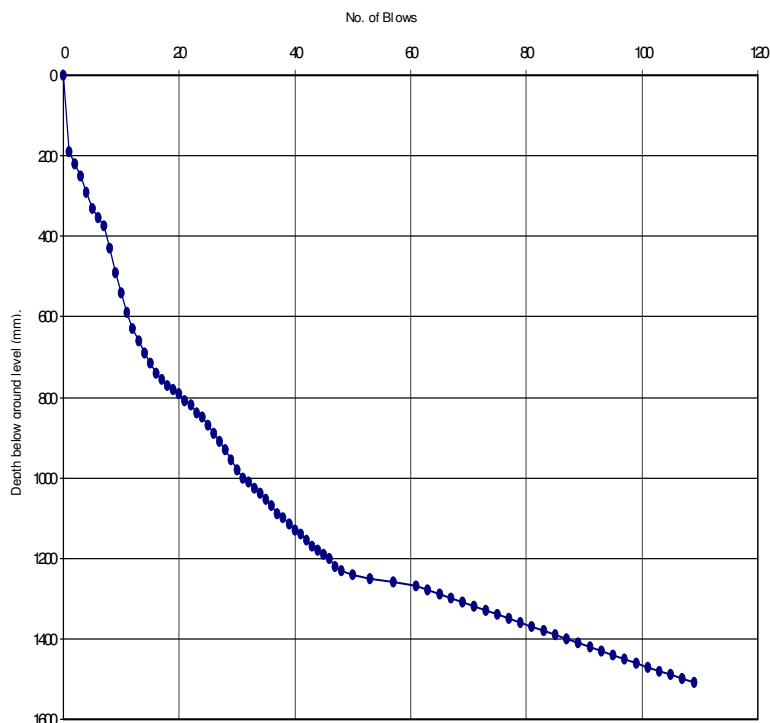
Test Date 30/10/2019

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
2	83	2	710	1380
2	85	2	720	1390
2	87	2	730	1400
2	89	2	740	1410
2	91	2	750	1420
2	93	2	760	1430
2	95	2	770	1440
2	97	2	780	1450
2	99	2	790	1460
2	101	2	800	1470
2	103	2	810	1480
2	105	2	820	1490
2	107	2	830	1500
2	109	2	840	1510

Test Started at	0.00 m
Operator	MM
Checked by	

Rod No.	Zero Reading (mm)
1	160
2	20

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	190	0	1	190	1.2
190	540	1	10	39	6.3
540	740	10	16	33	7.4
740	820	16	22	13	19.5
820	1000	22	31	20	12.7
1000	1230	31	48	14	19.2
1230	1270	48	61	3	92.1
1270	1510	61	109	5	55.1



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Rev 1 (2009).
DCP8B04 was located adjacent to TP8B09.

Printed: 27/11/2019

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project OMEGA DEVELOPMENT GI

Client WSP

Location No. DCP8B05

Project No. PN194027

Test No. 1

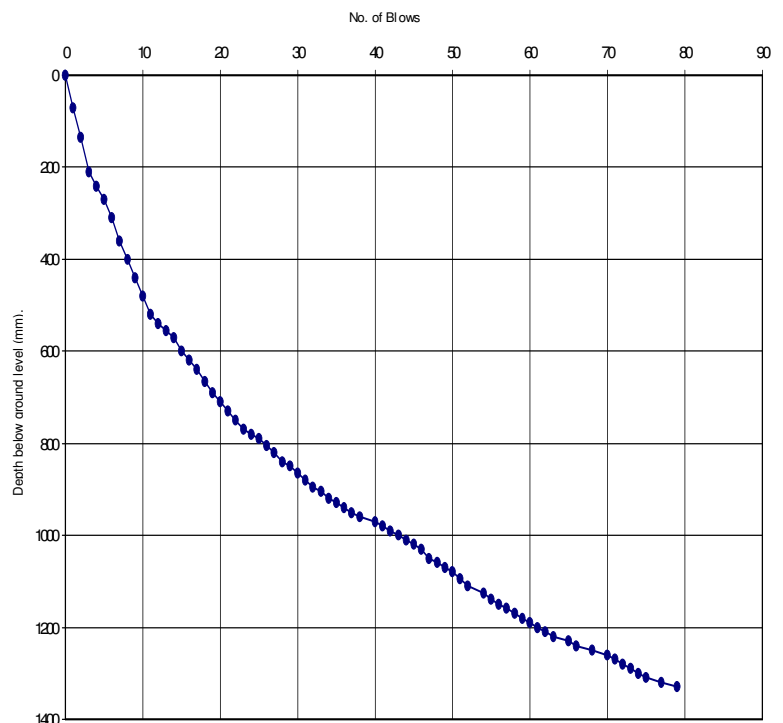
Test Date 30/10/2019

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
1	66	2	760	1240
2	68	2	770	1250
2	70	2	780	1260
1	71	2	790	1270
1	72	2	800	1280
1	73	2	810	1290
1	74	2	820	1300
1	75	2	830	1310
2	77	2	840	1320
2	79	2	850	1330

Test Started at	0.00 m
Operator	MM
Checked by	

Rod No.	Zero Reading (mm)
1	360
2	40

Depth bgl (mm) Top	Base	Blows No. Top	Base	DCP mm/blow	CBR %
0	210	0	3	70	3.4
210	540	3	12	37	6.7
540	770	12	23	21	12.1
770	970	23	40	12	22.3
970	1210	40	62	11	24.2
1210	1330	62	79	7	38.3



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Rev 1 (2009).
DCP8B05 was located adjacent to TP8B13.

Printed: 27/11/2019

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project OMEGA DEVELOPMENT GI

Client WSP

Location No. DCP8B06

Project No. PN194027

Test No. 1

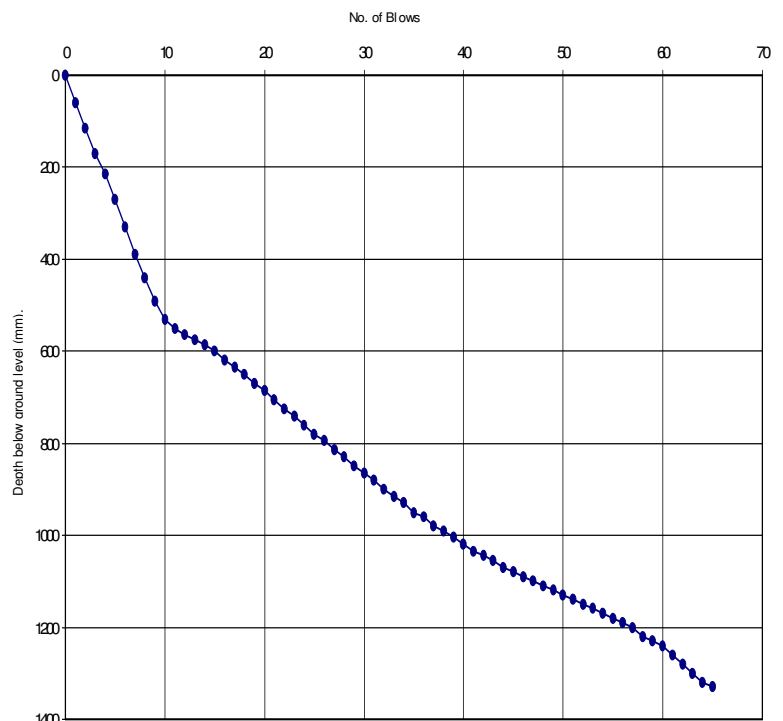
Test Date 30/10/2019

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	360	0	1	21	2	235	705	1	42	2	575	1045
1	1	1	420	60	1	22	2	255	725	1	43	2	585	1055
1	2	1	475	115	1	23	2	270	740	1	44	2	600	1070
1	3	1	530	170	1	24	2	290	760	1	45	2	610	1080
1	4	1	575	215	1	25	2	310	780	1	46	2	620	1090
1	5	1	630	270	1	26	2	325	795	1	47	2	630	1100
1	6	1	690	330	1	27	2	345	815	1	48	2	640	1110
1	7	1	750	390	1	28	2	360	830	1	49	2	650	1120
1	8	1	800	440	1	29	2	380	850	1	50	2	660	1130
1	9	1	850	490	1	30	2	395	865	1	51	2	670	1140
1	10	1	890	530	1	31	2	410	880	1	52	2	680	1150
1	11	2	80	550	1	32	2	430	900	1	53	2	690	1160
1	12	2	95	565	1	33	2	445	915	1	54	2	700	1170
1	13	2	105	575	1	34	2	460	930	1	55	2	710	1180
1	14	2	115	585	1	35	2	480	950	1	56	2	720	1190
1	15	2	130	600	1	36	2	490	960	1	57	2	730	1200
1	16	2	150	620	1	37	2	510	980	1	58	2	750	1220
1	17	2	165	635	1	38	2	520	990	1	59	2	760	1230
1	18	2	180	650	1	39	2	535	1005	1	60	2	770	1240
1	19	2	200	670	1	40	2	550	1020	1	61	2	790	1260
1	20	2	215	685	1	41	2	565	1035	1	62	2	810	1280

Test Started at	0.00 m
Operator	MM
Checked by	

Rod No.	Zero Reading (mm)
1	360
2	60

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	530	0	10	53	4.5
530	635	10	17	15	17.3
635	1005	17	39	17	15.3
1005	1200	39	57	11	24.3
1200	1330	57	65	16	15.9



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Rev 1 (2009).
DCP8B06 was located adjacent to TP8B14.

Printed: 27/11/2019

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project OMEGA DEVELOPMENT GI

Client WSP

Location No. DCP8B06

Project No. PN194027

Test No. 1

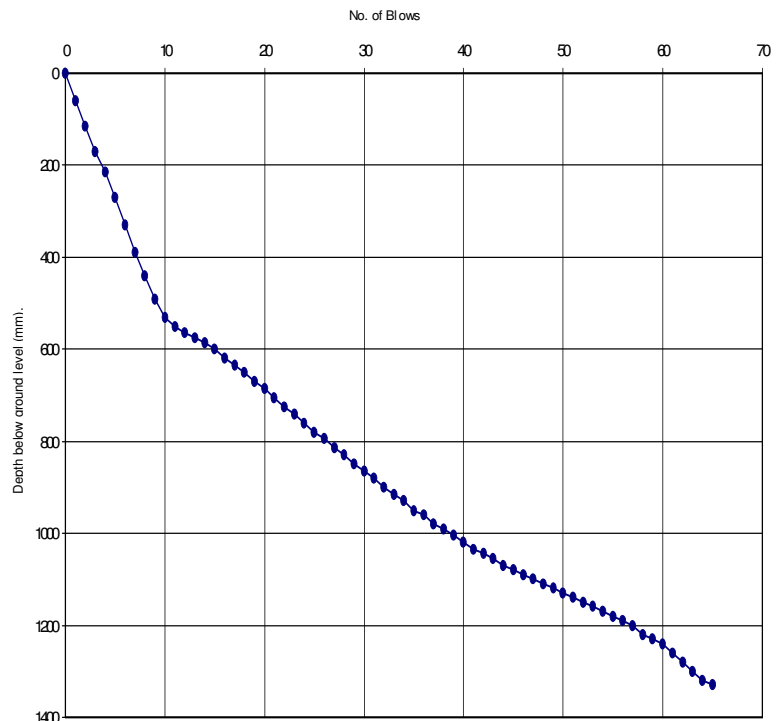
Test Date 30/10/2019

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
1	63	2	830	1300
1	64	2	850	1320
1	65	2	860	1330

Test Started at	0.00 m
Operator	MM
Checked by	

Rod No.	Zero Reading (mm)
1	360
2	60

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	530	0	10	53	4.5
530	635	10	17	15	17.3
635	1005	17	39	17	15.3
1005	1200	39	57	11	24.3
1200	1330	57	65	16	15.9



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Rev 1 (2009).
DCP8B06 was located adjacent to TP8B14.

Printed: 27/11/2019

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project OMEGA DEVELOPMENT GI

Client WSP

Location No. DCP8B07

Project No. PN194027

Test No. 1

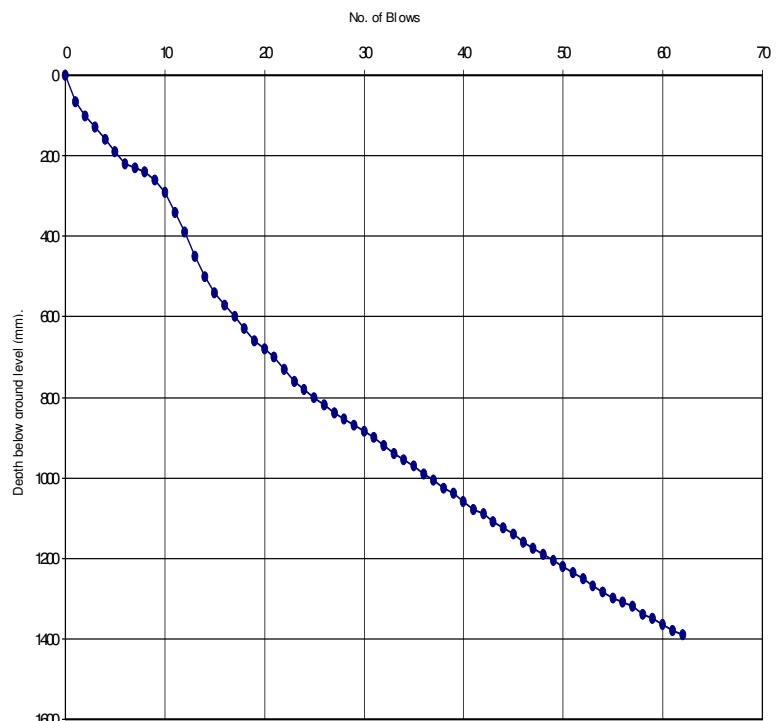
Test Date 30/10/2019

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	300	0	1	21	2	160	700	1	42	2	550	1090
1	1	1	365	65	1	22	2	190	730	1	43	2	570	1110
1	2	1	400	100	1	23	2	220	760	1	44	2	585	1125
1	3	1	430	130	1	24	2	240	780	1	45	2	600	1140
1	4	1	460	160	1	25	2	260	800	1	46	2	620	1160
1	5	1	490	190	1	26	2	280	820	1	47	2	635	1175
1	6	1	520	220	1	27	2	300	840	1	48	2	650	1190
1	7	1	530	230	1	28	2	315	855	1	49	2	665	1205
1	8	1	540	240	1	29	2	330	870	1	50	2	680	1220
1	9	1	560	260	1	30	2	345	885	1	51	2	695	1235
1	10	1	590	290	1	31	2	360	900	1	52	2	710	1250
1	11	1	640	340	1	32	2	380	920	1	53	2	730	1270
1	12	1	690	390	1	33	2	400	940	1	54	2	745	1285
1	13	1	750	450	1	34	2	415	955	1	55	2	760	1300
1	14	1	800	500	1	35	2	430	970	1	56	2	770	1310
1	15	1	840	540	1	36	2	450	990	1	57	2	780	1320
1	16	1	870	570	1	37	2	465	1005	1	58	2	800	1340
1	17	2	60	600	1	38	2	485	1025	1	59	2	810	1350
1	18	2	90	630	1	39	2	500	1040	1	60	2	825	1365
1	19	2	120	660	1	40	2	520	1060	1	61	2	840	1380
1	20	2	140	680	1	41	2	540	1080	1	62	2	850	1390

Test Started at	0.00 m
Operator	MM
Checked by	

Rod No.	Zero Reading (mm)
1	300
2	30

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	220	0	6	37	6.7
220	290	6	10	18	14.7
290	570	10	16	47	5.2
570	800	16	25	26	9.8
800	1300	25	55	17	15.4
1300	1390	55	62	13	20.3



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Rev 1 (2009).
DCP8B07 was located adjacent to TP8B17.

Printed: 27/11/2019

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APPENDIX 10

Laboratory Test Results - Geotechnical

Classification and Strength

Symbol	C - Clay (0 - containing organic matter) Plasticity	M - Silt L - Low I - Intermediate H - High V - Very High E - Extremely High
I_p	Plasticity Index	
%	% retained on 425 μ m sieve, shown under I_p value	
w_L	Liquid Limit	
w_p	Plastic Limit	
NP	Non-Plastic	
NAT	Sample tested in natural state	
w	Water Content	
ρ_d	Particle Density	
Test	Quick undrained triaxial tests	
	SS	Single stage - 102mm diameter.
	S3	Single stage - set of 3 38mm diameter.
	MS	Multistage - 102mm diameter.
	D	Drained Test
	HV	Hand Vane
	PP	Pocket Penetrometer (kg/cm^2)
	NST	Not suitable for test
γ_b	Bulk Density	
σ_3	Triaxial Cell Pressure	
$\sigma_1 - \sigma_3$	Deviator Stress	
##	Excessive Strain	
c_u	Undrained Cohesion	
c	Cohesion Intercept	
ϕ	Angle of Shearing Resistance	
Linear Shrink	Linear Shrinkage	
Stab add-	Stabiliser which is added	

Consolidation

m_v	Coefficient of Volume Compressibility
c_{v50}	Coefficient of Consolidation - Log t
c_{v90}	Coefficient of Consolidation - $\sqrt{t}$

Rock

UF	Unacceptable Failure
----	----------------------

Chemical Analysis

Acid Soluble	Total sulphate in specimen, expressed as SO_3 %, value in brackets expressed as SO_4 %
Water Soluble	Soluble sulphate in 2:1 water : soil extract, expressed as SO_3 g/l, value in brackets expressed as SO_4 g/l
In Water	Sulphate content of groundwater, expressed as SO_3 g/l, value in brackets expressed as SO_4 g/l
pH	pH value
Organic content	Organic content expressed as a percentage of dry weight
Chloride	Chloride Ion content expressed as a percentage of dry weight

MCV, Compaction, CBR

MCV	Moisture Condition Value at natural water content
MCC	Moisture Condition Calibration
CCV	Chalk Crushing Value

Compaction

Type	2.5	=	2.5 kg Rammer
	4.5	=	4.5 kg Rammer
	V	=	Vibrating Hammer
γ_b	Bulk Density		
γ_d	Dry Density		
CBR California Bearing Ratio			
Type	2.5	=	Test on Specimen Recompacted using 2.5 kg Rammer
	4.5	=	As above but using 4.5 kg Rammer
	V	=	As above but using Vibrating Hammer
	M	=	Test on open drive mould specimen cut in field
	S	=	Soaked Specimen

Top	CBR at top of mould
Bottom	CBR at bottom of mould
ND	None Detected

* In the Sample Description denotes a laboratory only description

Laboratory Test Certificate

Form REP008 Rev 3

Issued To	Geotechnics Ltd The Geotechnical Centre Unit 1B, Borders Industrial Estate River Lane, Saltney Chester CH4 8RJ	Date of issue	28/11/2019
		Issue No.	1
		Client Ref. No.	-
		Samples / Material Source	
		Samples Recv'd	15/10/19 to 12/11/19
Testing Start Date	15/10/2019	Sample State	As received
Testing Complete	28/11/2019	Sampled by	Geotechnics Limited
Comments	Rock Moisture Content performed according In-House procedure, not to IRSM accredited Method		
Project No	PN194027		
Project Name	OMEGA DEVELOPMENT GI		

Summary of Tests

Standard	Test Description	Test Quantity	UKAS
BS EN ISO 17892-5:2017	Incremental Loading Oedometer	9	Yes
BS EN ISO 17892-1:2014	Water Content	101	Yes
BS EN ISO 17892-12:2018 Cl. 5.3 & 5.5	Liquid Limit and Plastic Limit	65	Yes
BS EN ISO 17892-3:2015 Cl. 5.1	Particle Density by Fluid Pycnometer	12	Yes
BS EN ISO 17892-2:2014 Cl. 5.1	Bulk Density by Linear Measurement	2	Yes
BS 1377-4:1990 Cl. 3.3	2.5 kg Rammer Dry Density/Moisture Content Relationship (Compaction)	11	Yes
ISRM Suggested Method (1985)	Point Load Strength of Rock	24	Yes
BS EN ISO 17892-4:2016 Cl. 5.2	Particle Size Distribution by Sieving Method	6	Yes
BS EN ISO 17892-4:2016 Cl. 5.4	Particle Size Distribution by Pipette Method	6	Yes
BS EN ISO 17892-8:2018	Shear Strength by Unconsolidated Undrained Triaxial Test - Single Stage	26	Yes

Note: Any descriptions, opinions or interpretations are outside the scope of UKAS accreditation.

The results within this report relate only to the samples tested and received from the client.



Test Results checked and approved for issue.
Signed for and on behalf of Geotechnics Limited

[Redacted Signature]

Stephane Schiano (Laboratory Testing Manager)

GEOTECHNICS
geotechnical and geoenvironmental specialists

203 Torrington Avenue, Tile Hill,
Coventry, CV4 9UT

LABORATORY RESULTS - Atterberg Limit

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					Results							
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Test Type	Point Data		Sym- bol	p %	>425 sieve µm	w _L %	w _p %
						Cone Pene.	Water % (Factor)					
BH8A01	1.20- 1.65 (1.20)	UT	N77640	Firm to stiff brown mottled grey slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	15	12%	29	14
BH8A01	3.00- 3.45 (3.00)	UT	N77642	Stiff very high strength brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	13	16%	24	11
BH8A01	8.00- 8.45 (8.00)	UT	N77644	Very stiff extremely high strength brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	15	16%	24	9
BH8A02	1.20- 1.65 (1.20)	UT	N77646	Firm medium strength reddish brown mottled yellow slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	18	16%	32	14
BH8A02	3.00- 3.45 (3.00)	UT	N77648	Stiff reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	15	20%	27	12
BH8A02	5.00- 5.45 (5.00)	UT	N77649	Stiff high strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	14	18%	24	10
BH8A02	9.50- 9.93 (9.50)	D	N77650	Very stiff reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	13	16%	24	11
BH8A02A	1.20- 1.65 (1.20)	UT	N77775	Firm yellowish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	12	23%	27	15
BH8A02A	5.00- 5.45 (5.00)	UT	N77777	Stiff reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	12	15%	24	12

Remarks




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LABORATORY RESULTS - Atterberg Limit

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					Results							
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Test Type	Point Data		Sym- bol	p %	>425 sieve µm	w _L %	w _p %
						Cone Pene.	Water % (Factor)					
BH8A03	3.00- 3.45 (3.00)	UT	N77782	Firm reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	14	17%	25	11
BH8A03	5.00- 5.45 (5.00)	UT	N77783	Firm reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	13	30%	27	14
BH8A04	1.20- 1.65 (1.20)	UT	N77651	Firm medium strength yellowish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	16	19%	29	13
BH8A04	3.00- 3.45 (3.00)	UT	N77653	Stiff brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	15	15%	28	13
BH8A04	5.00- 5.45 (5.00)	UT	N77654	Stiff high strength brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	15	17%	28	13
BH8A07	1.20- 1.65 (1.20)	UT	N77608	Firm high strength brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	17	19%	31	14
BH8A07	3.00- 3.45 (3.00)	UT	N77609	Stiff brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	14	17%	29	15
BH8A08	1.20- 1.65 (1.20)	UT	N77571	Firm medium strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	16	16%	31	15
BH8A08	3.00- 3.45 (3.00)	UT	N77573	Very stiff very high strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	14	17%	26	12

Remarks





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LABORATORY RESULTS - Atterberg Limit

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					Results							
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Test Type	Point Data		Sym- bol	p %	>425 sieve µm	w _L %	w _p %
						Cone Pene.	Water % (Factor)					
BH8A08	5.00- 5.45 (5.00)	UT	N77575	Stiff high strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	12	18%	24	12
BH8A08	8.00- 8.45 (8.00)	UT	N77576	Stiff high strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	11	19%	23	12
BH8B01	1.20- 1.65 (1.20)	UT	N77577	Firm medium strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	19	14%	33	14
BH8B01	3.00- 3.45 (3.00)	UT	N77579	Very stiff very high strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	16	16%	29	13
BH8B01	5.00- 5.45 (5.00)	UT	N77581	Firm medium strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve					16%	21	NP
BH8B02	1.20- 1.65 (1.20)	UT	N77583	Firm reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	14	13%	28	14
BH8B02	3.00- 3.45 (3.00)	UT	N77585	Very stiff very high strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	14	19%	29	15
BH8B02	5.00- 5.45 (5.00)	UT	N77587	Stiff high strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	11	22%	22	11
BH8B03	2.00- 2.45 (2.00)	UT	N77567	Stiff high strength brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	12	15%	27	15

Remarks





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LABORATORY RESULTS - Atterberg Limit

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					Results							
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Test Type	Point Data		Sym- bol	p %	>425 sieve µm	w _L %	w _p %
						Cone Pene.	Water % (Factor)					
BH8B03	4.00- 4.45 (4.00)	UT	N77568	Very stiff very high strength brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	13	21%	27	14
BH8B03	6.50- 6.95 (6.50)	UT	N77569	Very stiff brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	11	16%	23	12
BH8C01	3.00- 3.45 (3.00)	UT	N77803	Firm low strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	16	13%	30	14
BH8C02	1.70 (1.70)	D	N77808	MADE GROUND: Firm yellowish brown slightly gravelly sandy clay.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	10	18%	24	14
BH8C02	5.00- 5.45 (5.00)	UT	N77810	Very stiff/hard extremely high strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	13	39%	25	12
BH8C03	3.00- 3.45 (3.00)	UT	N77806	Firm high strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	12	12%	25	13
BH8D01A	3.00- 3.45 (3.00)	UT	N77813	Stiff high strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	11	17%	22	11
BH8D01A	5.00- 5.45 (5.00)	UT	N77814	Very stiff high strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	10	20%	23	13
BH8D02	1.20- 1.65 (1.20)	UT	N77816	Firm high strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	12	15%	26	14

Remarks





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LABORATORY RESULTS - Atterberg Limit

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					Results							
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Test Type	Point Data		Sym- bol	p %	>425 sieve µm	w _L %	w _p %
						Cone Pene.	Water % (Factor)					
BH8D02	8.00- 8.45 (8.00)	UT	N77818	Very stiff very high strength reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	8	16%	21	13
BH8D03	3.00- 3.45 (3.00)	UT	N77820	Firm reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	14	16%	27	13
BH8D03	6.50- 6.95 (6.50)	UT	N77821	Very stiff reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	14	26%	26	12
TP8A05	0.50- 1.20 (0.50)	B	N77655	Firm yellowish brown mottled grey slightly gravelly sandy CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	21	8%	35	14
TP8A06	0.50- 1.20 (0.50)	B	N77657	Firm yellowish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	11	10%	24	13
TP8A07	1.50 (1.50)	D	N77660	Firm reddish brown mottled grey slightly gravelly sandy CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	16	18%	30	14
TP8A09	1.50 (1.50)	D	N77662	Firm reddish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	15	17%	29	14
TP8A10	0.70- 1.20 (0.70)	B	N77663	Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	19	10%	35	16
TP8A13	1.50 (1.50)	D	N77665	Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	14	19%	27	13

Remarks

AGS

GEOTECHNICS

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LABORATORY RESULTS - Atterberg Limit

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					Results							
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Test Type	Point Data		Sym- bol	p %	>425 sieve µm	w _L %	w _p %
						Cone Pene.	Water % (Factor)					
TP8C03	0.90 (0.90)	D	N77787	Stiff brown slightly gravelly sandy CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	16	18%	29	13
TP8C06	0.40 (0.40)	D	N77785	Firm to stiff orangish brown slightly gravelly sandy clayey SILT.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve					13%	25	NP
TP8C07	0.40 (0.40)	D	N77789	Firm to stiff orangish brown slightly gravelly sandy CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	13	17%	34	21
TP8D01	1.50 (1.50)	D	N77607	Stiff brown slightly gravelly sandy CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	16	13%	28	12
TP8D03	1.50 (1.50)	D	N77597	Stiff orangish brown slightly gravelly sandy CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	19	19%	33	14
TP8D09	0.40 (0.40)	D	N77599	Firm to stiff yellowish brown slightly gravelly sandy clayey SILT.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve					29%	31	NP
TP8D12	0.80 (0.80)	D	N77601	Stiff brown slightly gravelly sandy clayey SILT.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve					11%	27	NP
TP8D17	1.50 (1.50)	D	N77602	Stiff brown mottled grey slightly gravelly sandy CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	14	19%	27	13
TP8D30	0.80 (0.80)	D	N77604	Stiff brown slightly gravelly sandy CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	21	13%	35	14

Remarks





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LABORATORY RESULTS - Atterberg Limit

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					Results							
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Test Type	Point Data		Sym- bol	p %	>425 sieve µm	w _L %	w _p %
						Cone Pene.	Water % (Factor)					
TP8D36	0.40 (0.40)	D	N77605	Firm dark brown mottled grey slightly gravelly sandy CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	17	8%	38	21
WS8B03	0.50 (0.50)	D	N77590	MADE GROUND: Firm brown mottled orange and grey slightly sandy slightly gravelly clay.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	16	12%	32	16
WS8B03	1.20- 1.65 (1.20)	D	N77591	MADE GROUND: Firm brown mottled orange and grey slightly sandy slightly gravelly clay above firm to stiff brown mottled orange and grey slightly sandy slightly gravelly clay.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	16	15%	29	13
WS8B04	1.50 (1.50)	D	N77592	Firm to stiff orangish brown mottled grey slightly sandy slightly gravelly CLAY with some pockets of sand.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	11	15%	23	12
WS8B04	3.00- 3.45 (3.00)	D	N77593	Stiff orangish brown mottled grey slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	12	14%	26	14
WS8B05	1.50 (1.50)	D	N77594	Firm to stiff brown mottled grey slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	19	12%	34	15
WS8B05	4.50 (4.50)	D	N77595	Stiff brown mottled grey slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	13	14%	26	13
WS8C04	1.00 (1.00)	D	N77791	Orangish brown slightly gravelly clayey fine to medium SAND. Test Remark: 1-point cone	Fall Cone 1pt with increasing water content, cone type: 80g/30, washed over 425um sieve	20.2 19.7	21.42 22.91 (1.057)			8%	23	NP
WS8C04	2.00 (2.00)	D	N77793	Stiff orangish brown slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	15	19%	27	12

Remarks




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LABORATORY RESULTS - Atterberg Limit

Project OMEGA DEVELOPMENT GI Project No: PN194027

Sample					Results							
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Test Type	Point Data		Sym- bol	p %	>425 sieve µm	w _L %	w _p %
						Cone Pene.	Water % (Factor)					
WS8C04 A	0.70- 1.10 (0.70)	D	N77796	TOPSOIL: Brown slightly sandy slightly gravelly silt.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve					41%	30	NP
WS8C04 A	1.50- 2.00 (1.50)	D	N77798	Firm reddish brown slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	8	19%	22	14

Remarks 

LABORATORY RESULTS - Classification and Strength

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I _p (>425) %	w _L %	w _p %	w (p _d) %	Test	γ _b (γ _d) Mg/m ³	σ ₃ kN/m ²	σ ₁ -σ ₃ kN/m ²	c _u kN/m ²	c _{Avg} kN/m ²
BH8A01	1.20- 1.65 (1.20)	UT	N77640	Firm to stiff brown mottled grey slightly sandy slightly gravelly CLAY.	CL	15 (12%)	29	14	12.9						
BH8A01	3.00- 3.45 (3.00- 3.15)	UT	N77642	Stiff very high strength brown slightly sandy slightly gravelly CLAY.	CL	13 (16%)	24	11	9.3 <11.4>	SS	2.33	60	348	174	174
BH8A01	5.50 (5.50)	D	N77643	Very stiff brown slightly sandy slightly gravelly CLAY.					9.9						
BH8A01	8.00- 8.45 (8.00)	UT	N77644	Very stiff extremely high strength brown slightly sandy slightly gravelly CLAY.	CL	15 (16%)	24	9	9.0 <8.5>	SS	2.24	160	902	451	451
BH8A01	10.50 (10.50)	D	N77645	Very stiff brown slightly sandy slightly gravelly CLAY.					7.7						
BH8A02	1.20- 1.65 (1.20- 1.25)	UT	N77646	Firm medium strength reddish brown mottled yellow slightly sandy slightly gravelly CLAY.	CL	18 (16%)	32	14	19.0 <17.8>	SS	2.14	30	144	72	72
BH8A02	3.00- 3.45 (3.00)	UT	N77648	Stiff reddish brown slightly sandy slightly gravelly CLAY.	CL	15 (20%)	27	12	12.8						
BH8A02	5.00- 5.45 (5.00)	UT	N77649	Stiff high strength reddish brown slightly sandy slightly gravelly CLAY.	CL	14 (18%)	24	10	13.4 <13.1>	SS	2.31	100	200	100	100
BH8A02	9.50- 9.93 (9.50)	D	N77650	Very stiff reddish brown slightly sandy slightly gravelly CLAY.	CL	13 (16%)	24	11	9.5						
BH8A02A	1.20- 1.65 (1.20)	UT	N77775	Firm yellowish brown slightly sandy slightly gravelly CLAY.	CL	12 (23%)	27	15	13.2						
BH8A02A	5.00- 5.45 (5.00)	UT	N77777	Stiff reddish brown slightly sandy slightly gravelly CLAY.	CL	12 (15%)	24	12	12.7						
BH8A02A	7.50 (7.50)	D	N77778	Stiff reddish brown slightly sandy slightly gravelly CLAY.					10.6						
BH8A02A	9.00 (9.00)	D	N77779	Very stiff reddish brown slightly sandy slightly gravelly CLAY.					11.7						
BH8A03	3.00- 3.45 (3.00)	UT	N77782	Firm reddish brown slightly sandy slightly gravelly CLAY.	CL	14 (17%)	25	11	12.4						

Remarks



NST - Not suitable for Test

For Standards followed see Laboratory Test Certificate

^ Rock water content test

QUT Water Contents: <Failure Zone>, [After test]

GEOTECHNICS

geotechnical and geoenvironmental specialists

LABORATORY RESULTS - Classification and Strength

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I _p (>425) %	w _L %	w _p %	w (p _d) %	Test	γ _b (γ _d) Mg/m ³	σ ₃ kN/m ²	σ ₁ -σ ₃ kN/m ²	c _u kN/m ²	c _{Avg} kN/m ²
BH8A03	5.00- 5.45 (5.00)	UT	N77783	Firm reddish brown slightly sandy slightly gravelly CLAY.	CL	13 (30%)	27	14	12.4						
BH8A04	1.20- 1.65 (1.20- 1.25)	UT	N77651	Firm medium strength yellowish brown slightly sandy slightly gravelly CLAY.	CL	16 (19%)	29	13	16.5 <14.4>	SS	2.23	30	141	70	70
BH8A04	3.00- 3.45 (3.00)	UT	N77653	Stiff brown slightly sandy slightly gravelly CLAY.	CL	15 (15%)	28	13	12.6						
BH8A04	5.00- 5.45 (5.00- 5.05)	UT	N77654	Stiff high strength brown slightly sandy slightly gravelly CLAY.	CL	15 (17%)	28	13	13.1 <12.8>	SS	2.15	100	168	84	84
BH8A07	1.20- 1.65 (1.20)	UT	N77608	Firm high strength brown slightly sandy slightly gravelly CLAY.	CL	17 (19%)	31	14	13.4 <14.8>	SS	2.20	25	213	107	107
BH8A07	3.00- 3.45 (3.00)	UT	N77609	Stiff brown slightly sandy slightly gravelly CLAY.	CL	14 (17%)	29	15	12.2						
BH8A07	6.00 (6.00)	D	N77759	Stiff reddish brown slightly sandy slightly gravelly CLAY.					9.7						
BH8A07	9.50- 9.95 (9.50)	D	N77611	Stiff reddish brown slightly sandy slightly gravelly CLAY.					9.7						
BH8A08	1.20- 1.65 (1.20- 1.40)	UT	N77571	Firm medium strength reddish brown slightly sandy slightly gravelly CLAY.	CL	16 (16%)	31	15	19.5 <15.1>	SS	2.22	25	107	53	53
BH8A08	3.00- 3.45 (3.00- 3.25)	UT	N77573	Very stiff very high strength reddish brown slightly sandy slightly gravelly CLAY.	CL	14 (17%)	26	12	11.9 <11.6>	SS	2.26	60	441	220	220
BH8A08	4.00- 4.45 (4.00)	D	N77574	Very stiff reddish brown slightly sandy slightly gravelly CLAY.					11.4						
BH8A08	5.00- 5.45 (5.00- 5.05)	UT	N77575	Stiff high strength reddish brown slightly sandy slightly gravelly CLAY.	CL	12 (18%)	24	12	10.7 <10.7>	SS	1.74	100	169	84	84
BH8A08	8.00- 8.45 (8.00- 8.25)	UT	N77576	Stiff high strength reddish brown slightly sandy slightly gravelly CLAY.	CL	11 (19%)	23	12	10.1 <11.0>	SS	2.29	160	248	124	124

Remarks



NST - Not suitable for Test

For Standards followed see Laboratory Test Certificate

^ Rock water content test

QUT Water Contents: <Failure Zone>, [After test]

GEOTECHNICS

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LABORATORY RESULTS - Classification and Strength

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m ³	σ_3 kN/m ²	$\sigma_1 - \sigma_3$ kN/m ²	C_u kN/m ²	C_{Avg} kN/m ²
BH8B01	1.20- 1.65 (1.20- 1.45)	UT	N77577	Firm medium strength reddish brown slightly sandy slightly gravelly CLAY.	CL	19 (14%)	33	14	18.7 <16.4>	SS	2.20	25	120	60	60
BH8B01	3.00- 3.45 (3.00- 3.15)	UT	N77579	Very stiff very high strength reddish brown slightly sandy slightly gravelly CLAY.	CL	16 (16%)	29	13	12.6 <13.7>	SS	2.22	60	491	246	246
BH8B01	4.00- 4.45 (4.00)	D	N77580	Firm reddish brown slightly sandy slightly gravelly CLAY.					16.3						
BH8B01	5.00- 5.45 (5.00- 5.25)	UT	N77581	Firm medium strength reddish brown slightly sandy slightly gravelly CLAY.		(16%)	21	NP	13.0 13.0 <13.2>	SS	2.26	100	111	56	56
BH8B01	6.50- 6.95 (6.50)	D	N77582	Stiff reddish brown slightly sandy slightly gravelly CLAY.					9.7						
BH8B02	1.20- 1.65 (1.20)	UT	N77583	Firm reddish brown slightly sandy slightly gravelly CLAY. (See Test Remarks Sheet for further information)	CL	14 (13%)	28	14	17.9	SS	2.14		NST		
BH8B02	3.00- 3.45 (3.00- 3.05)	UT	N77585	Very stiff very high strength reddish brown slightly sandy slightly gravelly CLAY.	CL	14 (19%)	29	15	12.0 <12.7>	SS	2.26	60	595	298	298
BH8B02	4.00- 4.45 (4.00)	D	N77586	Firm to stiff brown slightly sandy slightly gravelly CLAY.					15.2						
BH8B02	5.00- 5.45 (5.00)	UT	N77587	Stiff high strength reddish brown slightly sandy slightly gravelly CLAY.	CL	11 (22%)	22	11	12.7 <9.9>	SS	2.33	100	160	80	80
BH8B02	6.50- 6.95 (6.50)	D	N77588	Very stiff brown slightly sandy slightly gravelly CLAY.					9.8						
BH8B02	7.50 (7.50)	D	N77589	Very stiff brown slightly sandy slightly gravelly CLAY.					9.5						
BH8B03	1.20- 1.65 (1.20)	D	N77566	Firm brown slightly gravelly sandy CLAY.					14.2						
BH8B03	2.00- 2.45 (2.00- 2.25)	UT	N77567	Stiff high strength brown slightly sandy slightly gravelly CLAY.	CL	12 (15%)	27	15	14.0 <14.0>	SS	2.23	40	245	123	123

Remarks  NST - Not suitable for Test
For Standards followed see Laboratory Test Certificate
^ Rock water content test
QUT Water Contents: <Failure Zone>, [After test]

GEOTECHNICS
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LABORATORY RESULTS - Classification and Strength

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m ³	σ_3 kN/m ²	$\sigma_1 - \sigma_3$ kN/m ²	C_u kN/m ²	C_{Avg} kN/m ²
BH8B03	4.00- 4.45 (4.00- 4.25)	UT	N77568	Very stiff very high strength brown slightly sandy slightly gravelly CLAY.	CL	13 (21%)	27	14	12.7 <12.4>	SS	2.28	80	422	211	211
BH8B03	6.50- 6.95 (6.50)	UT	N77569	Very stiff brown slightly sandy slightly gravelly CLAY.	CL	11 (16%)	23	12	9.4						
BH8C01	1.70 (1.70)	D	N77802	Firm reddish brown slightly sandy slightly gravelly CLAY.					11.7						
BH8C01	3.00- 3.45 (3.00- 3.20)	UT	N77803	Firm low strength reddish brown slightly sandy slightly gravelly CLAY.	CL	16 (13%)	30	14	17.5 <16.9>	SS	2.17	60	64	32	32
BH8C02	1.70 (1.70)	D	N77808	MADE GROUND: Firm yellowish brown slightly gravelly sandy clay.	CL	10 (18%)	24	14	14.1						
BH8C02	5.00- 5.45 (5.00- 5.25)	UT	N77810	Very stiff/hard extremely high strength reddish brown slightly sandy slightly gravelly CLAY.	CL	13 (39%)	25	12	10.1 <10.1>	SS	1.70	100	697	348	348
BH8C02	7.50 (7.50)	D	N77811	Very stiff/hard reddish brown slightly sandy slightly gravelly CLAY.					14.8						
BH8C03	1.70 (1.70)	D	N77805	Firm reddish brown slightly sandy slightly gravelly CLAY.					14.5						
BH8C03	3.00- 3.45 (3.00)	UT	N77806	Firm high strength reddish brown slightly sandy slightly gravelly CLAY.	CL	12 (12%)	25	13	10.3 <10.7>	SS	2.24	60	285	142	142
BH8D01A	3.00- 3.45 (3.00- 3.15)	UT	N77813	Stiff high strength reddish brown slightly sandy slightly gravelly CLAY.	CL	11 (17%)	22	11	11.1 <11.1>	SS	2.29	60	236	118	118
BH8D01A	5.00- 5.45 (5.00- 5.15)	UT	N77814	Very stiff high strength reddish brown slightly sandy slightly gravelly CLAY.	CL	10 (20%)	23	13	10.0 <10.1>	SS	2.31	100	229	115	115
BH8D01A	7.50 (7.50)	D	N77815	Very stiff reddish brown slightly sandy slightly gravelly CLAY.					8.4						
BH8D02	1.20- 1.65 (1.20- 1.30)	UT	N77816	Firm high strength reddish brown slightly sandy slightly gravelly CLAY.	CL	12 (15%)	26	14	23.4 <22.9>	SS	2.13	30	175	88	88
BH8D02	8.00- 8.45 (8.00- 8.15)	UT	N77818	Very stiff very high strength reddish brown slightly sandy slightly gravelly CLAY.	CL	8 (16%)	21	13	12.4 <10.7>	SS	2.38	160	520	260	260
Remarks					NST - Not suitable for Test For Standards followed see Laboratory Test Certificate ^ Rock water content test QUT Water Contents: <Failure Zone>, [After test]										

LABORATORY RESULTS - Classification and Strength

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m^3	σ_3 kN/m^2	$\sigma_1 - \sigma_3$ kN/m^2	c_u kN/m^2	c_{Avg} kN/m^2
BH8D03	3.00-3.45 (3.00)	UT	N77820	Firm reddish brown slightly sandy slightly gravelly CLAY.	CL	14 (16%)	27	13	14.1 <8.2>	SS	2.20	60	19	10	10
BH8D03	6.50-6.95 (6.50)	UT	N77821	Very stiff reddish brown slightly sandy slightly gravelly CLAY. (See Test Remarks Sheet for further information)	CL	14 (26%)	26	12	6.7	SS	2.18		NST		
TP8A05	0.50-1.20 (0.50)	B	N77655	Firm yellowish brown mottled grey slightly gravelly sandy CLAY.	CI	21 (8%)	35	14	16.2 (2.67)						
TP8A05	2.50 (2.50)	D	N77656	Firm reddish brown slightly sandy slightly gravelly CLAY.					13.5						
TP8A06	0.50-1.20 (0.50)	B	N77657	Firm yellowish brown slightly sandy slightly gravelly CLAY.	CL	11 (10%)	24	13	17.7 (2.66)						
TP8A06	2.00 (2.00)	D	N77658	Firm yellowish brown slightly sandy slightly gravelly CLAY.					12.9						
TP8A07	1.20-1.60 (1.20)	B	N77659	Firm reddish brown mottled grey slightly gravelly sandy CLAY.					14.2 (2.67)						
TP8A07	1.50 (1.50)	D	N77660	Firm reddish brown mottled grey slightly gravelly sandy CLAY.	CL	16 (18%)	30	14	13.9						
TP8A09	1.20-1.60 (1.20)	B	N77661	Firm reddish brown slightly sandy slightly gravelly CLAY.					16.6 (2.63)						
TP8A09	1.50 (1.50)	D	N77662	Firm reddish brown slightly sandy slightly gravelly CLAY.	CL	15 (17%)	29	14	13.7						
TP8A10	0.70-1.20 (0.70)	B	N77663	Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY.	CI	19 (10%)	35	16	15.2 (2.67)						
TP8A13	1.20-1.60 (1.20)	B	N77664	Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY.					17.6 (2.68)						
TP8A13	1.50 (1.50)	D	N77665	Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY.	CL	14 (19%)	27	13	17.4						
TP8C03	0.90-1.50 (0.90)	B	N77786	Stiff brown sandy gravelly CLAY.					11.9 (2.65)						
TP8C03	0.90 (0.90)	D	N77787	Stiff brown slightly gravelly sandy CLAY.	CL	16 (18%)	29	13	14.1						
TP8C06	0.40-1.40 (0.40)	B	N77784	Firm to stiff orangish brown slightly gravelly sandy CLAY.					14.3 (2.67)						

Remarks NST - Not suitable for Test
For Standards followed see Laboratory Test Certificate
^ Rock water content test
QUT Water Contents: <Failure Zone>, [After test]

geotechnical and geoenvironmental specialists

LABORATORY RESULTS - Classification and Strength

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I _p (>425) %	w _L %	w _p %	w (p _d) %	Test	γ _b (γ _d) Mg/m ³	σ ₃ kN/m ²	σ ₁ -σ ₃ kN/m ²	c _u kN/m ²	c _{Avg} kN/m ²
TP8C06	0.40 (0.40)	D	N77785	Firm to stiff orangish brown slightly gravelly sandy clayey SILT.		(13%)	25	NP	18.7						
TP8C07	0.40- 1.40 (0.40)	B	N77788	Firm to stiff orangish brown sandy gravelly CLAY.					15.5 (2.65)						
TP8C07	0.40 (0.40)	D	N77789	Firm to stiff orangish brown slightly gravelly sandy CLAY.	CL	13 (17%)	34	21	29.2						
TP8D01	1.50 (1.50)	D	N77607	Stiff brown slightly gravelly sandy CLAY.	CL	16 (13%)	28	12	10.8						
TP8D03	1.50 (1.50)	D	N77597	Stiff orangish brown slightly gravelly sandy CLAY.	CL	19 (19%)	33	14	13.5						
TP8D09	0.40- 1.40 (0.40)	B	N77598	Firm to stiff yellowish brown mottled grey slightly gravelly sandy CLAY.					18.8 (2.65)						
TP8D09	0.40 (0.40)	D	N77599	Firm to stiff yellowish brown slightly gravelly sandy clayey SILT.		(29%)	31	NP	22.9						
TP8D12	0.80- 1.80 (0.80)	B	N77600	Stiff brown slightly gravelly sandy CLAY.					(2.69)						
TP8D12	0.80 (0.80)	D	N77601	Stiff brown slightly gravelly sandy clayey SILT.		(11%)	27	NP	18.4						
TP8D17	1.50 (1.50)	D	N77602	Stiff brown mottled grey slightly gravelly sandy CLAY.	CL	14 (19%)	27	13	12.5						
TP8D30	0.80- 1.80 (0.80)	B	N77603	Stiff brown sandy gravelly CLAY.					13.0 (2.67)						
TP8D30	0.80 (0.80)	D	N77604	Stiff brown slightly gravelly sandy CLAY.	CI	21 (13%)	35	14	19.3						
TP8D36	0.40 (0.40)	D	N77605	Firm dark brown mottled grey slightly gravelly sandy CLAY.	CI	17 (8%)	38	21	28.4						
TP8D36	2.50 (2.50)	D	N77606	Stiff dark brown sandy gravelly CLAY.					12.2						
WS8B03	0.50 (0.50)	D	N77590	MADE GROUND: Firm brown mottled orange and grey slightly sandy slightly gravelly clay.	CL	16 (12%)	32	16	16.4						
WS8B03	1.20- 1.65 (1.20)	D	N77591	MADE GROUND: Firm brown mottled orange and grey slightly sandy slightly gravelly clay above firm to stiff brown mottled orange and grey slightly sandy slightly gravelly clay.	CL	16 (15%)	29	13	12.5						
WS8B04	1.50 (1.50)	D	N77592	Firm to stiff orangish brown mottled grey slightly sandy slightly gravelly CLAY with some pockets of sand.	CL	11 (15%)	23	12	16.3						

Remarks



NST - Not suitable for Test

For Standards followed see Laboratory Test Certificate

^ Rock water content test

QUT Water Contents: <Failure Zone>, [After test]



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LABORATORY RESULTS - Classification and Strength

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m ³	σ_3 kN/m ²	$\sigma_1 - \sigma_3$ kN/m ²	c_u kN/m ²	c_{Avg} kN/m ²
WS8B04	3.00- 3.45 (3.00)	D	N77593	Stiff orangish brown mottled grey slightly sandy slightly gravelly CLAY.	CL	12 (14%)	26	14	15.2						
WS8B05	1.50 (1.50)	D	N77594	Firm to stiff brown mottled grey slightly sandy slightly gravelly CLAY.	CL	19 (12%)	34	15	17.4						
WS8B05	4.50 (4.50)	D	N77595	Stiff brown mottled grey slightly sandy slightly gravelly CLAY.	CL	13 (14%)	26	13	12.9						
WS8C04	1.00 (1.00)	D	N77791	Orangish brown slightly gravelly clayey fine to medium SAND. (See Test Remarks Sheet for further information)		(8%)	23	NP	25.6						
WS8C04	1.50 (1.50)	D	N77792	Firm orangish brown slightly sandy slightly gravelly CLAY with occasional pockets of sand.					18.9						
WS8C04	2.00 (2.00)	D	N77793	Stiff orangish brown slightly sandy slightly gravelly CLAY.	CL	15 (19%)	27	12	12.6						
WS8C04	3.00 (3.00)	D	N77794	Stiff orangish brown slightly sandy slightly gravelly CLAY.					12.0						
WS8C04	4.00 (4.00)	D	N77795	Stiff orangish brown slightly sandy slightly gravelly CLAY.					10.0						
WS8C04 A	0.70- 1.10 (0.70)	D	N77796	TOPSOIL: Brown slightly sandy slightly gravelly silt.		(41%)	30	NP	19.8						
WS8C04 A	1.20- 1.50 (1.20)	D	N77797	TOPSOIL: Brown slightly sandy slightly gravelly silt.					14.8						
WS8C04 A	1.50- 2.00 (1.50)	D	N77798	Firm reddish brown slightly gravelly CLAY.	CL	8 (19%)	22	14	13.6						
WS8C04 A	2.00- 2.45 (2.00)	D	N77799	Firm reddish brown slightly gravelly CLAY.					13.7						
WS8C04 A	2.50- 3.00 (2.50)	D	N77800	Firm reddish brown slightly gravelly CLAY.					13.0						
WS8C04 A	3.00- 3.40 (3.00)	D	N77801	Firm reddish brown slightly gravelly CLAY.					9.0						
Remarks  NST - Not suitable for Test For Standards followed see Laboratory Test Certificate ^ Rock water content test QUT Water Contents: <Failure Zone>, [After test]															

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A01

Sample Depth 3.00-3.45m

Project No: PN194027

Sample Type UT

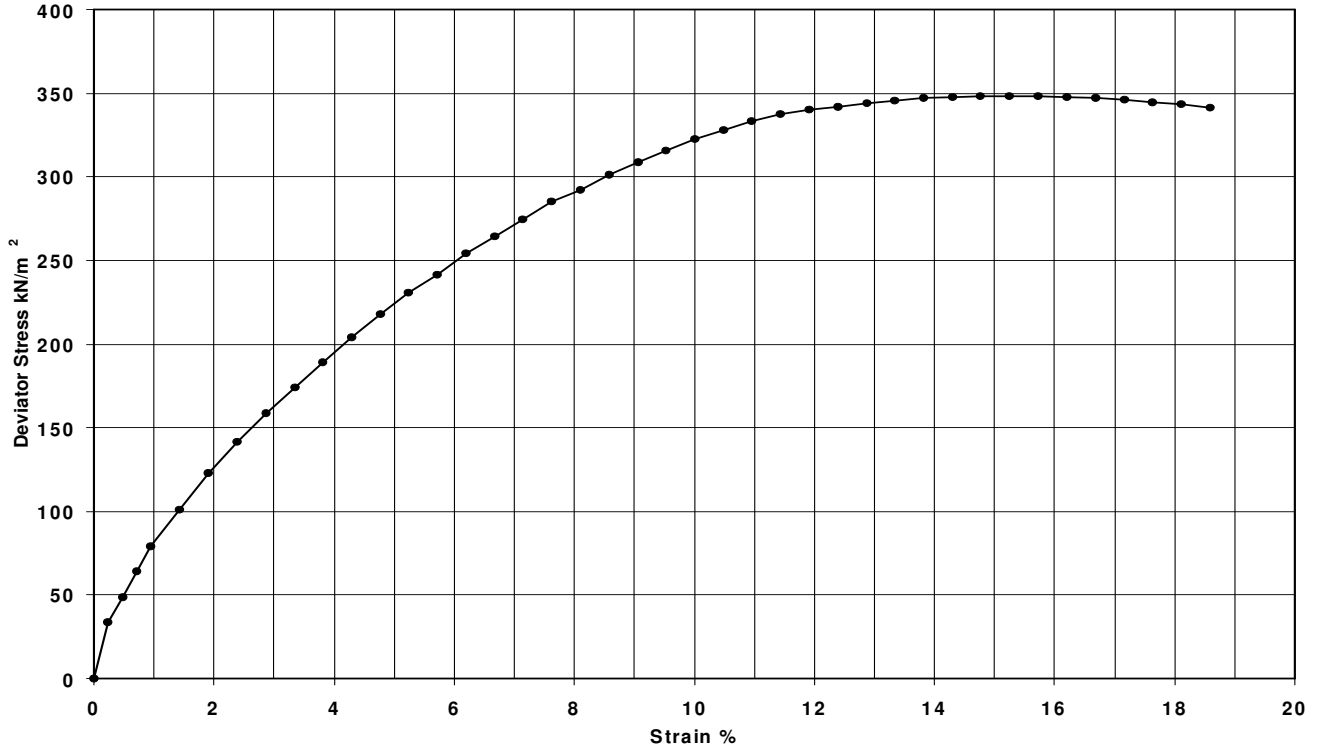
Sample Ref N77642

Sample Description

The following samples were combined to perform this test:

Stiff very high strength brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	33.7	10.0	322.6
Orientation of sample	Vertical			0.5	48.8	10.5	328.0
Initial Diameter (mm)	103.08			0.7	64.3	11.0	333.1
Initial Length (mm)	209.82			1.0	78.8	11.4	337.6
Initial Water Content (%)	9.3			1.4	101.1	11.9	340.0
Initial Bulk Density (Mg/m ³)	2.33			1.9	122.6	12.4	342.0
Initial Dry Density (Mg/m ³)	2.13			2.4	141.3	12.9	344.1
Particle Density (Mg/m ³)	2.65 Assumed			2.9	158.7	13.3	345.5
Cell Pressure (kPa)	60			3.3	173.9	13.8	347.0
'Specimen Height' at start of Shearing Stage (mm)	209.72			3.8	189.1	14.3	347.8
Membrane Thickness/Correction (mm/kPa)				4.3	204.0	14.8	348.3
Rate of Strain (%/min)	2.0			4.8	218.1	15.3	348.4
Corrected Deviator Stress (kPa)	348			5.2	230.9	15.7	348.3
Undrained Shear Strength (kPa)	174			5.7	241.5	16.2	347.7
Strain at Failure (%)	15.3			6.2	254.2	16.7	347.1
Failure Zone Water Content (%)	11.4			6.7	264.5	17.2	346.3
Water Content (after test) (%)				7.1	274.7	17.6	344.7
Mode of Failure	Brittle			7.6	284.9	18.1	343.2
				8.1	292.3	18.6	341.3
				8.6	301.3		
				9.1	308.6		
				9.5	315.7		

Remarks

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A01
Sample Depth 3.00-3.45m
Sample Type UT
Sample Ref N77642

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A01

Sample Depth 8.00-8.45m

Project No: PN194027

Sample Type UT

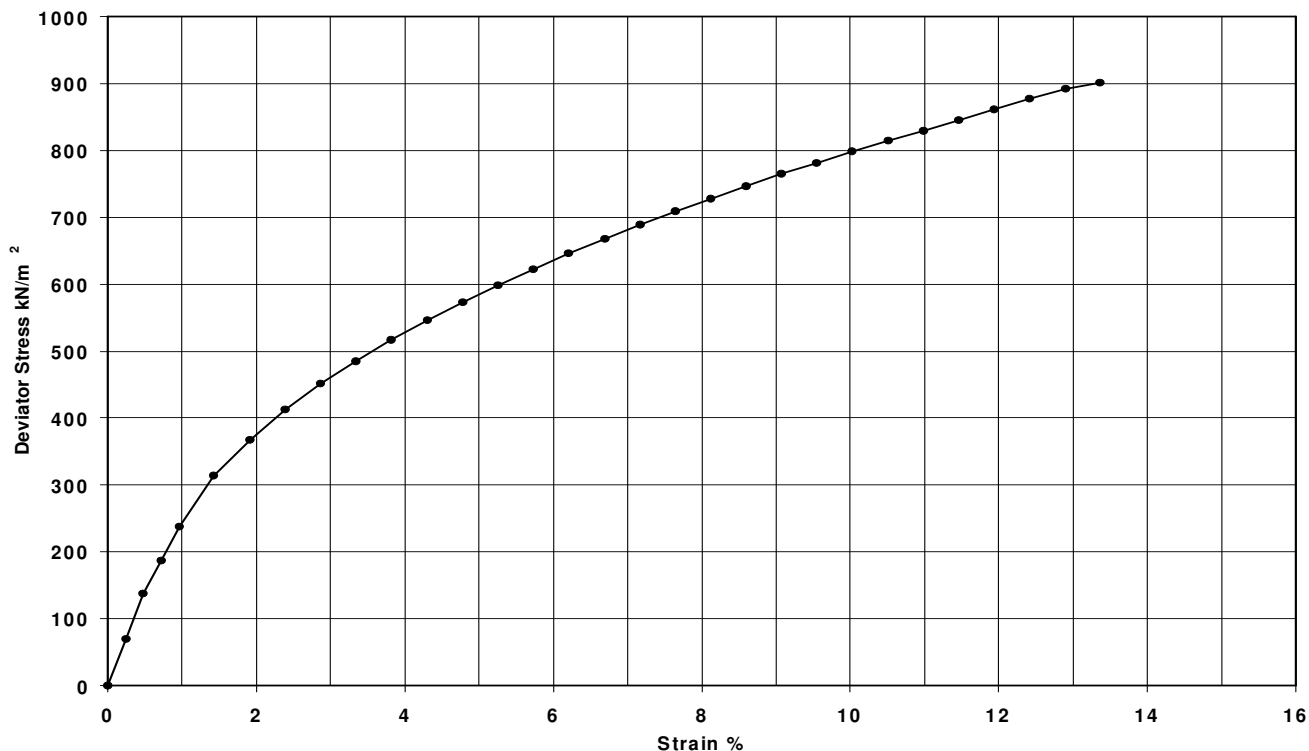
Sample Ref N77644

Sample Description

The following samples were combined to perform this test:

Very stiff extremely high strength brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	69.8	10.0	797.9
Orientation of sample	Vertical			0.5	137.1	10.5	813.8
Initial Diameter (mm)	101.72			0.7	187.5	11.0	829.0
Initial Length (mm)	209.35			1.0	237.9	11.5	845.1
Initial Water Content (%)	9.0			1.4	313.7	11.9	861.5
Initial Bulk Density (Mg/m ³)	2.24			1.9	367.8	12.4	877.2
Initial Dry Density (Mg/m ³)	2.06			2.4	412.9	12.9	891.2
Particle Density (Mg/m ³)	2.65 Assumed			2.9	451.3	13.4	901.6
Cell Pressure (kPa)	160			3.3	484.4		
'Specimen Height' at start of Shearing Stage (mm)	209.31			3.8	516.3		
Membrane Thickness/Correction (mm/kPa)				4.3	546.2		
Rate of Strain (%/min)	2.0			4.8	572.4		
Corrected Deviator Stress (kPa)	902			5.3	597.8		
Undrained Shear Strength (kPa)	451			5.7	621.5		
Strain at Failure (%)	13.4			6.2	645.8		
Failure Zone Water Content (%)	8.5			6.7	667.8		
Water Content (after test) (%)				7.2	688.9		
Mode of Failure	Intermediate			7.6	709.4		
				8.1	727.6		
				8.6	746.5		
				9.1	764.5		
				9.6	780.5		

Remarks 

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A01
Sample Depth 8.00-8.45m
Sample Type UT
Sample Ref N77644

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A02

Sample Depth 1.20-1.65m

Project No: PN194027

Sample Type UT

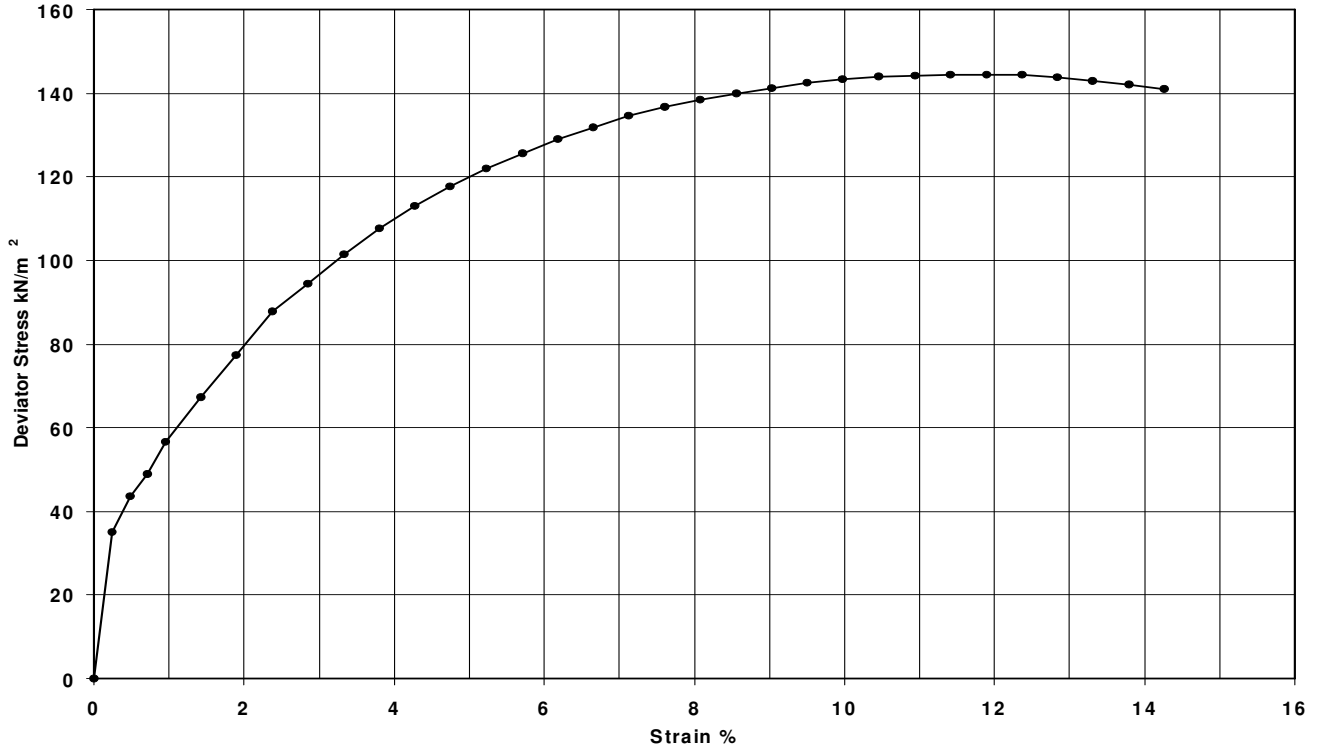
Sample Ref N77646

Sample Description

The following samples were combined to perform this test:

Firm medium strength reddish brown mottled yellow slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	35.1	10.0	143.4
Orientation of sample	Vertical			0.5	43.5	10.5	143.9
Initial Diameter (mm)	102.30			0.7	48.9	10.9	144.3
Initial Length (mm)	210.33			1.0	56.6	11.4	144.4
Initial Water Content (%)	19.0			1.4	67.3	11.9	144.4
Initial Bulk Density (Mg/m ³)	2.14			1.9	77.4	12.4	144.3
Initial Dry Density (Mg/m ³)	1.80			2.4	87.9	12.8	143.8
Particle Density (Mg/m ³)	2.65 Assumed			2.9	94.4	13.3	143.0
Cell Pressure (kPa)	30			3.3	101.5	13.8	142.0
'Specimen Height' at start of Shearing Stage (mm)	210.30			3.8	107.6	14.3	141.0
Membrane Thickness/Correction (mm/kPa)				4.3	113.0		
Rate of Strain (%/min)	2.0			4.8	117.7		
Corrected Deviator Stress (kPa)	144			5.2	122.0		
Undrained Shear Strength (kPa)	72			5.7	125.6		
Strain at Failure (%)	11.9			6.2	129.0		
Failure Zone Water Content (%)	17.8			6.7	131.9		
Water Content (after test) (%)				7.1	134.5		
Mode of Failure	Intermediate			7.6	136.7		
				8.1	138.4		
				8.6	139.9		
				9.0	141.3		
				9.5	142.5		

Remarks 

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A02
Sample Depth 1.20-1.65m
Sample Type UT
Sample Ref N77646

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A02

Sample Depth 5.00-5.45m

Project No: PN194027

Sample Type UT

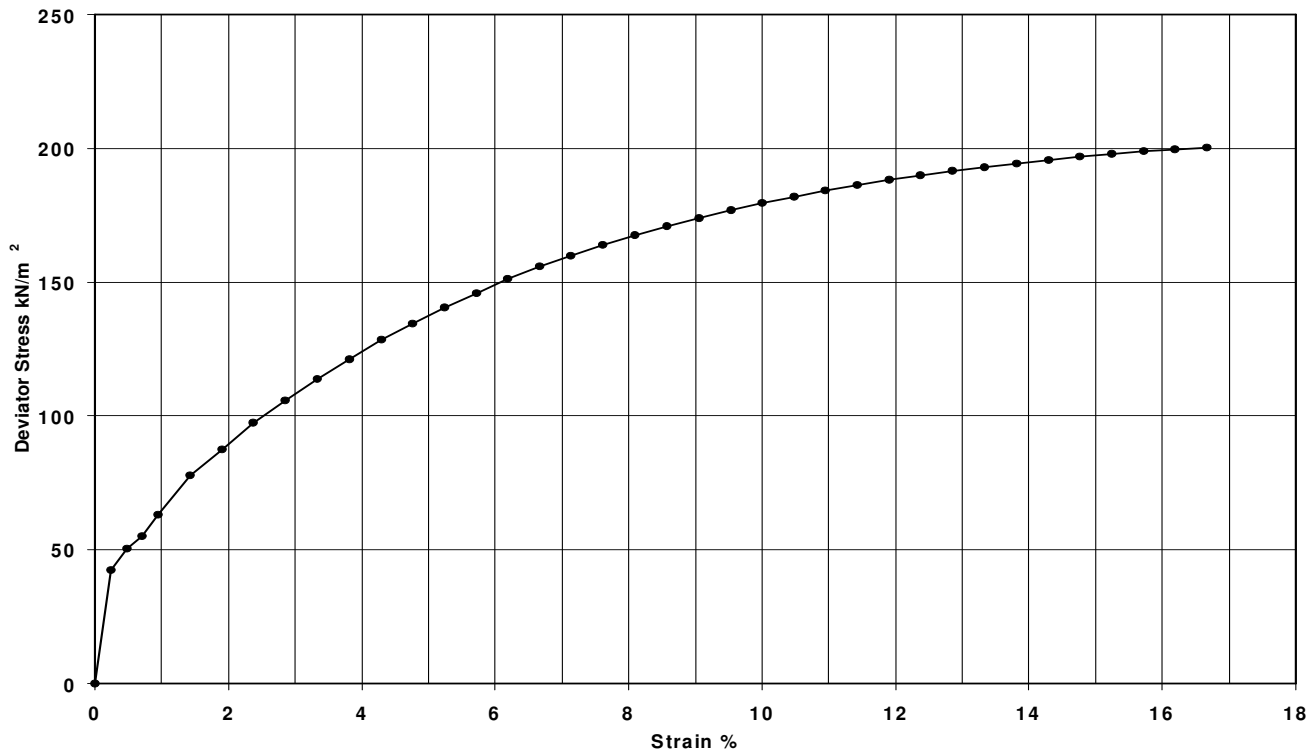
Sample Ref N77649

Sample Description

The following samples were combined to perform this test:

Stiff high strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	42.3	10.0	179.5
Orientation of sample	Vertical			0.5	50.3	10.5	182.0
Initial Diameter (mm)	102.23			0.7	55.2	11.0	184.2
Initial Length (mm)	209.97			1.0	63.1	11.4	186.1
Initial Water Content (%)	13.4			1.4	77.8	11.9	188.2
Initial Bulk Density (Mg/m ³)	2.31			1.9	87.6	12.4	189.9
Initial Dry Density (Mg/m ³)	2.04			2.4	97.4	12.9	191.6
Particle Density (Mg/m ³)	2.65 Assumed			2.9	105.8	13.3	193.0
Cell Pressure (kPa)	100			3.3	113.8	13.8	194.3
'Specimen Height' at start of Shearing Stage (mm)	209.96			3.8	121.3	14.3	195.6
Membrane Thickness/Correction (mm/kPa)				4.3	128.4	14.8	196.8
Rate of Strain (%/min)	2.0			4.8	134.7	15.2	197.9
Corrected Deviator Stress (kPa)	200			5.2	140.5	15.7	198.9
Undrained Shear Strength (kPa)	100			5.7	146.0	16.2	199.7
Strain at Failure (%)	16.7			6.2	151.1	16.7	200.3
Failure Zone Water Content (%)	13.1			6.7	155.7		
Water Content (after test) (%)				7.1	160.0		
Mode of Failure	Plastic			7.6	163.9		
				8.1	167.6		
				8.6	170.9		
				9.0	174.0		
				9.5	176.9		

Remarks

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A02
Sample Depth 5.00-5.45m
Sample Type UT
Sample Ref N77649

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A04

Sample Depth 1.20-1.65m

Project No: PN194027

Sample Type UT

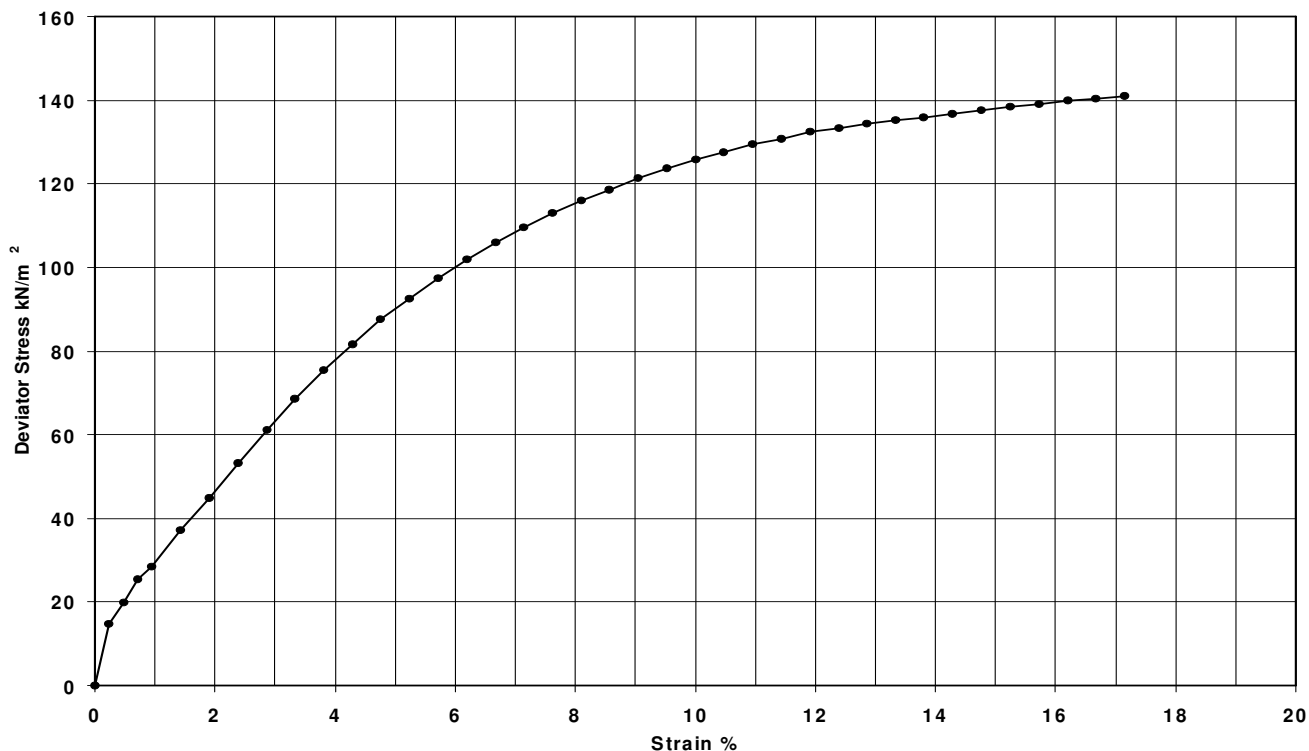
Sample Ref N77651

Sample Description

The following samples were combined to perform this test:

Firm medium strength yellowish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	14.7	10.0	125.7
Orientation of sample	Vertical			0.5	19.9	10.5	127.5
Initial Diameter (mm)	103.24			0.7	25.4	11.0	129.4
Initial Length (mm)	209.93			1.0	28.5	11.4	130.7
Initial Water Content (%)	16.5			1.4	37.1	11.9	132.4
Initial Bulk Density (Mg/m ³)	2.23			1.9	45.0	12.4	133.3
Initial Dry Density (Mg/m ³)	1.91			2.4	53.3	12.9	134.3
Particle Density (Mg/m ³)	2.65 Assumed			2.9	61.1	13.3	135.2
Cell Pressure (kPa)	30			3.3	68.5	13.8	135.9
'Specimen Height' at start of Shearing Stage (mm)	209.80			3.8	75.3	14.3	136.7
Membrane Thickness/Correction (mm/kPa)				4.3	81.6	14.8	137.5
Rate of Strain (%/min)	2.0			4.8	87.5	15.2	138.4
Corrected Deviator Stress (kPa)	141			5.2	92.5	15.7	139.1
Undrained Shear Strength (kPa)	70			5.7	97.4	16.2	139.9
Strain at Failure (%)	17.2			6.2	101.8	16.7	140.4
Failure Zone Water Content (%)	14.4			6.7	105.8	17.1	140.9
Water Content (after test) (%)				7.1	109.6		
Mode of Failure	Plastic			7.6	112.9		
				8.1	116.0		
				8.6	118.6		
				9.1	121.4		
				9.5	123.7		

Remarks

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A04
Sample Depth 1.20-1.65m
Sample Type UT
Sample Ref N77651

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A04
Sample Depth 5.00-5.45m
Sample Type UT
Sample Ref N77654

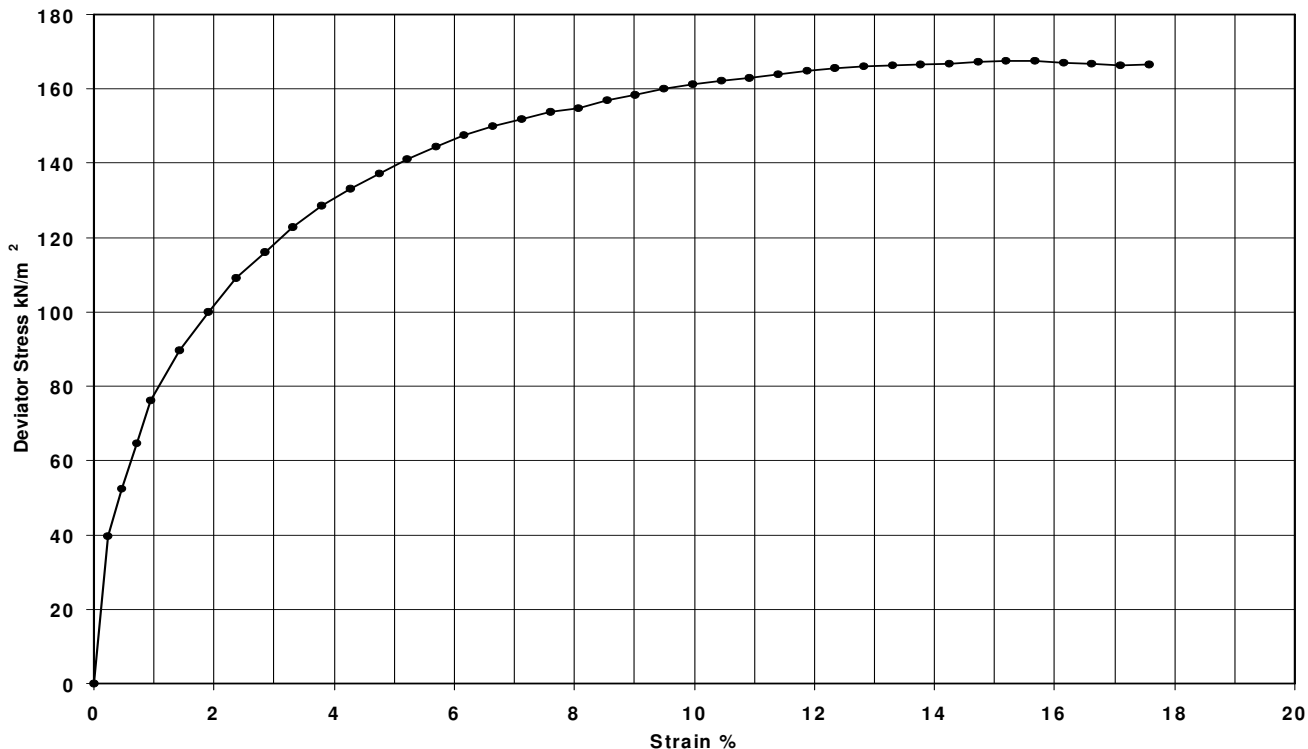
Project No: PN194027

Sample Description

The following samples were combined to perform this test:

Stiff high strength brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	39.6	10.0	161.2
Orientation of sample	Vertical			0.5	52.3	10.4	162.2
Initial Diameter (mm)	100.09			0.7	64.7	10.9	162.9
Initial Length (mm)	210.57			0.9	76.1	11.4	163.8
Initial Water Content (%)	13.1			1.4	89.7	11.9	164.8
Initial Bulk Density (Mg/m ³)	2.15			1.9	99.9	12.3	165.5
Initial Dry Density (Mg/m ³)	1.90			2.4	109.1	12.8	166.1
Particle Density (Mg/m ³)	2.65 Assumed			2.8	116.1	13.3	166.3
Cell Pressure (kPa)	100			3.3	122.9	13.8	166.5
'Specimen Height' at start of Shearing Stage (mm)	210.56			3.8	128.6	14.2	166.8
Membrane Thickness/Correction (mm/kPa)				4.3	133.2	14.7	167.2
Rate of Strain (%/min)	2.0			4.7	137.3	15.2	167.5
Corrected Deviator Stress (kPa)	168			5.2	141.0	15.7	167.6
Undrained Shear Strength (kPa)	84			5.7	144.5	16.1	167.1
Strain at Failure (%)	15.7			6.2	147.5	16.6	166.7
Failure Zone Water Content (%)	12.8			6.6	149.9	17.1	166.4
Water Content (after test) (%)				7.1	152.0	17.6	166.5
Mode of Failure	Intermediate			7.6	153.9		
				8.1	154.9		
				8.5	156.9		
				9.0	158.3		
				9.5	160.0		

Remarks 

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A04
Sample Depth 5.00-5.45m
Sample Type UT
Sample Ref N77654

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A07
Sample Depth 1.20-1.65m
Sample Type UT
Sample Ref N77608

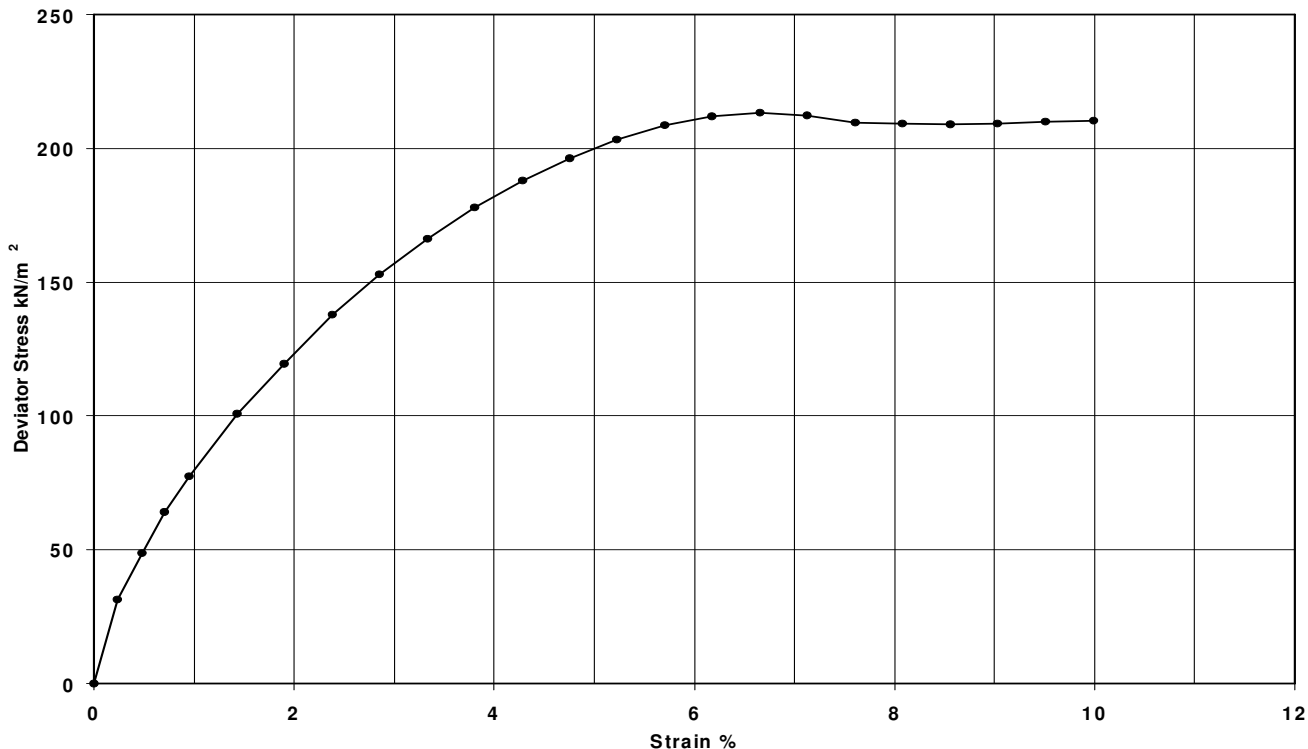
Project No: PN194027

Sample Description

The following samples were combined to perform this test:

Firm high strength brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	31.4	10.0	210.4
Orientation of sample	Vertical			0.5	48.9		
Initial Diameter (mm)	102.70			0.7	64.0		
Initial Length (mm)	210.30			1.0	77.3		
Initial Water Content (%)	13.4			1.4	100.7		
Initial Bulk Density (Mg/m ³)	2.20			1.9	119.6		
Initial Dry Density (Mg/m ³)	1.94			2.4	137.7		
Particle Density (Mg/m ³)	2.65 Assumed			2.9	152.8		
Cell Pressure (kPa)	25			3.3	166.4		
'Specimen Height' at start of Shearing Stage (mm)	210.25			3.8	177.9		
Membrane Thickness/Correction (mm/kPa)				4.3	187.9		
Rate of Strain (%/min)	1.3			4.8	196.4		
Corrected Deviator Stress (kPa)	213			5.2	203.3		
Undrained Shear Strength (kPa)	107			5.7	208.5		
Strain at Failure (%)	6.7			6.2	211.9		
Failure Zone Water Content (%)	14.8			6.7	213.3		
Water Content (after test) (%)				7.1	212.4		
Mode of Failure	Brittle			7.6	209.7		
				8.1	209.3		
				8.6	209.1		
				9.0	209.3		
				9.5	210.1		

Remarks 

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A07
Sample Depth 1.20-1.65m
Sample Type UT
Sample Ref N77608

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A08

Sample Depth 1.20-1.65m

Project No: PN194027

Sample Type UT

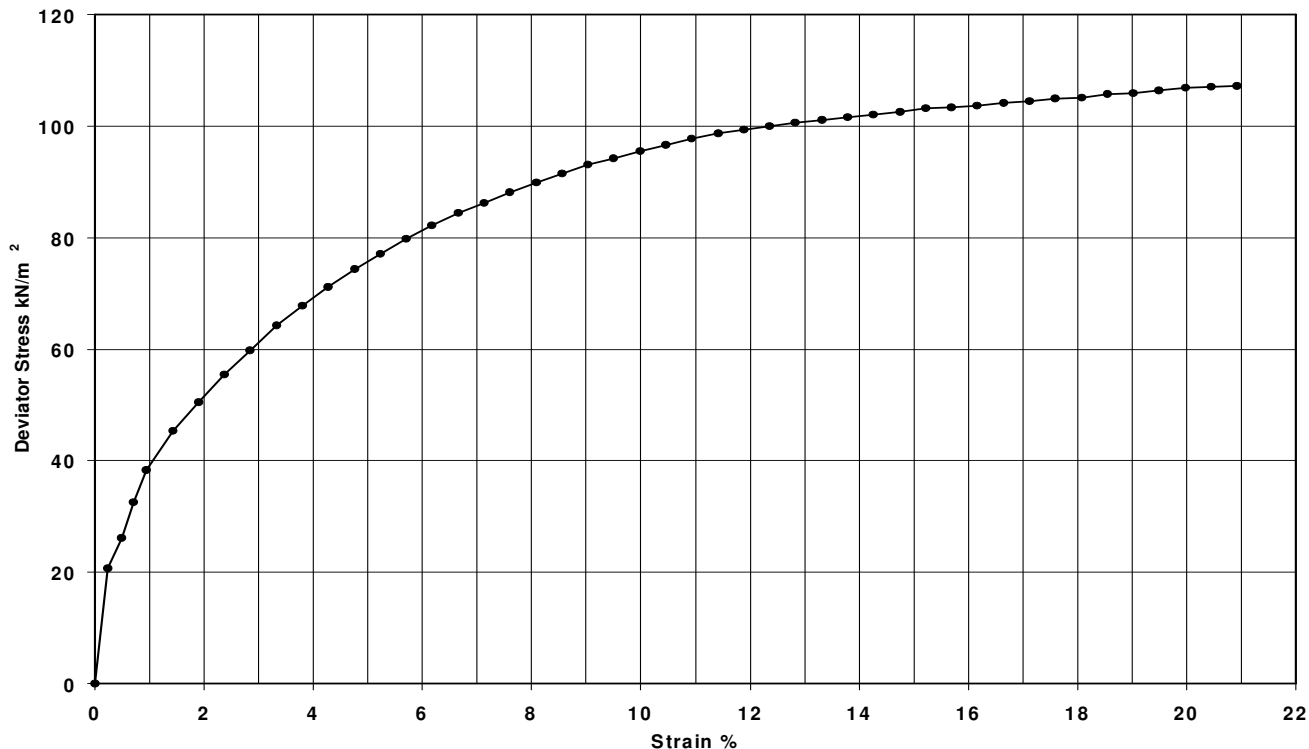
Sample Ref N77571

Sample Description

The following samples were combined to perform this test:

Firm medium strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	20.7	10.0	95.4
Orientation of sample	Vertical			0.5	26.1	10.5	96.6
Initial Diameter (mm)	102.83			0.7	32.6	10.9	97.8
Initial Length (mm)	210.22			1.0	38.4	11.4	98.7
Initial Water Content (%)	19.5			1.4	45.3	11.9	99.4
Initial Bulk Density (Mg/m ³)	2.22			1.9	50.5	12.4	99.9
Initial Dry Density (Mg/m ³)	1.86			2.4	55.4	12.8	100.6
Particle Density (Mg/m ³)	2.65 Assumed			2.9	59.8	13.3	101.1
Cell Pressure (kPa)	25			3.3	64.3	13.8	101.6
'Specimen Height' at start of Shearing Stage (mm)	210.07			3.8	67.8	14.3	102.1
Membrane Thickness/Correction (mm/kPa)				4.3	71.2	14.7	102.5
Rate of Strain (%/min)	1.3			4.8	74.4	15.2	103.2
Corrected Deviator Stress (kPa)	107			5.2	77.0	15.7	103.4
Undrained Shear Strength (kPa)	53			5.7	79.9	16.2	103.7
Strain at Failure (%)	20.0			6.2	82.2	16.6	104.2
Failure Zone Water Content (%)	15.1			6.7	84.4	17.1	104.5
Water Content (after test) (%)				7.1	86.1	17.6	105.0
Mode of Failure	Plastic			7.6	88.2	18.1	105.2
				8.1	89.8	18.6	105.8
				8.6	91.6	19.0	105.8
				9.0	93.1	19.5	106.4
				9.5	94.2	20.0	106.8

Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole	BH8A08
Sample Depth	1.20-1.65m
Sample Type	UT
Sample Ref	N77571



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A08

Sample Depth 3.00-3.45m

Project No: PN194027

Sample Type UT

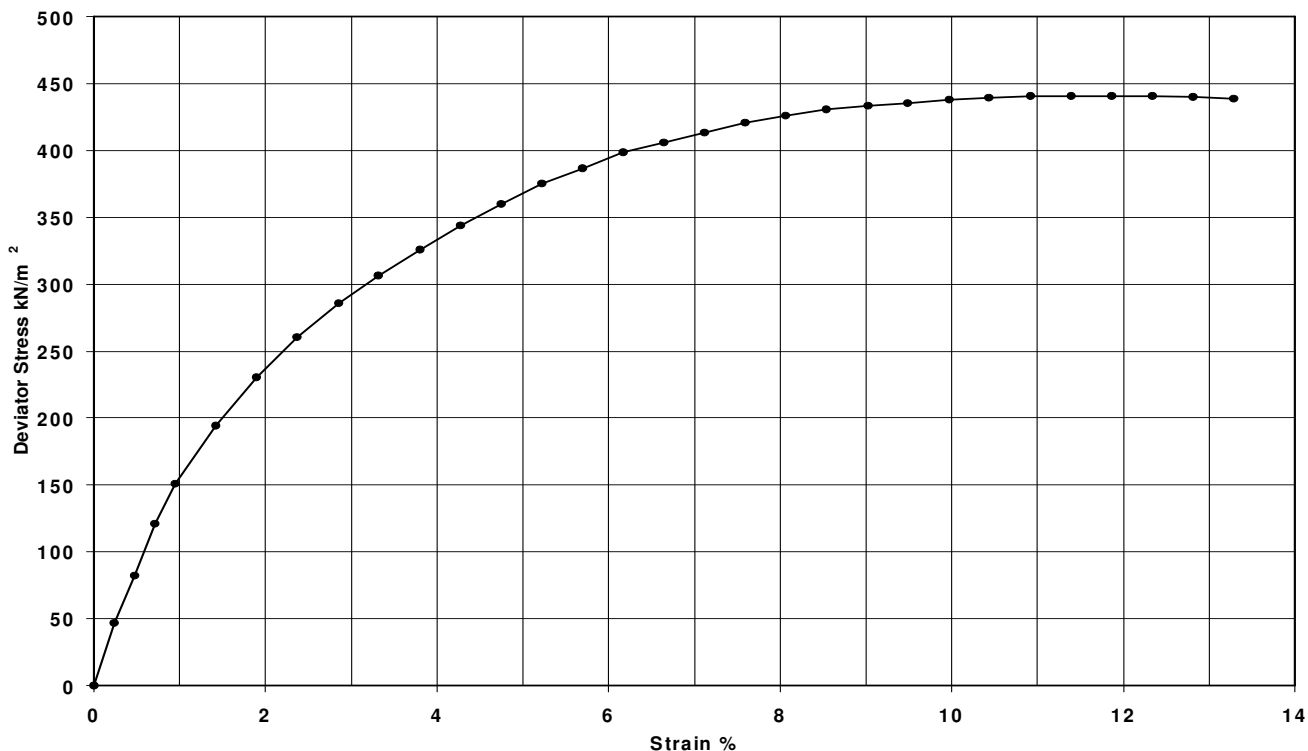
Sample Ref N77573

Sample Description

The following samples were combined to perform this test:

Very stiff very high strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	47.0	10.0	437.6
Orientation of sample	Vertical			0.5	81.8	10.4	438.9
Initial Diameter (mm)	103.37			0.7	120.5	10.9	440.7
Initial Length (mm)	210.69			0.9	151.1	11.4	440.7
Initial Water Content (%)	11.9			1.4	194.6	11.9	440.9
Initial Bulk Density (Mg/m ³)	2.26			1.9	230.5	12.3	440.6
Initial Dry Density (Mg/m ³)	2.02			2.4	260.0	12.8	440.1
Particle Density (Mg/m ³)	2.65 Assumed			2.8	285.7	13.3	438.8
Cell Pressure (kPa)	60			3.3	306.7		
'Specimen Height' at start of Shearing Stage (mm)	210.68			3.8	326.0		
Membrane Thickness/Correction (mm/kPa)				4.3	343.5		
Rate of Strain (%/min)	1.3			4.7	360.1		
Corrected Deviator Stress (kPa)	441			5.2	375.3		
Undrained Shear Strength (kPa)	220			5.7	386.5		
Strain at Failure (%)	11.9			6.2	398.3		
Failure Zone Water Content (%)	11.6			6.6	405.9		
Water Content (after test) (%)				7.1	413.4		
Mode of Failure	Intermediate			7.6	420.6		
				8.1	426.0		
				8.5	430.3		
				9.0	433.1		
				9.5	435.5		

Remarks 

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A08
Sample Depth 3.00-3.45m
Sample Type UT
Sample Ref N77573

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A08

Sample Depth 5.00-5.45m

Project No: PN194027

Sample Type UT

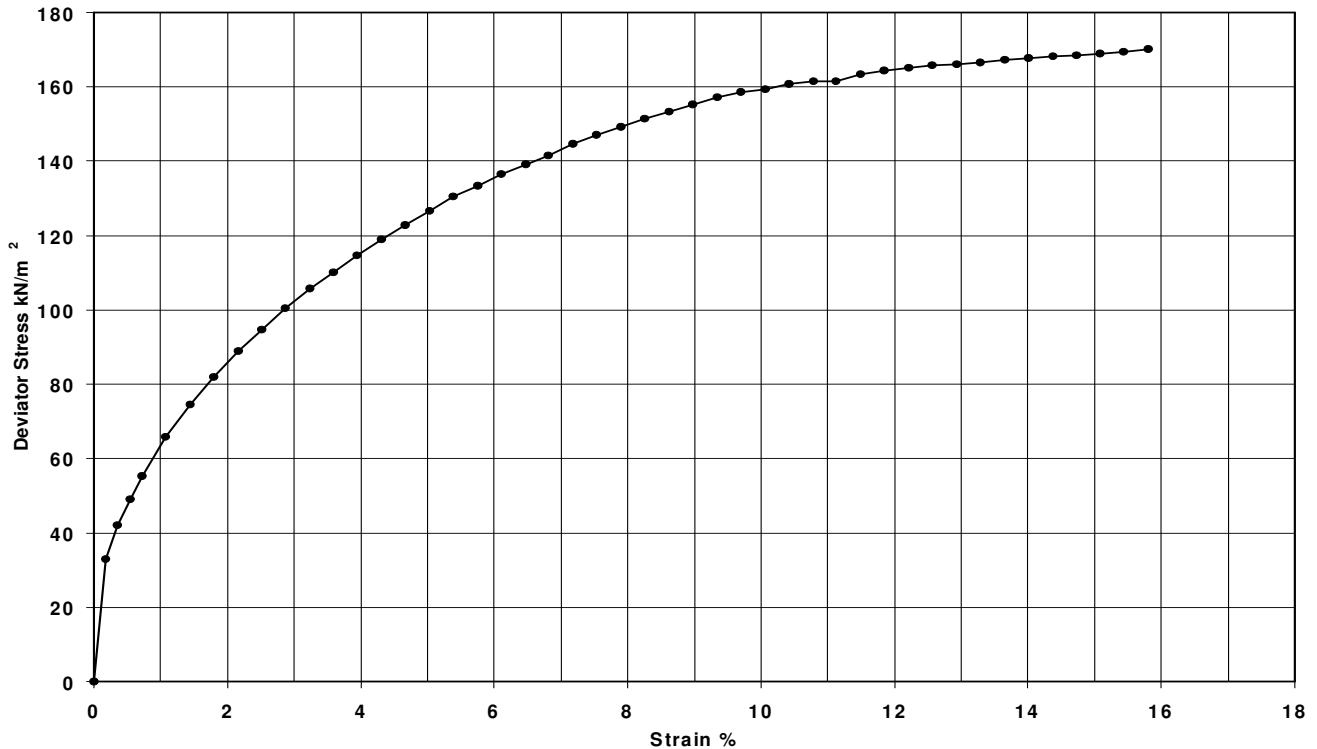
Sample Ref N77575

Sample Description

The following samples were combined to perform this test:

Stiff high strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	32.9	7.5	147.0
Orientation of sample	Vertical			0.4	42.0	7.9	149.3
Initial Diameter (mm)	102.25			0.5	49.0	8.3	151.5
Initial Length (mm)	278.41			0.7	55.4	8.6	153.3
Initial Water Content (%)	10.7			1.1	65.8	9.0	155.3
Initial Bulk Density (Mg/m ³)	1.74			1.4	74.5	9.3	157.3
Initial Dry Density (Mg/m ³)	1.57			1.8	82.0	9.7	158.7
Particle Density (Mg/m ³)	2.65 Assumed			2.2	88.8	10.1	159.4
Cell Pressure (kPa)	100			2.5	94.6	10.4	160.8
'Specimen Height' at start of Shearing Stage (mm)	278.35			2.9	100.5	10.8	161.5
Membrane Thickness/Correction (mm/kPa)				3.2	105.7	11.1	161.5
Rate of Strain (%/min)	1.3			3.6	110.2	11.5	163.4
Corrected Deviator Stress (kPa)	169			4.0	114.6	11.9	164.3
Undrained Shear Strength (kPa)	84			4.3	118.9	12.2	165.1
Strain at Failure (%)	15.1			4.7	122.8	12.6	165.8
Failure Zone Water Content (%)	10.7			5.0	126.7	12.9	166.2
Water Content (after test) (%)				5.4	130.5	13.3	166.6
Mode of Failure	Plastic			5.7	133.4	13.6	167.2
				6.1	136.4	14.0	167.7
				6.5	139.1	14.4	168.1
				6.8	141.6	14.7	168.5
				7.2	144.6	15.1	169.0

Remarks 

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A08
Sample Depth 5.00-5.45m
Sample Type UT
Sample Ref N77575

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A08

Sample Depth 8.00-8.45m

Project No: PN194027

Sample Type UT

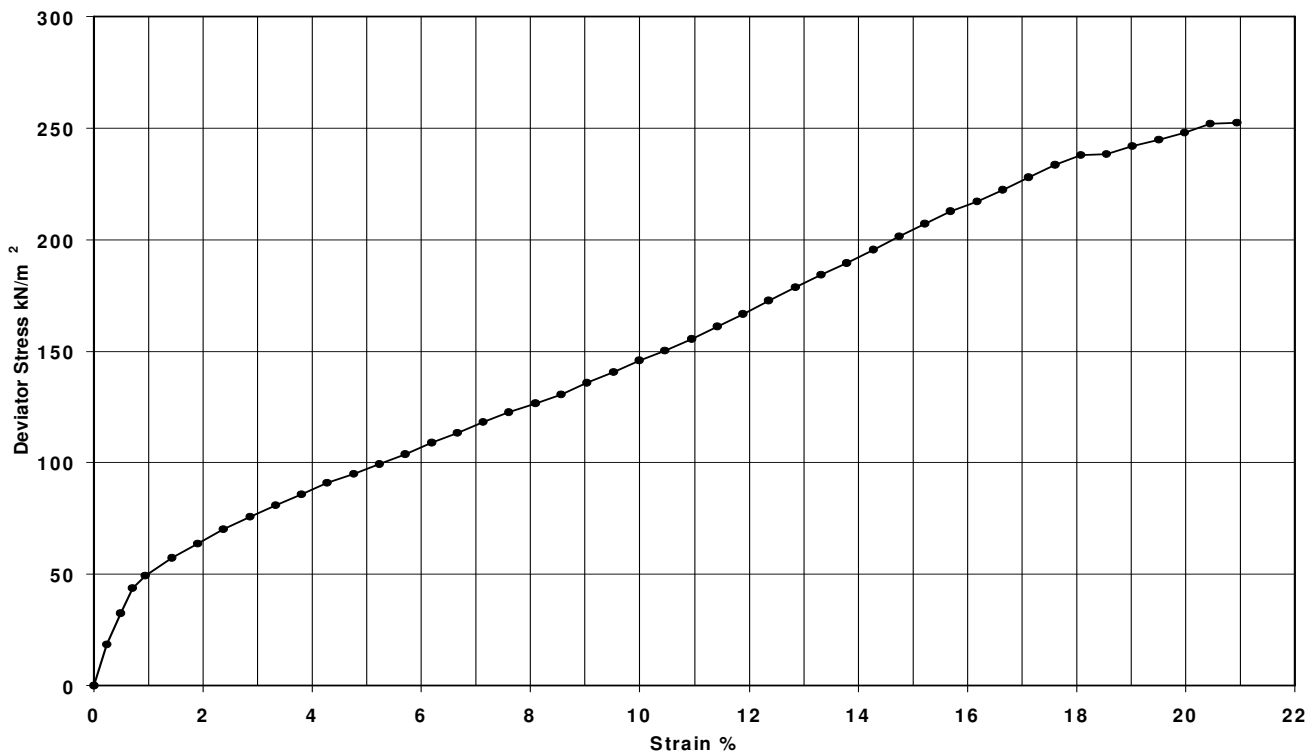
Sample Ref N77576

Sample Description

The following samples were combined to perform this test:

Stiff high strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	18.6	10.0	145.7
Orientation of sample	Vertical			0.5	32.6	10.5	150.0
Initial Diameter (mm)	103.78			0.7	43.5	10.9	155.3
Initial Length (mm)	210.14			1.0	49.1	11.4	160.9
Initial Water Content (%)	10.1			1.4	57.3	11.9	166.8
Initial Bulk Density (Mg/m ³)	2.29			1.9	63.6	12.4	172.5
Initial Dry Density (Mg/m ³)	2.08			2.4	70.0	12.8	178.7
Particle Density (Mg/m ³)	2.65 Assumed			2.9	75.7	13.3	184.3
Cell Pressure (kPa)	160			3.3	80.9	13.8	189.4
'Specimen Height' at start of Shearing Stage (mm)	209.91			3.8	85.7	14.3	195.4
Membrane Thickness/Correction (mm/kPa)				4.3	90.9	14.8	201.5
Rate of Strain (%/min)	1.3			4.8	95.1	15.2	206.9
Corrected Deviator Stress (kPa)	248			5.2	99.4	15.7	212.8
Undrained Shear Strength (kPa)	124			5.7	103.9	16.2	217.2
Strain at Failure (%)	20.0			6.2	109.0	16.7	222.4
Failure Zone Water Content (%)	11.0			6.7	113.2	17.1	228.0
Water Content (after test) (%)				7.1	118.1	17.6	233.4
Mode of Failure	Plastic			7.6	122.5	18.1	237.8
				8.1	126.7	18.6	238.4
				8.6	130.6	19.0	241.8
				9.0	135.8	19.5	244.6
				9.5	140.5	20.0	248.0

Remarks 

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8A08
Sample Depth 8.00-8.45m
Sample Type UT
Sample Ref N77576

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8B01

Sample Depth 1.20-1.65m

Project No: PN194027

Sample Type UT

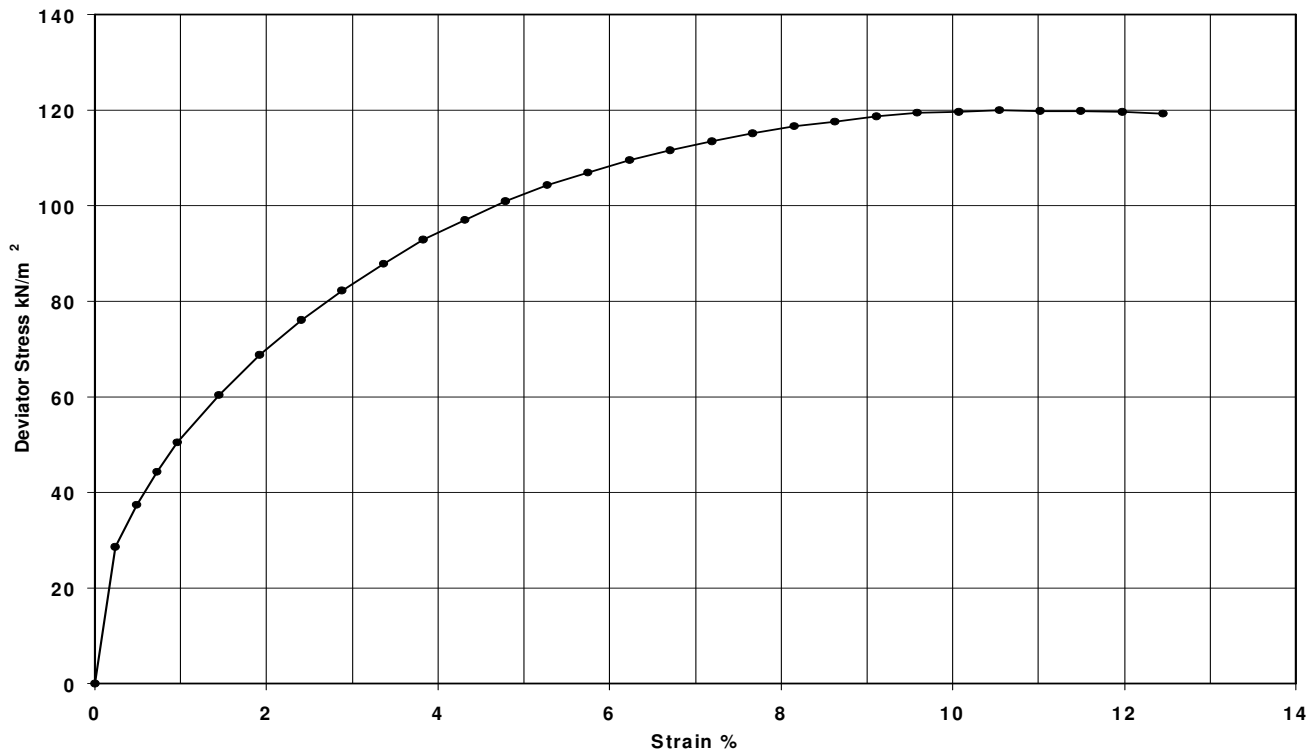
Sample Ref N77577

Sample Description

The following samples were combined to perform this test:

Firm medium strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	28.6	10.1	119.6
Orientation of sample	Vertical			0.5	37.4	10.5	119.9
Initial Diameter (mm)	101.64			0.7	44.3	11.0	119.8
Initial Length (mm)	208.62			1.0	50.4	11.5	119.8
Initial Water Content (%)	18.7			1.4	60.4	12.0	119.5
Initial Bulk Density (Mg/m ³)	2.20			1.9	68.8	12.5	119.2
Initial Dry Density (Mg/m ³)	1.85			2.4	76.0		
Particle Density (Mg/m ³)	2.65 Assumed			2.9	82.2		
Cell Pressure (kPa)	25			3.4	87.8		
'Specimen Height' at start of Shearing Stage (mm)	208.59			3.8	92.9		
Membrane Thickness/Correction (mm/kPa)				4.3	97.1		
Rate of Strain (%/min)	1.3			4.8	100.9		
Corrected Deviator Stress (kPa)	120			5.3	104.2		
Undrained Shear Strength (kPa)	60			5.8	106.9		
Strain at Failure (%)	10.6			6.2	109.5		
Failure Zone Water Content (%)	16.4			6.7	111.6		
Water Content (after test) (%)				7.2	113.5		
Mode of Failure	Intermediate			7.7	115.2		
				8.1	116.7		
				8.6	117.7		
				9.1	118.6		
				9.6	119.3		

Remarks 

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8B01
Sample Depth 1.20-1.65m
Sample Type UT
Sample Ref N77577

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8B01

Sample Depth 3.00-3.45m

Project No: PN194027

Sample Type UT

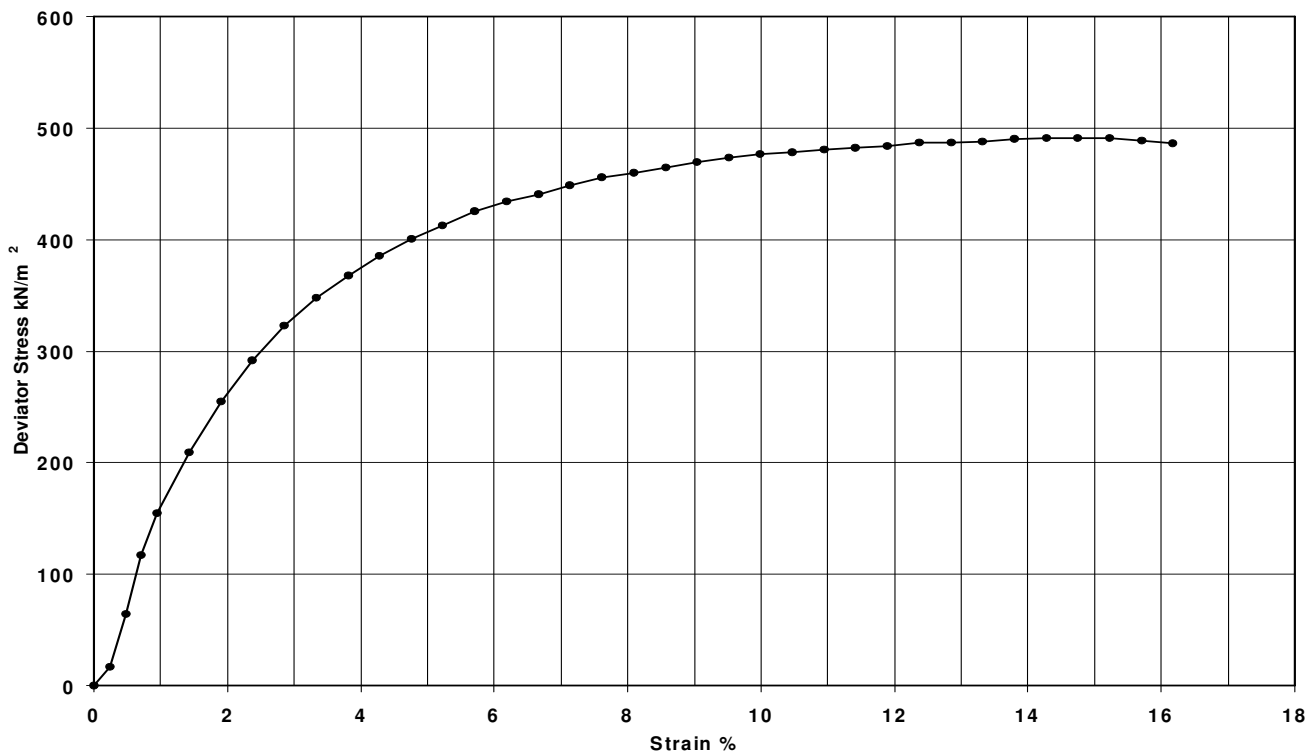
Sample Ref N77579

Sample Description

The following samples were combined to perform this test:

Very stiff very high strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	16.9	10.0	477.0
Orientation of sample	Vertical			0.5	63.7	10.5	478.5
Initial Diameter (mm)	101.58			0.7	116.6	10.9	480.5
Initial Length (mm)	210.14			1.0	154.3	11.4	482.1
Initial Water Content (%)	12.6			1.4	208.7	11.9	483.9
Initial Bulk Density (Mg/m ³)	2.22			1.9	254.9	12.4	486.8
Initial Dry Density (Mg/m ³)	1.97			2.4	291.2	12.8	487.3
Particle Density (Mg/m ³)	2.65 Assumed			2.9	322.8	13.3	487.9
Cell Pressure (kPa)	60			3.3	347.6	13.8	490.3
'Specimen Height' at start of Shearing Stage (mm)	209.95			3.8	367.7	14.3	490.7
Membrane Thickness/Correction (mm/kPa)				4.3	385.1	14.8	491.2
Rate of Strain (%/min)	1.3			4.8	400.3	15.2	490.7
Corrected Deviator Stress (kPa)	491			5.2	412.6	15.7	488.4
Undrained Shear Strength (kPa)	246			5.7	425.4	16.2	486.3
Strain at Failure (%)	14.8			6.2	434.5		
Failure Zone Water Content (%)	13.7			6.7	440.5		
Water Content (after test) (%)				7.1	448.4		
Mode of Failure	Plastic			7.6	455.5		
				8.1	460.1		
				8.6	464.9		
				9.0	469.2		
				9.5	473.6		

Remarks 

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - *Unconsolidated Undrained Triaxial Test*

Project: OMEGA DEVELOPMENT GI

Hole BH8B01
Sample Depth 3.00-3.45m
Sample Type UT
Sample Ref N77579

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8B01
Sample Depth 5.00-5.45m
Sample Type UT
Sample Ref N77581

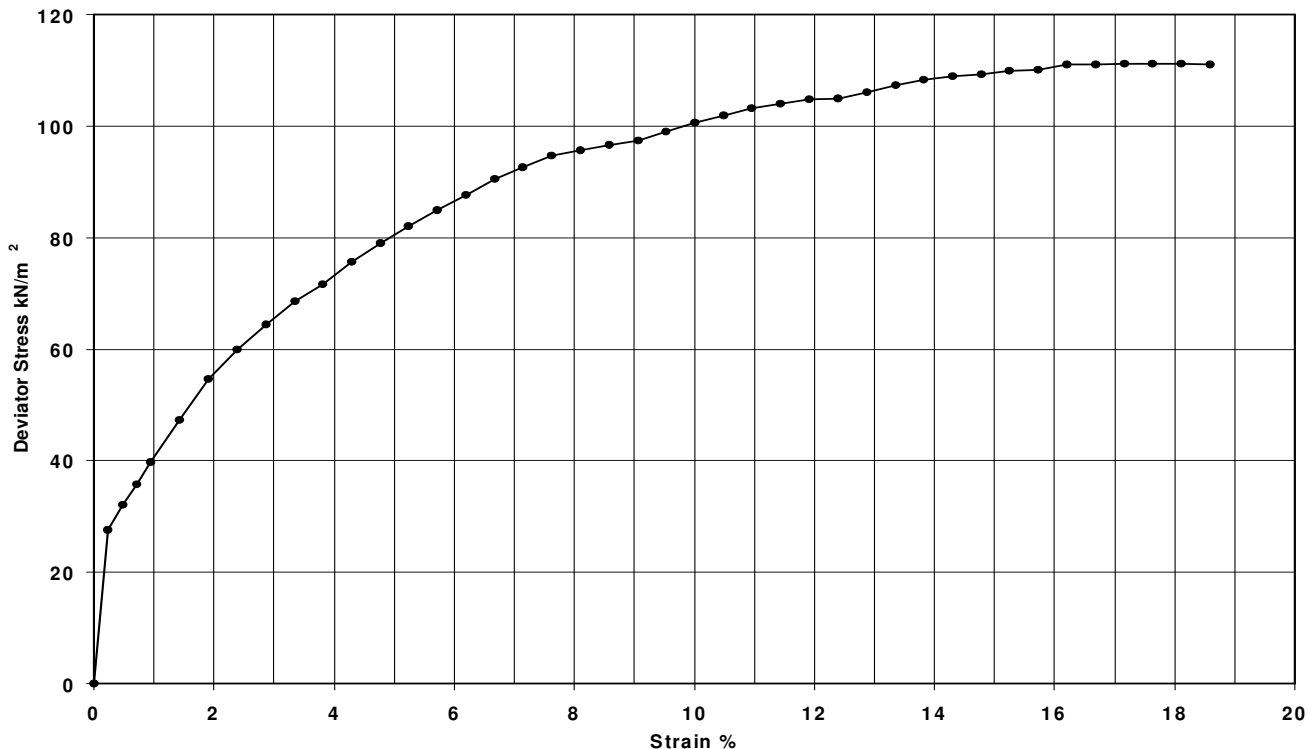
Project No: PN194027

Sample Description

The following samples were combined to perform this test:

Firm medium strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	27.5	10.0	100.7
Orientation of sample	Vertical			0.5	32.0	10.5	102.0
Initial Diameter (mm)	102.32			0.7	35.7	11.0	103.2
Initial Length (mm)	209.77			1.0	39.8	11.4	104.0
Initial Water Content (%)	13.0			1.4	47.3	11.9	104.8
Initial Bulk Density (Mg/m ³)	2.26			1.9	54.7	12.4	105.0
Initial Dry Density (Mg/m ³)	2.00			2.4	59.9	12.9	106.1
Particle Density (Mg/m ³)	2.65 Assumed			2.9	64.5	13.3	107.3
Cell Pressure (kPa)	100			3.3	68.6	13.8	108.3
'Specimen Height' at start of Shearing Stage (mm)	209.66			3.8	71.7	14.3	108.9
Membrane Thickness/Correction (mm/kPa)				4.3	75.6	14.8	109.3
Rate of Strain (%/min)	1.3			4.8	79.0	15.3	109.9
Corrected Deviator Stress (kPa)	111			5.2	82.0	15.7	110.1
Undrained Shear Strength (kPa)	56			5.7	84.9	16.2	111.0
Strain at Failure (%)	18.1			6.2	87.7	16.7	111.0
Failure Zone Water Content (%)	13.2			6.7	90.6	17.2	111.1
Water Content (after test) (%)				7.2	92.6	17.6	111.1
Mode of Failure	Plastic			7.6	94.6	18.1	111.2
				8.1	95.7	18.6	111.0
				8.6	96.5		
				9.1	97.4		
				9.5	99.0		

Remarks 

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8B01
Sample Depth 5.00-5.45m
Sample Type UT
Sample Ref N77581

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8B02

Sample Depth 3.00-3.45m

Project No: PN194027

Sample Type UT

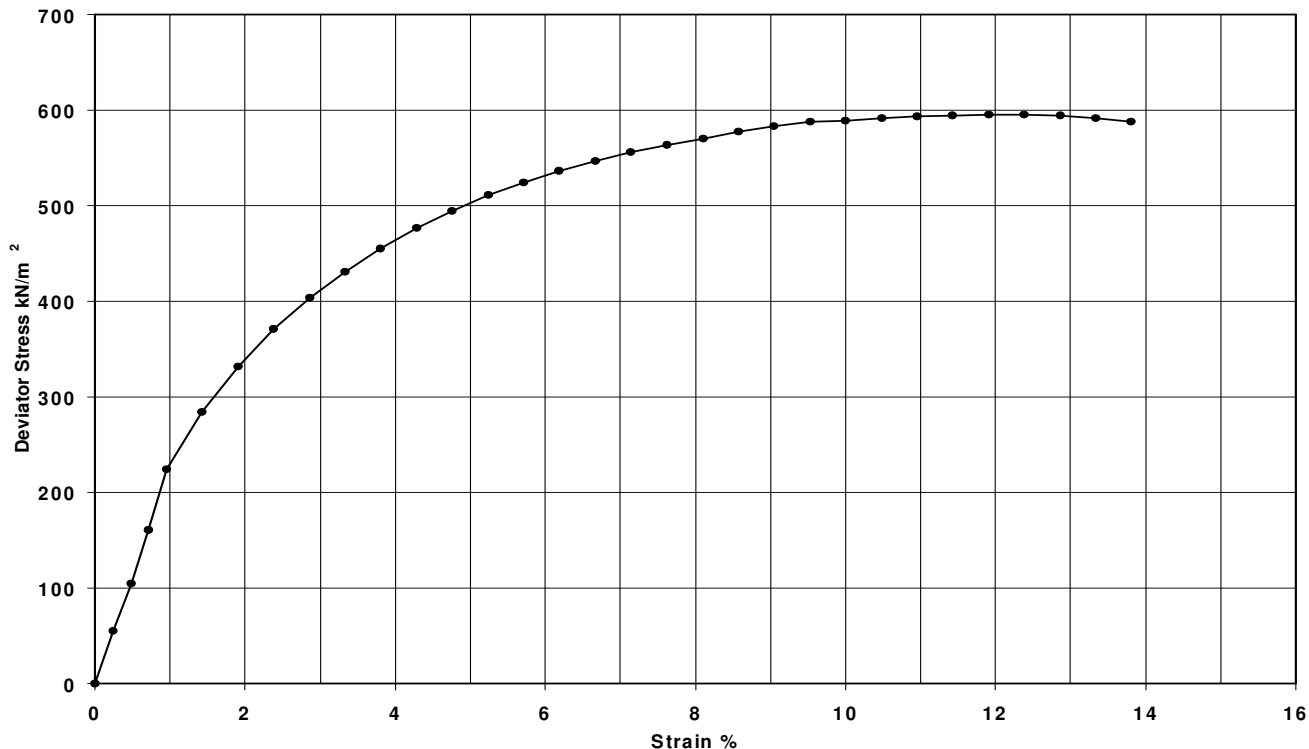
Sample Ref N77585

Sample Description

The following samples were combined to perform this test:

Very stiff very high strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	55.1	10.0	589.0
Orientation of sample	Vertical			0.5	104.3	10.5	592.0
Initial Diameter (mm)	101.95			0.7	161.0	11.0	593.4
Initial Length (mm)	209.95			1.0	224.2	11.4	594.2
Initial Water Content (%)	12.0			1.4	284.0	11.9	595.3
Initial Bulk Density (Mg/m ³)	2.26			1.9	331.4	12.4	595.5
Initial Dry Density (Mg/m ³)	2.02			2.4	370.8	12.9	593.9
Particle Density (Mg/m ³)	2.65 Assumed			2.9	403.3	13.3	591.9
Cell Pressure (kPa)	60			3.3	430.9	13.8	588.3
'Specimen Height' at start of Shearing Stage (mm)	209.84			3.8	454.7		
Membrane Thickness/Correction (mm/kPa)				4.3	476.3		
Rate of Strain (%/min)	1.3			4.8	494.3		
Corrected Deviator Stress (kPa)	595			5.2	510.8		
Undrained Shear Strength (kPa)	298			5.7	524.7		
Strain at Failure (%)	12.4			6.2	536.4		
Failure Zone Water Content (%)	12.7			6.7	546.6		
Water Content (after test) (%)				7.1	555.8		
Mode of Failure	Intermediate			7.6	563.4		
				8.1	570.5		
				8.6	577.3		
				9.0	582.9		
				9.5	587.5		

Remarks 

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8B02
Sample Depth 3.00-3.45m
Sample Type UT
Sample Ref N77585

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8B02

Sample Depth 5.00-5.45m

Project No: PN194027

Sample Type UT

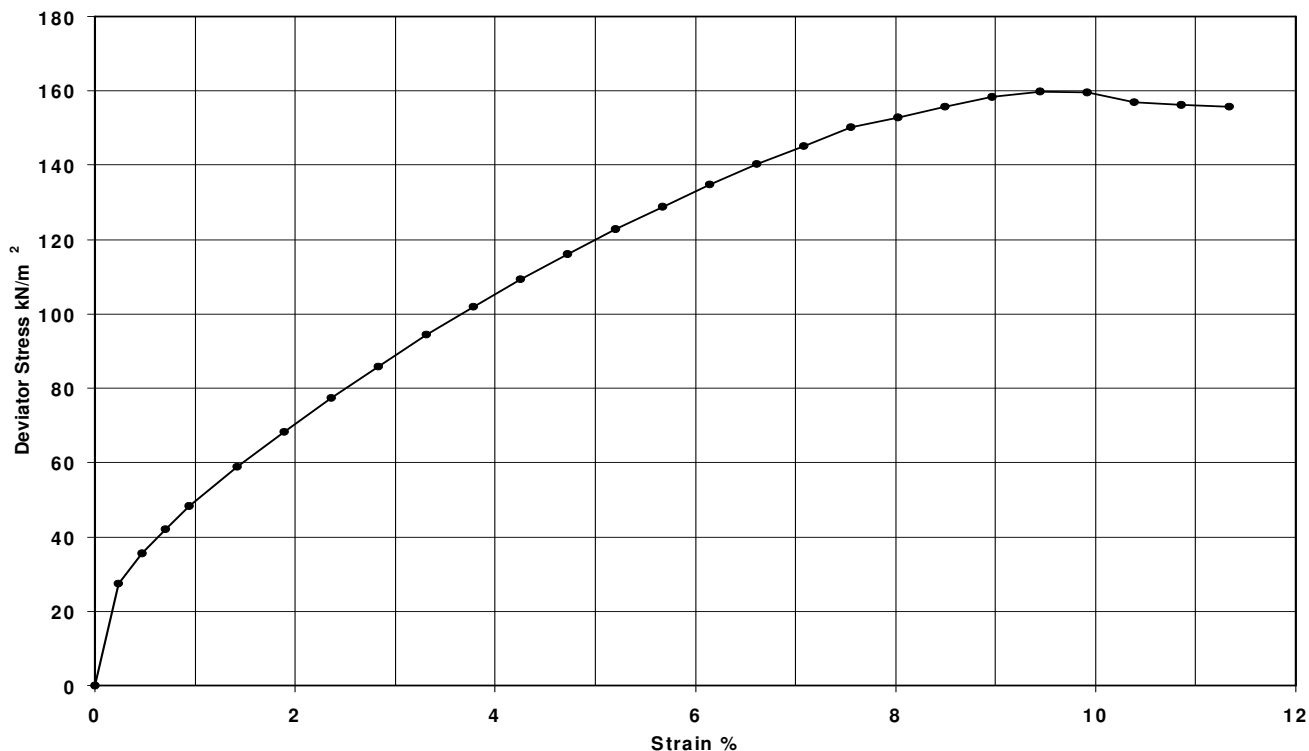
Sample Ref N77587

Sample Description

The following samples were combined to perform this test:

Stiff high strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	27.5	9.9	159.6
Orientation of sample	Vertical			0.5	35.7	10.4	156.9
Initial Diameter (mm)	103.19			0.7	42.1	10.9	156.3
Initial Length (mm)	211.73			0.9	48.3	11.3	155.8
Initial Water Content (%)	12.7			1.4	58.8		
Initial Bulk Density (Mg/m ³)	2.33			1.9	68.4		
Initial Dry Density (Mg/m ³)	2.07			2.4	77.3		
Particle Density (Mg/m ³)	2.65 Assumed			2.8	85.9		
Cell Pressure (kPa)	100			3.3	94.4		
'Specimen Height' at start of Shearing Stage (mm)	211.72			3.8	101.9		
Membrane Thickness/Correction (mm/kPa)				4.3	109.4		
Rate of Strain (%/min)	1.3			4.7	116.2		
Corrected Deviator Stress (kPa)	160			5.2	122.8		
Undrained Shear Strength (kPa)	80			5.7	128.9		
Strain at Failure (%)	9.5			6.1	134.8		
Failure Zone Water Content (%)	9.9			6.6	140.4		
Water Content (after test) (%)				7.1	145.1		
Mode of Failure	Intermediate			7.6	150.1		
				8.0	152.8		
				8.5	155.8		
				9.0	158.4		
				9.4	159.9		

Remarks



29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8B02
Sample Depth 5.00-5.45m
Sample Type UT
Sample Ref N77587

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8B03

Sample Depth 2.00-2.45m

Project No: PN194027

Sample Type UT

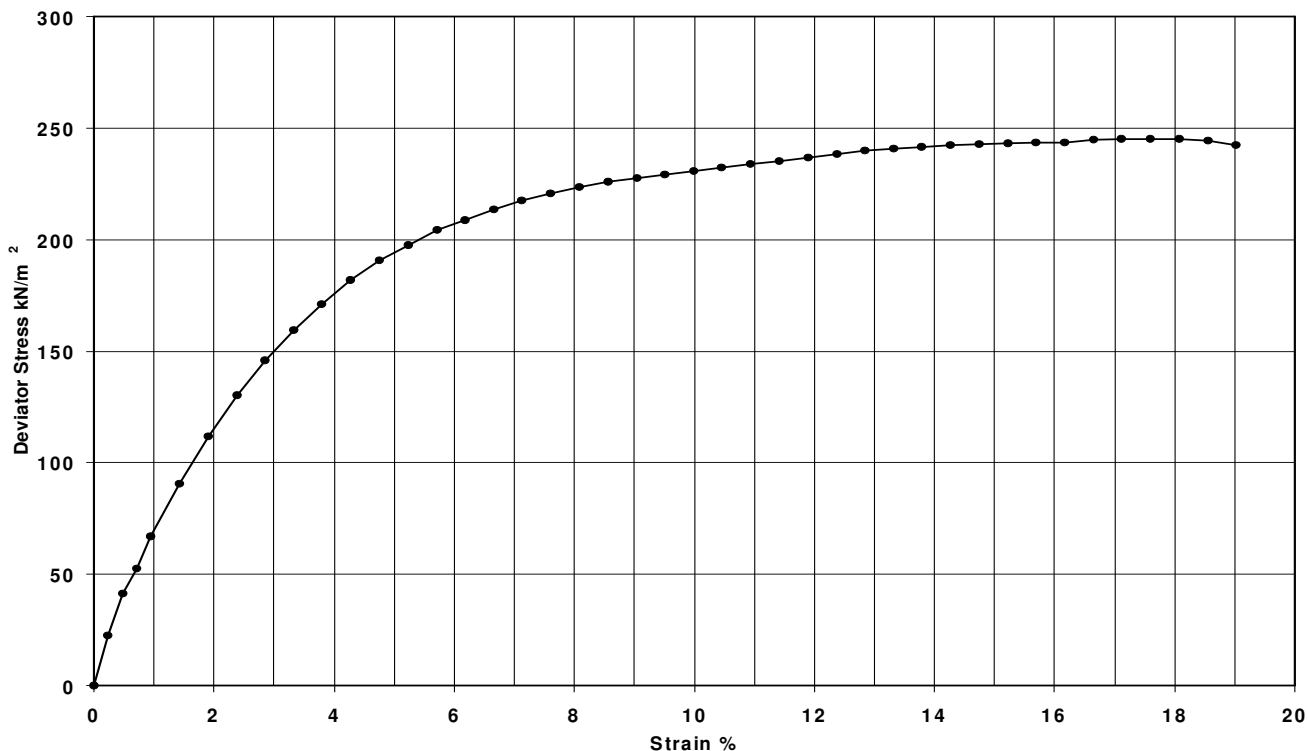
Sample Ref N77567

Sample Description

The following samples were combined to perform this test:

Stiff high strength brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	22.6	10.0	230.7
Orientation of sample	Vertical			0.5	41.1	10.5	232.3
Initial Diameter (mm)	103.46			0.7	52.5	10.9	233.8
Initial Length (mm)	210.27			1.0	66.9	11.4	235.3
Initial Water Content (%)	14.0			1.4	90.5	11.9	236.7
Initial Bulk Density (Mg/m ³)	2.23			1.9	111.6	12.4	238.5
Initial Dry Density (Mg/m ³)	1.96			2.4	130.0	12.8	239.9
Particle Density (Mg/m ³)	2.65 Assumed			2.9	145.6	13.3	240.9
Cell Pressure (kPa)	40			3.3	159.3	13.8	241.4
'Specimen Height' at start of Shearing Stage (mm)	210.17			3.8	171.2	14.3	242.2
Membrane Thickness/Correction (mm/kPa)				4.3	181.7	14.7	242.7
Rate of Strain (%/min)	1.3			4.8	190.7	15.2	243.1
Corrected Deviator Stress (kPa)	245			5.2	197.5	15.7	243.7
Undrained Shear Strength (kPa)	123			5.7	204.1	16.2	243.7
Strain at Failure (%)	17.6			6.2	208.7	16.6	244.6
Failure Zone Water Content (%)	14.0			6.7	213.6	17.1	245.0
Water Content (after test) (%)				7.1	217.6	17.6	245.2
Mode of Failure	Plastic			7.6	220.8	18.1	245.1
				8.1	223.6	18.5	244.4
				8.6	226.0	19.0	242.2
				9.0	227.6		
				9.5	229.2		

Remarks



29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8B03
Sample Depth 2.00-2.45m
Sample Type UT
Sample Ref N77567

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8B03
Sample Depth 4.00-4.45m
Sample Type UT
Sample Ref N77568

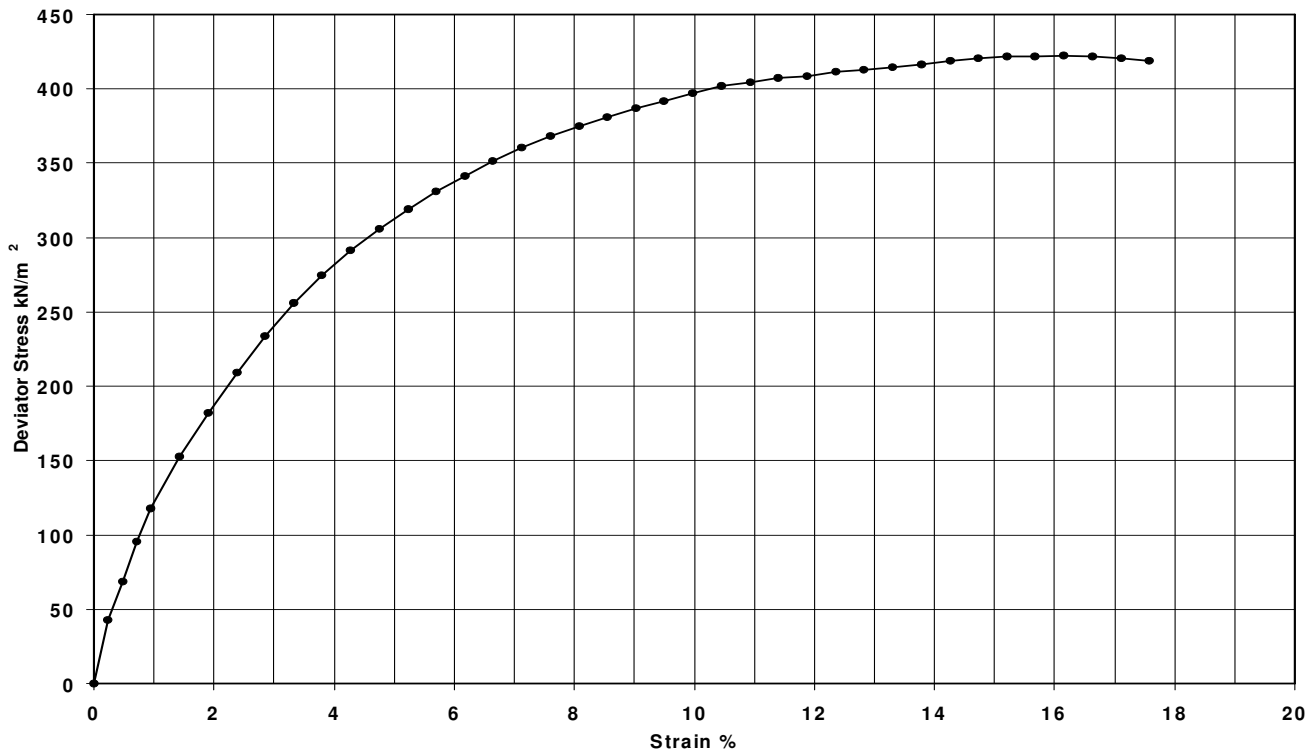
Project No: PN194027

Sample Description

The following samples were combined to perform this test:

Very stiff very high strength brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	42.5	10.0	397.1
Orientation of sample	Vertical			0.5	68.6	10.5	402.0
Initial Diameter (mm)	102.74			0.7	95.8	10.9	404.4
Initial Length (mm)	210.44			1.0	117.6	11.4	407.1
Initial Water Content (%)	12.7			1.4	152.5	11.9	408.5
Initial Bulk Density (Mg/m ³)	2.28			1.9	182.2	12.4	411.3
Initial Dry Density (Mg/m ³)	2.02			2.4	209.1	12.8	412.7
Particle Density (Mg/m ³)	2.65 Assumed			2.9	233.5	13.3	414.8
Cell Pressure (kPa)	80			3.3	255.7	13.8	416.6
'Specimen Height' at start of Shearing Stage (mm)	210.33			3.8	274.6	14.3	418.8
Membrane Thickness/Correction (mm/kPa)				4.3	291.2	14.7	420.5
Rate of Strain (%/min)	1.3			4.8	305.8	15.2	421.7
Corrected Deviator Stress (kPa)	422			5.2	318.8	15.7	421.9
Undrained Shear Strength (kPa)	211			5.7	330.8	16.2	422.1
Strain at Failure (%)	16.2			6.2	341.4	16.6	421.5
Failure Zone Water Content (%)	12.4			6.7	351.7	17.1	420.4
Water Content (after test) (%)				7.1	360.7	17.6	418.8
Mode of Failure	Plastic			7.6	368.3		
				8.1	374.8		
				8.6	381.0		
				9.0	387.0		
				9.5	391.9		

Remarks

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8B03
Sample Depth 4.00-4.45m
Sample Type UT
Sample Ref N77568

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8C01
Sample Depth 3.00-3.45m
Sample Type UT
Sample Ref N77803

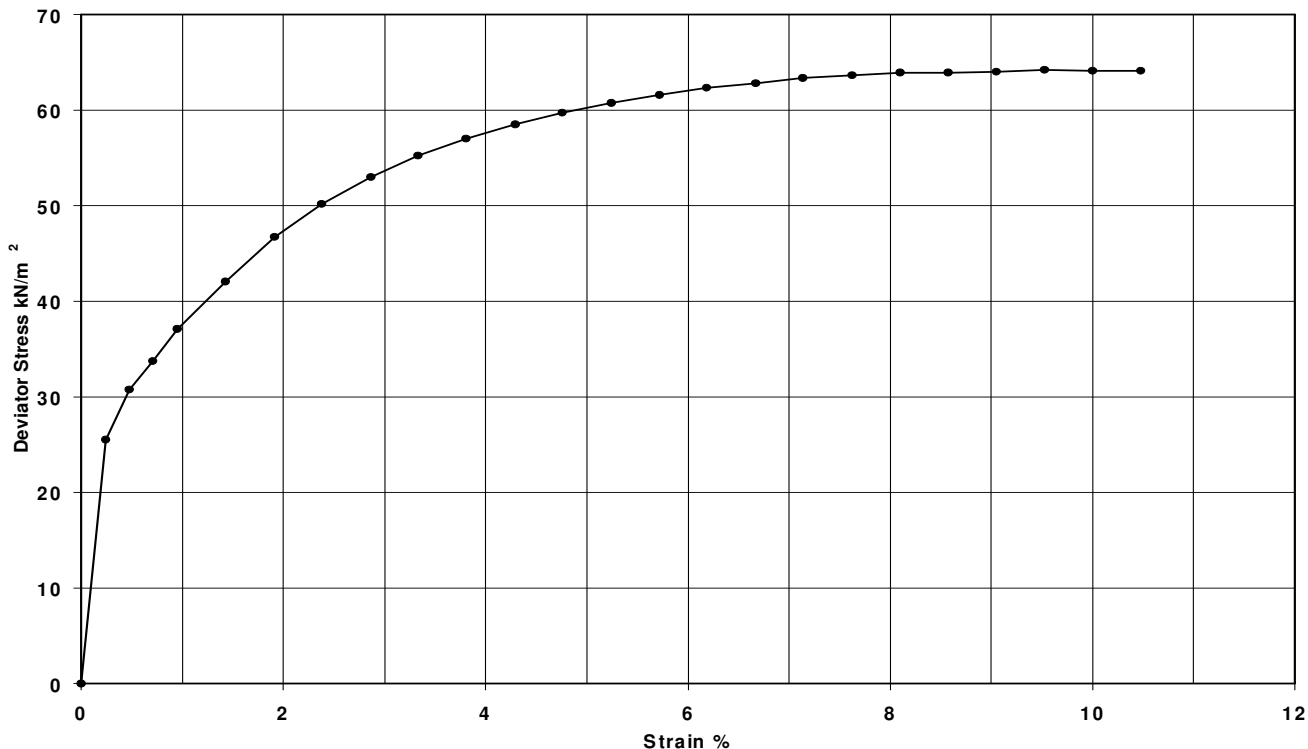
Project No: PN194027

Sample Description

The following samples were combined to perform this test:

Firm low strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	25.5	10.0	64.1
Orientation of sample	Vertical			0.5	30.8	10.5	64.1
Initial Diameter (mm)	102.11			0.7	33.7		
Initial Length (mm)	209.94			1.0	37.1		
Initial Water Content (%)	17.5			1.4	42.1		
Initial Bulk Density (Mg/m ³)	2.17			1.9	46.8		
Initial Dry Density (Mg/m ³)	1.85			2.4	50.2		
Particle Density (Mg/m ³)	2.65 Assumed			2.9	52.9		
Cell Pressure (kPa)	60			3.3	55.2		
'Specimen Height' at start of Shearing Stage (mm)	209.89			3.8	57.0		
Membrane Thickness/Correction (mm/kPa)				4.3	58.5		
Rate of Strain (%/min)	2.0			4.8	59.7		
Corrected Deviator Stress (kPa)	64			5.2	60.7		
Undrained Shear Strength (kPa)	32			5.7	61.6		
Strain at Failure (%)	9.5			6.2	62.3		
Failure Zone Water Content (%)	16.9			6.7	62.8		
Water Content (after test) (%)				7.1	63.4		
Mode of Failure	Intermediate			7.6	63.7		
				8.1	63.9		
				8.6	64.0		
				9.1	64.0		
				9.5	64.2		

Remarks 

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - *Unconsolidated Undrained Triaxial Test*

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole	BH8C01
Sample Depth	3.00-3.45m
Sample Type	UT
Sample Ref	N77803



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8C02
Sample Depth 5.00-5.45m
Sample Type UT
Sample Ref N77810

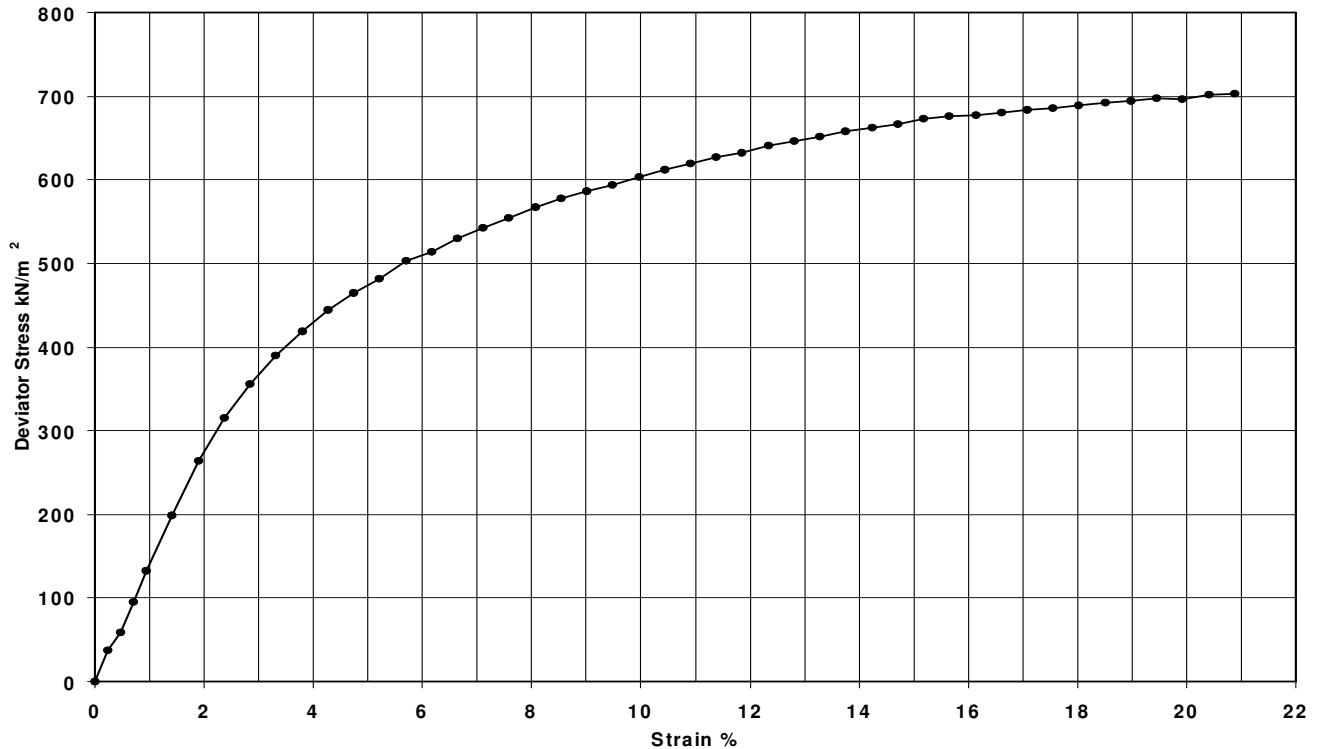
Project No: PN194027

Sample Description

The following samples were combined to perform this test:

Very stiff/hard extremely high strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	37.8	10.0	603.4
Orientation of sample	Vertical			0.5	58.9	10.4	611.7
Initial Diameter (mm)	102.01			0.7	95.0	10.9	619.4
Initial Length (mm)	210.71			0.9	132.1	11.4	627.4
Initial Water Content (%)	10.1			1.4	199.1	11.9	632.3
Initial Bulk Density (Mg/m ³)	1.70			1.9	263.6	12.3	641.0
Initial Dry Density (Mg/m ³)	1.54			2.4	314.6	12.8	645.8
Particle Density (Mg/m ³)	2.65 Assumed			2.8	355.4	13.3	652.0
Cell Pressure (kPa)	100			3.3	389.7	13.8	657.7
'Specimen Height' at start of Shearing Stage (mm)	210.67			3.8	418.8	14.2	662.0
Membrane Thickness/Correction (mm/kPa)				4.3	444.1	14.7	666.5
Rate of Strain (%/min)	2.0			4.7	464.5	15.2	673.1
Corrected Deviator Stress (kPa)	697			5.2	482.2	15.7	676.3
Undrained Shear Strength (kPa)	348			5.7	503.4	16.1	677.4
Strain at Failure (%)	19.5			6.2	514.3	16.6	680.5
Failure Zone Water Content (%)	10.1			6.6	529.5	17.1	683.2
Water Content (after test) (%)				7.1	542.3	17.6	685.9
Mode of Failure	Plastic			7.6	554.8	18.0	688.4
				8.1	566.8	18.5	692.2
				8.5	578.1	19.0	693.9
				9.0	586.0	19.5	697.0
				9.5	594.0	19.9	696.9

Remarks 

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8C02
Sample Depth 5.00-5.45m
Sample Type UT
Sample Ref N77810

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8C03

Sample Depth 3.00-3.45m

Project No: PN194027

Sample Type UT

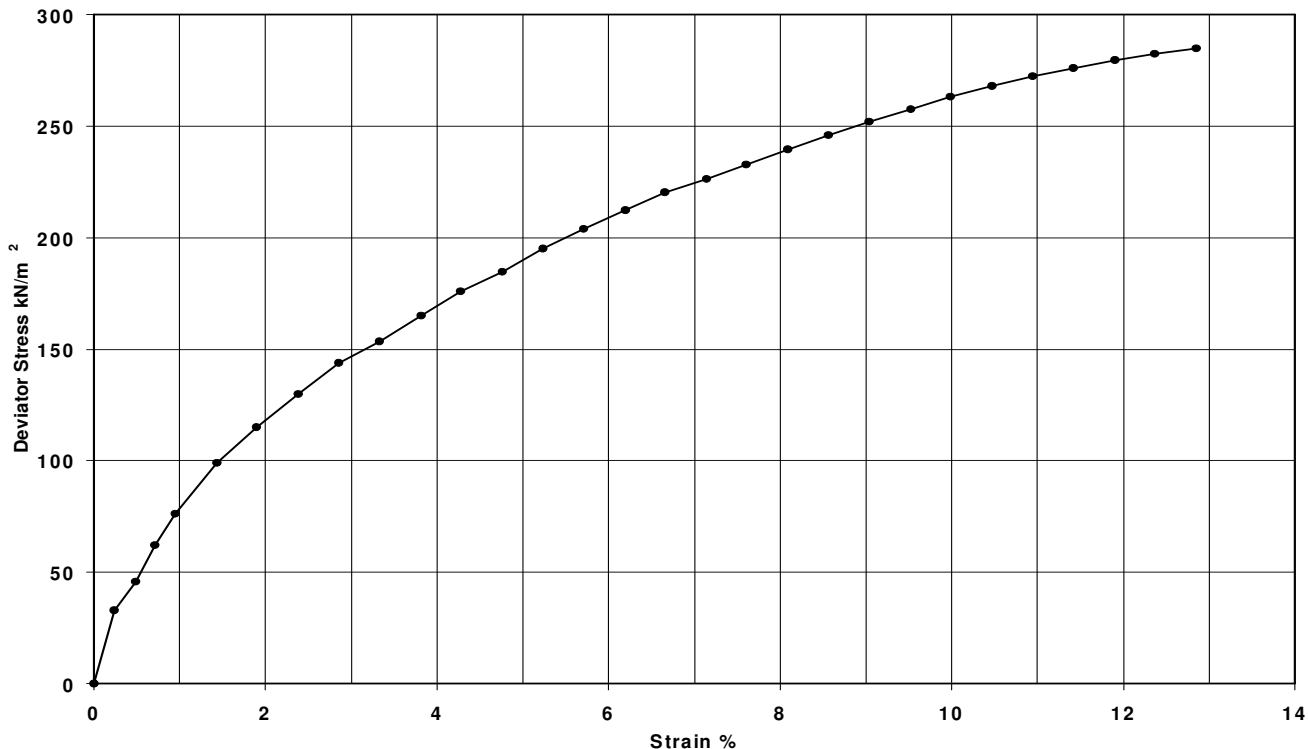
Sample Ref N77806

Sample Description

The following samples were combined to perform this test:

Firm high strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	32.9	10.0	263.1
Orientation of sample	Vertical			0.5	45.7	10.5	267.8
Initial Diameter (mm)	102.29			0.7	61.9	10.9	272.3
Initial Length (mm)	210.17			1.0	76.2	11.4	275.9
Initial Water Content (%)	10.3			1.4	98.8	11.9	279.5
Initial Bulk Density (Mg/m ³)	2.24			1.9	114.9	12.4	282.4
Initial Dry Density (Mg/m ³)	2.03			2.4	129.7	12.8	284.7
Particle Density (Mg/m ³)	2.65 Assumed			2.9	143.7		
Cell Pressure (kPa)	60			3.3	153.3		
'Specimen Height' at start of Shearing Stage (mm)	210.18			3.8	165.2		
Membrane Thickness/Correction (mm/kPa)				4.3	175.7		
Rate of Strain (%/min)	2.0			4.8	184.6		
Corrected Deviator Stress (kPa)	285			5.2	195.0		
Undrained Shear Strength (kPa)	142			5.7	203.8		
Strain at Failure (%)	12.9			6.2	212.2		
Failure Zone Water Content (%)	10.7			6.7	220.3		
Water Content (after test) (%)				7.1	226.2		
Mode of Failure	Intermediate			7.6	232.9		
				8.1	239.6		
				8.6	246.0		
				9.0	251.8		
				9.5	257.6		

Remarks 

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LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8C03
Sample Depth 3.00-3.45m
Sample Type UT
Sample Ref N77806

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8D01A

Sample Depth 3.00-3.45m

Project No: PN194027

Sample Type UT

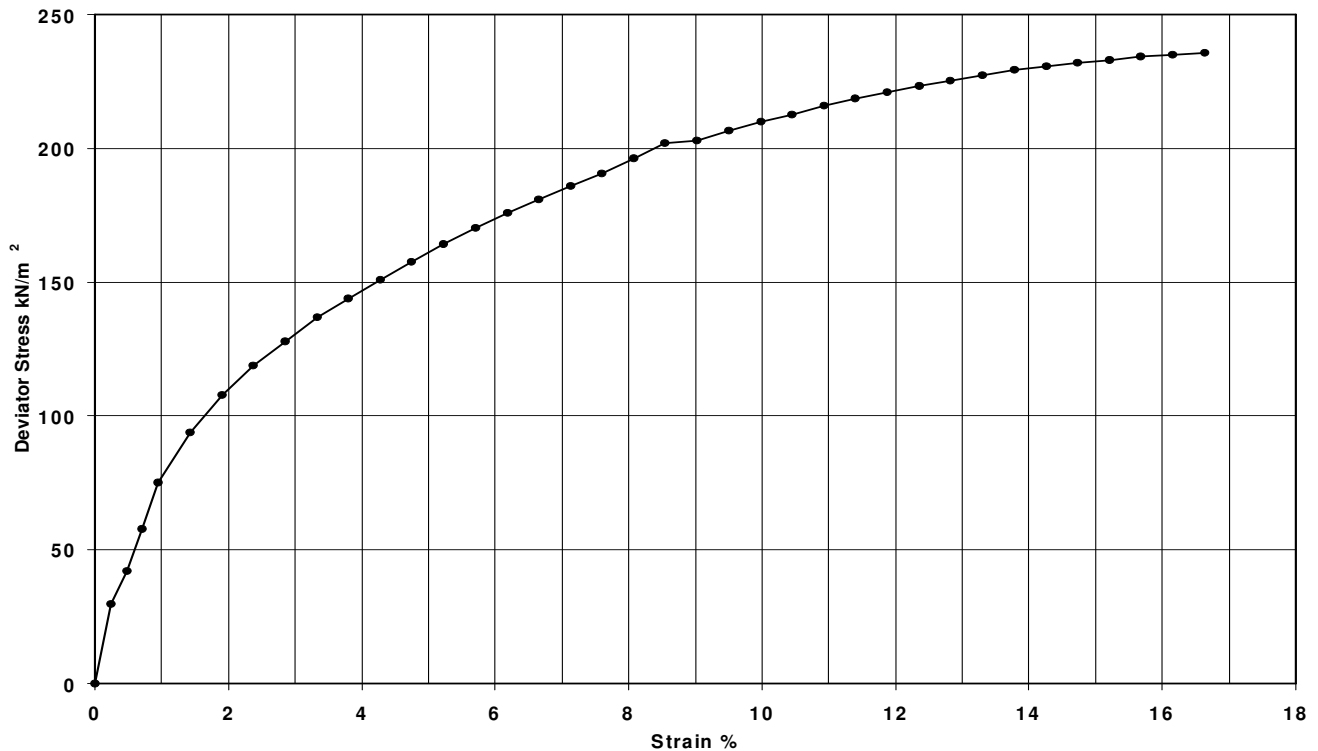
Sample Ref N77813

Sample Description

The following samples were combined to perform this test:

Stiff high strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	29.8	10.0	209.9
Orientation of sample	Vertical			0.5	42.1	10.5	212.8
Initial Diameter (mm)	103.67			0.7	57.7	10.9	215.8
Initial Length (mm)	210.44			1.0	74.9	11.4	218.5
Initial Water Content (%)	11.1			1.4	93.8	11.9	221.1
Initial Bulk Density (Mg/m ³)	2.29			1.9	107.8	12.4	223.3
Initial Dry Density (Mg/m ³)	2.06			2.4	119.0	12.8	225.4
Particle Density (Mg/m ³)	2.65 Assumed			2.9	127.8	13.3	227.4
Cell Pressure (kPa)	60			3.3	136.7	13.8	229.2
'Specimen Height' at start of Shearing Stage (mm)	210.39			3.8	143.8	14.3	230.6
Membrane Thickness/Correction (mm/kPa)				4.3	150.9	14.7	232.1
Rate of Strain (%/min)	2.0			4.8	157.7	15.2	233.1
Corrected Deviator Stress (kPa)	236			5.2	164.1	15.7	234.4
Undrained Shear Strength (kPa)	118			5.7	170.1	16.2	234.9
Strain at Failure (%)	16.6			6.2	175.8	16.6	235.7
Failure Zone Water Content (%)	11.1			6.7	180.9		
Water Content (after test) (%)				7.1	185.9		
Mode of Failure	Plastic			7.6	190.5		
				8.1	196.3		
				8.6	201.8		
				9.0	202.8		
				9.5	206.5		

Remarks

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GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8D01A
Sample Depth 3.00-3.45m
Sample Type UT
Sample Ref N77813

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8D01A

Sample Depth 5.00-5.45m

Project No: PN194027

Sample Type UT

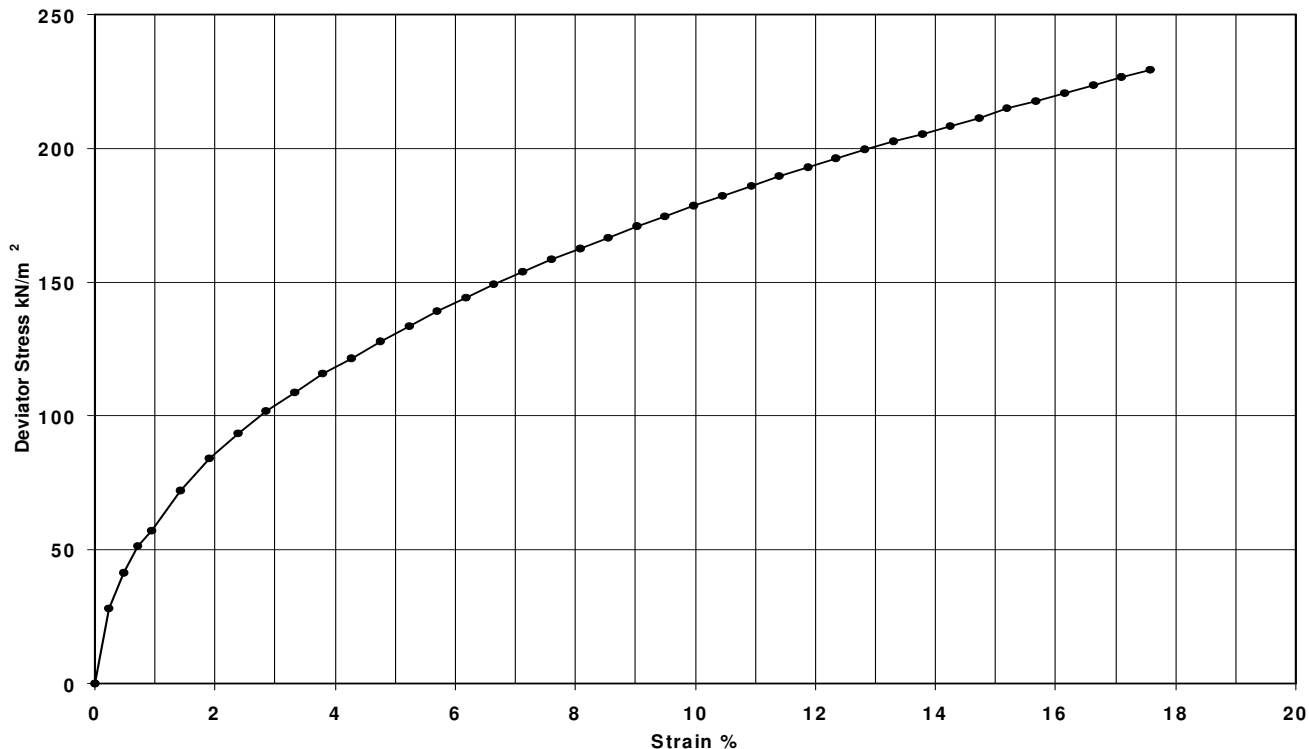
Sample Ref N77814

Sample Description

The following samples were combined to perform this test:

Very stiff high strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	28.1	10.0	178.6
Orientation of sample	Vertical			0.5	41.4	10.5	182.2
Initial Diameter (mm)	103.35			0.7	51.5	10.9	185.8
Initial Length (mm)	210.49			1.0	57.1	11.4	189.5
Initial Water Content (%)	10.0			1.4	72.0	11.9	192.9
Initial Bulk Density (Mg/m ³)	2.31			1.9	84.1	12.4	196.3
Initial Dry Density (Mg/m ³)	2.10			2.4	93.6	12.8	199.7
Particle Density (Mg/m ³)	2.65 Assumed			2.9	101.7	13.3	202.5
Cell Pressure (kPa)	100			3.3	108.9	13.8	205.4
'Specimen Height' at start of Shearing Stage (mm)	210.33			3.8	115.7	14.3	208.1
Membrane Thickness/Correction (mm/kPa)				4.3	121.5	14.7	211.3
Rate of Strain (%/min)	2.0			4.8	127.7	15.2	214.9
Corrected Deviator Stress (kPa)	229			5.2	133.4	15.7	217.5
Undrained Shear Strength (kPa)	115			5.7	139.1	16.2	220.5
Strain at Failure (%)	17.6			6.2	144.1	16.6	223.7
Failure Zone Water Content (%)	10.1			6.7	149.2	17.1	226.5
Water Content (after test) (%)				7.1	153.9	17.6	229.4
Mode of Failure	Plastic			7.6	158.5		
				8.1	162.4		
				8.6	166.6		
				9.0	170.8		
				9.5	174.7		

Remarks

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - *Unconsolidated Undrained Triaxial Test*

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole	BH8D01A
Sample Depth	5.00-5.45m
Sample Type	UT
Sample Ref	N77814



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8D02

Sample Depth 1.20-1.65m

Project No: PN194027

Sample Type UT

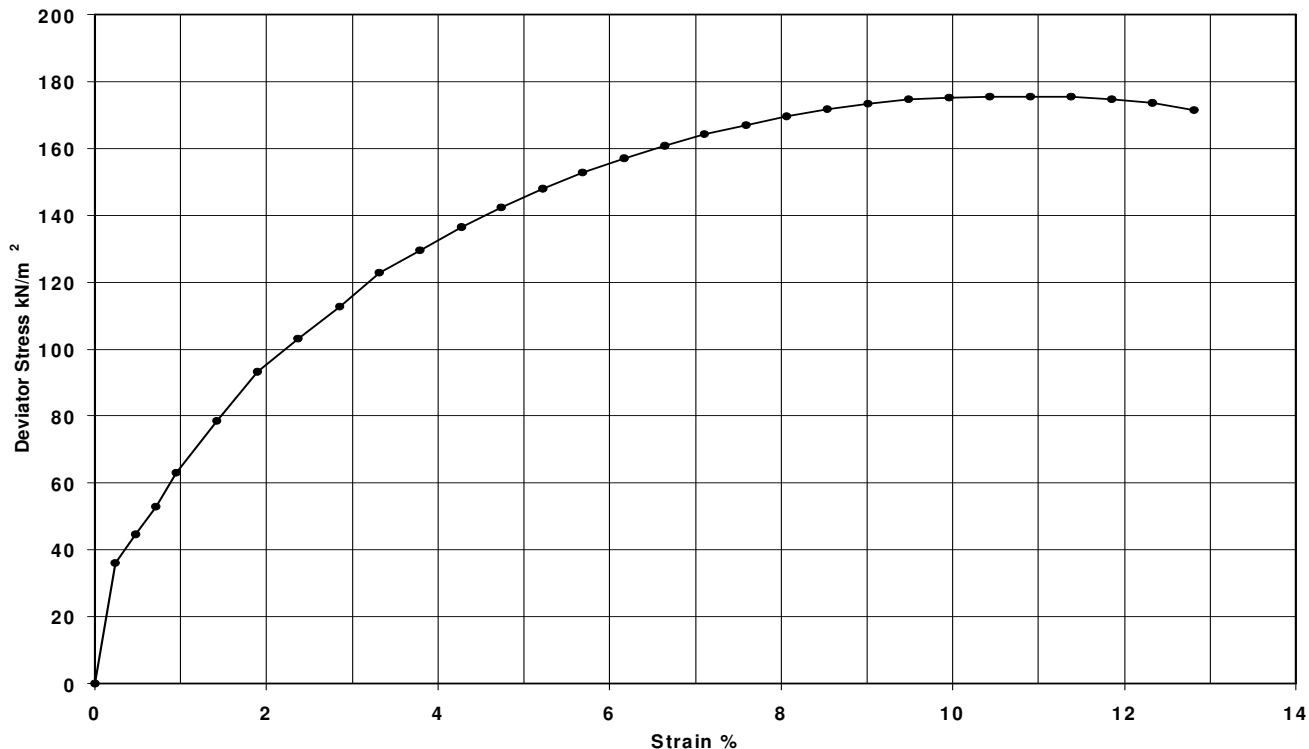
Sample Ref N77816

Sample Description

The following samples were combined to perform this test:

Firm high strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	36.2	10.0	175.1
Orientation of sample	Vertical			0.5	44.7	10.4	175.3
Initial Diameter (mm)	102.43			0.7	52.8	10.9	175.4
Initial Length (mm)	210.83			0.9	63.1	11.4	175.3
Initial Water Content (%)	23.4			1.4	78.6	11.9	174.6
Initial Bulk Density (Mg/m ³)	2.13			1.9	93.1	12.3	173.6
Initial Dry Density (Mg/m ³)	1.73			2.4	103.1	12.8	171.5
Particle Density (Mg/m ³)	2.65 Assumed			2.8	112.8		
Cell Pressure (kPa)	30			3.3	122.9		
'Specimen Height' at start of Shearing Stage (mm)	210.75			3.8	129.5		
Membrane Thickness/Correction (mm/kPa)				4.3	136.4		
Rate of Strain (%/min)	2.0			4.7	142.4		
Corrected Deviator Stress (kPa)	175			5.2	147.9		
Undrained Shear Strength (kPa)	88			5.7	152.7		
Strain at Failure (%)	10.9			6.2	157.1		
Failure Zone Water Content (%)	22.9			6.6	160.8		
Water Content (after test) (%)				7.1	164.1		
Mode of Failure	Intermediate			7.6	167.0		
				8.1	169.6		
				8.5	171.6		
				9.0	173.4		
				9.5	174.6		

Remarks 

29/11/2019

GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8D02
Sample Depth 1.20-1.65m
Sample Type UT
Sample Ref N77816

Project No: PN194027



Remarks 

29/11/2019

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8D02

Sample Depth 8.00-8.45m

Project No: PN194027

Sample Type UT

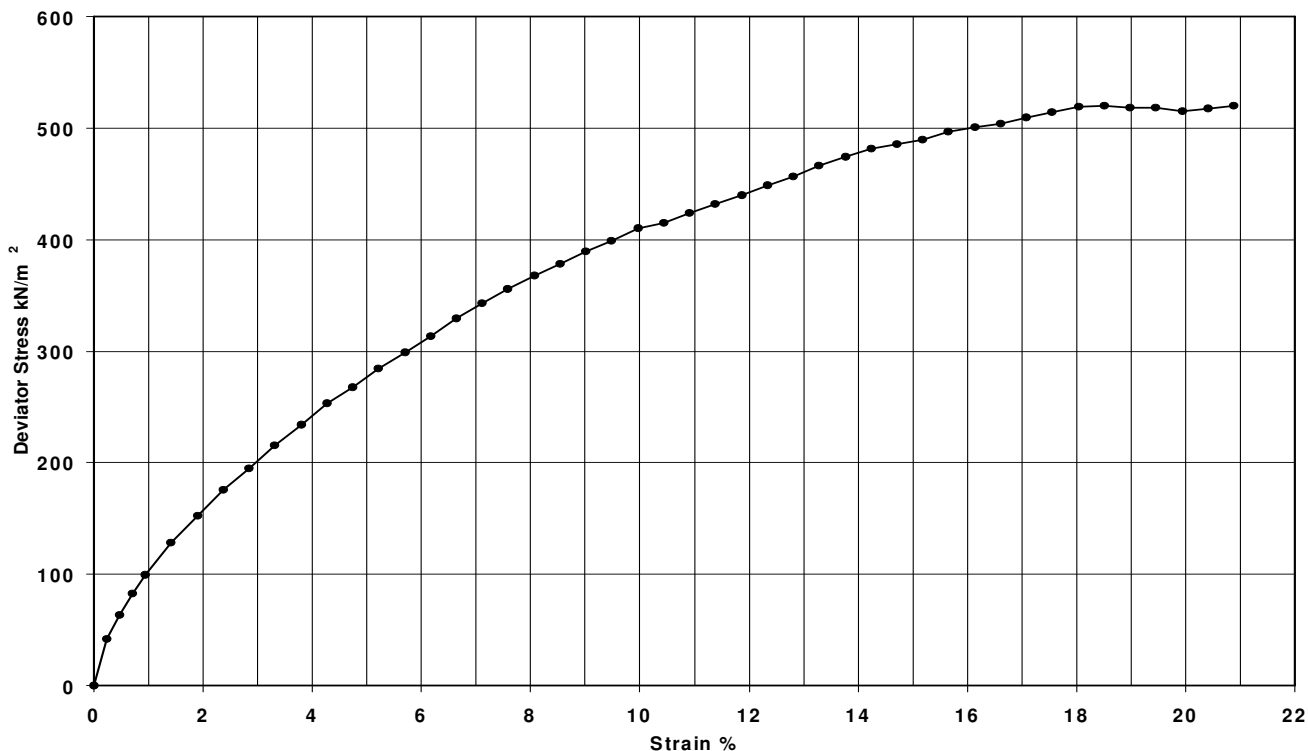
Sample Ref N77818

Sample Description

The following samples were combined to perform this test:

Very stiff very high strength reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	42.0	10.0	409.8
Orientation of sample	Vertical			0.5	63.4	10.4	415.0
Initial Diameter (mm)	102.40			0.7	82.7	10.9	423.4
Initial Length (mm)	210.67			0.9	99.1	11.4	432.0
Initial Water Content (%)	12.4			1.4	128.4	11.9	439.6
Initial Bulk Density (Mg/m ³)	2.38			1.9	151.8	12.3	448.6
Initial Dry Density (Mg/m ³)	2.12			2.4	175.3	12.8	456.4
Particle Density (Mg/m ³)	2.65 Assumed			2.8	194.9	13.3	466.3
Cell Pressure (kPa)	160			3.3	215.9	13.8	473.9
'Specimen Height' at start of Shearing Stage (mm)	210.48			3.8	233.6	14.2	481.4
Membrane Thickness/Correction (mm/kPa)				4.3	253.1	14.7	485.3
Rate of Strain (%/min)	2.0			4.7	267.6	15.2	489.8
Corrected Deviator Stress (kPa)	520			5.2	284.4	15.7	497.0
Undrained Shear Strength (kPa)	260			5.7	299.1	16.1	500.8
Strain at Failure (%)	18.5			6.2	313.2	16.6	504.2
Failure Zone Water Content (%)	10.7			6.6	329.2	17.1	509.5
Water Content (after test) (%)				7.1	343.1	17.6	514.0
Mode of Failure	Plastic			7.6	355.7	18.0	519.2
				8.1	367.4	18.5	519.8
				8.5	378.5	19.0	518.4
				9.0	389.7	19.5	518.1
				9.5	398.6	19.9	515.2

Remarks 

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GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8D02
Sample Depth 8.00-8.45m
Sample Type UT
Sample Ref N77818

Project No: PN194027



Remarks 

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LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Hole BH8D03

Sample Depth 3.00-3.45m

Project No: PN194027

Sample Type UT

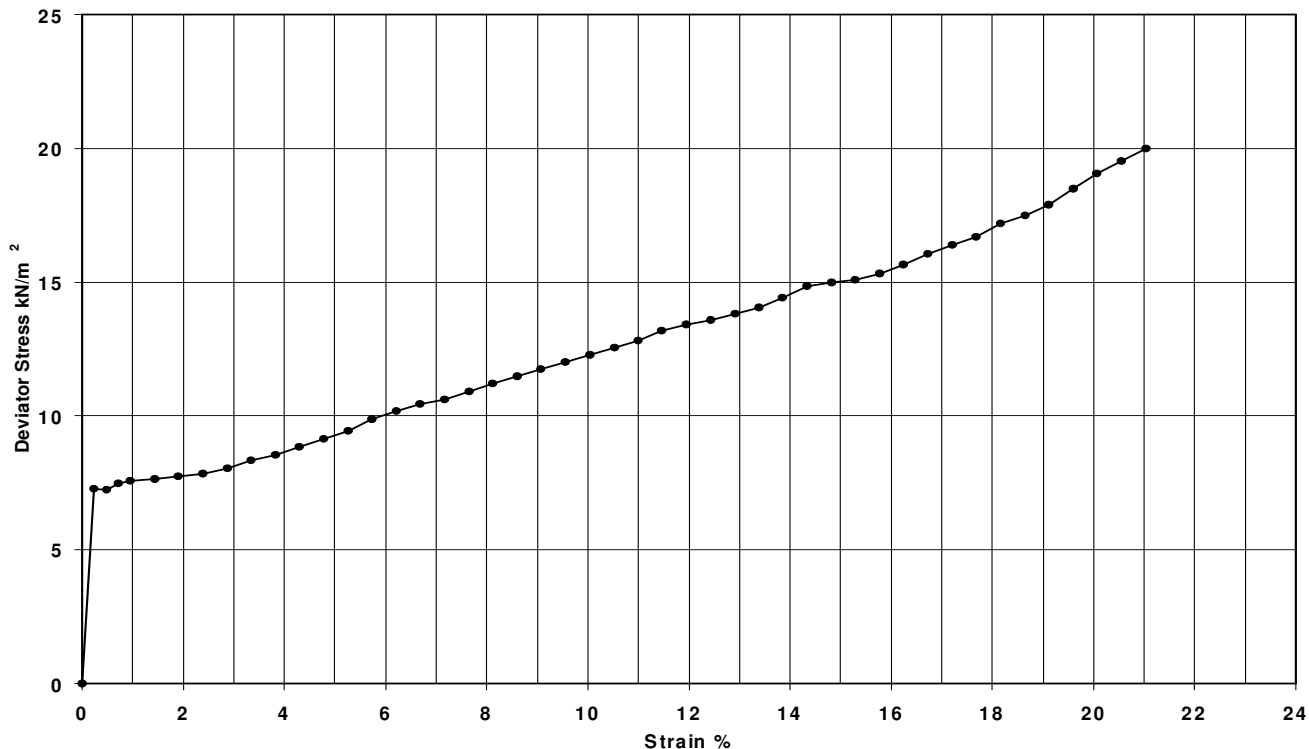
Sample Ref N77820

Sample Description

The following samples were combined to perform this test:

Firm reddish brown slightly sandy slightly gravelly CLAY.

BS EN ISO 17892-8:2018



	Stage 1	Stage 2	Stage 3	Strain %	Corrected Deviator Stress kN/m ²	Strain %	Corrected Deviator Stress kN/m ²
Sample Condition	Undisturbed			0.2	7.3	10.0	12.3
Orientation of sample	Vertical			0.5	7.2	10.5	12.6
Initial Diameter (mm)	101.93			0.7	7.5	11.0	12.8
Initial Length (mm)	209.22			1.0	7.6	11.5	13.2
Initial Water Content (%)	14.1			1.4	7.7	11.9	13.4
Initial Bulk Density (Mg/m ³)	2.20			1.9	7.7	12.4	13.6
Initial Dry Density (Mg/m ³)	1.93			2.4	7.8	12.9	13.8
Particle Density (Mg/m ³)	2.65 Assumed			2.9	8.0	13.4	14.1
Cell Pressure (kPa)	60			3.3	8.3	13.9	14.4
'Specimen Height' at start of Shearing Stage (mm)	209.14			3.8	8.5	14.3	14.9
Membrane Thickness/Correction (mm/kPa)				4.3	8.8	14.8	15.0
Rate of Strain (%/min)	2.0			4.8	9.2	15.3	15.1
Corrected Deviator Stress (kPa)	19			5.3	9.5	15.8	15.3
Undrained Shear Strength (kPa)	10			5.7	9.9	16.3	15.7
Strain at Failure (%)	20.1			6.2	10.2	16.7	16.1
Failure Zone Water Content (%)	8.2			6.7	10.5	17.2	16.4
Water Content (after test) (%)				7.2	10.6	17.7	16.7
Mode of Failure	Plastic			7.6	10.9	18.2	17.2
				8.1	11.2	18.6	17.5
				8.6	11.5	19.1	17.9
				9.1	11.8	19.6	18.5
				9.6	12.0	20.1	19.1

Remarks

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GEOTECHNICS

LABORATORY RESULTS - Unconsolidated Undrained Triaxial Test

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole	BH8D03
Sample Depth	3.00-3.45m
Sample Type	UT
Sample Ref	N77820



Remarks 

29/11/2019

LABORATORY RESULTS - Particle Size Distribution

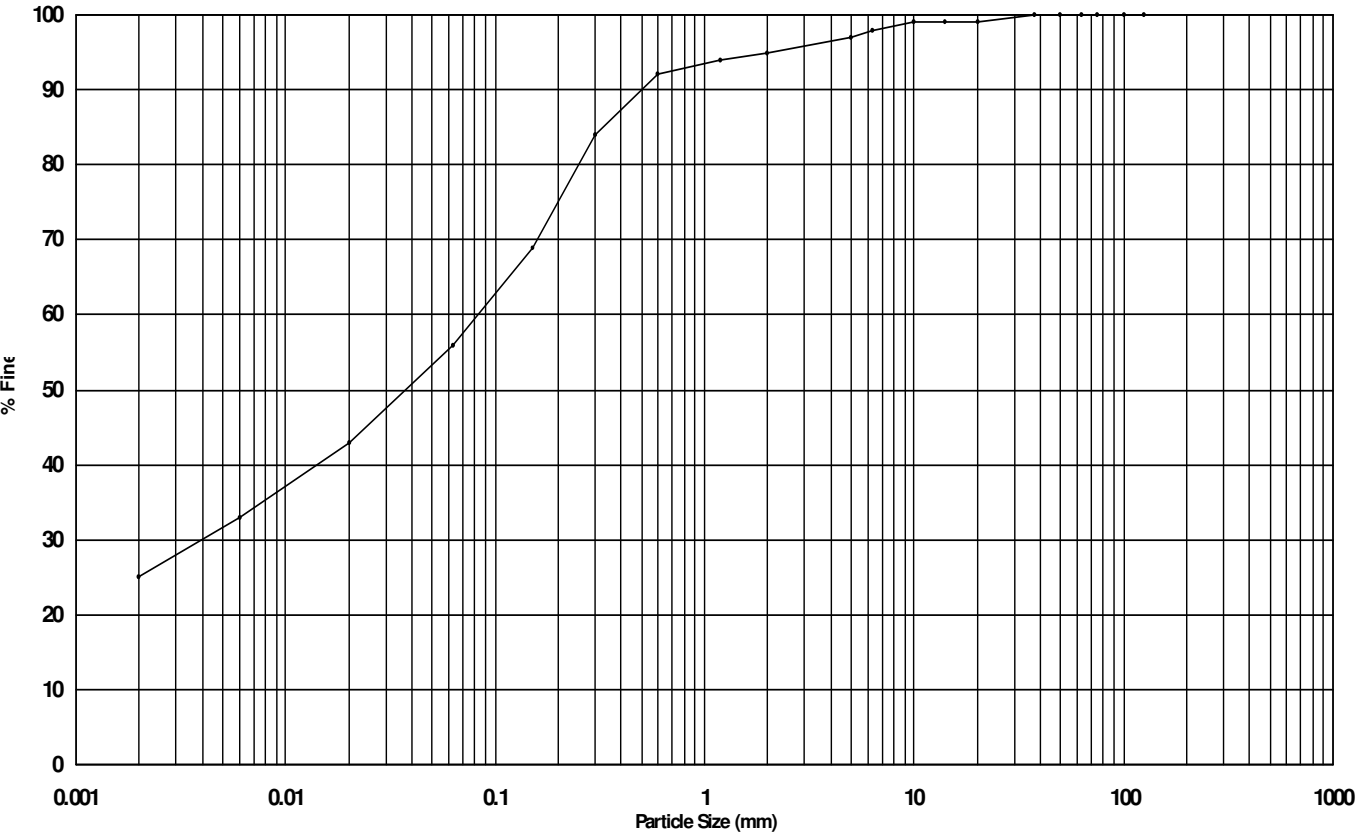
Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole BH8A02A
Sample Depth 0.60-1.20m
Sample Type B
Sample Ref N77774

Sample Description

Firm yellowish brown slightly gravelly sandy CLAY.



Classification	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	25
SILT	31
SAND	39
GRAVEL	5
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
20 mm	99
14 mm	99
10 mm	99
6.3 mm	98
5 mm	97
2 mm	95
1.18 mm	94
600 µm	92
300 µm	84
150 µm	69

Size	% Finer
63 µm	56
20 µm	43
6 µm	33
2 µm	25

Uniformity Coefficient	
Not Available	
Sieving Method	
Wet sieve	
Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.55
Particle Density	2.65 (Assumed)

Remarks Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

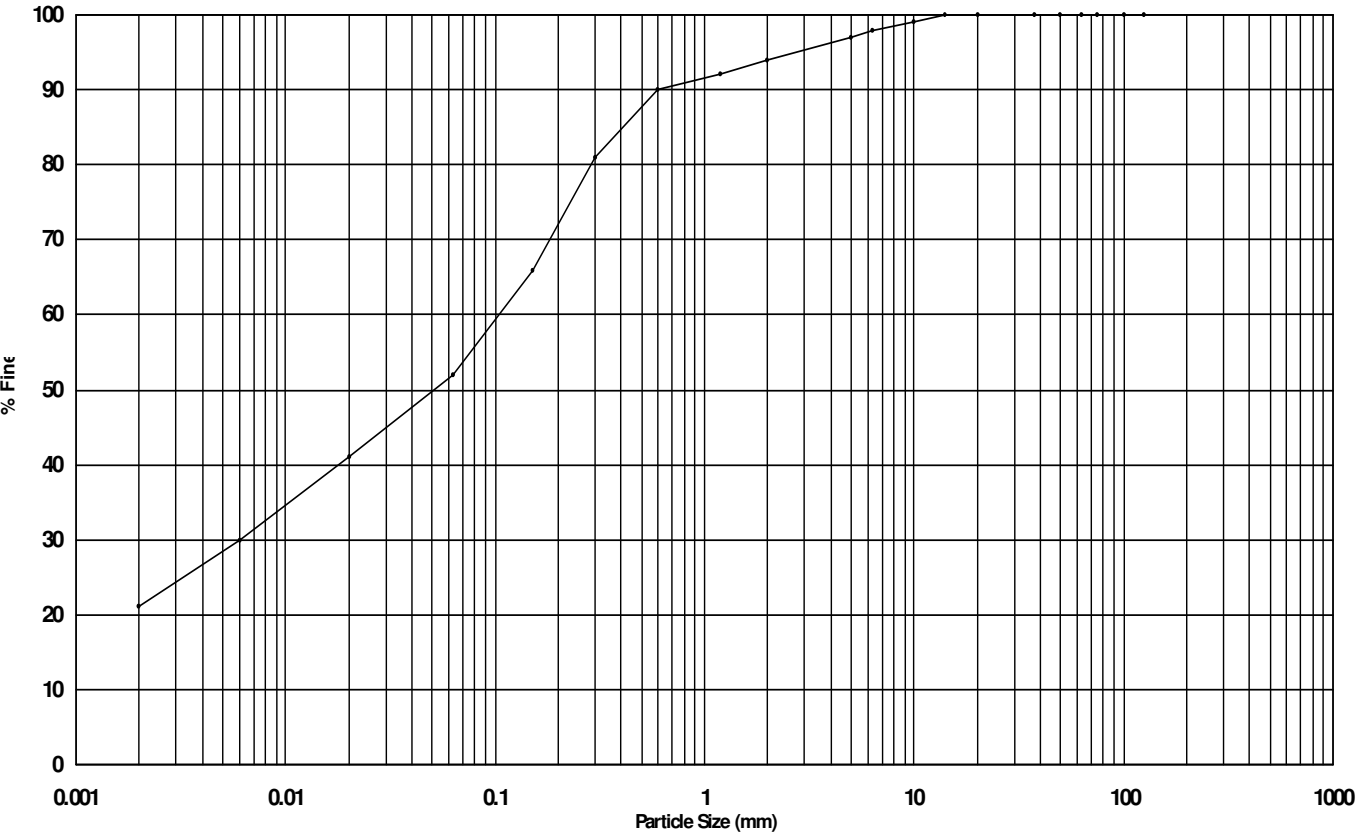
Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole BH8A03
Sample Depth 2.00-2.45m
Sample Type B
Sample Ref N77781

Sample Description

Soft to firm reddish brown slightly gravelly sandy CLAY.



Classification	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
		SILT			SAND			Gravel				

Classification	% of each
CLAY	21
SILT	31
SAND	42
GRAVEL	6
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
20 mm	100
14 mm	100
10 mm	99
6.3 mm	98
5 mm	97
2 mm	94
1.18 mm	92
600 µm	90
300 µm	81
150 µm	66

Size	% Finer
63 µm	52
20 µm	41
6 µm	30
2 µm	21

Uniformity Coefficient	
Not Available	
Sieving Method	
Wet sieve	
Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.28
Particle Density	2.65 (Assumed)

Remarks Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

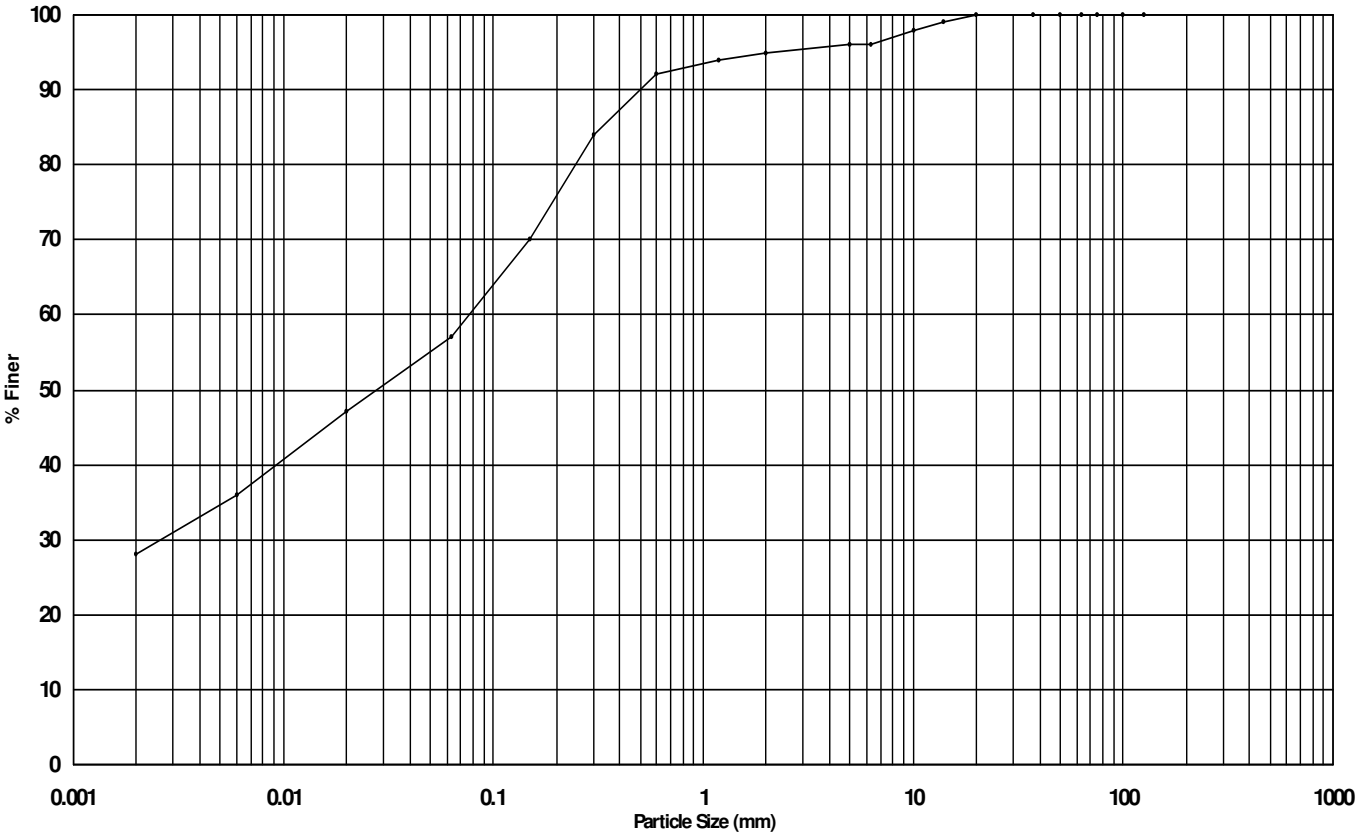
Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8A05
Sample Depth 0.50-1.20m
Sample Type B
Sample Ref N77655

Sample Description

Firm yellowish brown mottled grey slightly gravelly sandy CLAY.



Classification	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
		SILT			SAND			Gravel				

Classification	% of each
CLAY	28
SILT	29
SAND	38
GRAVEL	5
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
20 mm	100
14 mm	99
10 mm	98
6.3 mm	96
5 mm	96
2 mm	95
1.18 mm	94
600 µm	92
300 µm	84
150 µm	70

Size	% Finer
63 µm	57
20 µm	47
6 µm	36
2 µm	28

Uniformity Coefficient	
Not Available	
Sieving Method	
Wet sieve	
Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.62
Particle Density	2.65 (Assumed)

Remarks Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

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LABORATORY RESULTS - Particle Size Distribution

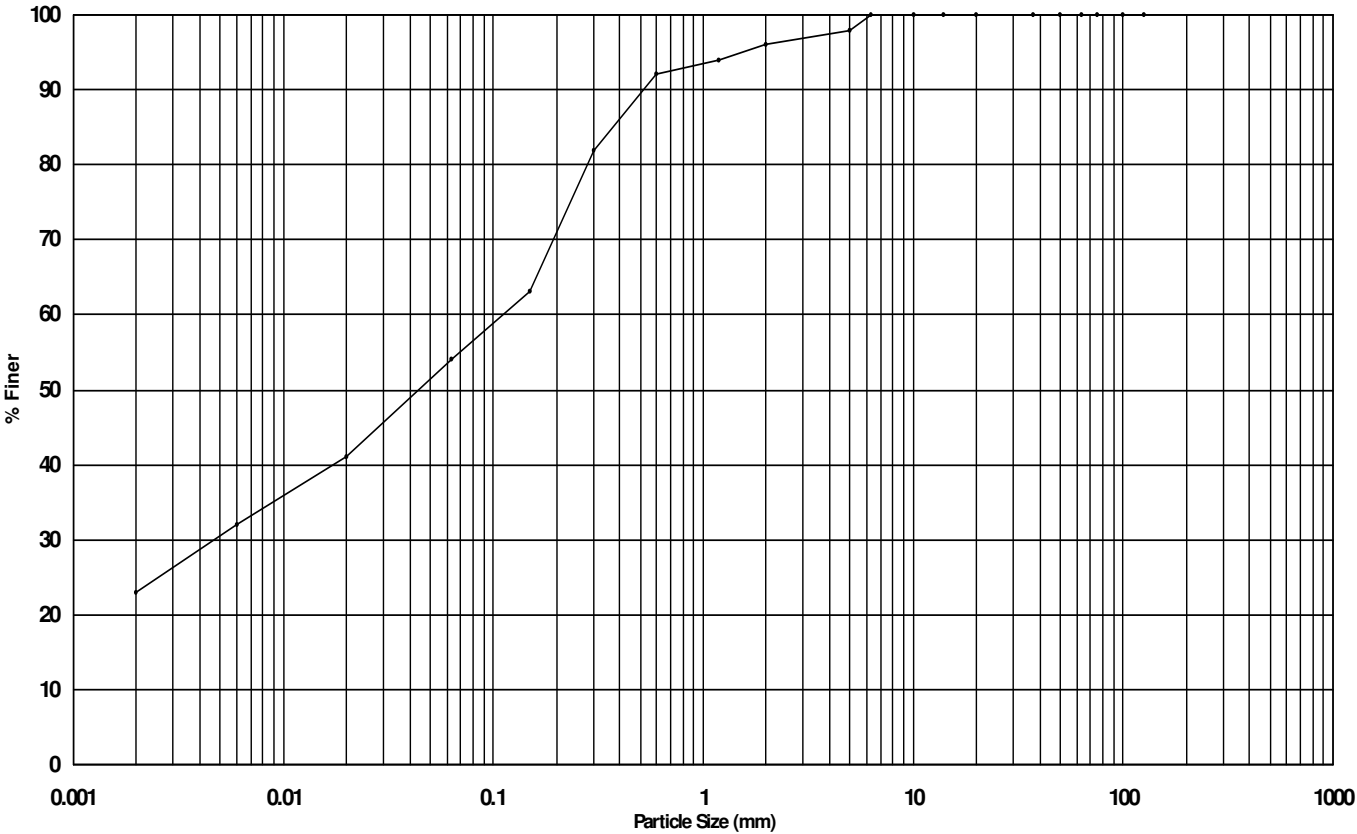
Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8A07
Sample Depth 1.20-1.60m
Sample Type B
Sample Ref N77659

Sample Description

Firm reddish brown mottled grey slightly gravelly sandy CLAY.



Classification	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
		SILT			SAND			Gravel				

Classification	% of each
CLAY	23
SILT	31
SAND	42
GRAVEL	4
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
20 mm	100
14 mm	100
10 mm	100
6.3 mm	100
5 mm	98
2 mm	96
1.18 mm	94
600 μm	92
300 μm	82
150 μm	63

Size	% Finer
63 μm	54
20 μm	41
6 μm	32
2 μm	23

Uniformity Coefficient	
Not Available	
Sieving Method	
Wet sieve	
Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.00
Particle Density	2.65 (Assumed)

Remarks Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

29/11/2019

LABORATORY RESULTS - Particle Size Distribution

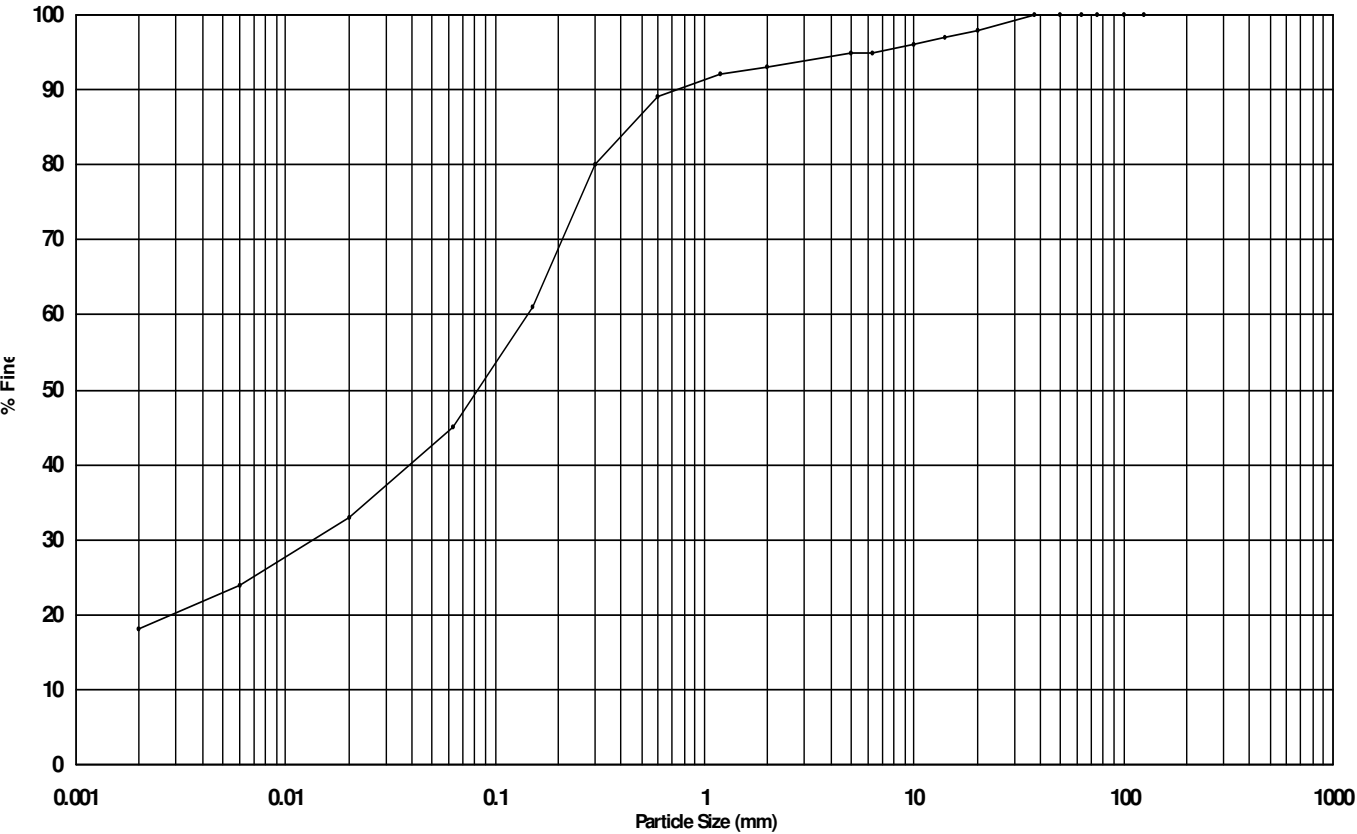
Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8C06
Sample Depth 0.40-1.40m
Sample Type B
Sample Ref N77784

Sample Description

Firm to stiff orangish brown slightly gravelly sandy CLAY.



Classification	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
		SILT			SAND			Gravel				

Classification	% of each
CLAY	18
SILT	27
SAND	48
GRAVEL	7
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
20 mm	98
14 mm	97
10 mm	96
6.3 mm	95
5 mm	95
2 mm	93
1.18 mm	92
600 μm	89
300 μm	80
150 μm	61

Size	% Finer
63 μm	45
20 μm	33
6 μm	24
2 μm	18

Uniformity Coefficient	
Not Available	
Sieving Method	
Wet sieve	
Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	1.06
Particle Density	2.65 (Assumed)

Remarks Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

29/11/2019

LABORATORY RESULTS - Particle Size Distribution

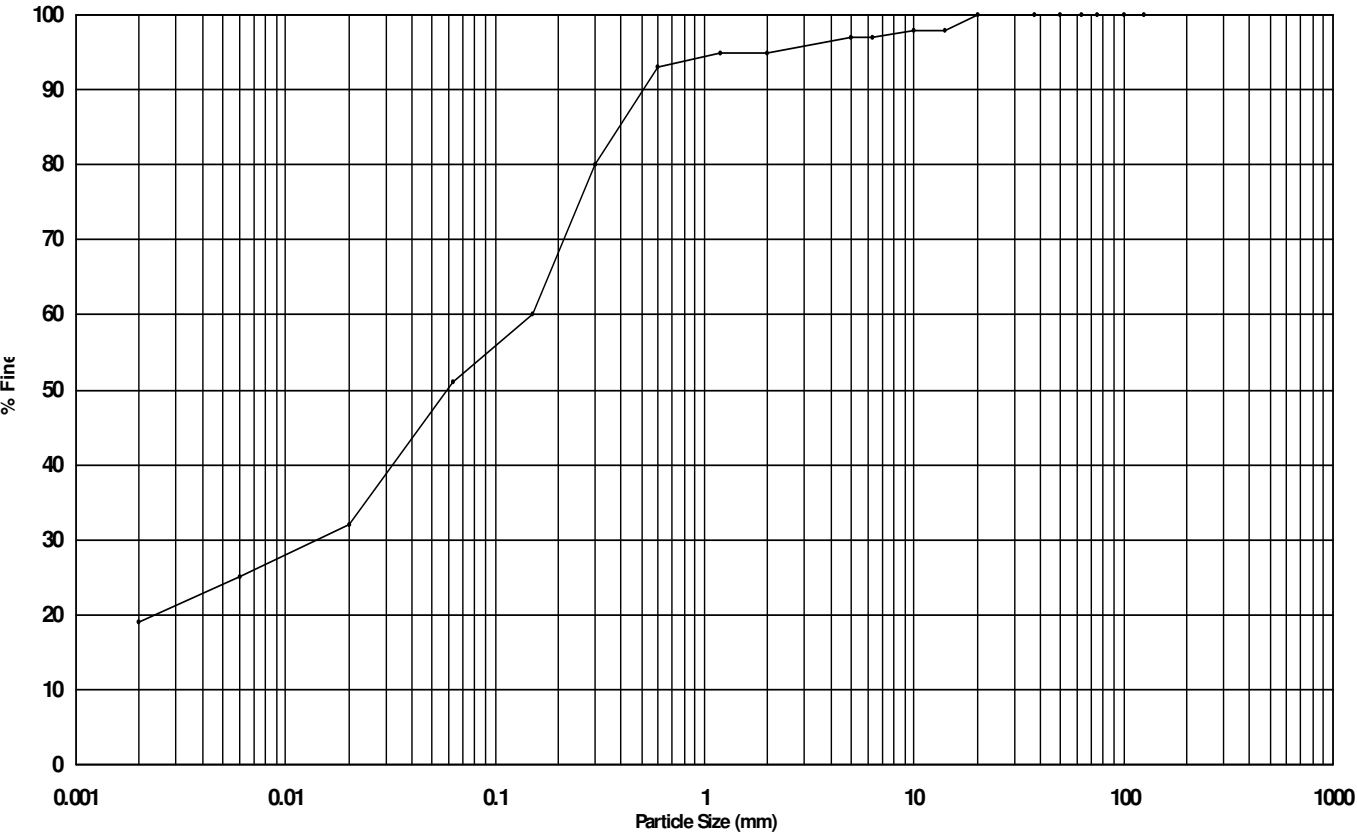
Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8D09
Sample Depth 0.40-1.40m
Sample Type B
Sample Ref N77598

Sample Description

Firm to stiff yellowish brown mottled grey slightly gravelly sandy CLAY.



Classification	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
CLAY	SILT			SAND			Gravel				

Classification	% of each
CLAY	19
SILT	32
SAND	44
GRAVEL	5
COBBLES	0
BOULDERS	0

Size	% Finer
125 mm	100
100 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
20 mm	100
14 mm	98
10 mm	98
6.3 mm	97
5 mm	97
2 mm	95
1.18 mm	95
600 µm	93
300 µm	80
150 µm	60

Size	% Finer
63 µm	51
20 µm	32
6 µm	25
2 µm	19

Uniformity Coefficient	
Not Available	
Sieving Method	
Wet sieve	
Fine Particle Analysis	
Method	Pipette
Pre-treated with	Hydrogen Peroxide
% loss on Pre-treatment	0.24
Particle Density	2.65 (Assumed)

Remarks Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

29/11/2019

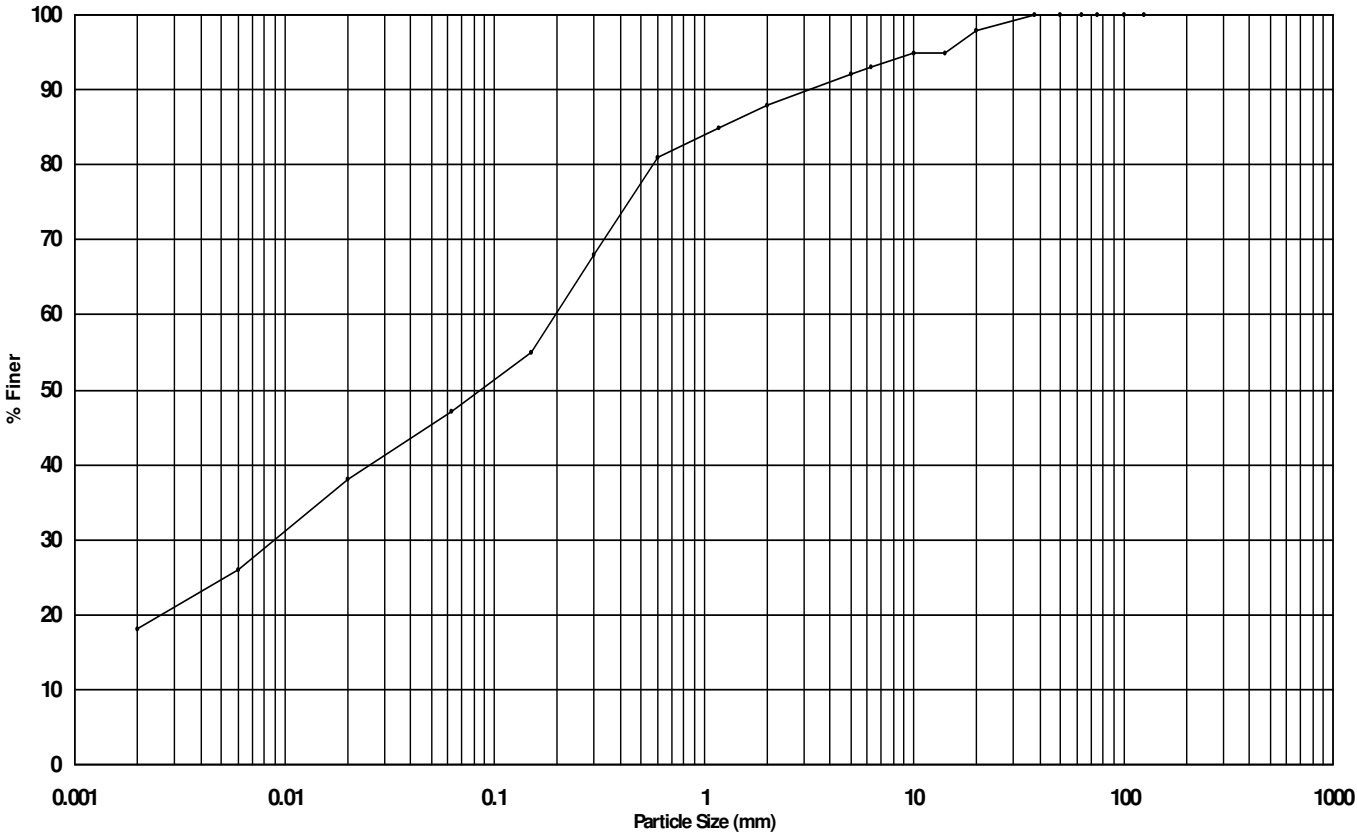
LABORATORY RESULTS - Particle Size Distribution

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8D12
Sample Depth 0.80-1.80m
Sample Type B
Sample Ref N77600

Sample Description
Stiff brown slightly gravelly sandy CLAY.



Classification	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulders
CLAY	SILT			SAND			Gravel				

Classification	% of each	Size	% Finer	Size	% Finer	Uniformity Coefficient	
CLAY	18	125 mm	100	63 μm	47	Not Available	
SILT	29	100 mm	100	20 μm	38	Sieving Method	
		75 mm	100	6 μm	26	Wet sieve	
		63 mm	100	2 μm	18	Fine Particle Analysis	
		50 mm	100			Method	Pipette
		37.5 mm	100			Pre-treated with	Hydrogen Peroxide
SAND	41	20 mm	98			% loss on Pre-treatment	5.72
		14 mm	95			Particle Density	2.65 (Assumed)
		10 mm	95				
GRAVEL	12	6.3 mm	93				
COBBLES	0	5 mm	92				
		2 mm	88				
		1.18 mm	85				
BOULDERS	0	600 μm	81				
		300 μm	68				
		150 μm	55				

Remarks Sieve:-Test performed in accordance with BS EN ISO 17892-4:2016
Pipette:-Test performed in accordance with BS EN ISO 17892-4:2016

LABORATORY RESULTS - MCV, Compaction, CBR

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					MCV		Compaction					CBR				
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	MCV	w %	Type	w (Opt) %	ρ _d Mg/m³	γ _b Mg/m³	γ _d (Max) (Mg/m³)	Type	Top		Bottom	
													CBR %	w %	CBR %	w %
TP8A05	0.50- 1.20 (0.50- 1.20)	B	N77655	Firm yellowish brown mottled grey slightly gravelly sandy CLAY.			2.5kg	(10.8) 15.8* 13.2 20.7 3.3 7.0	2.67 m	*2.11 2.11 2.00 1.78 1.96	(1.89) *1.82 1.86 1.66 1.72 1.83					
TP8A06	0.50- 1.20 (0.50- 1.20)	B	N77657	Firm yellowish brown slightly sandy slightly gravelly CLAY.			2.5kg	(12.0) 17.1* 5.6 9.9 14.6 22.6	2.66 m	*2.09 1.88 2.01 2.07 2.02	(1.83) *1.78 1.78 1.83 1.81 1.65					
TP8A07	1.20- 1.60 (1.20- 1.60)	B	N77659	Firm reddish brown mottled grey slightly gravelly sandy CLAY.			2.5kg	(9.0) 5.9 12.6* 17.3 21.4 4.3	2.67 m	1.95 *2.11 2.05 2.01 1.72	(1.91) 1.84 *1.87 1.75 1.65 1.65					
TP8A09	1.20- 1.60 (1.20- 1.60)	B	N77661	Firm reddish brown slightly sandy slightly gravelly CLAY.			2.5kg	(8.5) 9.1 12.0* 17.9 2.2 4.2 15.7	2.63 m	2.08 *2.11 2.02 1.79 1.90 2.02	(1.92) 1.91 *1.88 1.72 1.75 1.82 1.75					
TP8A10	0.70- 1.20 (0.70- 1.20)	B	N77663	Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY.			2.5kg	(11.3) 19.0* 4.0 6.2 8.1 14.3	2.67 m	*2.15 1.87 1.98 2.04 2.18	(1.93) *1.80 1.80 1.87 1.89 1.90					
TP8A13	1.20- 1.60 (1.20- 1.60)	B	N77664	Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY.			2.5kg	(8.0) 18.7* 3.4 5.8 9.6 14.2	2.68 m	*2.12 1.90 2.00 2.07 2.10	(1.91) *1.79 1.83 1.89 1.89 1.84					
TP8C03	0.90- 1.50 (0.90- 1.50)	B	N77786	Stiff brown sandy gravelly CLAY.			2.5kg	(11.0) 14.4* 5.3 7.2 16.5 17.8	2.65 m	*2.19 1.91 2.01 2.01 1.94	(1.99) *1.91 1.82 1.88 1.73 1.64					
TP8C06	0.40- 1.40 (0.40- 1.40)	B	N77784	Firm to stiff orangish brown slightly gravelly sandy CLAY.			2.5kg	(11.0) 4.1 7.5 9.6 13.5*	2.67 m	1.92 2.06 2.13 *2.19	(1.97) 1.85 1.92 1.94 *1.93					

Remarks  Particle Density - a=assumed, m=measured
 * = at natural moisture content NST - Not suitable for Test
 # = stabilised, see relevant test plot for details
 For Standards followed see Laboratory Test Certificate

LABORATORY RESULTS - MCV, Compaction, CBR

Project OMEGA DEVELOPMENT GI

Project No: PN194027

Sample					MCV		Compaction					CBR				
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	MCV	w %	Type	w (Opt) %	ρ_d Mg/m³	γ_b Mg/m³	γ_d (Max) Mg/m³	Type	Top		Bottom	
													CBR %	w %	CBR %	w %
								15.5		2.06	1.78					
TP8C07	0.40- 1.40 (0.40- 1.40)	B	N77788	Firm to stiff orangish brown sandy gravelly CLAY.			2.5kg	(11.3) 14.0* 7.6 9.5 11.9 17.0	2.65 m	*2.19 2.01 2.13 2.20 2.02	(1.98) *1.92 1.87 1.94 1.96 1.73					
TP8D09	0.40- 1.40 (0.40- 1.40)	B	N77598	Firm to stiff yellowish brown mottled grey slightly gravelly sandy CLAY.			2.5kg	(13.5) 21.8* 17.5 2.8 6.4 10.2	2.65 m	*2.03 2.02 1.68 1.79 1.90	(1.76) *1.67 1.72 1.63 1.68 1.72					
TP8D30	0.80- 1.80 (0.80- 1.80)	B	N77603	Stiff brown sandy gravelly CLAY.			2.5kg	(7.0) 2.9 5.5 8.7 12.8* 24.0	2.67 m	1.90 2.03 2.08 *2.13 2.10	(1.93) 1.84 1.92 1.91 *1.89 1.70					

Remarks

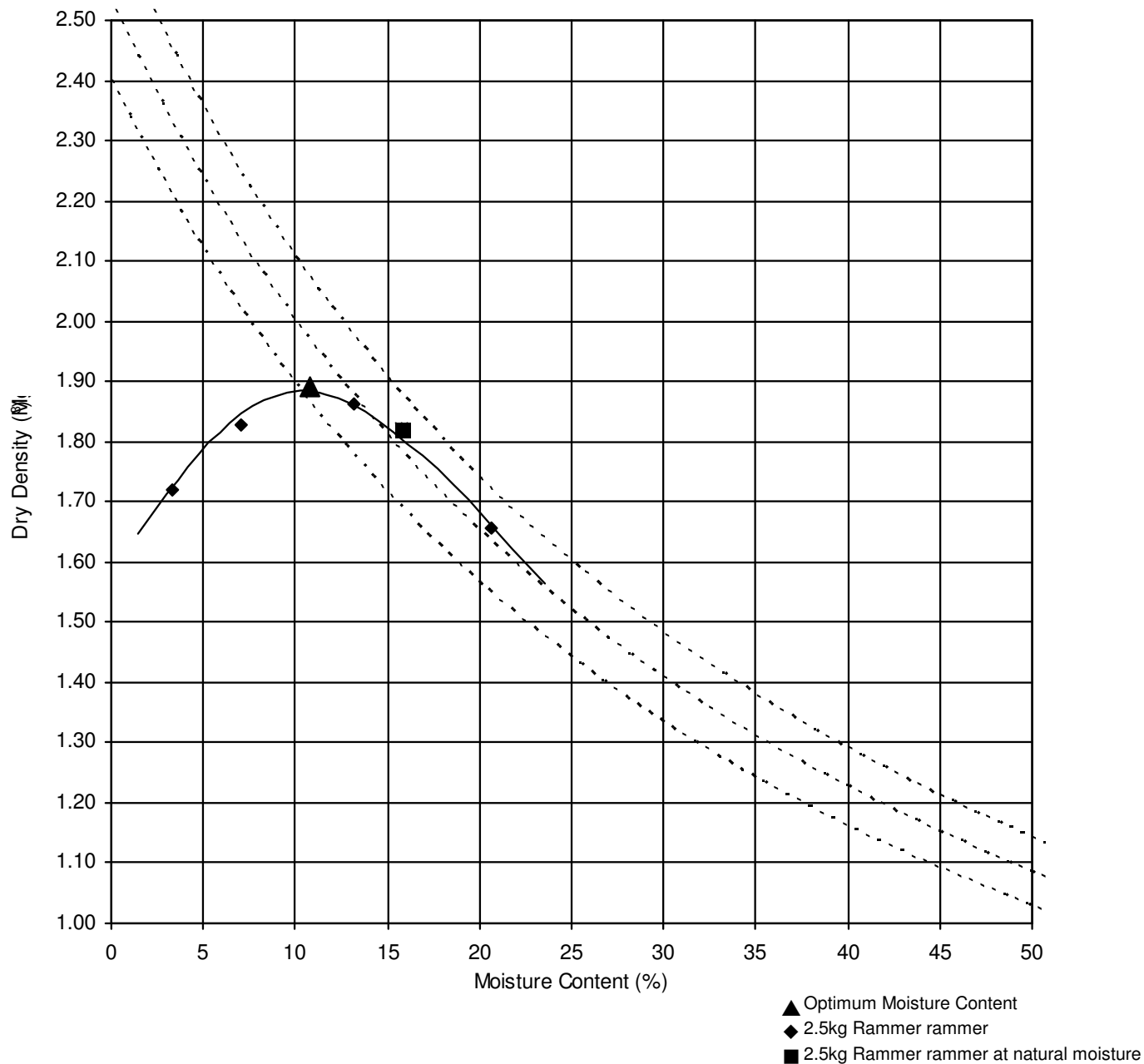
Particle Density - a=assumed, m=measured
 * = at natural moisture content NST - Not suitable for Test
 # = stabilised, see relevant test plot for details
 For Standards followed see Laboratory Test Certificate

LABORATORY RESULTS - Compaction

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8A05
Sample Depth 0.50-1.20m
Sample Type B
Sample Ref N77655



Optimum Moisture Content 10.8
Maximum Dry Density 1.89 Mg/m³

Particles retained on 63mm sieve -1 %
20mm sieve 0 %

Particle Density 2.67 (Meas) Mg/m³
Preparation Single Sample
2.5kg Rammer

Description Firm yellowish brown mottled grey slightly
gravelly sandy CLAY.

Remarks  BS1377 Part 4 1990 : Clause 3.3 and 3.4

GEOTECHNICS
geotechnical and geoenvironmental specialists

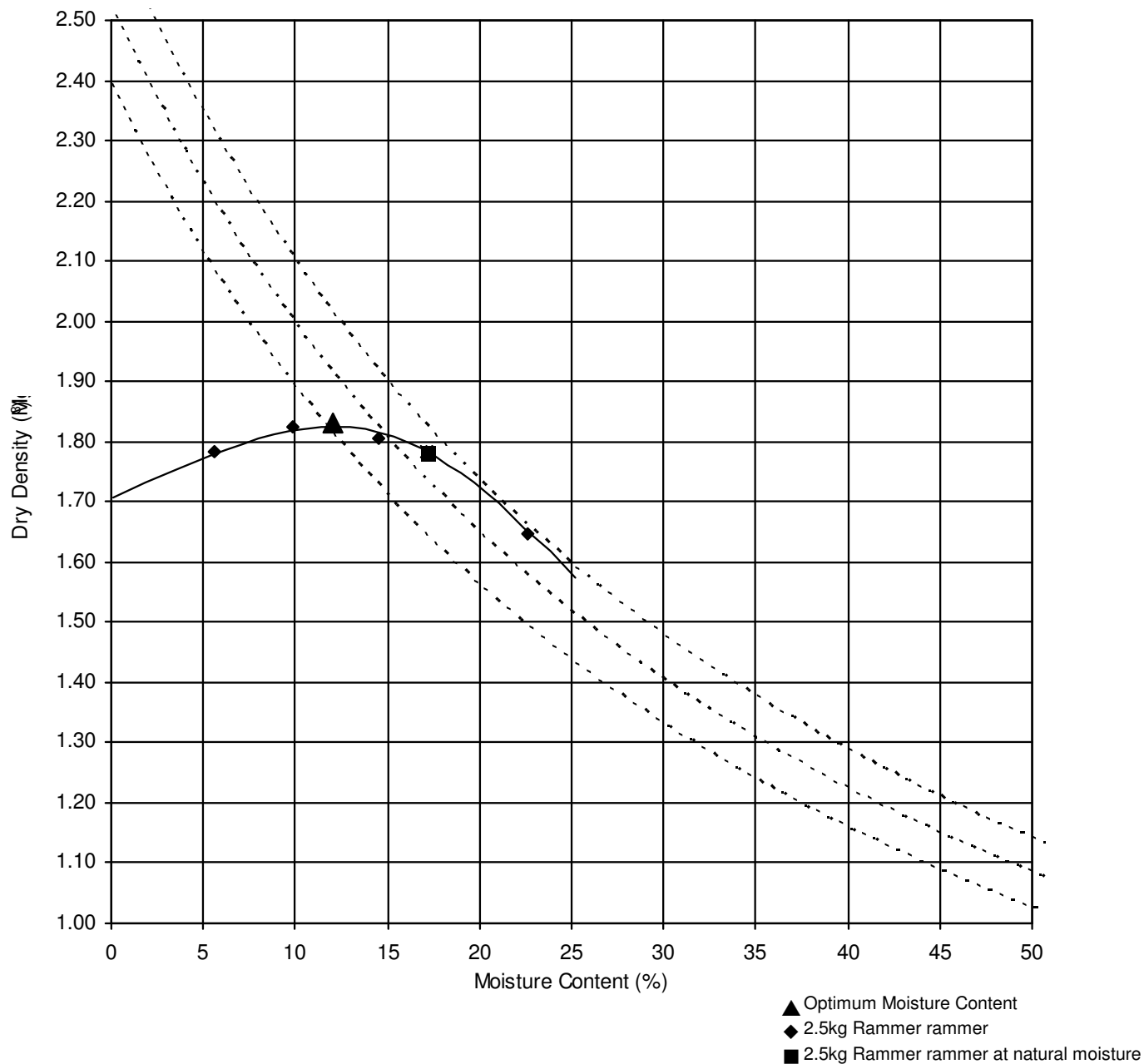
29/11/2019

LABORATORY RESULTS - Compaction

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8A06
Sample Depth 0.50-1.20m
Sample Type B
Sample Ref N77657



Optimum Moisture Content 12.0
Maximum Dry Density 1.83 Mg/m³

Particles retained on 63mm sieve -1 %
20mm sieve 1 %

Particle Density 2.66 (Meas) Mg/m³
Preparation Single Sample
2.5kg Rammer

Description Firm yellowish brown slightly sandy slightly
gravelly CLAY.

Remarks  BS1377 Part 4 1990 : Clause 3.3 and 3.4

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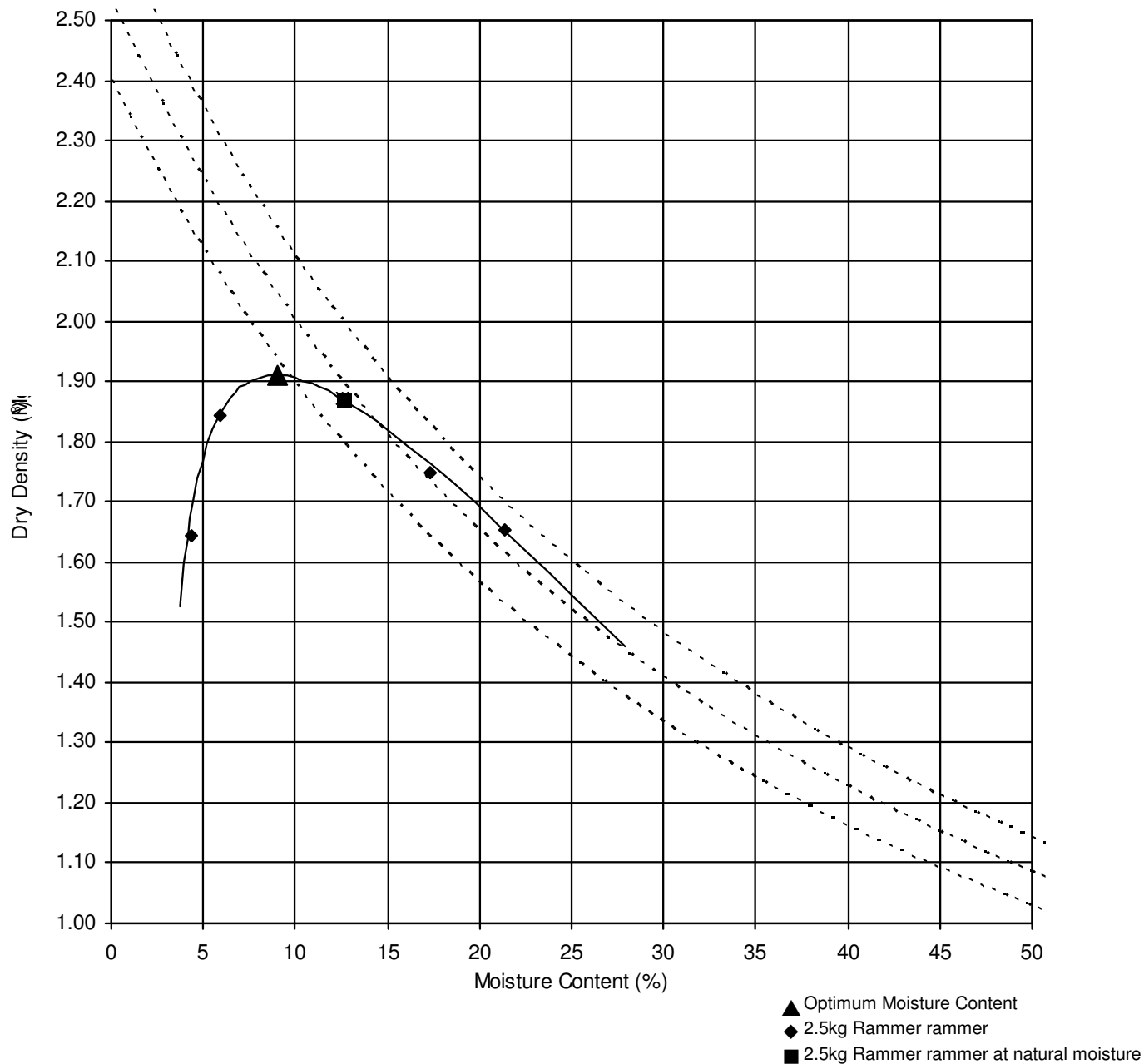
29/11/2019

LABORATORY RESULTS - Compaction

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8A07
Sample Depth 1.20-1.60m
Sample Type B
Sample Ref N77659



Optimum Moisture Content 9.0
Maximum Dry Density 1.91 Mg/m³

Particles retained on 63mm sieve -1 %
31.5mm -1 %

Particle Density 2.67 (Meas) Mg/m³
Preparation Single Sample
2.5kg Rammer

Description Firm reddish brown mottled grey slightly gravelly sandy CLAY.

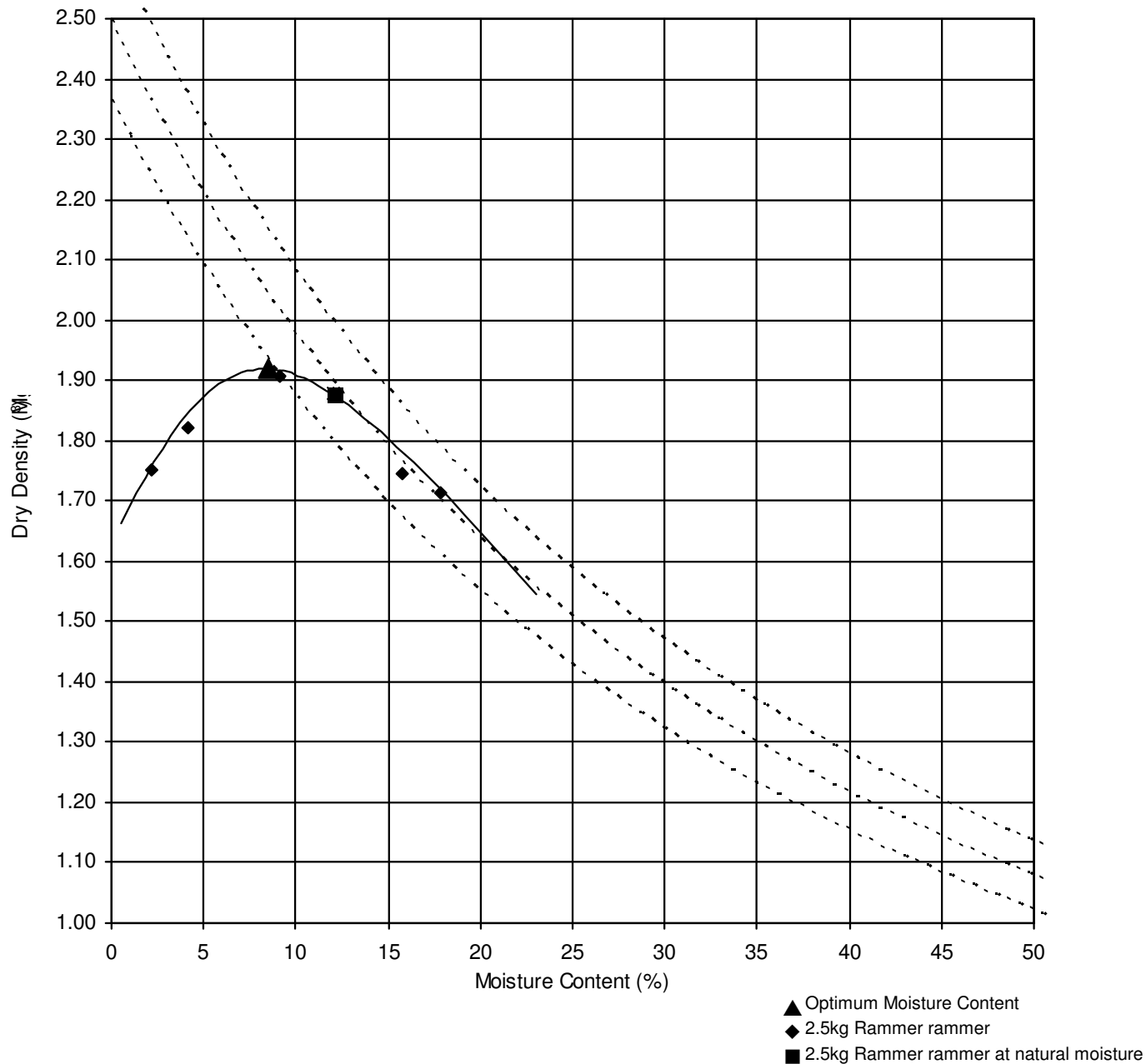
Remarks BS1377 Part 4 1990 : Clause 3.3 and 3.4

LABORATORY RESULTS - Compaction

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8A09
Sample Depth 1.20-1.60m
Sample Type B
Sample Ref N77661



Optimum Moisture Content 8.5
Maximum Dry Density 1.92 Mg/m³

Particles retained on 63mm sieve -1 %
31.5mm -1 %

Particle Density 2.63 (Meas) Mg/m³
Preparation Single Sample
2.5kg Rammer

Description Firm reddish brown slightly sandy slightly gravelly CLAY.

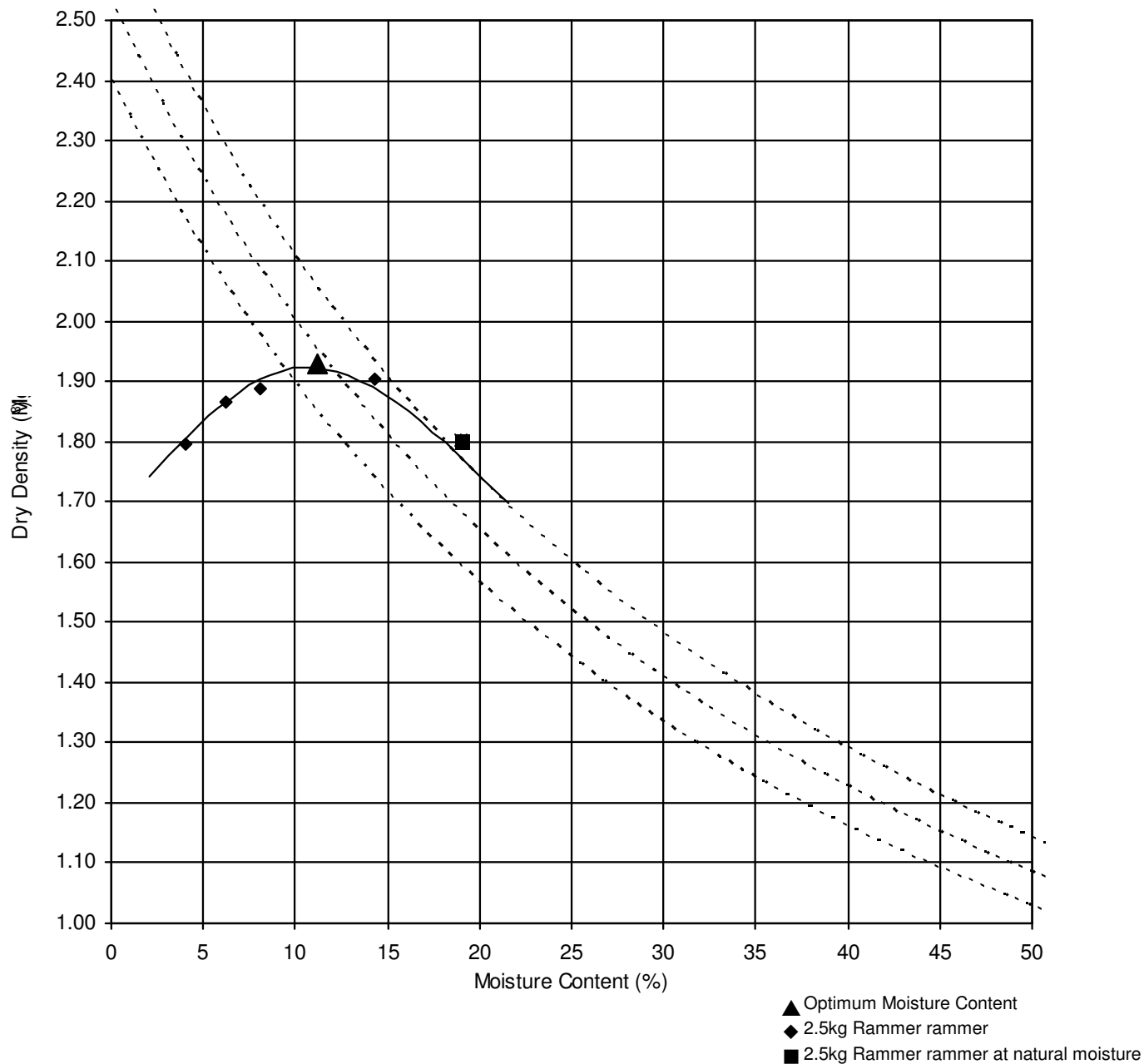
Remarks BS1377 Part 4 1990 : Clause 3.3 and 3.4

LABORATORY RESULTS - Compaction

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8A10
Sample Depth 0.70-1.20m
Sample Type B
Sample Ref N77663



Optimum Moisture Content 11.3
Maximum Dry Density 1.93 Mg/m³

Particles retained on 63mm sieve -1 %
20mm sieve 1 %

Particle Density 2.67 (Meas) Mg/m³
Preparation Single Sample
2.5kg Rammer

Description Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY.

Remarks  BS1377 Part 4 1990 : Clause 3.3 and 3.4

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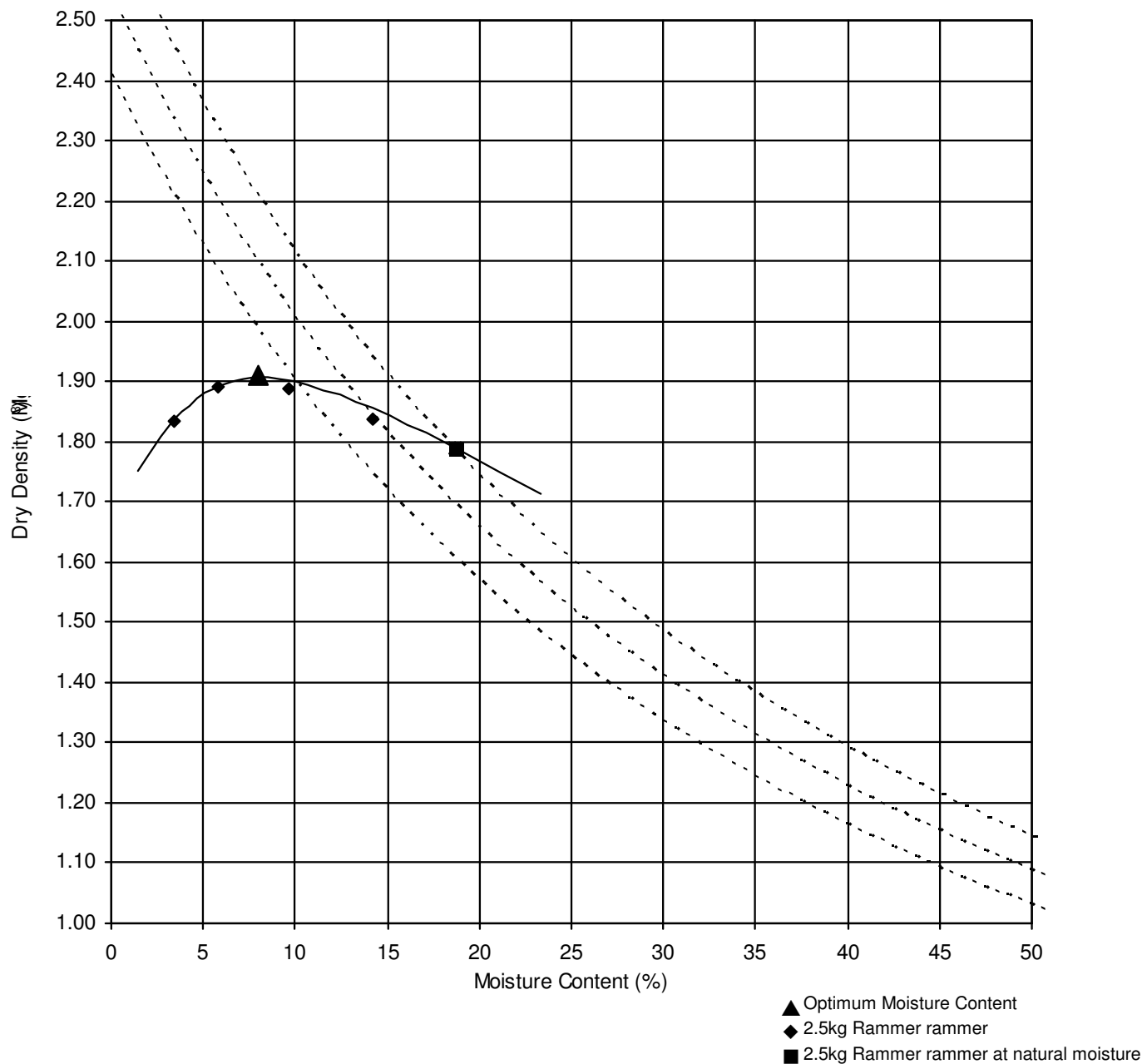
29/11/2019

LABORATORY RESULTS - Compaction

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8A13
Sample Depth 1.20-1.60m
Sample Type B
Sample Ref N77664



Optimum Moisture Content 8.0
Maximum Dry Density 1.91 Mg/m³

Particles retained on 63mm sieve -1 %
31.5mm -1 %

Particle Density 2.68 (Meas) Mg/m³
Preparation Single Sample
2.5kg Rammer

Description Firm yellowish brown mottled grey slightly sandy slightly gravelly CLAY.

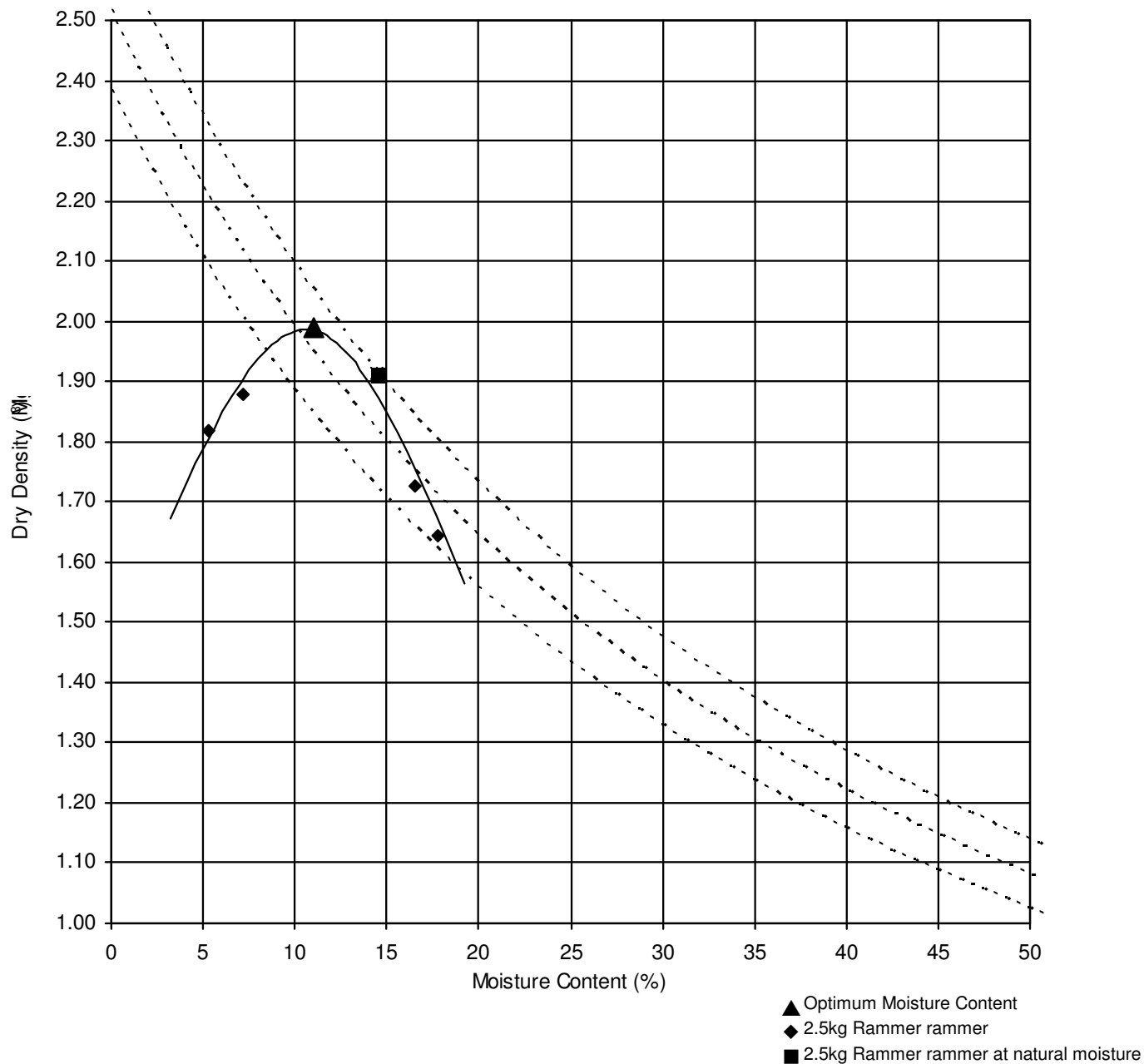
Remarks BS1377 Part 4 1990 : Clause 3.3 and 3.4

LABORATORY RESULTS - Compaction

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8C03
Sample Depth 0.90-1.50m
Sample Type B
Sample Ref N77786



Optimum Moisture Content 11.0
Maximum Dry Density 1.99 Mg/m³

Particles retained on 37.5mm 0 %
20mm sieve 0 %

Particle Density 2.65 (Meas) Mg/m³
Preparation Single Sample
2.5kg Rammer

Description Stiff brown sandy gravelly CLAY.

Remarks  BS1377 Part 4 1990 : Clause 3.3 and 3.4

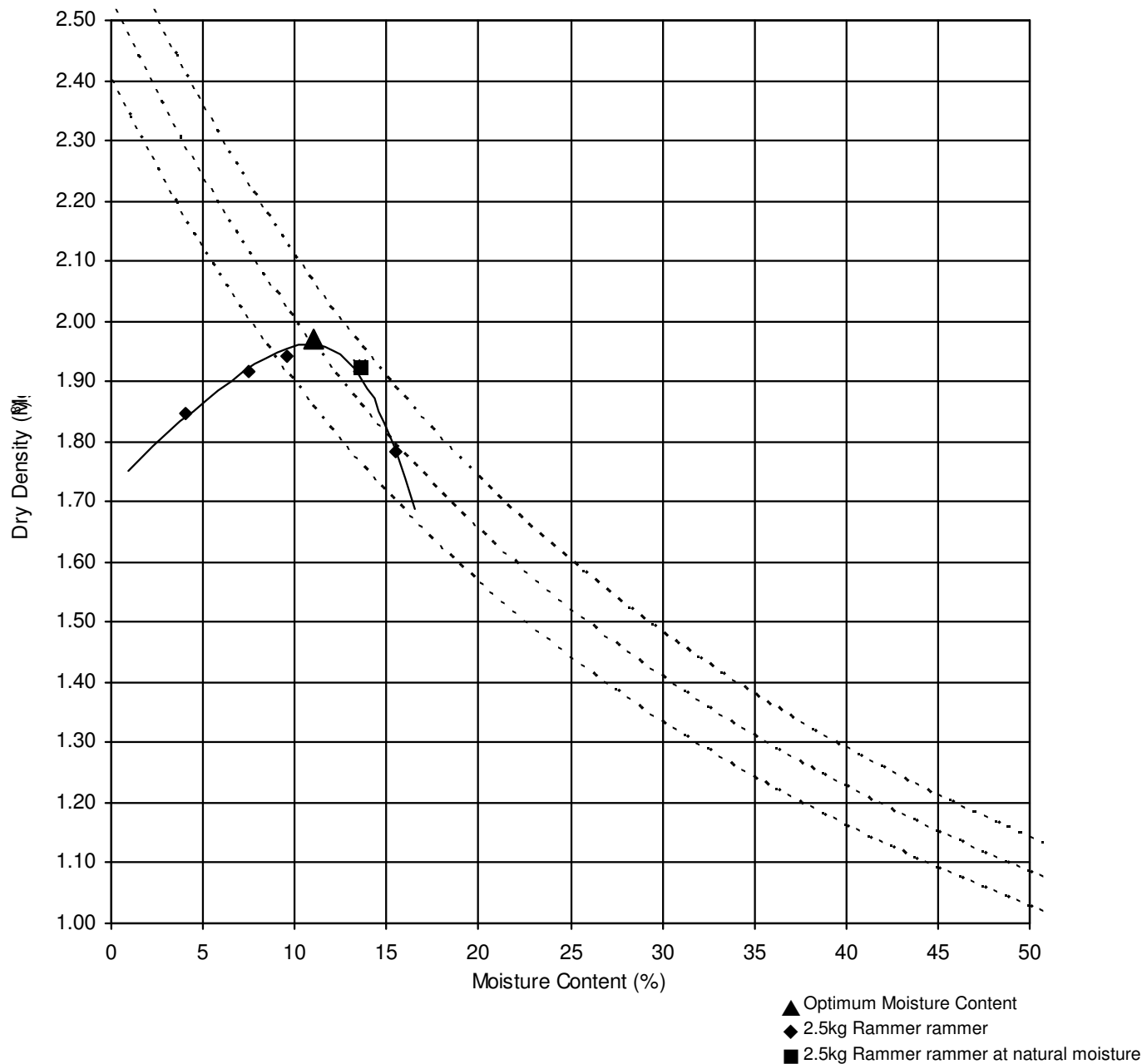
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LABORATORY RESULTS - Compaction

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8C06
Sample Depth 0.40-1.40m
Sample Type B
Sample Ref N77784



Optimum Moisture Content 11.0
Maximum Dry Density 1.97 Mg/m³

Particles retained on 37.5mm 0 %
20mm sieve 2 %

Particle Density 2.67 (Meas) Mg/m³
Preparation Single Sample
2.5kg Rammer

Description Firm to stiff orangish brown slightly gravelly sandy CLAY.

Remarks  BS1377 Part 4 1990 : Clause 3.3 and 3.4

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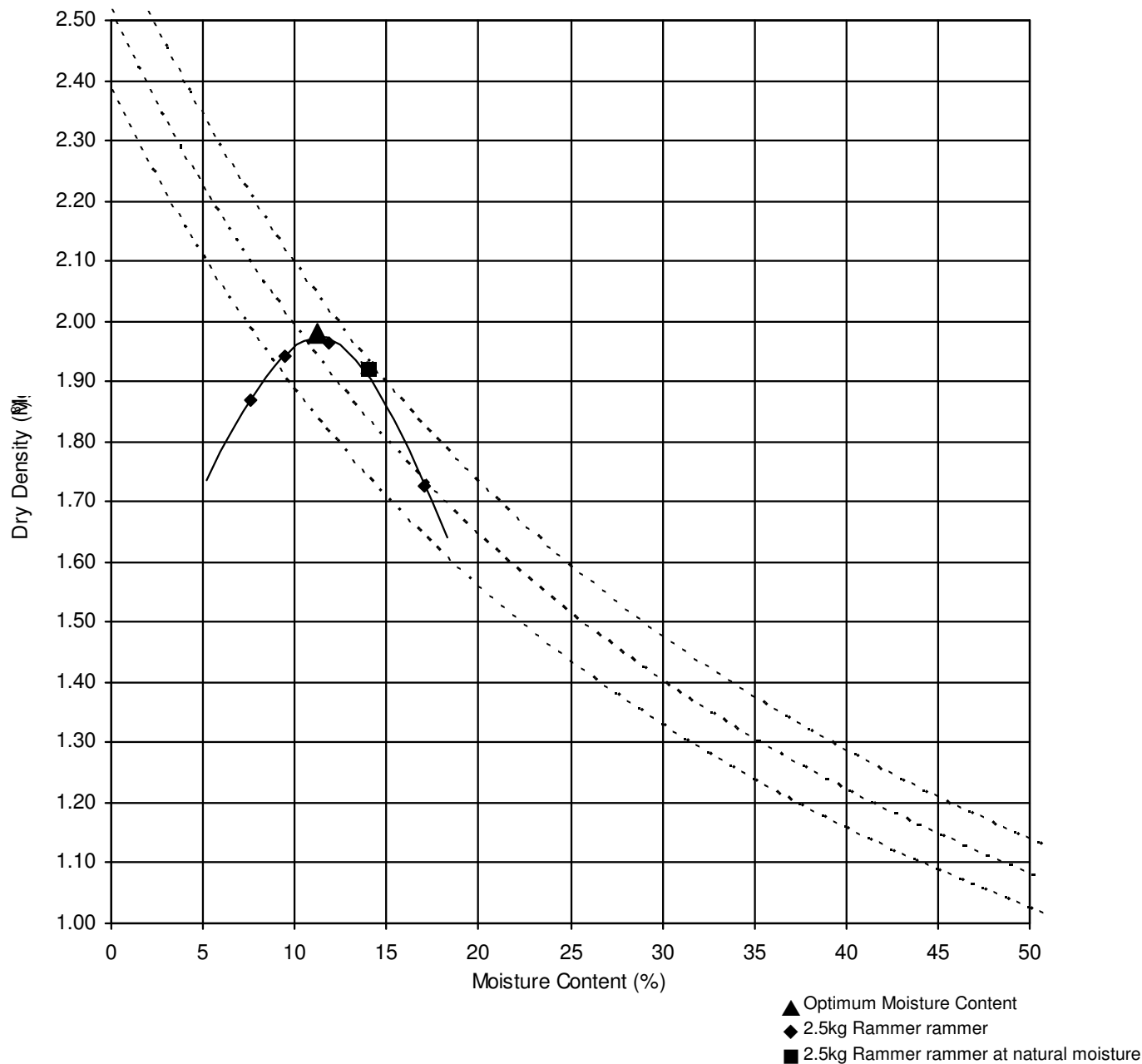
29/11/2019

LABORATORY RESULTS - Compaction

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8C07
Sample Depth 0.40-1.40m
Sample Type B
Sample Ref N77788



Optimum Moisture Content 11.3
Maximum Dry Density 1.98 Mg/m³

Particles retained on 37.5mm 0 %
20mm sieve 0 %

Particle Density 2.65 (Meas) Mg/m³
Preparation Single Sample
2.5kg Rammer

Description Firm to stiff orangish brown sandy gravelly CLAY.

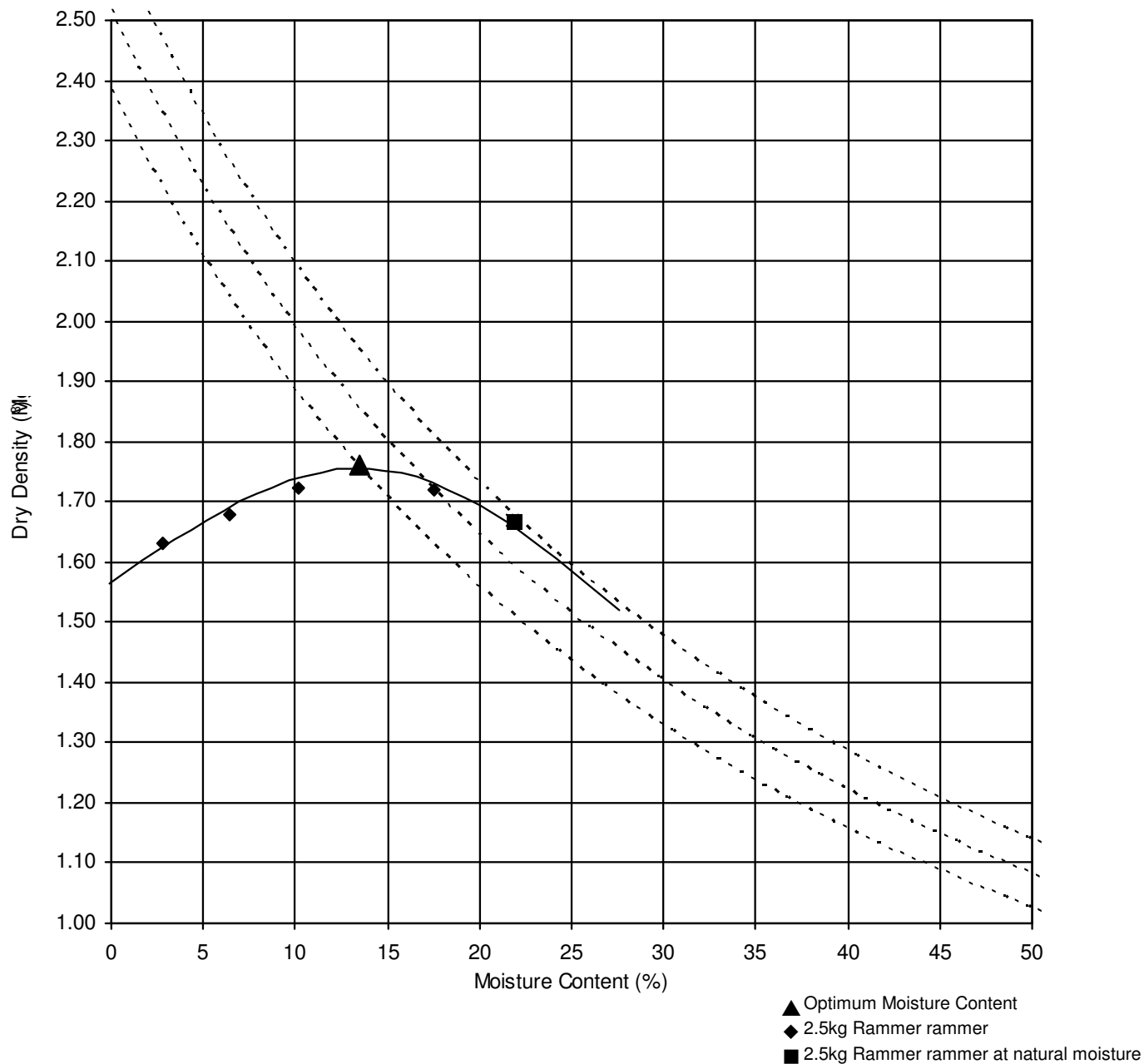
Remarks BS1377 Part 4 1990 : Clause 3.3 and 3.4

LABORATORY RESULTS - Compaction

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8D09
Sample Depth 0.40-1.40m
Sample Type B
Sample Ref N77598



Optimum Moisture Content 13.5
Maximum Dry Density 1.76 Mg/m³

Particles retained on 63mm sieve -1 %
31.5mm -1 %

Particle Density 2.65 (Meas) Mg/m³
Preparation Single Sample
2.5kg Rammer

Description Firm to stiff yellowish brown mottled grey slightly
gravelly sandy CLAY.

Remarks  BS1377 Part 4 1990 : Clause 3.3 and 3.4

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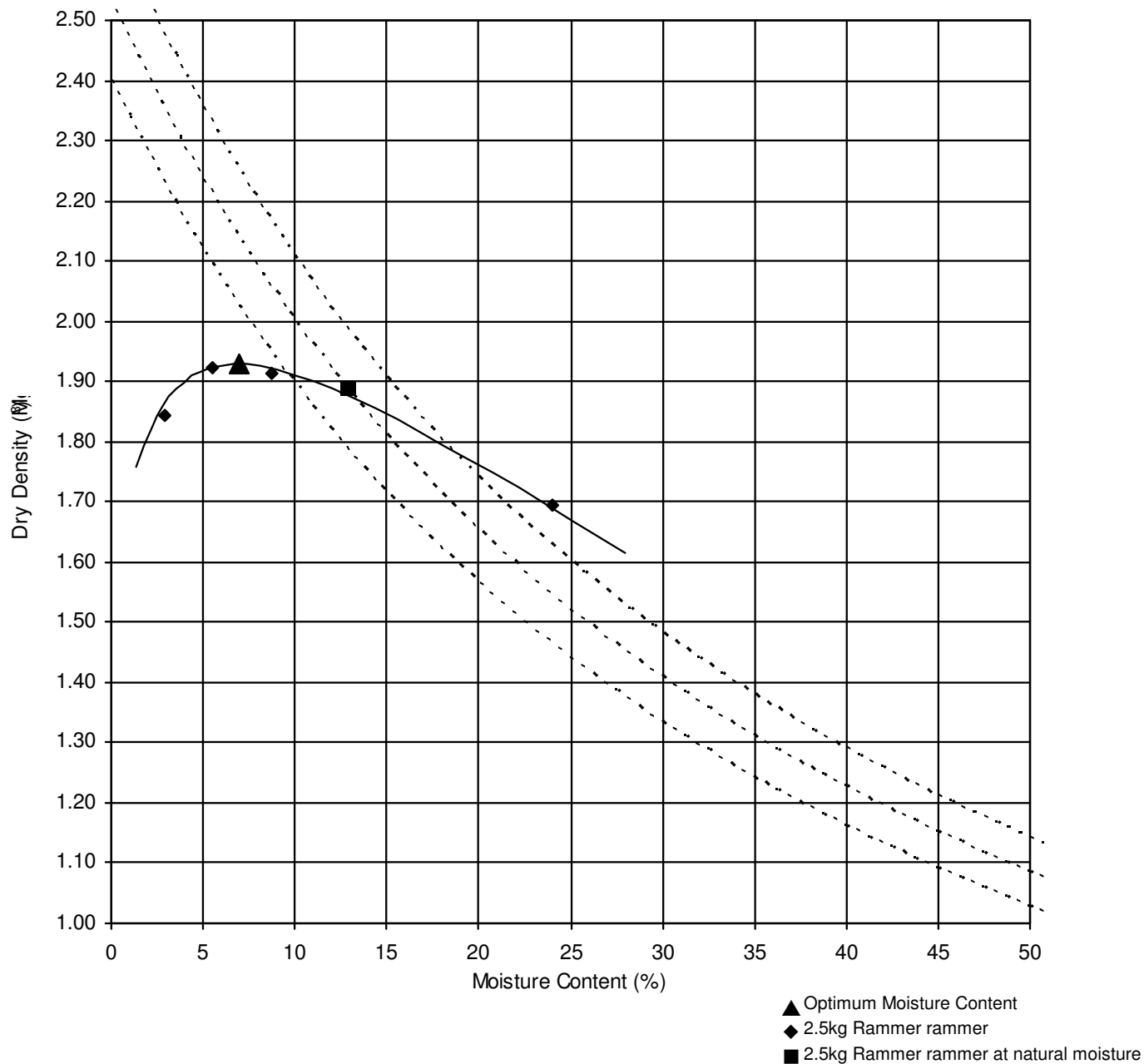
29/11/2019

LABORATORY RESULTS - Compaction

Project: OMEGA DEVELOPMENT GI

Project No: PN194027

Hole TP8D30
Sample Depth 0.80-1.80m
Sample Type B
Sample Ref N77603



Optimum Moisture Content 7.0
Maximum Dry Density 1.93 Mg/m³

Particles retained on 63mm sieve -1 %
31.5mm -1 %

Particle Density 2.67 (Meas) Mg/m³
Preparation Single Sample
2.5kg Rammer

Description Stiff brown sandy gravelly CLAY.

Remarks BS1377 Part 4 1990 : Clause 3.3 and 3.4

LABORATORY RESULTS - Consolidation $e/\log p$ Plot

Project Omega Development Gi

Project No PN194027

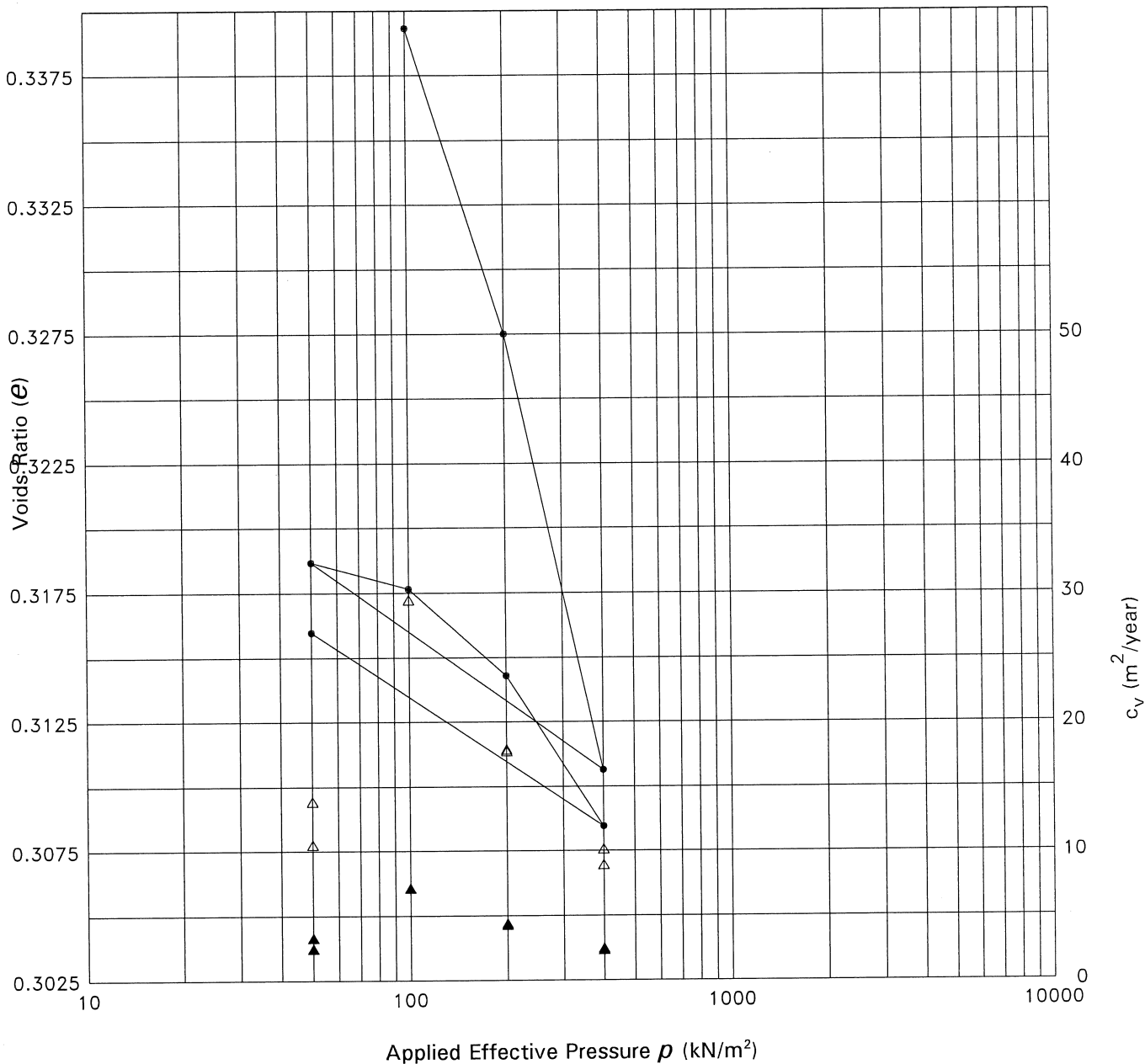
Borehole BH8A01

Sample Depth 1.20 - 1.65 m

Sample Type UT

Client

Symbols: Voids Ratio $\bullet$, c_{v50} $\blacktriangle$, c_{v90} $\triangle$



Applied Pressure kN/m^2	0-100	100-200	200-400	400-500	500-1000	1000-2000	2000-4000	4000-5000		
m_v m^2/MN	0.19	0.09	0.06	0.02	0.02	0.03	0.02	0.02		
c_{v50} Log Time m^2/yr	-	4.28	2.46	3.28	7.13	4.38	2.34	2.47		
c_{v90} Root Time m^2/yr	-	17.74	10.13	13.86	29.45	17.87	8.92	10.50		
Voids Ratio	0.339	0.327	0.311	0.319	0.318	0.314	0.308	0.316		
Description N77640 Stiff reddish brown slightly sandy slightly gravelly CLAY			Specimen Diameter		74.720	mm	Initial Water Content		12.91	%
			Initial Height		18.710	mm	Final Water Content		12.77	%
			Particle Density		2.65 Assumed		Initial Saturation		93.68	%
			Initial Voids Ratio		0.365		Initial Bulk Density		2.19	Mg/m^3
							Initial Dry Density		1.94	Mg/m^3

Remarks Laboratory temperature $20^\circ\text{C} \pm 3^\circ\text{C}$
Specimen cut vertically from base of sample
Test performed in accordance with BS EN ISO 17892-5:2017

geotechnics

LABORATORY RESULTS - Consolidation $e/\log p$ Plot

Project Omega Development Gi

Project No PN194027

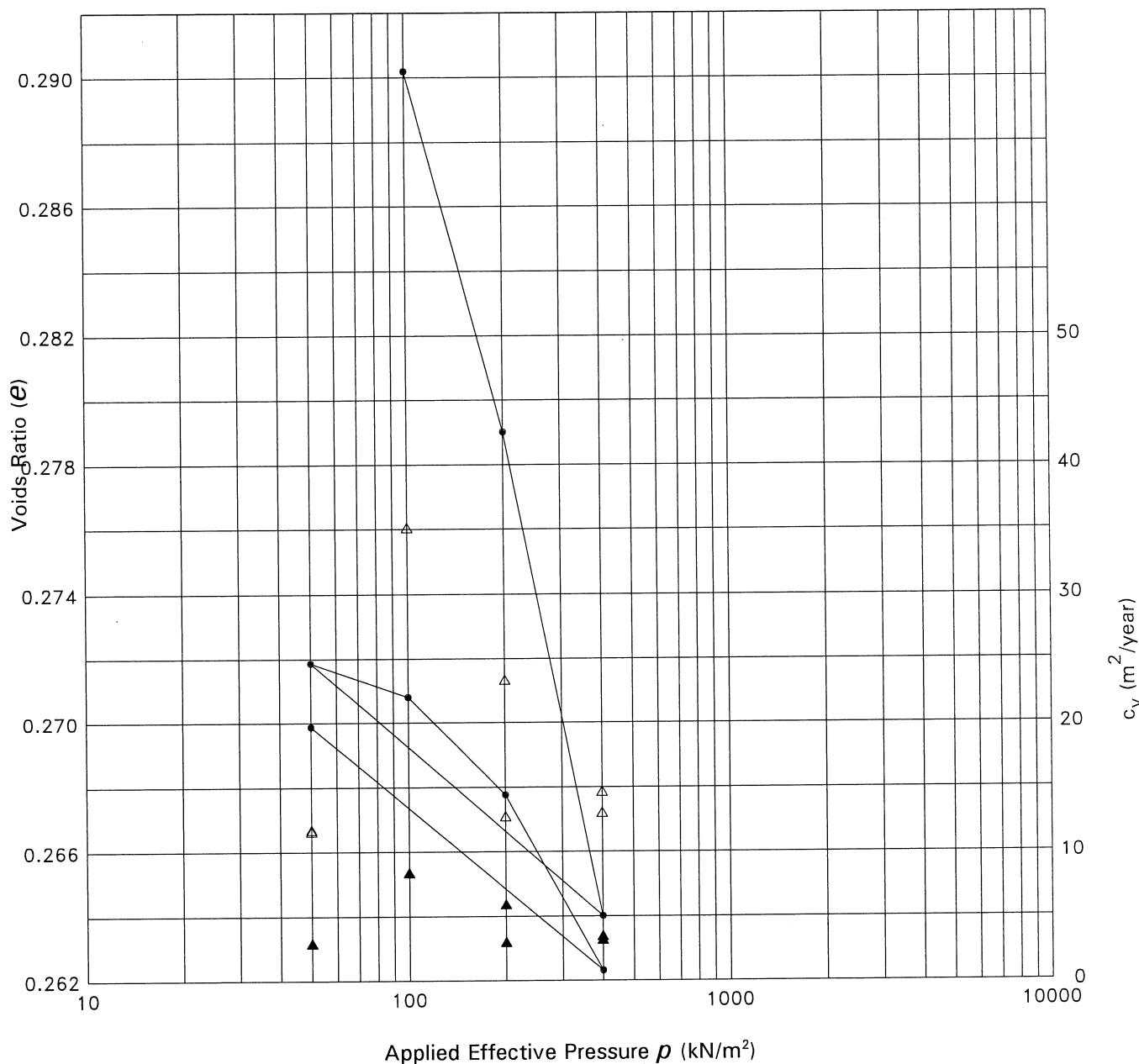
Borehole BH8A02

Sample Depth 3.00 - 3.45 m

Sample Type UT

Client

Symbols: Voids Ratio $\bullet$, c_{v50} $\blacktriangle$, c_{v90} $\triangle$



Applied Pressure kN/m^2	0-100	100-200	200-400	400-50	50-100	100-200	200-400	400-50		
m_v m^2/MN	0.37	0.09	0.06	0.02	0.02	0.02	0.02	0.02		
c_{v50} Log Time m^2/yr	-	3.01	3.19	2.91	8.39	5.93	3.48	2.94		
c_{v90} Root Time m^2/yr	-	12.74	13.03	11.61	35.12	23.34	14.66	11.73		
Voids Ratio	0.290	0.279	0.264	0.272	0.271	0.268	0.262	0.270		
Description N77648 Stiff reddish brown slightly sandy slightly gravelly CLAY			Specimen Diameter 74.550 mm			Initial Water Content 12.76 %				
			Initial Height 18.930 mm			Final Water Content 12.48 %				
			Particle Density 2.65 Assumed			Initial Saturation 99.59 %				
			Initial Voids Ratio 0.340			Initial Bulk Density 2.23 Mg/m^3				
						Initial Dry Density 1.98 Mg/m^3				

Remarks Laboratory temperature $20^\circ\text{C} \pm 3^\circ\text{C}$
Specimen cut vertically from base of sample
Test performed in accordance with BS EN ISO 17892-5:2017

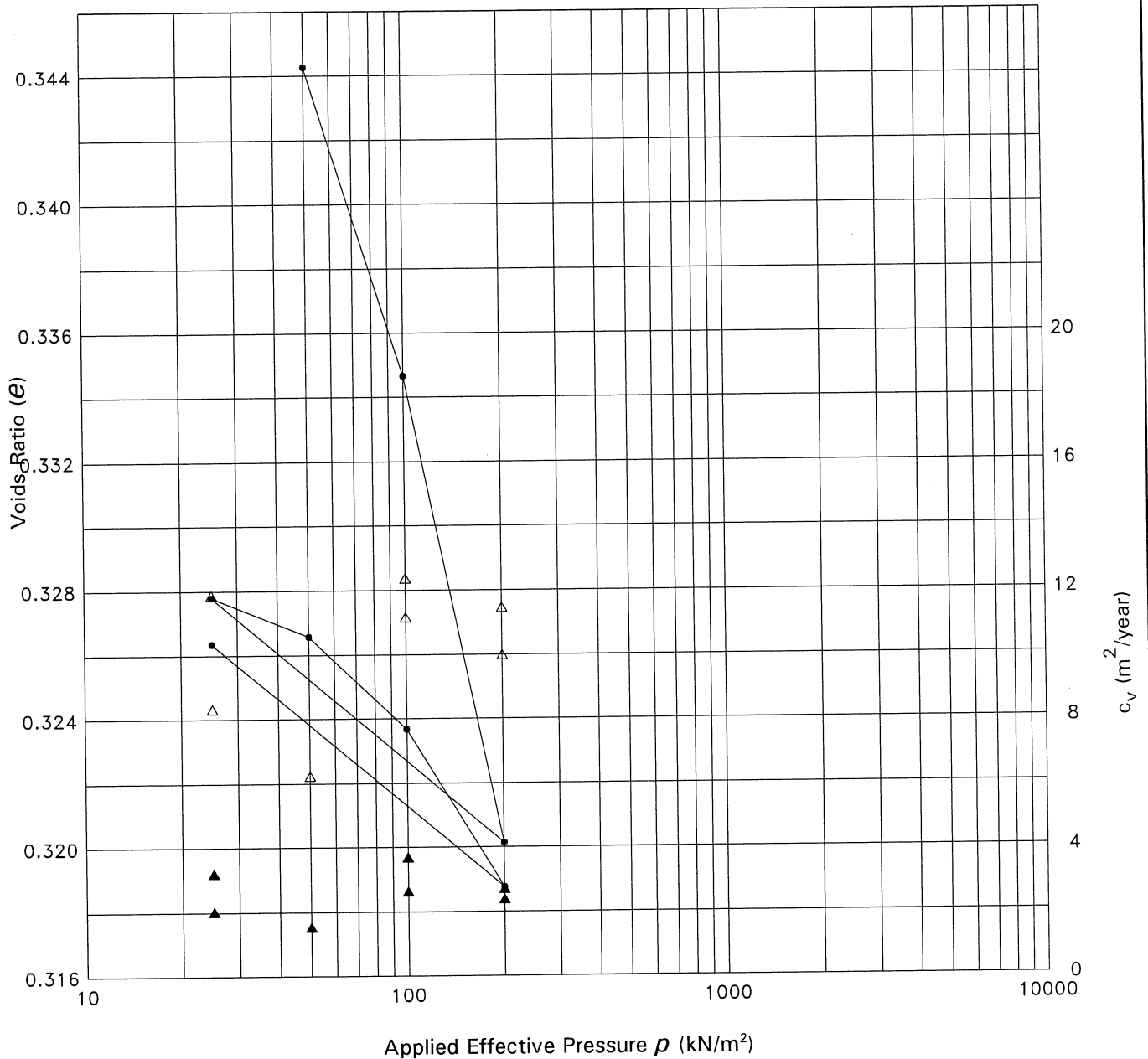
LABORATORY RESULTS - Consolidation e/logp Plot

Project Omega Development Gi

Project No PN194027
Borehole BH8A02A
Sample Depth 1.20 - 1.65 m
Sample Type UT

Client

Symbols: Voids Ratio •, c_{v50} ▲, c_{v90} △



Applied Pressure	kN/m ²	0-50	50-100	100-200	200-25	25-50	50-100	100-200	200-25		
m_v	m ² /MN	0.29	0.14	0.11	0.03	0.04	0.04	0.04	0.03		
c_{v50} Log Time	m ² /yr	-	2.63	2.38	3.21	1.53	3.69	2.70	2.02		
c_{v90} Root Time	m ² /yr	-	11.16	9.99	11.87	6.23	12.36	11.46	8.32		
Voids Ratio		0.344	0.335	0.320	0.328	0.327	0.324	0.319	0.326		
Description N77775 Soft to firm reddish brown slightly sandy slightly gravelly CLAY		Specimen Diameter		74.540	mm	Initial Water Content		13.15	%		
		Initial Height		18.880	mm	Final Water Content		13.63	%		
		Particle Density		2.65	Assumed	Initial Saturation		95.73	%		
		Initial Voids Ratio		0.364		Initial Bulk Density		2.20	Mg/m ³		
						Initial Dry Density		1.94	Mg/m ³		

Remarks Laboratory temperature 20°C ± 3°C
Specimen cut vertically from base of sample
Test performed in accordance with BS EN ISO 17892-5:2017

geotechnics

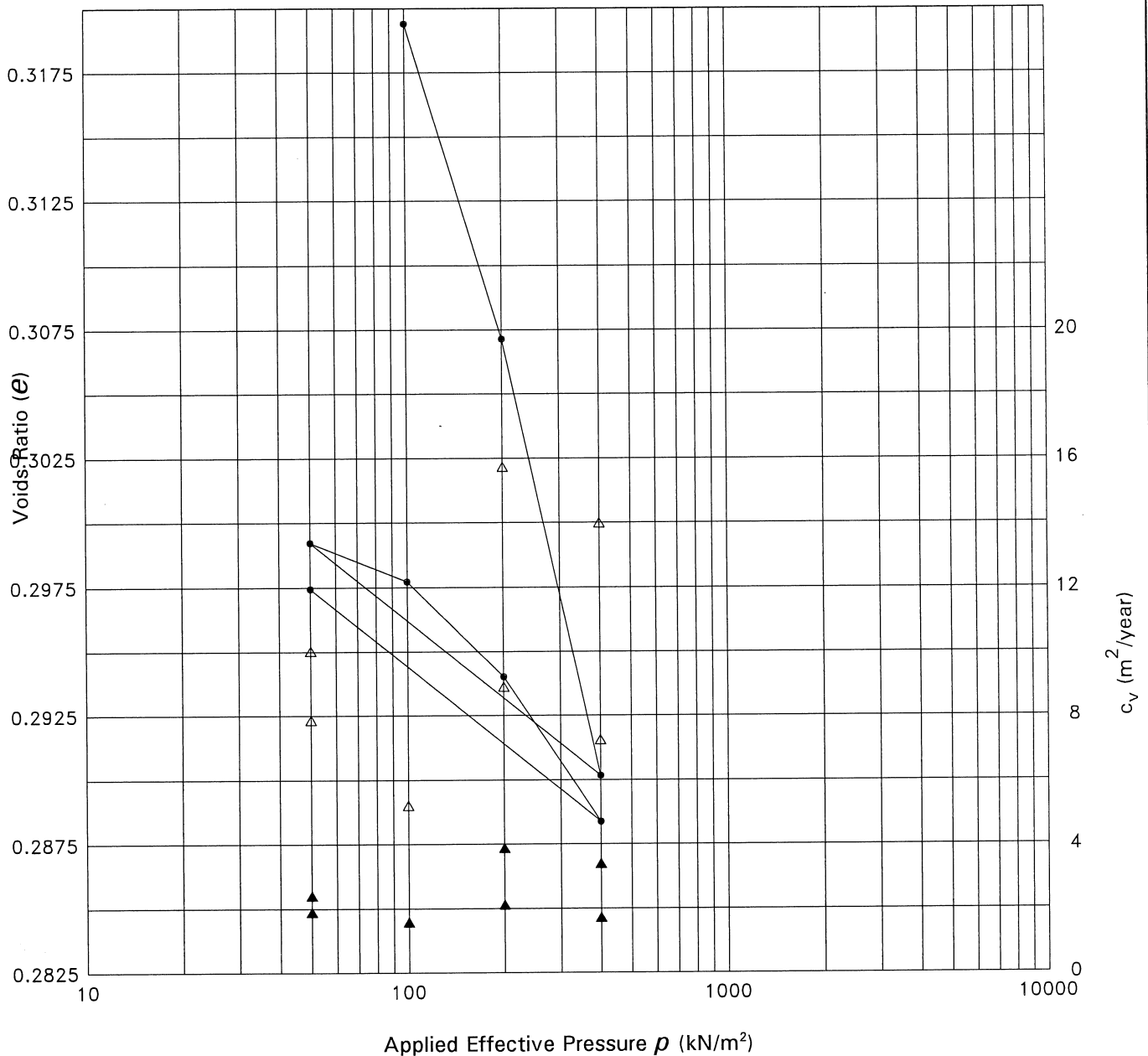
LABORATORY RESULTS - Consolidation $e/\log p$ Plot

Project Omega Development Gi

Project No PN194027
Borehole BH8A02A
Sample Depth 5.00 - 5.45 m
Sample Type UT

Client

Symbols: Voids Ratio •, c_{v50} ▲, c_{v90} △



Applied Pressure kN/m^2	0-100	100-200	200-400	400-500	500-1000	1000-2000	2000-4000	4000-5000		
m_v m^2/MN	0.18	0.09	0.06	0.02	0.02	0.03	0.02	0.02		
c_{v50} Log Time m^2/yr	-	2.11	1.71	2.40	1.57	3.88	3.40	1.89		
c_{v90} Root Time m^2/yr	-	8.90	7.24	10.02	5.20	15.73	13.99	7.86		
Voids Ratio	0.319	0.307	0.290	0.299	0.298	0.294	0.288	0.297		
Description N77777 Firm reddish brown slightly sandy slightly gravelly CLAY			Specimen Diameter 74.800 mm Initial Height 18.840 mm Particle Density 2.65 Assumed Initial Voids Ratio 0.344			Initial Water Content 12.72 % Final Water Content 12.42 % Initial Saturation 98.09 % Initial Bulk Density 2.22 Mg/m^3 Initial Dry Density 1.97 Mg/m^3				

Remarks Laboratory temperature $20^\circ\text{C} \pm 3^\circ\text{C}$
Specimen cut vertically from base of sample
Test performed in accordance with BS EN ISO 17892-5:2017

LABORATORY RESULTS - Consolidation $e/\log p$ Plot

Project Omega Development Gi

Project No PN194027

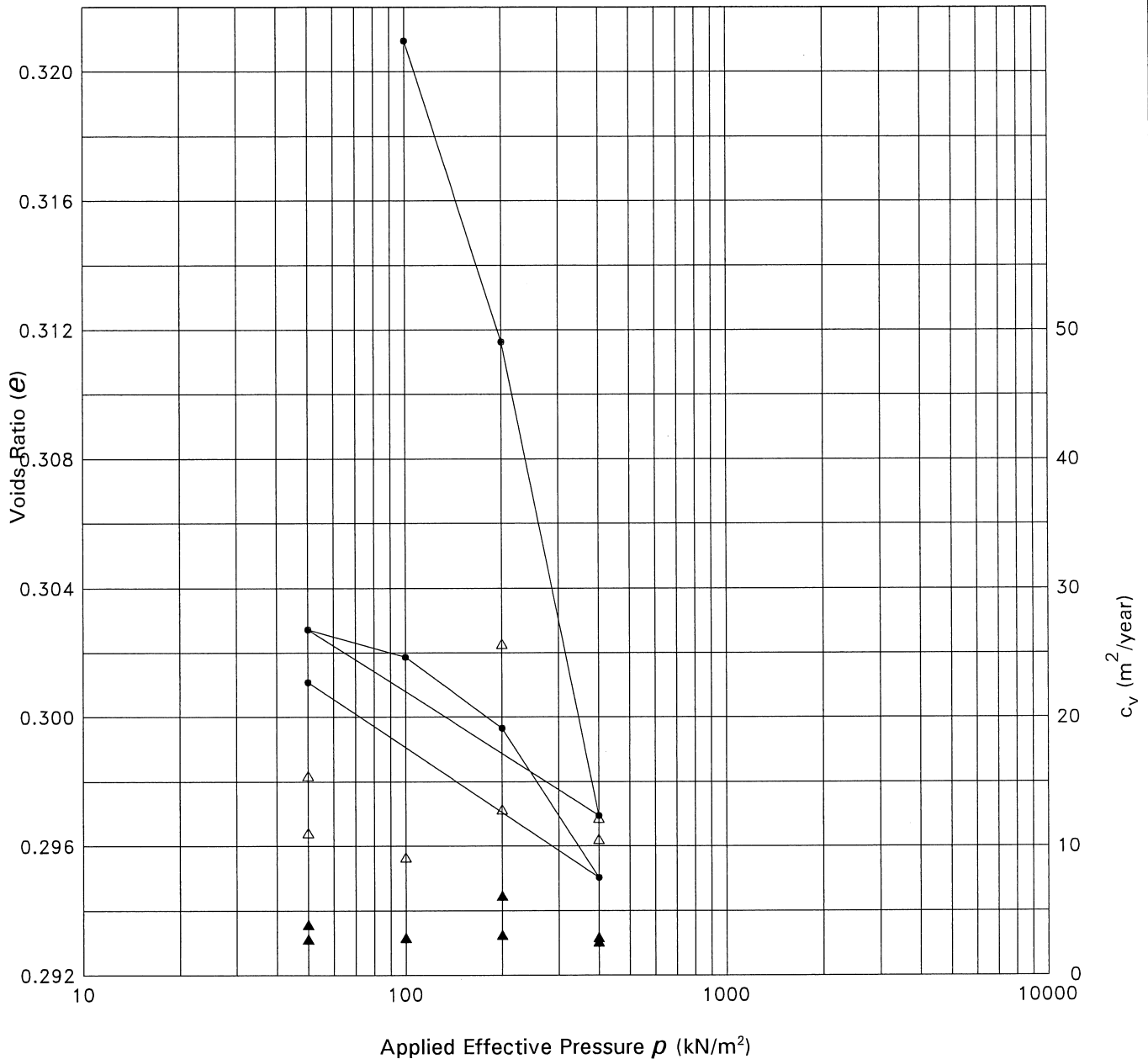
Borehole BH8A03

Sample Depth 3.00 - 3.45 m

Sample Type UT

Client

Symbols: Voids Ratio $\bullet$, c_{v50} $\blacktriangle$, c_{v90} $\triangle$



Applied Pressure kN/m^2	0-100	100-200	200-400	400-50	50-100	100-200	200-400	400-50		
m_v m^2/MN	0.10	0.07	0.06	0.01	0.01	0.02	0.02	0.01		
c_{v50} Log Time m^2/yr	-	3.11	2.59	3.90	2.90	6.15	2.92	2.77		
c_{v90} Root Time m^2/yr	-	12.84	10.54	15.46	9.13	25.69	12.19	11.03		
Voids Ratio	0.321	0.312	0.297	0.303	0.302	0.300	0.295	0.301		
Description N77782 Stiff reddish brown slightly sandy slightly gravelly CLAY			Specimen Diameter 74.550 mm Initial Height 18.730 mm Particle Density 2.65 Assumed Initial Voids Ratio 0.334			Initial Water Content 12.36 % Final Water Content 12.53 % Initial Saturation 97.94 % Initial Bulk Density 2.23 Mg/m^3 Initial Dry Density 1.99 Mg/m^3				

Remarks Laboratory temperature $20^\circ\text{C} \pm 3^\circ\text{C}$
Specimen cut vertically from base of sample
Test performed in accordance with BS EN ISO 17892-5:2017

geotechnics