

2.8 Infiltration Tests

Infiltration tests were performed in seven locations (SA01 to SA07) to investigate the soakage characteristics of the overburden soils. Testing was performed in each test pit in accordance with BRE Digest 365 'Soakaway Design'.

To obtain a measure of the infiltration rate, water was poured into the test pit to ensure total saturation of the sub-soils. The infiltration rate is the volume of water dispersed per unit exposed area per unit of time, and is generally expressed as metres/minute or metres/second.

Two monitored stages were typically performed, during which records were taken of the fall in water level against time. The exceptions were tests SA01, 04, 05 and 07, where very low or negligible egress was measured during the initial test stage and further test stages were both impractical and unnecessary.

The infiltration test results are presented in numerical and graphical format in Appendix 8.

2.9 Groundwater Monitoring

Groundwater was recorded in all five trial pits and in six infiltration test locations. The depths ranged between 0.9 and 2.2m BGL. In the trial pits, water strikes were mostly rapid with strikes in the infiltration tests observed as seepage.

The boreholes and coreholes reported deeper strikes in the range 9.30m to 19.70m BGL, and the rate of ingress was reported as slow. Standpipes were installed in two of the coreholes (RC02 and RC03) and the site was revisited to measure the water levels.

The groundwater readings are presented in Appendix 9.

2.10 As-Built Survey

On completion of fieldworks, the location (x,y) and elevation (z) of each exploratory location was determined by detailed survey using GPS Realtime Kinetic survey instrument.

The Irish Transverse Mercator (ITM) survey co-ordinates and ground levels related to Malin Head Datum are presented on the exploratory hole records and these were used to plot the as-built locations on the site plans in Appendix 12 of this report.

3.0 Laboratory Testing

Geotechnical laboratory testing was performed at IGSL'S INAB accredited laboratory in accordance with BS1377; British Standard Methods of Test for Soils for Civil Engineering Purposes; British Standards Institute:1990. The schedule of the geotechnical testing contained:

- Moisture Content
- Atterberg Limits (Plasticity Index)
- Particle Size Distribution (PSD)
- Unconsolidated Undrained (UU) Triaxial
- Irregular Point Loads on rock core specimens

Chemical and environmental testing were performed by Eurofins Chemtest with the schedule including:

- BRE SD1 Sulphate Suite (Acid-Soluble Sulphate, Water-Soluble Sulphate, Total Sulphur, Water-Soluble Magnesium, Water-Soluble Chloride, Water-Soluble Nitrate, Water-Soluble Ammonium and pH)
- RILTA (WAC) Suite

Laboratory, chemical and environmental test results are segregated and presented as follows:

- Appendix 10 – Geotechnical Laboratory Testing
- Appendix 11 – Chemical and Environmental Testing

4.0 References

1. BS 5930:2015+A1:2020 Code of Practice for Site Investigations; British Standards Institute
2. Manual of Contract Documents for Highway Works, Volume 5, Section 3, Ground Investigation, Part 4: Specification
3. BRE Special Digest 1: 2005 – Concrete in aggressive ground
4. EN 1997-3; Eurocode 7: Geotechnical Design – Part 3: Design assisted by field testing; 1997
5. BS1377; British Standard Methods of Test for Soils for Civil Engineering Purposes; British Standards Institute;1990.
6. BRE Digest 365, September 1991, British Research Establishment
7. Manual of Contract Documents for Road Works, Volume 1: Specification for Road Works (March 2007)
8. Manual of Soil Laboratory Testing, Volume 3; K.H. Head
9. ISRM – Suggested Methods for Determining Point Load Strength
10. ISRM – Suggested Methods for Determining the Uniaxial Compressive Strength and Deformability of Rock Materials
11. TRL Report 447- Sulfate specification for structural backfills
12. CIRIA C580
13. Specification for Roadworks Series 600 – Specification for Roadworks

Appendix 1

Cable Percussive Borehole Records

 GEOTECHNICAL BORING RECORD REPORT NUMBER 26458										
CONTRACT Phase 1 - M11 - Old Connaught							BOREHOLE NO. BH01 SHEET Sheet 1 of 1			
CO-ORDINATES 725,011.71 E 719,700.87 N			RIG TYPE Dando 2000 BOREHOLE DIAMETER (mm) 200 BOREHOLE DEPTH (m) 7.90		DATE COMMENCED 10/03/2026 DATE COMPLETED 11/03/2026					
GROUND LEVEL (mOD) 20.80										
CLIENT Castlethorne Construction ENGINEER Atkins			SPT HAMMER REF. NO. ENERGY RATIO (%)		BORED BY A.Delaney PROCESSED BY F.C					
Depth (m)	Description	Legend	Elevation	Depth (m)	Samples				Field Test Results	Standpipe Details
					Ref. Number	Sample Type	Depth (m)	Recovery		
0	TOPSOIL		20.60	0.20						
1	Firm brown sandy SILT/CLAY with occasional gravel				AA260236	B	1.00		N = 11 (2, 1, 2, 3, 3, 3)	
2			18.40	2.40	AA260237	B	2.00		N = 10 (3, 3, 4, 3, 2, 1)	
	Very soft grey/brown very sandy SILT/CLAY		17.80	3.00	AA260238	B	2.50			
3	Soft brown sandy SILT/CLAY with occasional gravel				AA260239	B	3.00		N = 5 (1, 0, 1, 0, 2, 2)	
4					AA260240	B	4.00		N = 7 (1, 1, 2, 1, 2, 2)	
5	Medium dense grey/brown clayey GRAVEL (Possibly very gravelly Clay)		15.90	4.90	AA260241	B	5.00		N = 28 (3, 4, 5, 7, 7, 9)	
6	Dense grey/brown fine to coarse clayey GRAVEL with some angular cobbles and boulders		15.00	5.80	AA260242	B	6.00		N = 46 (5, 7, 9, 10, 12, 15)	
7					AA260243	B	7.00		N = 50/225 mm (7, 9, 12, 17, 21)	
					AA260244	B	7.50			
8	Obstruction End of Borehole at 7.90 m		12.90	7.90					N = 50/75 mm (25, 50)	
9										
HARD STRATA BORING/CHISELLING				WATER STRIKE DETAILS						
From (m)	To (m)	Time (h)	Comments	Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments	
7.20	7.40	1		2.50	2.50	No	2.00	20	Slow	
7.70	7.90	1.5		5.40	5.40	No	1.20	20	Rapid	
INSTALLATION DETAILS					GROUNDWATER PROGRESS					
Date	Tip Depth	RZ Top	RZ Base	Type	Date	Hole Depth	Casing Depth	Depth to Water	Comments	

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 GEOTECHNICAL BORING RECORD										REPORT NUMBER 26458	
CONTRACT Phase 1 - M11 - Old Connaught								BOREHOLE NO. BH02			
CO-ORDINATES 725,111.89 E 719,781.91 N				RIG TYPE Dando 2000 BOREHOLE DIAMETER (mm) 200				SHEET Sheet 1 of 2			
GROUND LEVEL (mOD) 20.87				BOREHOLE DEPTH (m) 11.80				DATE COMMENCED 18/03/2026 DATE COMPLETED 19/03/2026			
CLIENT Castlethorne Construction ENGINEER Atkins				SPT HAMMER REF. NO. ENERGY RATIO (%)				BORED BY A.Delaney PROCESSED BY F.C			

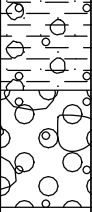
Depth (m)	Description	Legend	Elevation	Depth (m)	Samples				Field Test Results	Standpipe Details
					Ref. Number	Sample Type	Depth (m)	Recovery		
0	TOPSOIL		20.67	0.20						
1	Soft brown sandy SILT/CLAY with occasional gravel				AA265207 AA265208	B U	1.00 1.00	70%rec	N = 6 (2, 1, 1, 2, 2, 1)	
2	Medium dense grey/grey brown fine to coarse sandy silty/clayey GRAVEL with occasional cobbles		19.07	1.80	AA265209	B	2.00		N = 17 (6, 4, 5, 3, 4, 5)	
3					AA265210	B	3.00		N = 17 (5, 5, 4, 6, 3, 4)	
4					AA265211	B	4.00		N = 16 (3, 4, 4, 3, 5, 4)	
5					AA265212	B	5.00		N = 23 (2, 3, 3, 8, 6, 6)	
6					AA265213	B	6.00		N = 20 (3, 5, 4, 5, 5, 6)	
7					AA265214	B	7.00		N = 26 (6, 5, 6, 7, 6, 7)	
8	Very stiff to hard brown very gravelly CLAY with some cobbles		13.07	7.80	AA265215	B	8.00		N = 56 (7, 13, 14, 16, 14, 12)	
9					AA265216	B	9.00		N = 48 (6, 8, 10, 13, 13, 12)	
			11.17	9.70						

HARD STRATA BORING/CHISELLING				WATER STRIKE DETAILS					
From (m)	To (m)	Time (h)	Comments	Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
11.10	11.30	1		2.50	2.50	3.80	1.60		
11.60	11.80	1.5		6.10	6.10	No	1.80	20	Moderate Rapid

INSTALLATION DETAILS					GROUNDWATER PROGRESS				
Date	Tip Depth	RZ Top	RZ Base	Type	Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS 4 hrs standing on Landowner to move horses .CAT scanned location and hand dug inspection pit was carried out .					Sample Legend D - Small Disturbed (tub) B - Bulk Disturbed LB - Large Bulk Disturbed Env - Environmental Sample (Jar + Vial + Tub)					UT - Undisturbed 100mm Diameter Sample P - Undisturbed Piston Sample W - Water Sample				
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 GEOTECHNICAL BORING RECORD REPORT NUMBER 26458										
CONTRACT Phase 1 - M11 - Old Connaught							BOREHOLE NO. BH02 SHEET Sheet 2 of 2			
CO-ORDINATES 725,111.89 E 719,781.91 N			RIG TYPE Dando 2000 BOREHOLE DIAMETER (mm) 200 BOREHOLE DEPTH (m) 11.80		DATE COMMENCED 18/03/2026 DATE COMPLETED 19/03/2026					
GROUND LEVEL (mOD) 20.87										
CLIENT ENGINEER Castlethorne Construction Atkins			SPT HAMMER REF. NO. ENERGY RATIO (%)		BORED BY A.Delaney PROCESSED BY F.C					
Depth (m)	Description	Legend	Elevation	Depth (m)	Samples				Field Test Results	Standpipe Details
					Ref. Number	Sample Type	Depth (m)	Recovery		
10	Very stiff brown sandy gravelly CLAY with occasional cobbles (<i>continued</i>)		10.07	10.80	AA265217	B	10.00		N = 50 (9, 13, 5, 15, 16, 14) N = 50/150 mm (6, 11, 18, 32) N = 50/75 mm (25, 50)	
11	Dense grey fine to coarse angular GRAVEL with broken angular cobbles and boulders				AA265218	B	11.00			
12	Obstruction End of Borehole at 11.80 m									
13										
14										
15										
16										
17										
18										
19										
HARD STRATA BORING/CHISELLING					WATER STRIKE DETAILS					
From (m)	To (m)	Time (h)	Comments		Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
11.10	11.30	1								
11.60	11.80	1.5								
					GROUNDWATER PROGRESS					
INSTALLATION DETAILS					Date	Hole Depth	Casing Depth	Depth to Water	Comments	
Date	Tip Depth	RZ Top	RZ Base	Type						
REMARKS 4 hrs standing on Landowner to move horses .CAT scanned location and hand dug inspection pit was carried out .					Sample Legend D - Small Disturbed (tub) B - Bulk Disturbed LB - Large Bulk Disturbed Env - Environmental Sample (Jar + Vial + Tub) UT - Undisturbed 100mm Diameter Sample P - Undisturbed Piston Sample W - Water Sample					

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 GEOTECHNICAL BORING RECORD REPORT NUMBER 26458										
CONTRACT Phase 1 - M11 - Old Connaught							BOREHOLE NO. BH03 SHEET Sheet 1 of 2			
CO-ORDINATES 725,120.17 E 719,441.67 N			RIG TYPE Dando 2000 BOREHOLE DIAMETER (mm) 200 BOREHOLE DEPTH (m) 9.90		DATE COMMENCED 12/03/2026 DATE COMPLETED 13/03/2026					
GROUND LEVEL (mOD) 20.02			SPT HAMMER REF. NO. ENERGY RATIO (%)		BORED BY A.Delaney PROCESSED BY F.C					
Depth (m)	Description	Legend	Elevation	Depth (m)	Samples				Field Test Results	Standpipe Details
					Ref. Number	Sample Type	Depth (m)	Recovery		
0	TOPSOIL		19.72	0.30						
1	Soft brown sandy SILT/CLAY with occasional fine gravel				AA260245	B	1.00		N = 7 (1, 0, 1, 2, 2, 2)	
AA260246					U	1.50				
AA260247					B	2.00				
AA260248					B	3.00				
4	Medium dense grey fine to medium silty sandy GRAVEL with large cobbles		15.92	4.10	AA260249	B	4.00		N = 9 (1, 2, 2, 2, 2, 3)	
AA260250					B	5.00				
AA260251					B	6.00				
7	Stiff brown sandy gravelly CLAY with some cobbles		13.22	6.80	AA260252	B	7.00		N = 30 (2, 4, 5, 7, 8, 10)	
8	Stiff reddish brown laminated SILT/CLAY		12.32	7.70	AA260253	B	8.00		N = 23 (4, 4, 4, 6, 6, 7)	
9					AA260254	B	9.00			
	Dense grey fine to coarse angular GRAVEL with some clayey bands		10.82	9.20	AA260255	B	9.80		N = 19 (2, 3, 3, 4, 4, 8)	
			10.12	9.90	AA260255	B	9.80		N = 50/75 mm (25, 50)	
HARD STRATA BORING/CHISELLING				WATER STRIKE DETAILS						
From (m)	To (m)	Time (h)	Comments	Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments	
9.40	9.60	0.75		1.80	1.80	6.50	1.00	20	Slow	
9.70	9.90	1.5		8.50		No	6.30	20		Rapid
INSTALLATION DETAILS					GROUNDWATER PROGRESS					
Date	Tip Depth	RZ Top	RZ Base	Type	Date	Hole Depth	Casing Depth	Depth to Water	Comments	

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 GEOTECHNICAL BORING RECORD										REPORT NUMBER 26458	
CONTRACT Phase 1 - M11 - Old Connaught								BOREHOLE NO. BH03			
CO-ORDINATES 725,120.17 E 719,441.67 N				RIG TYPE Dando 2000 BOREHOLE DIAMETER (mm) 200		SHEET Sheet 2 of 2		DATE COMMENCED 12/03/2026			
GROUND LEVEL (mOD) 20.02				BOREHOLE DEPTH (m) 9.90		DATE COMPLETED 13/03/2026					
CLIENT Castlethorne Construction ENGINEER Atkins				SPT HAMMER REF. NO. ENERGY RATIO (%)		BORED BY A.Delaney PROCESSED BY F.C					

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples				Field Test Results	Standpipe Details
					Ref. Number	Sample Type	Depth (m)	Recovery		
10	Obstruction End of Borehole at 9.90 m									
11										
12										
13										
14										
15										
16										
17										
18										
19										

HARD STRATA BORING/CHISELLING				WATER STRIKE DETAILS					
From (m)	To (m)	Time (h)	Comments	Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
9.40	9.60	0.75							
9.70	9.90	1.5							

INSTALLATION DETAILS					GROUNDWATER PROGRESS				
Date	Tip Depth	RZ Top	RZ Base	Type	Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS 3hrs manouvering rig into position .CAT scanned location and hand dug inspection pit was carried out . Blowing sands noted 6.80-4.90m	Sample Legend D - Small Disturbed (tub) B - Bulk Disturbed LB - Large Bulk Disturbed Env - Environmental Sample (Jar + Vial + Tub)		UT - Undisturbed 100mm Diameter Sample P - Undisturbed Piston Sample W - Water Sample

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Appendix 2

Rotary Coreholes Records

										GEOTECHNICAL CORE LOG RECORD										REPORT NUMBER 26458	
CONTRACT Phase 1 - M11 - Old Connaught												DRILLHOLE NO RC01									
CO-ORDINATES 725,011.71 E 719,700.87 N						RIG TYPE Beretta T-44						SHEET Sheet 1 of 2									
GROUND LEVEL (mOD) 20.80						FLUSH Air/Mist						DATE DRILLED 30/05/2026									
CLIENT Castlethorne Construction						INCLINATION (deg) -90						DATE LOGGED 30/05/2026									
ENGINEER Atkins						CORE DIAMETER (mm) 78						DRILLED BY IGSL - DH									
												LOGGED BY D. O' Shea									
Downhole Depth (m)	Core Run Depth (m)	T.C.R. %	S.C.R. %	R.Q.D. %	Fracture Spacing Log (mm)	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)									
0					0 250 500			SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.20	20.60											
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy SILT/CLAY with occasional gravel													
2									2.40	18.40											
3								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown very sandy SILT/CLAY	3.00	17.80											
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy SILT/CLAY with occasional gravel													
5									4.90	15.90											
6								SYMMETRIX DRILLING: No recovery, observed by driller as returns of dense grey/brown clayey GRAVEL	5.80	15.00											
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown fine to coarse clayey GRAVEL with some cobbles													
8									7.60	13.20											
9								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown gravelly CLAY													
9.80									9.80	11.00		N = 31 (7, 9, 5, 8, 9, 9)									
REMARKS Hole cased from 0.0-9.80m.								WATER STRIKE DETAILS													
								Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments								
								9.30	9.30	N/S			Slow								
								GROUNDWATER DETAILS													
INSTALLATION DETAILS								Date	Hole Depth	Casing Depth	Depth to Water	Comments									
Date	Tip Depth	RZ Top	RZ Base	Type																	

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 GEOTECHNICAL CORE LOG RECORD REPORT NUMBER 26458													
CONTRACT Phase 1 - M11 - Old Connaught							DRILLHOLE NO RC01 SHEET Sheet 2 of 2						
CO-ORDINATES 725,011.71 E 719,700.87 N GROUND LEVEL (mOD) 20.80				RIG TYPE Beretta T-44 FLUSH Air/Mist INCLINATION (deg) -90 CORE DIAMETER (mm) 78			DATE DRILLED 30/05/2026 DATE LOGGED 30/05/2026						
CLIENT Castletborne Construction ENGINEER Atkins							DRILLED BY IGSL - DH LOGGED BY D. O' Shea						
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm)	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)	
10		100	14	0				Weak to moderately weak, medium bedded to thinly laminated, light to dark blueish/grey, fine-grained interbedded SILTSTONE/MUDSTONE (possibly metamorphosed, graphitic appearance on surfaces), slightly to locally moderately/highly weathered (at 10.12-10.17m, 11.07-11.31m & 12.53-12.57m) Frequent incipient fractures - core predominantly non-intact					
11	11.30												
12		100	19	0				Discontinuities are medium to closely spaced, smooth to rough, fractures are planar to irregular. Apertures are tight to locally moderately open, locally clay smeared, locally moderately iron-oxide stained. Dips are subhorizontal to 20-30° & irregular. (continued)					
13	12.80												
13		75	9	0				Highly weathered ROCK - recovered as green very sandy clay	13.30	7.50			
14	13.80							Weak to moderately weak, medium to thinly bedded, light greenish grey, fine-grained interbedded SILTSTONE/SANDSTONE, slightly weathered. Frequent incipient fractures - core predominantly non-intact	13.40	7.40			
14		100	24	11									
15	14.80							Discontinuities are medium to closely spaced, smooth to rough, fractures are planar to irregular. Apertures are tight to locally moderately open, locally clay smeared, locally moderately iron-oxide stained, locally quartz-veined (1-8mm thick). Dips are subhorizontal to 20-40° & irregular.	14.80	6.00			
16								End of Borehole at 14.80 m					
17													
18													
19													
REMARKS								WATER STRIKE DETAILS					
Hole cased from 0.0-9.80m.								Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
								9.30	9.30	N/S			Slow
INSTALLATION DETAILS								GROUNDWATER DETAILS					
Date	Tip Depth	RZ Top	RZ Base	Type	Date	Hole Depth	Casing Depth	Depth to Water	Comments				
					30-05-26	14.80	9.80	7.40	Water level recorded 5mins after end of drilling				

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 GEOTECHNICAL CORE LOG RECORD REPORT NUMBER 26458													
CONTRACT Phase 1 - M11 - Old Connaught							DRILLHOLE NO RC02 SHEET Sheet 1 of 3						
CO-ORDINATES 725,111.89 E 719,781.91 N GROUND LEVEL (mOD) 20.87				RIG TYPE Beretta T-44 FLUSH Air/Mist INCLINATION (deg) -90 CORE DIAMETER (mm)			DATE DRILLED 27/05/2026 DATE LOGGED 27/05/2026						
CLIENT Castlethorne Construction ENGINEER Atkins							DRILLED BY IGSL - DH/JK LOGGED BY D. O' Shea						
Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm)	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)	
0					0 250 500			SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy SILT/CLAY with occasional gravel	0.20	20.67			
1									1.80	19.07			
2								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/grey brown fine to coarse sandy silty/clayey GRAVEL with occasional cobbles					
3													
4													
5													
6													
7													
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown very gravelly CLAY with some cobbles	7.80	13.07			
9									9.70	11.17			
REMARKS Hole cased from 0.0-25.00m.								WATER STRIKE DETAILS					
								Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
													No water strike recorded
								GROUNDWATER DETAILS					
INSTALLATION DETAILS								Date	Hole Depth	Casing Depth	Depth to Water	Comments	
Date	Tip Depth	RZ Top	RZ Base	Type									
27-05-26	15.00	1.00	15.00	50mm SP									

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 GEOTECHNICAL CORE LOG RECORD REPORT NUMBER 26458													
CONTRACT Phase 1 - M11 - Old Connaught							DRILLHOLE NO RC02						
CO-ORDINATES 725,111.89 E 719,781.91 N					GROUND LEVEL (mOD) 20.87		RIG TYPE Beretta T-44						
CLIENT Castlethorne Construction					ENGINEER Atkins		FLUSH Air/Mist						
					INCLINATION (deg) -90		CORE DIAMETER (mm)						
					DATE DRILLED 27/05/2026		DATE LOGGED 27/05/2026						
					DRILLED BY IGSL - DH/JK		LOGGED BY D. O' Shea						
Downhole Depth (m)	Core Run Depth (m)	T.C.R. %	S.C.R. %	R.Q.D. %	Fracture Spacing Log (mm)	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)	
10					0 250 500			SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly CLAY with occasional cobbles (<i>continued</i>)	10.80	10.07			
11								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine to coarse angular GRAVEL with cobbles and boulders	11.80	9.07			
12								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown silty sandy gravelly CLAY					
13													
14									14.90	5.97			
15								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown clayey sandy GRAVEL					
16													
17													
18												N = 26 (2, 6, 4, 8, 7, 7)	
19									19.70	1.17		N = 32 (5, 9, 7, 8, 8, 9)	
REMARKS								WATER STRIKE DETAILS					
Hole cased from 0.0-25.00m.								Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
													No water strike recorded
								GROUNDWATER DETAILS					
INSTALLATION DETAILS								Date	Hole Depth	Casing Depth	Depth to Water	Comments	
Date	Tip Depth	RZ Top	RZ Base	Type									
27-05-26	15.00	1.00	15.00	50mm SP									

IGSL RC FI 10M 26458.GPJ IGSL GDT 8/6/26

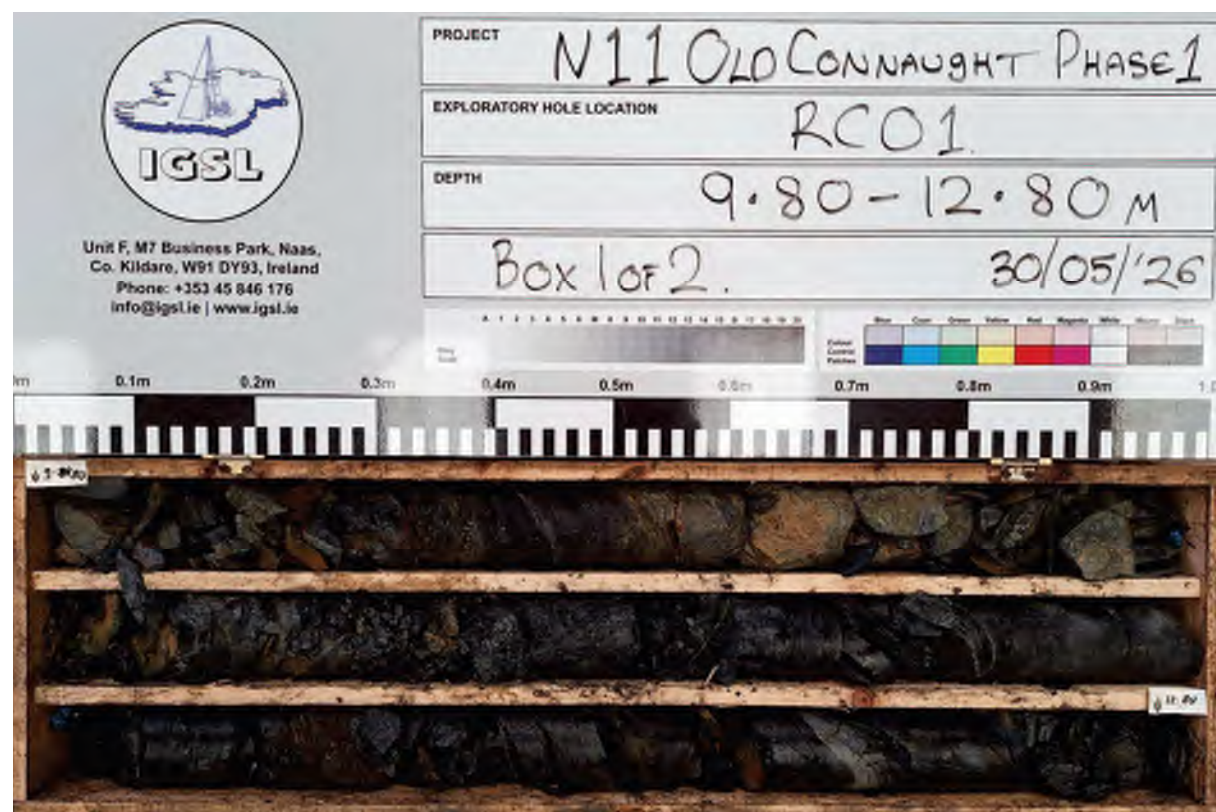
 GEOTECHNICAL CORE LOG RECORD										REPORT NUMBER 26458			
CONTRACT Phase 1 - M11 - Old Connaught								DRILLHOLE NO RC02					
CO-ORDINATES 725,111.89 E 719,781.91 N				RIG TYPE Beretta T-44 FLUSH Air/Mist INCLINATION (deg) -90 CORE DIAMETER (mm)				SHEET Sheet 3 of 3 DATE DRILLED 27/05/2026 DATE LOGGED 27/05/2026					
GROUND LEVEL (mOD) 20.87								DRILLED BY IGSL - DH/JK LOGGED BY D. O' Shea					
CLIENT Castlethorne Construction ENGINEER Atkins													
Downhole Depth (m)	Core Run Depth (m)	T.C.R. %	S.C.R. %	R.Q.D. %	Fracture Spacing Log (mm)	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)	
20					0 250 500			SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown gravelly CLAY (<i>continued</i>)					
21								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly CLAY	21.30	-0.43		N = 34 (3, 5, 8, 9, 8, 9)	
22												N = 27 (2, 4, 6, 6, 7, 8)	
23												N = 36 (3, 6, 7, 9, 9, 11)	
24													
25								End of Borehole at 25.00 m	25.00	-4.13			
26													
27													
28													
29													
REMARKS Hole cased from 0.0-25.00m.								WATER STRIKE DETAILS					
								Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
													No water strike recorded
								GROUNDWATER DETAILS					
INSTALLATION DETAILS								Date	Hole Depth	Casing Depth	Depth to Water	Comments	
Date	Tip Depth	RZ Top	RZ Base	Type				27-05-26	25.00	25.00	14.20	Water level recorded 5mins after end of drilling	
27-05-26	15.00	1.00	15.00	50mm SP									

 GEOTECHNICAL CORE LOG RECORD REPORT NUMBER 26458														
CONTRACT Phase 1 - M11 - Old Connaught							DRILLHOLE NO RC03							
CO-ORDINATES 725,120.17 E 719,441.67 N					RIG TYPE Beretta T-44		SHEET Sheet 1 of 3							
GROUND LEVEL (mOD) 20.02					FLUSH Air/Mist		DATE DRILLED 02/05/2026							
CLIENT Castlethorne Construction					INCLINATION (deg) -90		DATE LOGGED 03/05/2026							
ENGINEER Atkins					CORE DIAMETER (mm)		DRILLED BY IGSL - JK							
							LOGGED BY D. O' Shea							
Downhole Depth (m)	Core Run Depth (m)	T.C.R. %	S.C.R. %	R.Q.D. %	Fracture Spacing Log (mm)	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)		
0					0 250 500			SYMMETRIX DRILLING: No recovery, observed by driller as returns of TOPSOIL	0.30	19.72				
1								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy SILT/CLAY with occasional fine gravel						
2														
3														
4								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine to medium silty sandy GRAVEL with large cobbles	4.10	15.92				
5														
6														
7								SYMMETRIX DRILLING: No recovery, observed by driller as returns of brown sandy gravelly CLAY with some cobbles	6.80	13.22				
8								SYMMETRIX DRILLING: No recovery, observed by driller as returns of reddish brown laminated SILT/CLAY	7.70	12.32				
9									9.20	10.82				
								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey fine to coarse angular GRAVEL with some clayey bands	9.90	10.12				
REMARKS									WATER STRIKE DETAILS					
Hole cased from 0.0-20.00m.									Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
									11.40 19.70	11.40 19.70	16.50 N/S			Slow Slow
INSTALLATION DETAILS									GROUNDWATER DETAILS					
Date	Tip Depth	RZ Top	RZ Base	Type	Date	Hole Depth	Casing Depth	Depth to Water	Comments					
04-06-26	16.50	8.50	16.50	50mm SP										

 GEOTECHNICAL CORE LOG RECORD REPORT NUMBER 26458														
CONTRACT Phase 1 - M11 - Old Connaught							DRILLHOLE NO RC03 SHEET Sheet 2 of 3							
CO-ORDINATES 725,120.17 E 719,441.67 N GROUND LEVEL (mOD) 20.02				RIG TYPE Beretta T-44 FLUSH Air/Mist INCLINATION (deg) -90 CORE DIAMETER (mm)			DATE DRILLED 02/05/2026 DATE LOGGED 03/05/2026							
CLIENT Castlethorne Construction ENGINEER Atkins							DRILLED BY IGSL - JK LOGGED BY D. O' Shea							
Downhole Depth (m)	Core Run Depth (m)	T.C.R. %	S.C.R. %	R.Q.D. %	Fracture Spacing Log (mm)	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)		
10					0 250 500			SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown sandy gravelly CLAY with occasional cobbles <i>(continued)</i>				N = 40/230 mm (4, 5, 8, 11, 16, 5)		
11									11.40	8.62				
12								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown clayey sandy GRAVEL Driller notes gravels blowing				N = 50/105 mm (6, 12, 21, 29)		
13												N = 50/155 mm (5, 10, 21, 22, 7)		
14												N = 50/90 mm (11, 19, 27, 23)		
15														
16									16.50	3.52		N = 10/5 mm (40, 10)		
17								SYMMETRIX DRILLING: No recovery, observed by driller as returns of grey/brown gravelly CLAY				N = 15/10 mm (35, 15)		
18														
19									19.70	0.32		N = 22/10 mm (17, 25, 22)		
								SYMMETRIX DRILLING: No recovery, observed by driller	20.00	0.02				
REMARKS Hole cased from 0.0-20.00m.									WATER STRIKE DETAILS					
									Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
									11.40 19.70	11.40 19.70	16.50 N/S			Slow Slow
INSTALLATION DETAILS									GROUNDWATER DETAILS					
									Date	Hole Depth	Casing Depth	Depth to Water	Comments	
									04-06-26	20.00	20.00	12.20	Water level recorded 5mins after end of drilling	
Date	Tip Depth	RZ Top	RZ Base	Type										
04-06-26	16.50	8.50	16.50	50mm SP										

IGSL RC FI 10M 26458.GPJ IGSL GDT 8/6/26

RC01 – Box 1 of 2 – 9.80-12.80m



RC01 – Box 2 of 2 – 12.80-14.80m



Appendix 3

Trial Pit Records



TRIAL PIT RECORD

REPORT NUMBER

26458

CONTRACT Phase 1 - M11 - Old Connaught

TRIAL PIT NO. ST01

SHEET Sheet 1 of 1

LOGGED BY DM

CO-ORDINATES 725,059.15 E
719,433.57 N

DATE STARTED 23/03/2026

DATE COMPLETED 23/03/2026

CLIENT Castlethorne Construction
ENGINEER Atkins

GROUND LEVEL (m) 20.77

EXCAVATION METHOD TB280FR

	Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples			Vane Test (KPa)	Hand Penetrometer (KPa)
						Sample Ref	Type	Depth		
0.0	TOPSOIL: Soft brown sandy CLAY.		0.10	20.67	 1 (Seepage)	260166	B	1.40-1.50		
	MADE GROUND: Firm brown slightly gravelly sandy CLAY with rare plastic and red brick fragments (<2%). Gravel is subangular fine to medium.									
1.0	Medium dense dark grey sandy GRAVEL. Gravel is subangular fine to medium.		1.20	19.57						
	Firm brown slightly gravelly sandy CLAY. Gravel is subangular fine to medium.		1.30	19.47						
	End of Trial Pit at 1.60m		1.60	19.17						
2.0										
3.0										
4.0										

Groundwater Conditions

Seepage at 1.20m

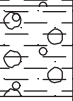
Stability

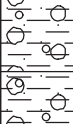
Good

General Remarks

Location CAT scanned prior to excavation.

		TRIAL PIT RECORD						REPORT NUMBER 26458		
CONTRACT Phase 1 - M11 - Old Connaught						TRIAL PIT NO. SHEET		TP/SA01 Sheet 1 of 1		
LOGGED BY DM		CO-ORDINATES 724,989.66 E 719,517.55 N		DATE STARTED 25/03/2026		DATE COMPLETED 25/03/2026				
CLIENT ENGINEER Castlethorne Construction Atkins		GROUND LEVEL (m) 21.11		EXCAVATION METHOD TB280FR						
	Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples			Vane Test (KPa)	Hand Penetrometer (KPa)
						Sample Ref	Type	Depth		
0.0	TOPSOIL: Soft brown sandy CLAY.		0.20	20.91						
	Soft to firm brown slightly sandy slightly gravelly CLAY. Gravel is subangular fine to medium of limestone.									
1.0	End of Trial Pit at 1.10m		1.10	20.01		260181	B	1.00		
2.0										
3.0										
4.0										
Groundwater Conditions Seepage at 0.90m										
Stability Slight instability - Sidewall collapse from 0.90m										
General Remarks Location CAT scanned prior to excavation.										

 TRIAL PIT RECORD REPORT NUMBER 26458										
CONTRACT Phase 1 - M11 - Old Connaught						TRIAL PIT NO. TP/SA02 SHEET Sheet 1 of 1				
LOGGED BY DM		CO-ORDINATES 724,977.32 E 719,583.42 N		DATE STARTED 23/03/2026 DATE COMPLETED 23/03/2026						
CLIENT ENGINEER Castlethorne Construction Atkins		GROUND LEVEL (m) 21.54		EXCAVATION METHOD TB280FR						
	Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples			Vane Test (KPa)	Hand Penetrometer (KPa)
						Sample Ref	Type	Depth		
0.0	TOPSOIL: Soft brown sandy CLAY.									
	Firm brown slightly silty sandy gravelly CLAY. Gravel is subangular fine to medium of limestone.		0.20	21.34						
1.0	Firm greyish brown slightly sandy gravelly CLAY with a low cobble content. Gravel is subangular fine to medium of limestone. Cobbles are subangular of limestone.		1.00	20.54		260167	B	0.80-0.90	18 20 14	
	End of Trial Pit at 1.40m		1.40	20.14	 (Slow)	260168	B	1.30-1.40		
2.0										
3.0										
4.0										
Groundwater Conditions Slow ingress at 1.40m										
Stability Slight instability - Sidewall collapse from 1.00m										
General Remarks Location CAT scanned prior to excavation.										

 TRIAL PIT RECORD REPORT NUMBER 26458										
CONTRACT Phase 1 - M11 - Old Connaught						TRIAL PIT NO. TP/SA03 SHEET Sheet 1 of 1				
LOGGED BY DM		CO-ORDINATES 724,990.34 E 719,640.37 N		DATE STARTED 24/03/2026 DATE COMPLETED 24/03/2026						
CLIENT ENGINEER Castlethorne Construction Atkins		GROUND LEVEL (m) 21.10		EXCAVATION METHOD TB280FR						
	Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples			Vane Test (KPa)	Hand Penetrometer (KPa)
						Sample Ref	Type	Depth		
0.0	TOPSOIL: Soft brown sandy CLAY.									
	Firm brown sandy gravelly CLAY with a low cobble content. Gravel is subangular fine to medium. Cobbles are subangular of limestone.		0.20	20.90						
1.0	Medium dense grey slightly clayey sandy GRAVEL with a medium cobble content. Gravel is subangular fine to medium. Cobbles are subangular to subrounded of limestone.		1.10	20.00		260169	B	0.80-0.90		
	End of Trial Pit at 1.40m		1.40	19.70	 (Seepage)	260170	B	1.30-1.40		
2.0										
3.0										
4.0										
Groundwater Conditions Seepage at 1.40m										
Stability Slight instability - Sidewall collapse from 1.20m										
General Remarks Location CAT scanned prior to excavation.										

		TRIAL PIT RECORD						REPORT NUMBER 26458	
CONTRACT Phase 1 - M11 - Old Connaught							TRIAL PIT NO. TP/SA04		
LOGGED BY DM							CO-ORDINATES 724,976.54 E 719,681.11 N		
CLIENT ENGINEER Castlethorne Construction Atkins							GROUND LEVEL (m) 21.10		
							SHEET Sheet 1 of 1		
							DATE STARTED 24/03/2026 DATE COMPLETED 24/03/2026		
							EXCAVATION METHOD TB280FR		

	Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples			Vane Test (KPa)	Hand Penetrometer (KPa)
						Sample Ref	Type	Depth		
0.0	TOPSOIL: Soft brown sandy CLAY.									
	Firm brown slightly gravelly sandy CLAY. Gravel is subangular fine of limestone.		0.20	20.90						
	Stiff light brown mottled light grey slightly sandy slightly gravelly CLAY. Gravel is subangular fine to medium of limestone.		0.60	20.50		260171	B	0.50-0.60	20 22 18	
1.0					↓ (Seepage)					
						260172	B	1.50-1.60		
2.0	End of Trial Pit at 2.00m		2.00	19.10						
3.0										
4.0										

Groundwater Conditions
 Seepage at 0.90m

Stability
 Good

General Remarks
 Location CAT scanned prior to excavation.



TRIAL PIT RECORD

REPORT NUMBER

26458

CONTRACT Phase 1 - M11 - Old Connaught

TRIAL PIT NO.

TP/SA06

LOGGED BY DM

CO-ORDINATES 725,100.45 E
719,754.40 N

SHEET

Sheet 1 of 1

DATE STARTED

25/03/2026

DATE COMPLETED

25/03/2026

CLIENT Castlethorne Construction
ENGINEER Atkins

GROUND LEVEL (m) 20.87

EXCAVATION
METHOD

TB280FR

	Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples			Vane Test (KPa)	Hand Penetrometer (KPa)
						Sample Ref	Type	Depth		
0.0	TOPSOIL: Soft brown sandy CLAY.									
	MADE GROUND: Soft to firm brown slightly sandy slightly gravelly CLAY. Gravel is subangular fine to medium of limestone.		0.20	20.67						
	MADE GROUND: Soft to firm brown sandy gravelly CLAY with occasional red brick and concrete fragments.		0.50	20.37		260183	B	0.50		
	Medium dense grey/brown sandy GRAVEL.		0.70	20.17						
1.0										
	End of Trial Pit at 1.60m		1.60	19.27		260184	B	1.60		
2.0										
3.0										
4.0										

Groundwater Conditions

Seepage at 1.40m

Stability

Poor Stability - Sidewall collapse from 1.0m

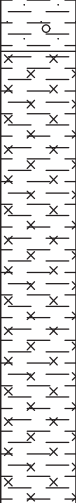
General Remarks

Location CAT scanned prior to excavation.

		TRIAL PIT RECORD						REPORT NUMBER 26458	
CONTRACT Phase 1 - M11 - Old Connaught							TRIAL PIT NO. TP/SA07 SHEET Sheet 1 of 1		
LOGGED BY DM		CO-ORDINATES 725,111.95 E 719,530.93 N				DATE STARTED 25/03/2026 DATE COMPLETED 25/03/2026			
CLIENT ENGINEER Castlethorne Construction Atkins		GROUND LEVEL (m) 19.16				EXCAVATION METHOD TB280FR			

	Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples			Vane Test (KPa)	Hand Penetrometer (KPa)
						Sample Ref	Type	Depth		
0.0	TOPSOIL: Soft brown sandy CLAY.									
	Soft to firm brown slightly sandy slightly gravelly CLAY. Gravel is subangular fine to medium of limestone.		0.20	18.96						
1.0	Firm to stiff greyish brown slightly sandy gravelly CLAY with a low cobble content. Gravel is subangular fine to medium of limestone. Cobbles are subangular of limestone.		1.00	18.16		260182	B	1.00		
	End of Trial Pit at 1.40m		1.40	17.76						
2.0										
3.0										
4.0										

Groundwater Conditions Seepage at 1.40m
Stability Slight instability - Sidewall collapse from 1.10m
General Remarks Location CAT scanned prior to excavation.

 TRIAL PIT RECORD REPORT NUMBER 26458										
CONTRACT Phase 1 - M11 - Old Connaught						TRIAL PIT NO. TP01 SHEET Sheet 1 of 1				
LOGGED BY O.A		CO-ORDINATES 724,951.97 E 719,714.15 N		DATE STARTED 20/03/2026 DATE COMPLETED 20/03/2026						
CLIENT ENGINEER Castlethorne Construction Atkins		GROUND LEVEL (m) 21.93		EXCAVATION METHOD TB280FR						
	Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples			Vane Test (KPa)	Hand Penetrometer (KPa)
						Sample Ref	Type	Depth		
0.0	TOPSOIL: Soft grey very sandy CLAY with rootlets					ENV01	Env	0.00-1.00		
	Soft brown silty sandy CLAY		0.40	21.53						
	Soft to firm greyish brown sandy gravelly CLAY. Gravel is subangular fine to medium of limestone.		0.60	21.33		258592	B	0.50-0.50	9	11
1.0										
	Firm grey silty CLAY		1.20	20.73		258593	B	1.00-1.00		
						258594	B	1.50-1.50		
2.0					 (Rapid)					
3.0										
	End of Trial Pit at 3.20m		3.20	18.73						
4.0										
Groundwater Conditions Rapid at 2.0m										
Stability Poor Stability - Sidewall collapse from 2.00m										
General Remarks Location CAT scanned prior to excavation. Pit ended due to sidewall instability and water ingress.										



TRIAL PIT RECORD

REPORT NUMBER

26458

CONTRACT Phase 1 - M11 - Old Connaught

TRIAL PIT NO. TP02

SHEET Sheet 1 of 1

LOGGED BY O.A

CO-ORDINATES 724,975.07 E
719,615.58 N

DATE STARTED 20/03/2026

DATE COMPLETED 20/03/2026

CLIENT Castlethorne Construction
ENGINEER Atkins

GROUND LEVEL (m) 21.48

EXCAVATION METHOD TB280FR

	Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples			Vane Test (KPa)	Hand Penetrometer (KPa)
						Sample Ref	Type	Depth		
0.0	TOPSOIL: Soft grey very sandy CLAY with rootlets					ENV01	Env	0.00-1.00		
	Soft to firm brown sandy gravelly CLAY. Gravel is subangular fine to medium of limestone.		0.60	20.88		258589	B	0.80-1.00	19 18 16	
1.0	Firm to stiff grey sandy gravelly CLAY. Gravel is subangular fine to medium of limestone.		1.30	20.18		258590	B	1.50-1.50		
2.0										
	Grey very silty fine SAND		2.60	18.88		258591	B	2.70-2.70		
3.0	End of Trial Pit at 2.90m		2.90	18.58						
4.0										

Groundwater Conditions

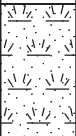
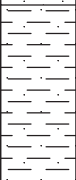
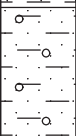
Seepage at 1.90m

Stability

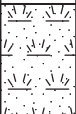
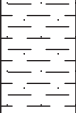
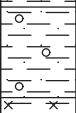
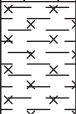
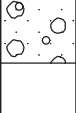
Poor Stability - Sidewall collapse from 1.80m

General Remarks

Location CAT scanned prior to excavation. Pit ended due to sidewall instability.

		TRIAL PIT RECORD						REPORT NUMBER 26458		
CONTRACT Phase 1 - M11 - Old Connaught							TRIAL PIT NO. TP03 SHEET Sheet 1 of 1			
LOGGED BY O.A		CO-ORDINATES 725,000.87 E 719,498.06 N			DATE STARTED 20/03/2026 DATE COMPLETED 20/03/2026					
CLIENT ENGINEER Castlethorne Construction Atkins		GROUND LEVEL (m) 20.83			EXCAVATION METHOD TB280FR					
	Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples			Vane Test (KPa)	Hand Penetrometer (KPa)
						Sample Ref	Type	Depth		
0.0	TOPSOIL: Soft dark grey slightly sandy CLAY (planted arable field)					ENV01	Env	0.00-1.00		
	Soft to firm brown sandy CLAY		0.60	20.23					18 24 22	
1.0						258583	B	1.10-1.20		
	Brownish grey slightly clayey gravelly SAND. Gravel is subangular fine to medium of limestone.		1.40	19.43	 (Rapid)	258584	B	1.80-1.90		
2.0	End of Trial Pit at 2.00m		2.00	18.83						
3.0										
4.0										
Groundwater Conditions Rapid ingress at 1.70m										
Stability Poor Stability - Sidewall collapse from 1.50m										
General Remarks Location CAT scanned prior to excavation. Pit ended due to sidewall instability and water ingress.										

		TRIAL PIT RECORD						REPORT NUMBER 26458	
CONTRACT Phase 1 - M11 - Old Connaught							TRIAL PIT NO. TP04 SHEET Sheet 1 of 1		
LOGGED BY O.A		CO-ORDINATES 725,014.08 E 719,583.19 N		DATE STARTED 20/03/2026 DATE COMPLETED 20/03/2026					
CLIENT ENGINEER Castlethorne Construction Atkins		GROUND LEVEL (m) 20.56		EXCAVATION METHOD TB280FR					

	Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples			Vane Test (KPa)	Hand Penetrometer (KPa)
						Sample Ref	Type	Depth		
0.0	TOPSOIL: Soft dark grey slightly sandy CLAY (planted arable field)					ENV01	Env	0.00-1.00		
	Soft to firm brown sandy CLAY		0.50	20.06					20 25 28	
1.0						258585	B	1.00-1.00		
	Soft to firm dark grey very sandy gravelly CLAY. Gravel is subangular fine to medium of limestone.		1.30	19.26	 1 (Rapid)	258586	B	1.50-1.50		
	Firm grey silty CLAY		1.70	18.86		258587	B	1.80-1.80		
2.0										
	Grey gravelly fine to coarse SAND with a low cobble content. Gravel is subangular to subrounded fine to medium of limestone.		2.20	18.36		258588	B	2.30-2.30		
	End of Trial Pit at 2.50m		2.50	18.06						
3.0										
4.0										

Groundwater Conditions Rapid ingress at 1.50m	
Stability Poor Stability - Sidewall collapse from 1.50m	
General Remarks Location CAT scanned prior to excavation. Pit ended due to sidewall instability and water ingress.	

		TRIAL PIT RECORD						REPORT NUMBER 26458		
CONTRACT Phase 1 - M11 - Old Connaught							TRIAL PIT NO. TP05			
LOGGED BY O.A				CO-ORDINATES 725,028.90 E 719,727.04 N			SHEET Sheet 1 of 1			
CLIENT ENGINEER Castlethorne Construction Atkins				GROUND LEVEL (m) 20.73			DATE STARTED 20/03/2026 DATE COMPLETED 20/03/2026			
							EXCAVATION METHOD TB280FR			
	Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples			Vane Test (KPa)	Hand Penetrometer (KPa)
						Sample Ref	Type	Depth		
0.0	TPOSOIL: Soft grey very sandy CLAY					ENV01	Env	0.00-1.00		
	Soft to firm brown silty sandy gravelly CLAY. Gravel is subangular fine to medium of limestone.		0.40	20.33		258595	B	0.60-0.60	15 18 19	
1.0	Firm grey silty sandy gravelly CLAY. Gravel is subangular fine to medium of limestone.		1.20	19.53		258596	B	1.50-1.50		
2.0					 1 (Moderate)					
	End of Trial Pit at 2.80m		2.80	17.93						
3.0										
4.0										
Groundwater Conditions Flow at 2.20m										
Stability Poor Stability - Sidewall collapse from 2.00m										
General Remarks Location CAT scanned prior to excavation. Pit ended due to sidewall instability and water ingress.										

TP01 – 1 of 2



TP01 – 2 of 2



TP02 – 1 of 2



TP02 – 2 of 2



TP03 – 1 of 2



TP03 – 2 of 2



TP04 – 1 of 2



TP04 – 2 of 2



TP05 – 1 of 2



TP05 – 2 of 2



Appendix 4

Window Sample Records



WINDOW SAMPLE RECORD

REPORT NUMBER

26458

CONTRACT Phase 1 - M11 - Old Connaught

PROBE NO. WS01

CO-ORDINATES 724,973.71 E
719,703.63 N

SHEET Sheet 1 of 1

GROUND LEVEL (mOD) 21.35

DATE DRILLED 23/03/2026

DATE LOGGED 23/03/2026

CLIENT Castlethorne Construction
ENGINEER Atkins

SAMPLED BY IGSL

LOGGED BY HM

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Depth of Sample Run (m)	Recovery (%)	Blowcount	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0	TOPSOIL									
	Soft to firm brown slightly sandy slightly gravelly CLAY. Gravel is subrounded to subangular fine to coarse.		0.20	21.15						
1.0	Soft to firm brown sandy slightly gravelly CLAY. Gravel is subrounded to subangular fine to coarse.		0.90	20.45		0.00-1.00	70			
			2.00	19.35		1.00-2.00	100			
2.0	Soft brown sandy slightly gravelly CLAY. Gravel is subrounded to subangular fine to coarse									
						2.00-3.00	70			
3.0										
			3.50	17.85						
	Soft to firm brown sandy slightly gravelly CLAY. Gravel is subrounded to subangular fine to coarse.									
4.0						3.00-4.00	80			
	Final Depth 4.00m		4.00	17.35						
5.0										

General Remarks

Installations



WINDOW SAMPLE RECORD

REPORT NUMBER

26458

CONTRACT Phase 1 - M11 - Old Connaught

PROBE NO. WS02

CO-ORDINATES 724,948.87 E
719,539.85 N

SHEET Sheet 1 of 1

GROUND LEVEL (mOD) 22.30

DATE DRILLED 23/03/2026

DATE LOGGED 23/03/2026

CLIENT Castlethorne Construction
ENGINEER Atkins

SAMPLED BY IGSL

LOGGED BY HM

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Depth of Sample Run (m)	Recovery (%)	Blowcount	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0	TOPSOIL		0.20	22.10						
	Soft to firm brown slightly sandy slightly gravelly CLAY. Gravel is subrounded to subangular fine to coarse.		0.50	21.80						
	Firm to stiff brown sandy gravelly CLAY. Gravel is subrounded to subangular fine to coarse					0.00-1.00	90			
1.0						1.00-2.00	60			
2.0	Final Depth 2.00m		2.00	20.30						
3.0										
4.0										
5.0										

General Remarks

Installations

Project Number: 26458

Phase 1 Old Connaught – Window Sample Photographs



WS01



WS02



Appendix 5

Dynamic Probe Records



DYNAMIC PROBE RECORD

REPORT NUMBER
26458

CONTRACT Phase 1 - M11 - Old Connaught				PROBE NO. DP01	
CO-ORDINATES 724,973.71 E 719,703.63 N				SHEET Sheet 1 of 2	
GROUND LEVEL (mOD) 21.35		HAMMER MASS (kg) 64		DATE DRILLED 23/03/2024	
CLIENT Castlethorne Construction		INCREMENT SIZE (mm) 100		DATE LOGGED 23/03/2024	
ENGINEER Atkins		FALL HEIGHT (mm) 750		PROBE TYPE DPH	

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)	Graphic Probe Record
0.0			0.00			0.00	0	
						0.10	0	
						0.20	0	
						0.30	2	
						0.40	2	
						0.50	0	
						0.60	0	
						0.70	0	
						0.80	0	
						0.90	2	
1.0						1.00	5	
						1.10	4	
						1.20	4	
						1.30	3	
						1.40	3	
						1.50	3	
						1.60	2	
						1.70	3	
						1.80	3	
2.0						1.90	2	
						2.00	1	
						2.10	1	
						2.20	1	
						2.30	0	
						2.40	1	
						2.50	0	
						2.60	0	
						2.70	1	
						2.80	1	
3.0						2.90	1	
						3.00	1	
						3.10	1	
						3.20	1	
						3.30	1	
						3.40	1	
						3.50	1	
						3.60	2	
						3.70	2	
						3.80	4	
4.0						3.90	6	
						4.00	4	
						4.10	6	
						4.20	8	
						4.30	8	
						4.40	7	
						4.50	7	
						4.60	9	
						4.70	6	
						4.80	5	
						4.90	7	

GROUNDWATER OBSERVATIONS

REMARKS

Appendix 6

Inspection (Slit) Trench Record

Report No. 26458		SLIT TRENCH RECORD			FACING DIRECTION: W			
Project: Phase 1 - M11 Old Connaught Engineer: Mountclare Crew: DM		Survey Easting (m) Northing (m) Elevation (mOD)			Slit Trench No. ST01 Sheet 1 of 1			
		Start of Trench 725059.147 719433.573 20.77			Date Commenced 23/03/2026			
		End of Trench 725051.064 719433.287 21.036			Date Completed 23/03/2026			
Ground Conditions								
From (m)		To (m)		Soil Description			Photograph	
0.00		0.10		TOPSOIL				
0.1		1.2		MADE GROUND: Firm brown slightly gravelly sandy CLAY with rare plastic and red brick fragments (<2%). Gravel is subangular fine to medium.				
1.2		1.3		Medium dense dark grey sandy GRAVEL. Gravel is subangular fine to medium.				
1.3		1.6		Firm brown slightly gravelly sandy CLAY. Gravel is subangular fine to medium.				
Trench Dimensions				Location		Excavation Quantities		
LHS of Trench (m)	0.0				Surface		Length (m)	Material
RHS of Trench (m)	6.0				Road			
Trench Depth (m)	1.6				Path (LHS)			
Trench Width (m)	0.7				Path (RHS)			
						Grass Verge (LHS)		
						Grass Verge (RHS)		
Facing Direction		South		SAMPLES		Other		
Facing Features		Stream		sample 1: 1.4-1.5 (260166)		Total Length	6.0	
Groundwater		Seepage at 1.20m				Zero Metres Taken As:		
X-Section								
Plan								
	Diameter (mm)	Material	Description	Distance (m)	Depth to crown (m)	Angle (deg.)		
Service A								
Service B								
Service C								
Service D								
Service E								
Service F								
Service G								
Service H								
Service I								
Service J								
Service K								
Service L								
Service M								

Appendix 7

Plate Bearing Test Records

PLATE TEST REPORT SHEET (F3.1)		Applied Pressure/Settlement Curve	
Reference No.	R178005	Description of soil under test (natural soil, placed fill, sub-base)	
Contract	Phase 1 - M11 - Old Connaught		
Test No.	PBT01 - Load	Brown slightly gravelly sandy CLAY	
Location	E:724963.445 N:719733.331 L:21.874		
Depth	0.5 BGL	Sample Ref No. _____ Depth _____ m bgl	
Client	Castlethorne		
Plate Diameter:	300 mm		
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test		
Technician	DM		
Authorised by	<i>HA Ryan</i>		
Date	20/03/2026		

Pressure / Settlement

Pressure (kN/m ²)	Settlement (mm) - Series 1	Settlement (mm) - Series 2
0	0.00	-4.00
75	-1.25	-4.50
150	-2.50	-5.25
200	-3.25	-5.40
275	-4.25	-5.40
350	-5.40	-5.40

Gradient at 1.25 mm settlement intersection = 55

Modulus of subgrade reaction = 25 MPa/m

Correction factor applied = 0.46 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10

2.6 %

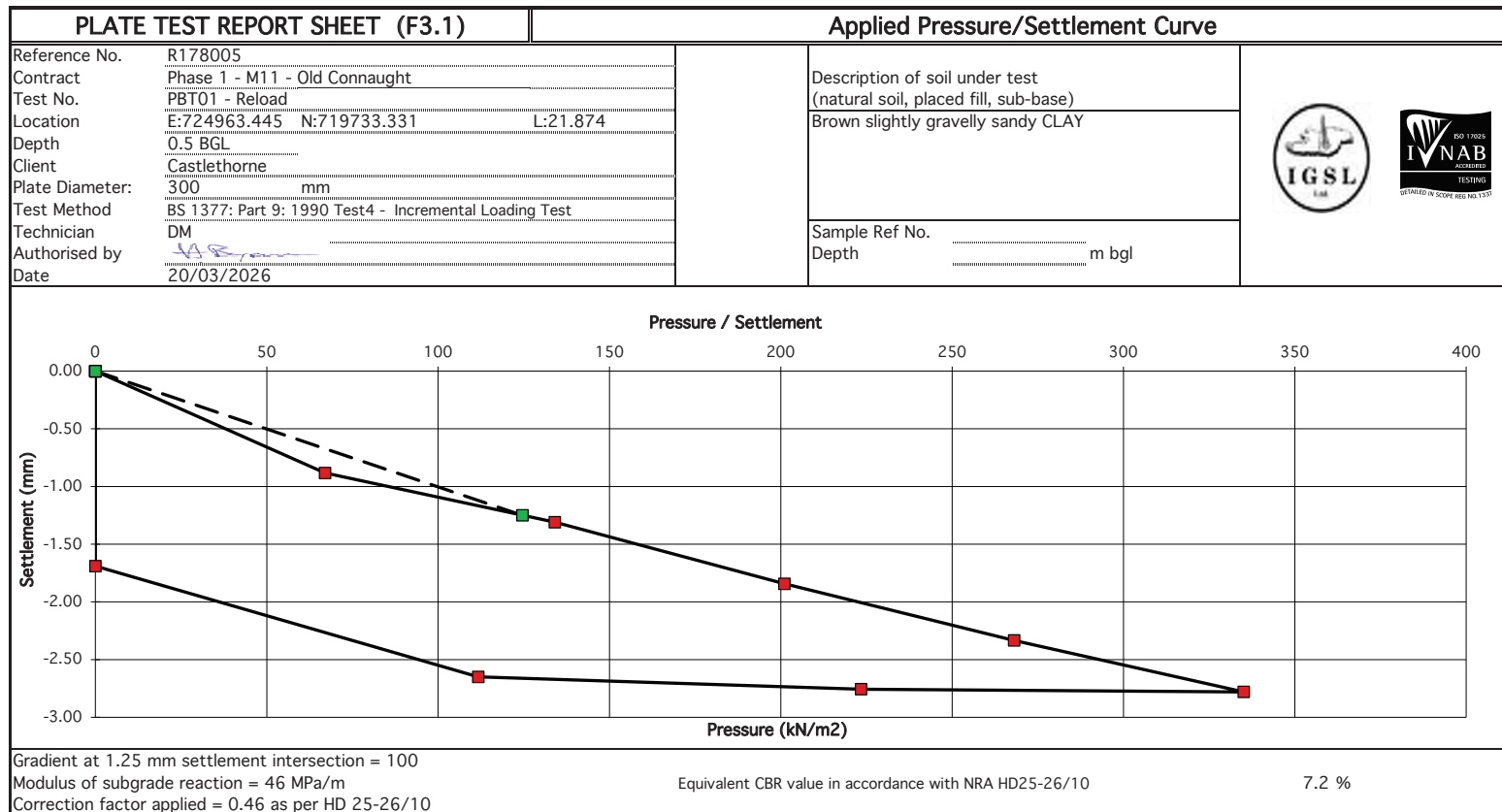
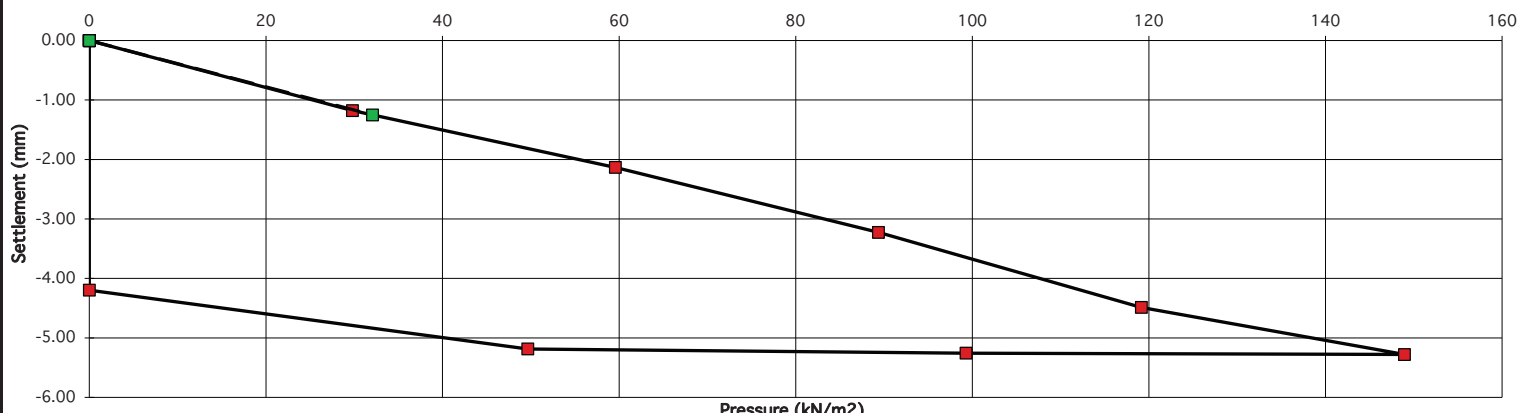


PLATE TEST REPORT SHEET (F3.1)		Applied Pressure/Settlement Curve	
Reference No.	R178004	Description of soil under test (natural soil, placed fill, sub-base) Brown slightly gravelly sandy CLAY	 
Contract	Phase 1 - M11 - Old Connaught		
Test No.	PBT01 - Load		
Location	E:724951.969 N:719714.146 L:21.934		
Depth	0.5 BGL		
Client	Castlethorne	Sample Ref No.	
Plate Diameter:	450 mm	Depth	
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test		
Technician	DM		
Authorised by	<i>JA Ryan</i>		
Date	20/03/2026		

Pressure / Settlement



Pressure (kN/m ²)	Settlement (mm) - Upper Curve	Settlement (mm) - Lower Curve
0	0.00	-4.20
30	-1.20	
50		-5.20
60	-2.20	
90	-3.20	
100		-5.20
120	-4.50	
150	-5.50	-5.20

Gradient at 1.25 mm settlement intersection = 26
 Modulus of subgrade reaction = 16 MPa/m
 Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 1.2 %

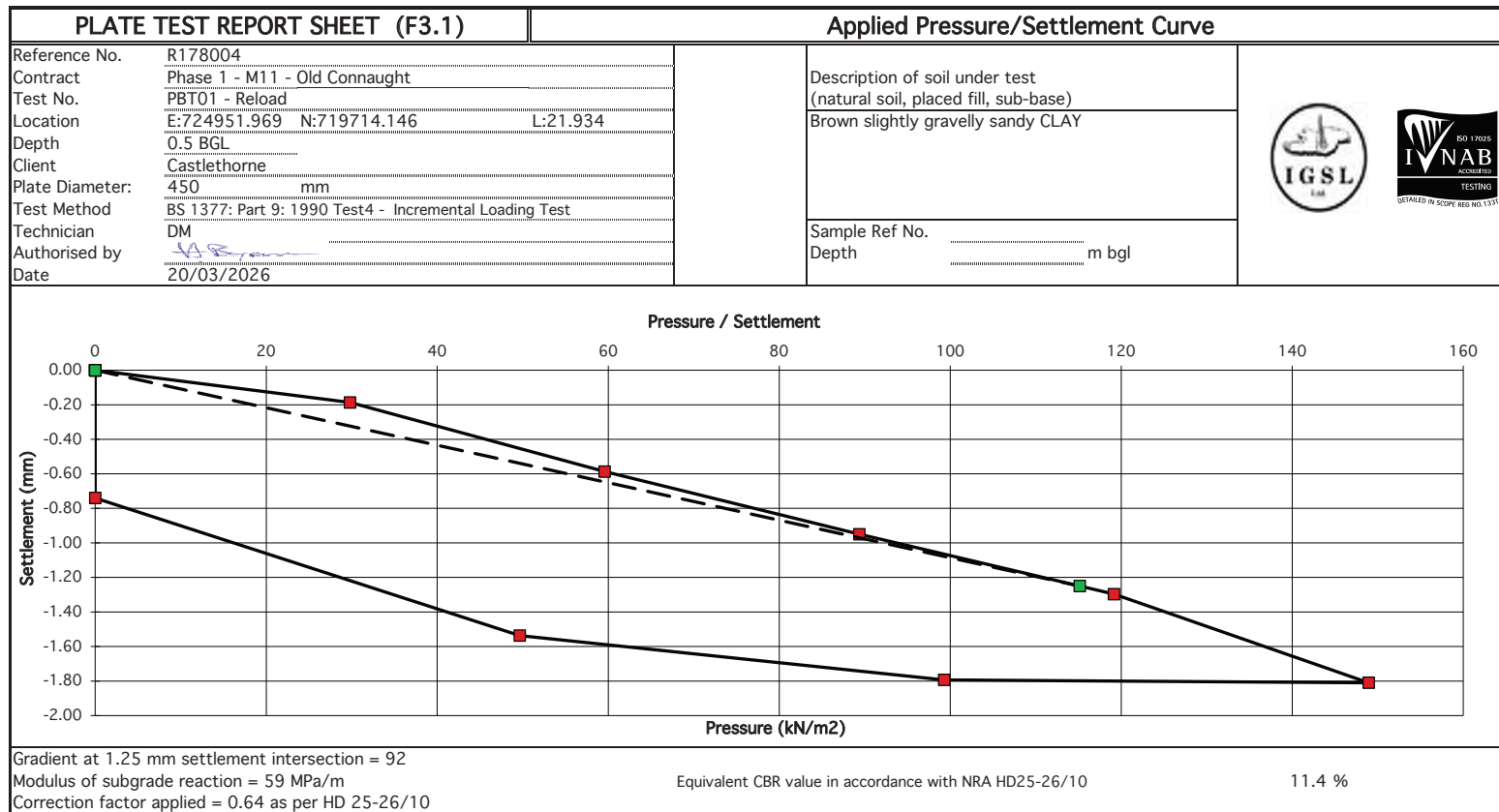


PLATE TEST REPORT SHEET (F3.1)			Applied Pressure/Settlement Curve	
Reference No.	R178007		Description of soil under test (natural soil, placed fill, sub-base)	
Contract	Phase 1 - M11 - Old Connaught			
Test No.	PBT02 - Load		Brown slightly gravelly sandy CLAY	
Location	E:725052.681 N:719468.81 L:20.396			
Depth	0.5 BGL		Sample Ref No. _____ Depth _____ m bgl	
Client	Castletown			
Plate Diameter:	300 mm			
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test			
Technician	DM			
Authorised by	<i>HA Ryan</i>			
Date	20/03/2026			

Pressure / Settlement

Pressure (kN/m2)

Gradient at 1.25 mm settlement intersection = 62		
Modulus of subgrade reaction = 28 MPa/m	Equivalent CBR value in accordance with NRA HD25-26/10	3.2 %
Correction factor applied = 0.46 as per HD 25-26/10		

PLATE TEST REPORT SHEET (F3.1)			Applied Pressure/Settlement Curve	
Reference No.	R178007		Description of soil under test (natural soil, placed fill, sub-base)	 
Contract	Phase 1 - M11 - Old Connaught			
Test No.	PBT02 - Reload		Brown slightly gravelly sandy CLAY	
Location	E:725052.681 N:719468.81 L:20.396			
Depth	0.5 BGL		Sample Ref No. _____ Depth _____ m bgl	
Client	Castlethorne			
Plate Diameter:	300 mm			
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test			
Technician	DM			
Authorised by				
Date	20/03/2026			

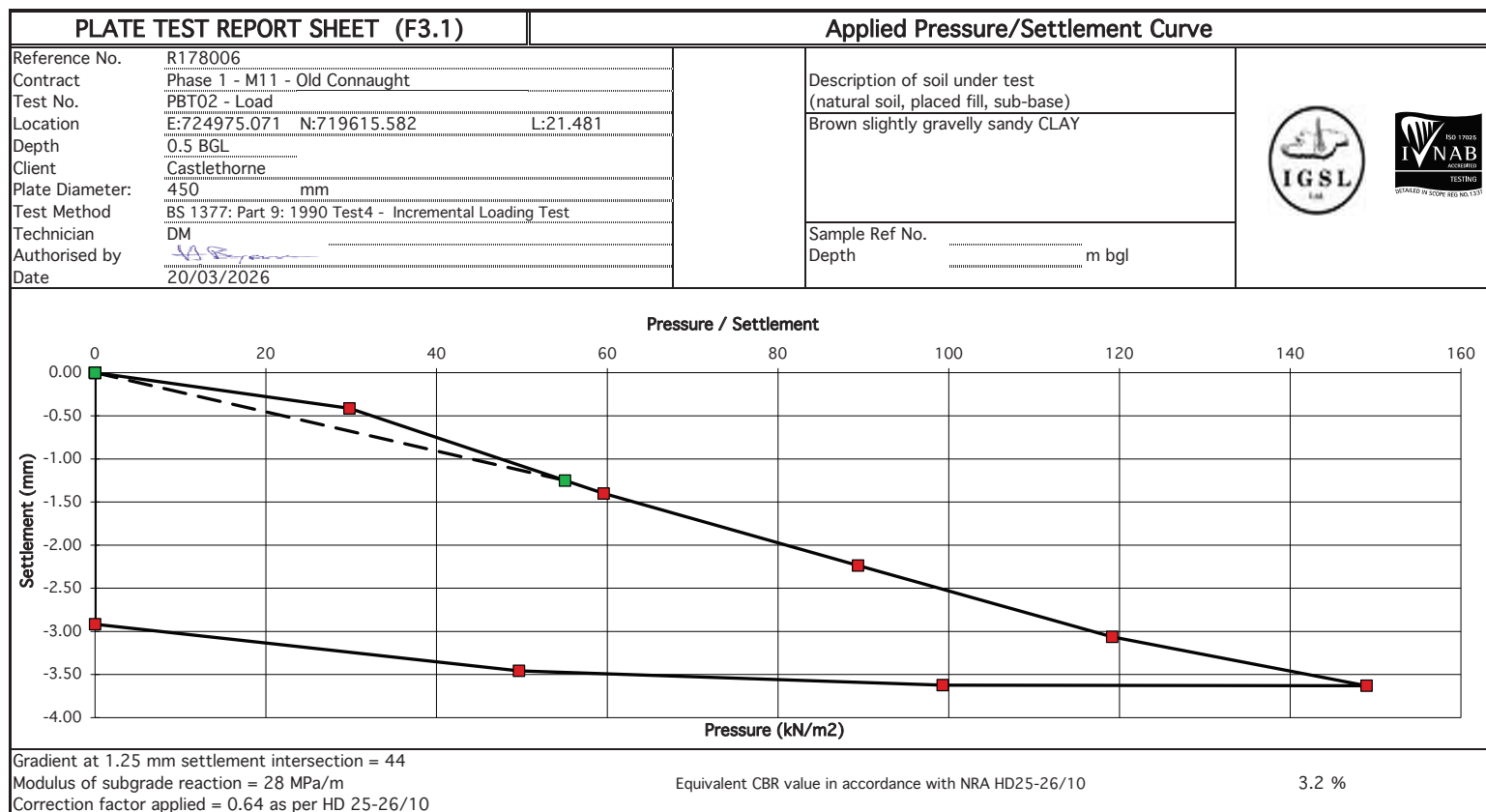
Pressure / Settlement

Pressure (kN/m ²)	Settlement (mm) - Top Curve	Settlement (mm) - Bottom Curve
0	0.00	-2.50
75	-1.25	-
100	-1.50	-4.50
150	-2.25	-4.80
200	-3.00	-5.00
225	-	-5.00
275	-4.00	-
350	-5.00	-5.00

Gradient at 1.25 mm settlement intersection = 75
 Modulus of subgrade reaction = 34 MPa/m
 Correction factor applied = 0.46 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10

4.4 %



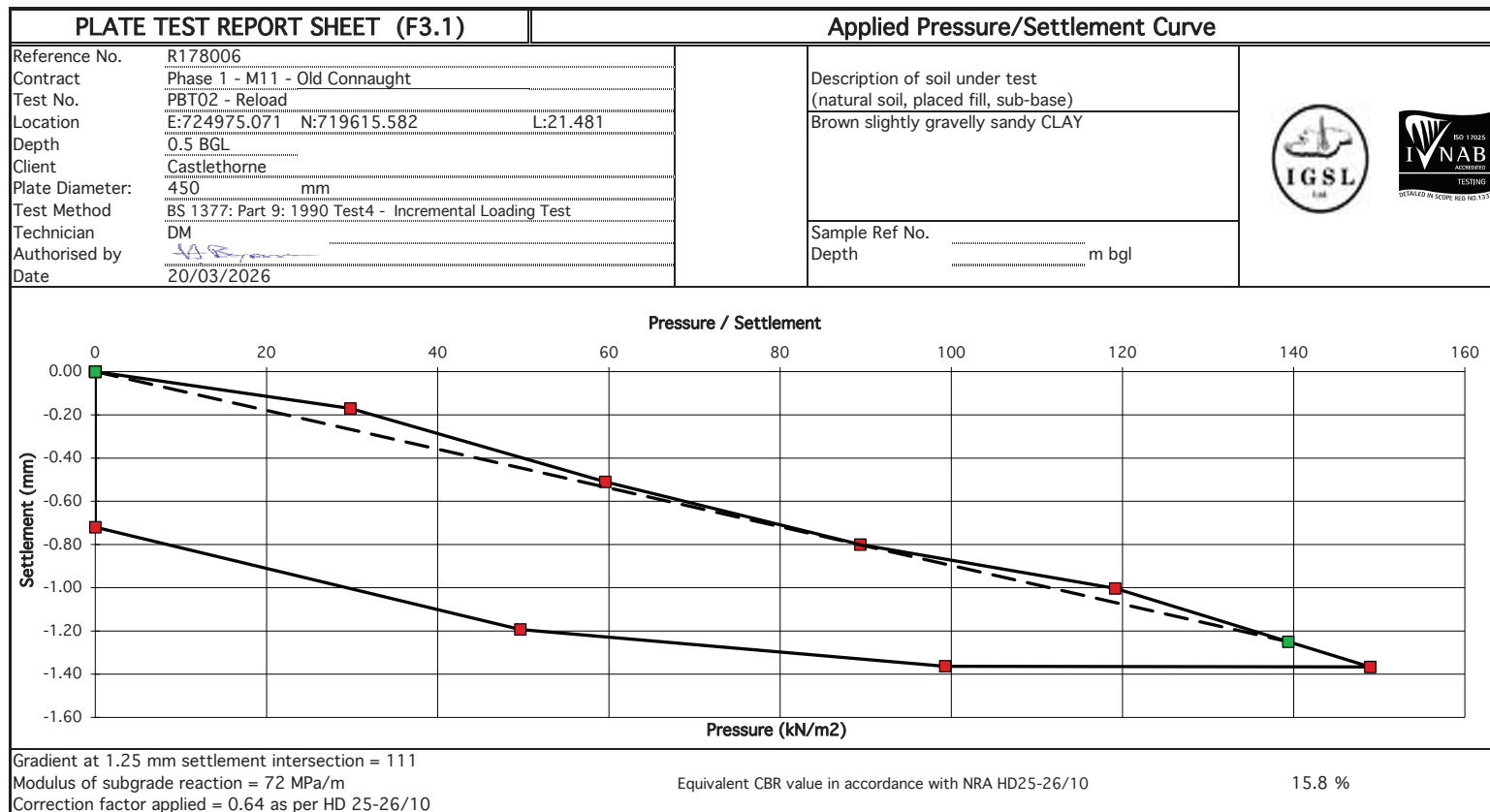
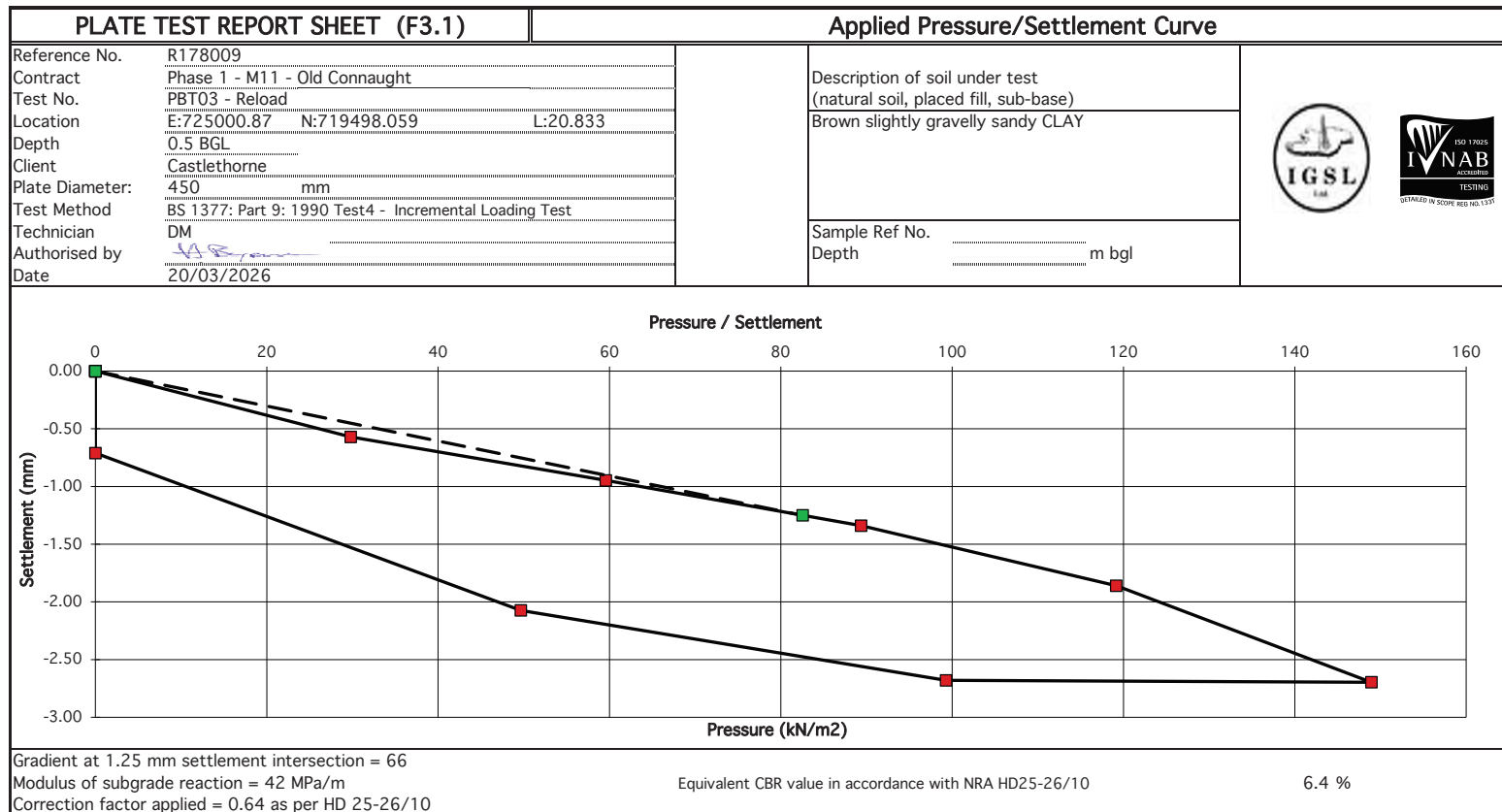


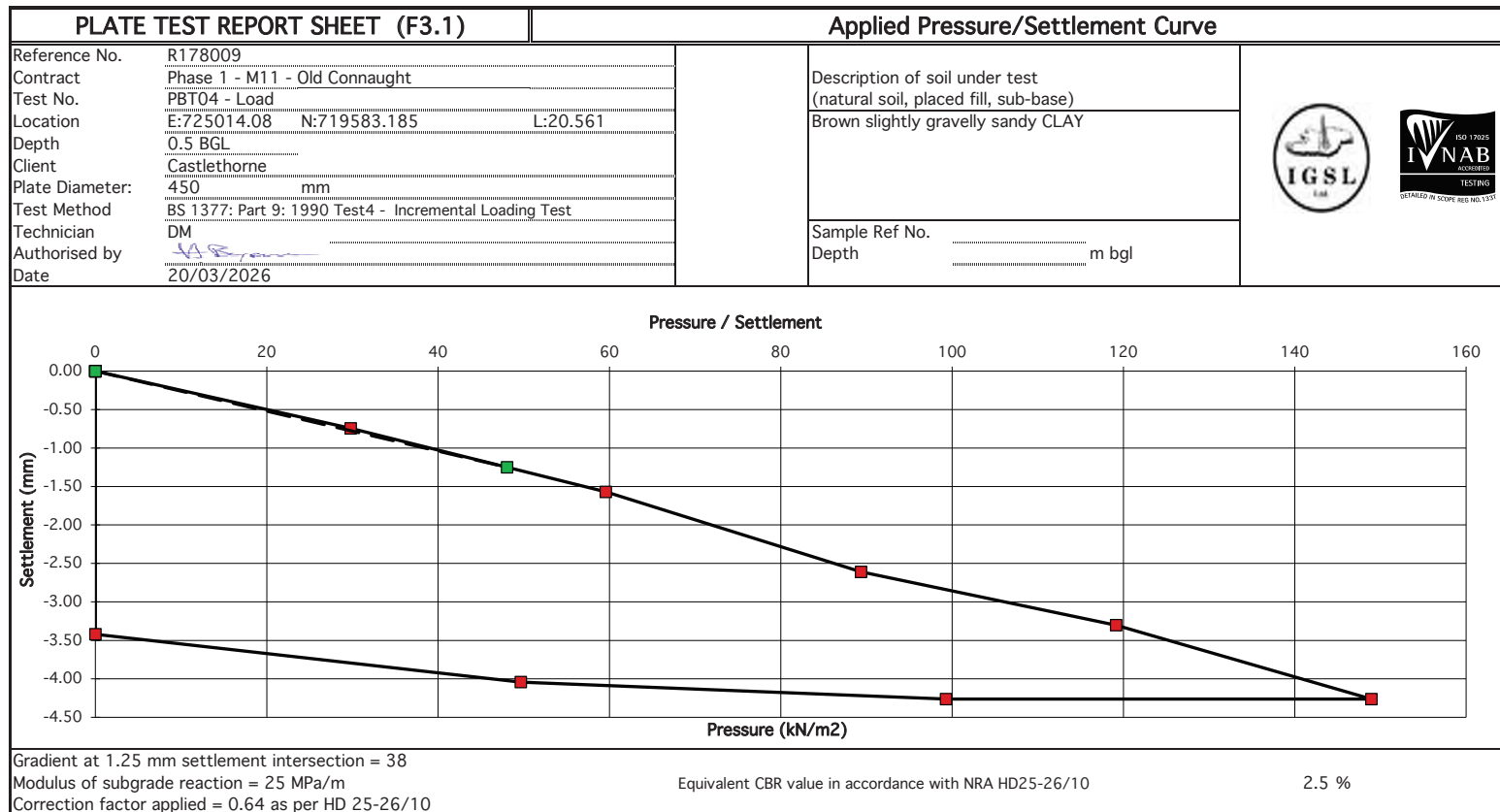
PLATE TEST REPORT SHEET (F3.1)			Applied Pressure/Settlement Curve	
Reference No.	R178008		Description of soil under test (natural soil, placed fill, sub-base)	
Contract	Phase 1 - M11 - Old Connaught			
Test No.	PBT03 - Load		Brown slightly gravelly sandy CLAY	
Location	E:725000.87 N:719498.059 L:20.833			
Depth	0.5 BGL		Sample Ref No. _____ Depth _____ m bgl	
Client	Castlethorne			
Plate Diameter:	450 mm			
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test			
Technician	DM			
Authorised by	<i>HA Ryan</i>			
Date	20/03/2026			

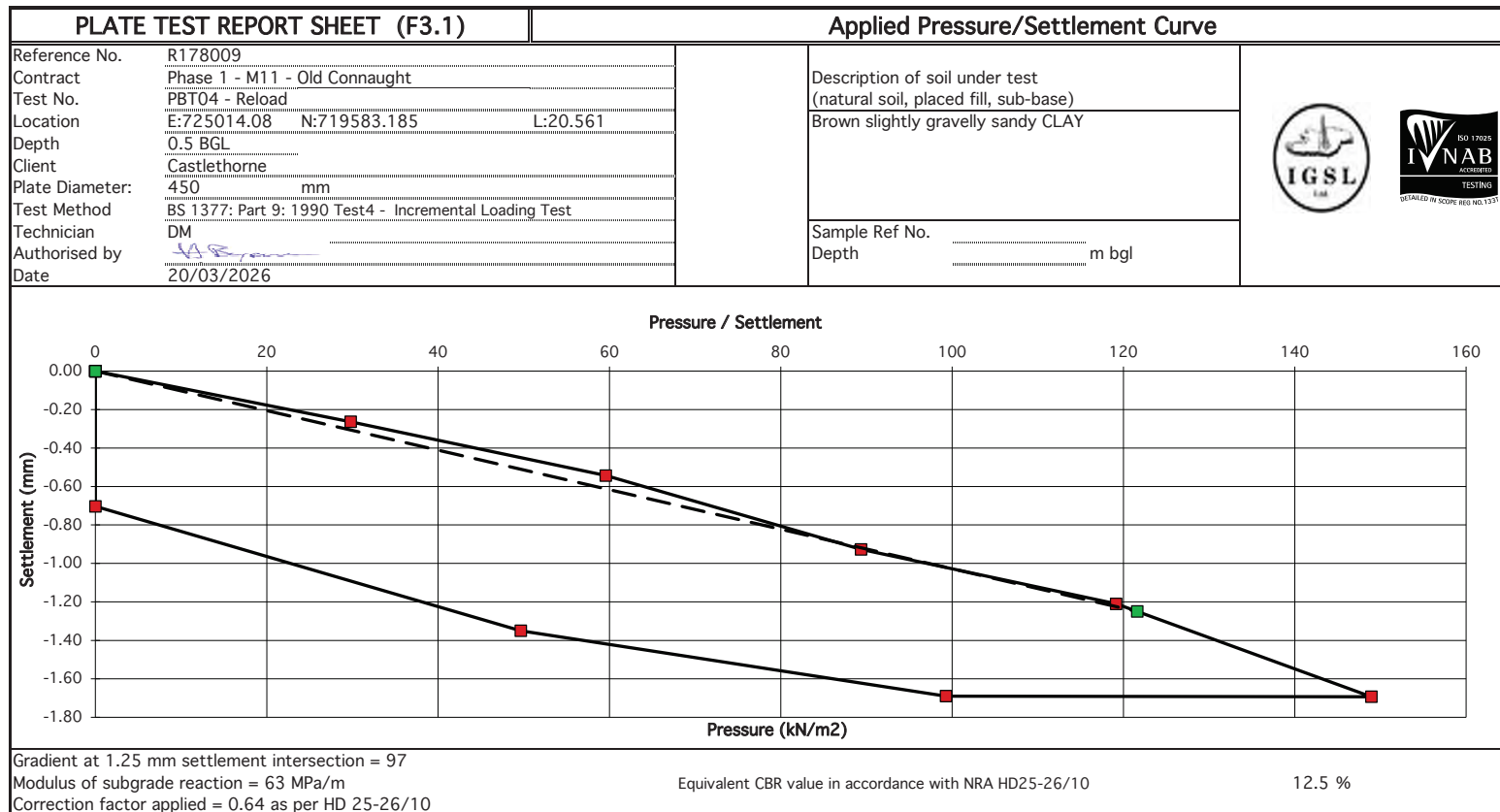
Pressure / Settlement

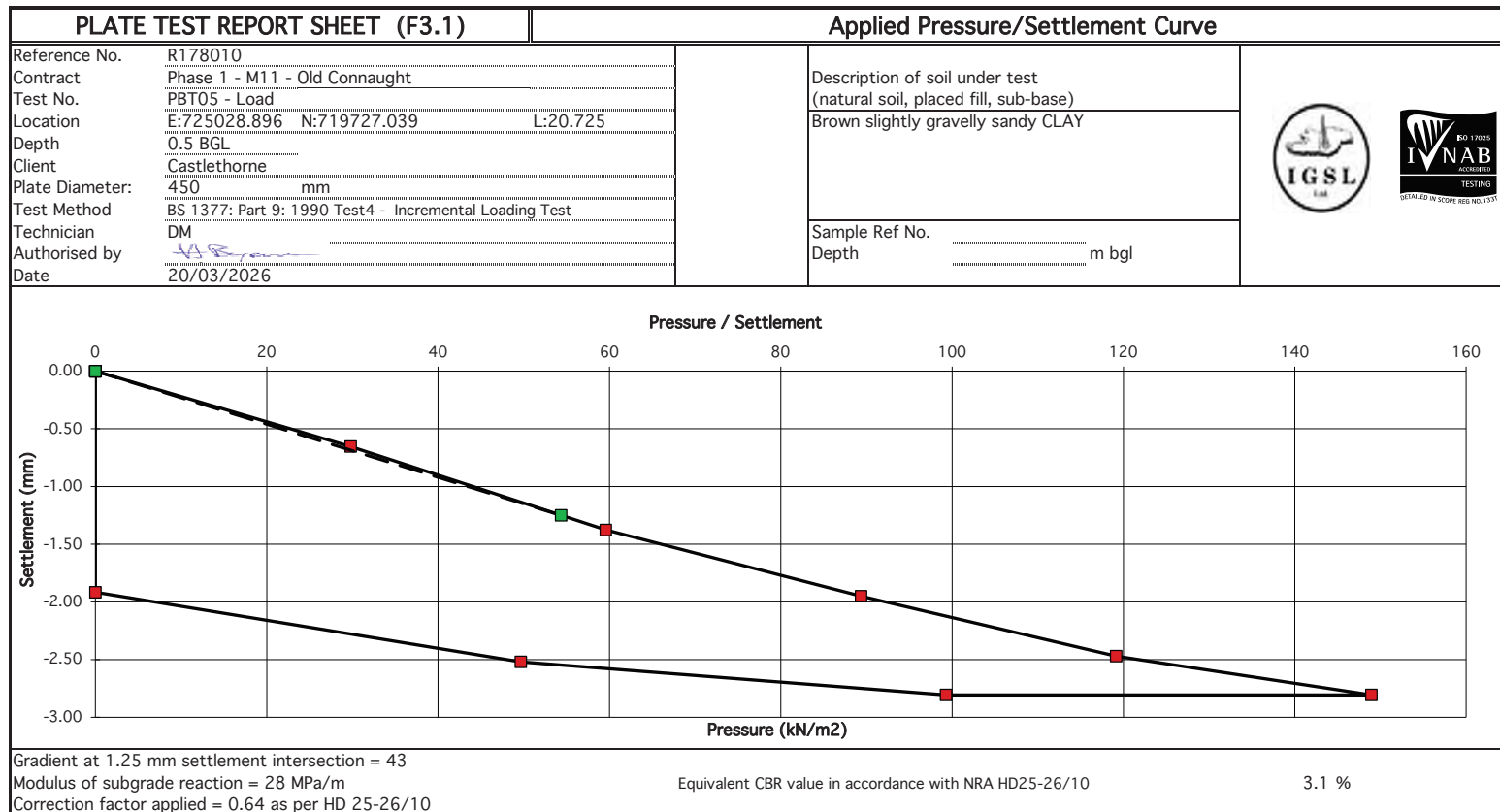
Pressure (kN/m ²)	Settlement (mm) - Upper Series	Settlement (mm) - Lower Series
0	0.00	-6.50
30	-1.20	-7.50
60	-3.00	-8.00
90	-5.20	-8.50
120	-6.80	-8.80
150	-8.50	-8.80

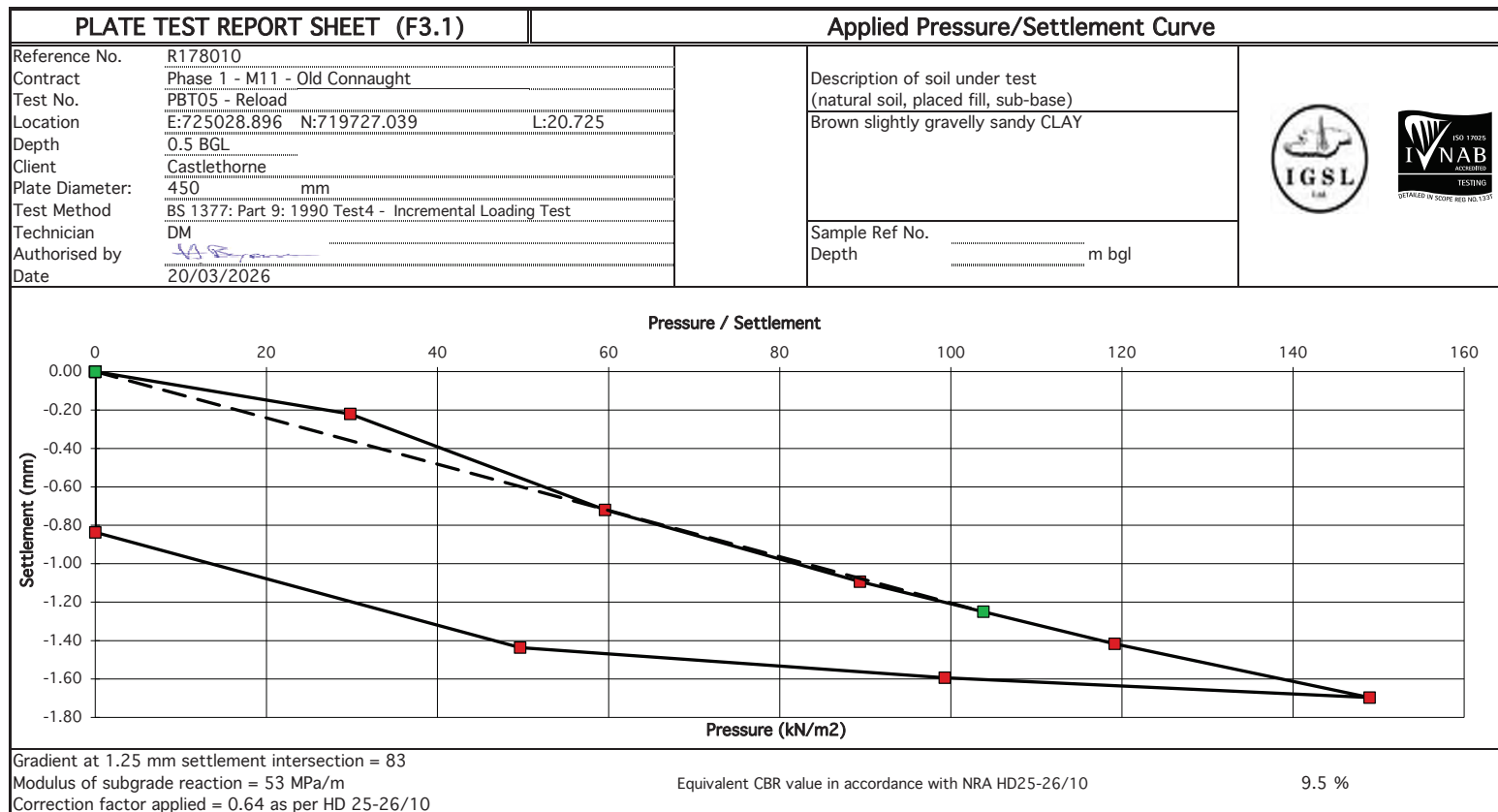
Gradient at 1.25 mm settlement intersection = 25		
Modulus of subgrade reaction = 16 MPa/m	Equivalent CBR value in accordance with NRA HD25-26/10	1.2 %
Correction factor applied = 0.64 as per HD 25-26/10		











Appendix 8

Infiltration Test Records

Soakaway Design f -value from field tests

IGSL

Contract: Old Connaught, Phase 1
Test No. SA01
Engineer NP
Date: 25/03/2026

Contract No. 26458

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	TOPSOIL	DRY
0.20	1.10	Soft to firm brown slightly sandy slightly gravelly CLAY.	

Notes: For all trial pit information, see TP/SA01.

Field Data

Field Test

Depth to Water (m)	Elapsed Time (min)
0.580	0.00
0.580	1.00
0.580	2.00
0.580	3.00
0.590	4.00
0.590	5.00
0.590	6.00
0.600	7.00
0.600	8.00
0.600	9.00
0.610	10.00
0.610	12.00
0.610	14.00
0.610	16.00
0.610	18.00
0.620	20.00
0.630	25.00
0.630	30.00
0.630	40.00
0.630	50.00
0.640	60.00

Depth of Pit (D)	1.10	m
Width of Pit (B)	0.40	m
Length of Pit (L)	1.50	m

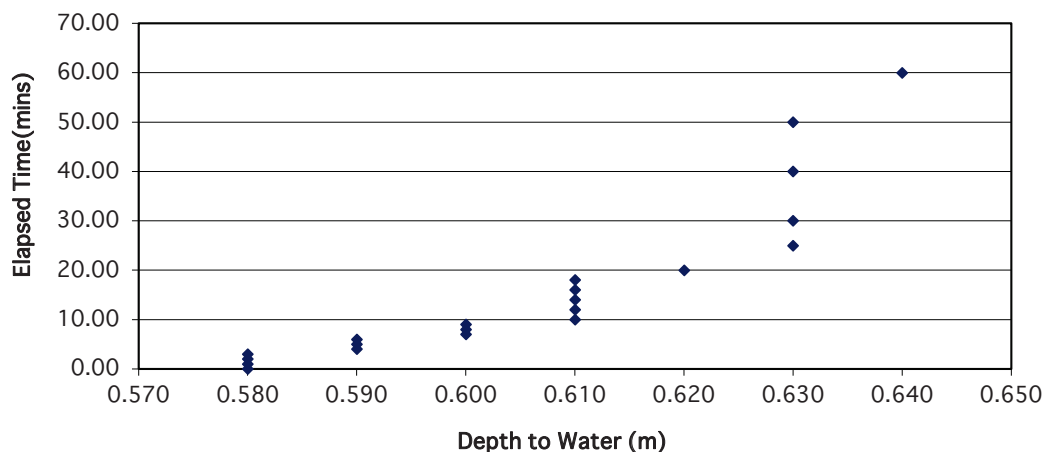
Initial depth to Water =	0.58	m
Final depth to water =	0.64	m
Elapsed time (mins)=	60.00	

Top of permeable soil		m
Base of permeable soil		m

Base area=	0.6	m ²
*Av. side area of permeable stratum over test period	1.862	m ²
Total Exposed area =	2.462	m ²

Infiltration rate (f) = Volume of water used/unit exposed area / unit time |
f= 0.00024 m/min or 4.06174E-06 m/sec

Depth of water vs Elapsed Time (mins)



Soakaway Design f -value from field tests

IGSL

Contract: Old Connaught, Phase 1
Test No. SA02 (Stage 1)
Engineer DM
Date: 23/03/2026

Contract No. 26458

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	TOPSOIL	DRY
0.20	1.00	Firm brown slightly silty sandy gravelly CLAY.	
1.00	1.40	Firm greyish brown slightly sandy gravelly CLAY with cobbles.	

Notes: For all trial pit information, see TP/SA02.

Field Data

Depth to Water (m)	Elapsed Time (min)
0.650	0.00
0.670	1.00
0.700	2.00
0.720	3.00
0.740	4.00
0.760	5.00
0.770	6.00
0.780	7.00
0.790	8.00
0.800	9.00
0.810	10.00
0.840	12.00
0.860	14.00
0.870	16.00
0.880	18.00
0.900	20.00
0.930	25.00
0.960	30.00
0.990	40.00
1.030	50.00
1.070	60.00

Field Test

Depth of Pit (D)	1.40	m
Width of Pit (B)	0.50	m
Length of Pit (L)	1.50	m

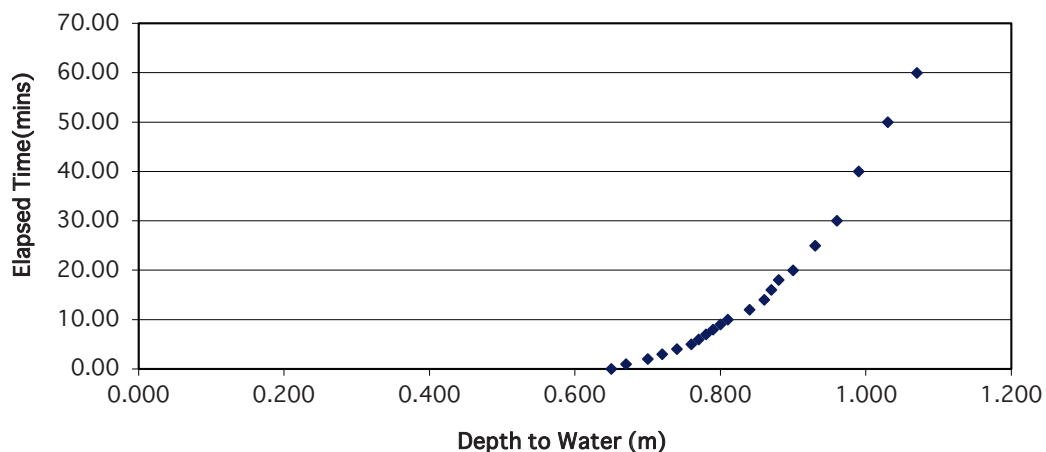
Initial depth to Water =	0.65	m
Final depth to water =	1.07	m
Elapsed time (mins)=	60.00	

Top of permeable soil		m
Base of permeable soil		m

Base area=	0.75	m ²
*Av. side area of permeable stratum over test period	2.16	m ²
Total Exposed area =	2.91	m ²

Infiltration rate (f) = Volume of water used/unit exposed area / unit time |
f= 0.0018 m/min or 3.00687E-05 m/sec

Depth of water vs Elapsed Time (mins)



Soakaway Design f -value from field tests

IGSL

Contract: Old Connaught, Phase 1
Test No. SA02 (Stage 2)
Engineer DM
Date: 23/03/2026

Contract No. 26458

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	TOPSOIL	DRY
0.20	1.00	Firm brown slightly silty sandy gravelly CLAY.	
1.00	1.40	Firm greyish brown slightly sandy gravelly CLAY with cobbles.	

Notes: For all trial pit information, see TP/SA02.

Field Data

Depth to Water (m)	Elapsed Time (min)
0.630	0.00
0.640	1.00
0.650	2.00
0.660	3.00
0.670	4.00
0.680	5.00
0.690	6.00
0.700	7.00
0.710	8.00
0.720	9.00
0.730	10.00
0.740	12.00
0.750	14.00
0.750	16.00
0.760	18.00
0.770	20.00
0.780	25.00
0.790	30.00
0.810	40.00
0.820	50.00
0.830	60.00

Field Test

Depth of Pit (D)	1.40	m
Width of Pit (B)	0.50	m
Length of Pit (L)	1.50	m

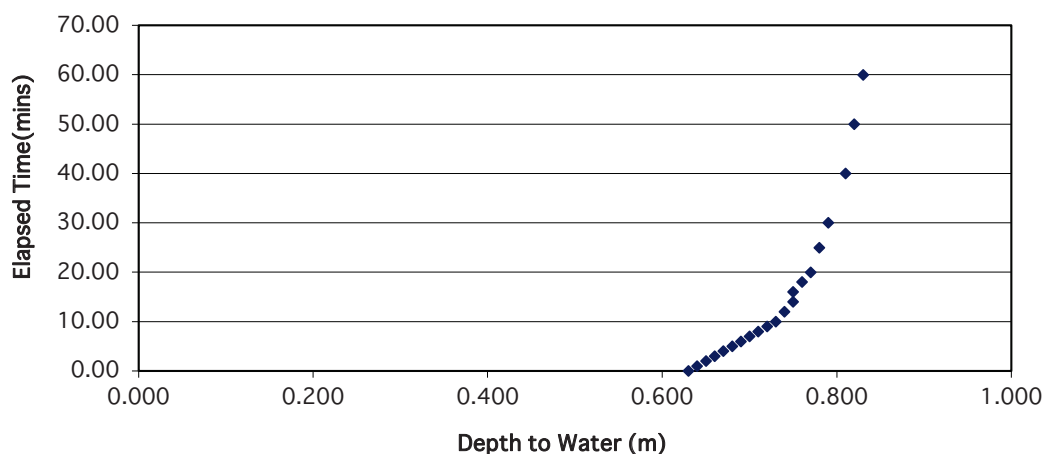
Initial depth to Water =	0.63	m
Final depth to water =	0.830	m
Elapsed time (mins)=	60.00	

Top of permeable soil		m
Base of permeable soil		m

Base area=	0.75	m ²
*Av. side area of permeable stratum over test period	2.68	m ²
Total Exposed area =	3.43	m ²

Infiltration rate (f) = Volume of water used/unit exposed area / unit time |
f= 0.00073 m/min or 1.21477E-05 m/sec

Depth of water vs Elapsed Time (mins)



Soakaway Design f -value from field tests

IGSL

Contract: Old Connaught, Phase 1
Test No. SA03 (Stage 1)
Engineer DM
Date: 23/03/2026

Contract No. 26458

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	TOPSOIL	DRY
0.20	1.10	Firm brown sandy gravelly CLAY with cobbles.	
1.10	1.40	Medium dense grey slightly clayey sandy GRAVEL with cobbles.	

Notes: For all trial pit information, see TP/SA03.

Field Data

Depth to Water (m)	Elapsed Time (min)
0.850	0.00
0.870	1.00
0.900	2.00
0.920	3.00
0.940	4.00
0.950	5.00
0.970	6.00
0.980	7.00
0.990	8.00
1.000	9.00
1.020	10.00
1.030	12.00
1.050	14.00
1.070	16.00
1.100	18.00
1.120	20.00
1.150	25.00
1.190	30.00
1.200	40.00
1.210	50.00
1.220	60.00

Field Test

Depth of Pit (D)	1.40	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.70	m

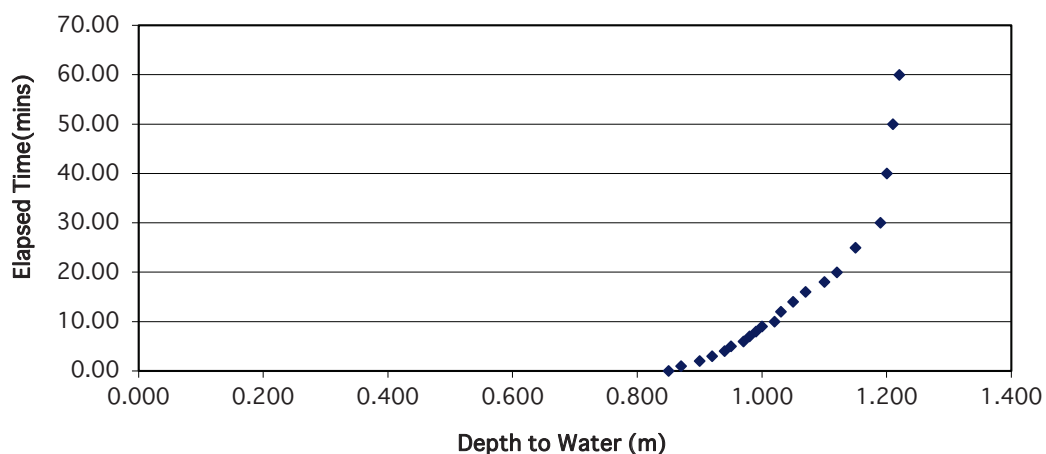
Initial depth to Water =	0.85	m
Final depth to water =	1.220	m
Elapsed time (mins)=	60.00	

Top of permeable soil		m
Base of permeable soil		m

Base area=	1.02	m ²
*Av. side area of permeable stratum over test period	1.679	m ²
Total Exposed area =	2.699	m ²

Infiltration rate (f) = Volume of water used/unit exposed area / unit time |
f= 0.00233 m/min or 3.88415E-05 m/sec

Depth of water vs Elapsed Time (mins)



Soakaway Design

f -value from field tests

IGSL

Contract: Old Connaught, Phase 1

Contract No. 26458

Test No. SA03 (Stage 2)

Engineer DM

Date: 23/03/2026

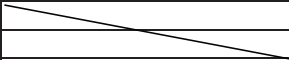
Summary of ground conditions			
from	to	Description	Ground water
0.00	0.20	TOPSOIL	DRY
0.20	1.10	Firm brown sandy gravelly CLAY with cobbles.	
1.10	1.40	Medium dense grey slightly clayey sandy GRAVEL with cobbles.	

Notes: For all trial pit information, see TP/SA03.

Field Data

Depth to Water (m)	Elapsed Time (min)
0.800	0.00
0.800	1.00
0.810	2.00
0.820	3.00
0.830	4.00
0.850	5.00
0.860	6.00
0.870	7.00
0.890	8.00
0.900	9.00
0.910	10.00
0.920	12.00
0.940	14.00
0.950	16.00
0.960	18.00
0.970	20.00
0.990	25.00
1.000	30.00
1.020	40.00
1.040	50.00
1.060	60.00

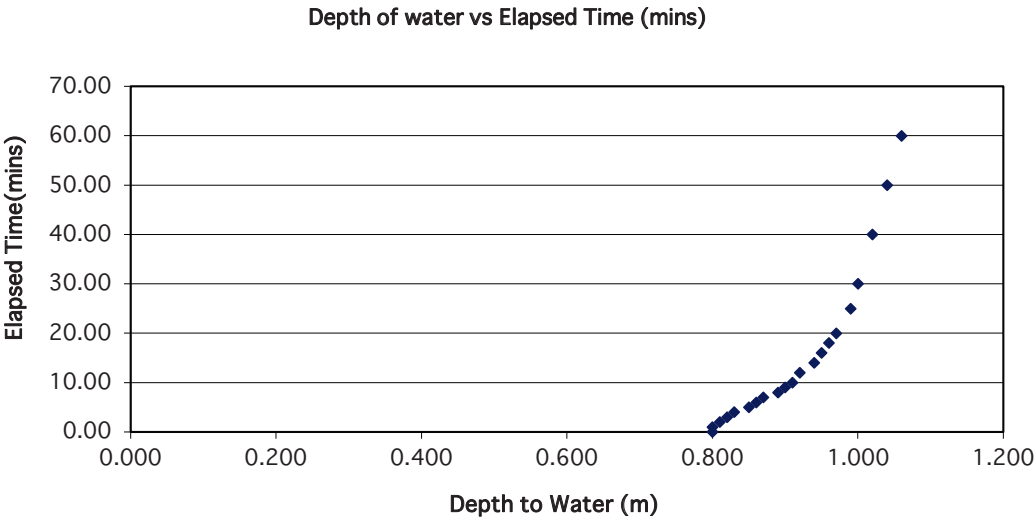
Field Test

Depth of Pit (D)	1.40	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.70	m
Initial depth to Water =	0.80	m
Final depth to water =	1.060	m
Elapsed time (mins)=	60.00	
Top of permeable soil		
Base of permeable soil		

Base area=	1.02	m2
*Av. side area of permeable stratum over test period =	2.162	m2
Total Exposed area =	3.182	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time |

f= 0.00139 m/min or 2.31511E-05 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Old Connaught, Phase 1

Contract No. 26458

Test No. SA04

Engineer DM

Date: 23/03/2026

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	TOPSOIL	DRY
0.20	0.60	Firm brown slightly gravelly sandy CLAY.	
0.60	2.00	Stiff light brown mottled light grey slightly sandy slightly gravelly CLAY.	

Notes: For all trial pit information, see TP/SA04.

Field Data

Depth to Water (m)	Elapsed Time (min)
0.780	0.00
0.780	1.00
0.780	2.00
0.780	3.00
0.780	4.00
0.780	5.00
0.780	6.00
0.780	7.00
0.780	8.00
0.780	9.00
0.780	10.00
0.780	12.00
0.780	14.00
0.780	16.00
0.780	18.00
0.780	20.00
0.780	25.00
0.780	30.00
0.780	40.00
0.780	50.00
0.780	60.00

Field Test

Depth of Pit (D)	2.00	m
Width of Pit (B)	0.50	m
Length of Pit (L)	1.50	m

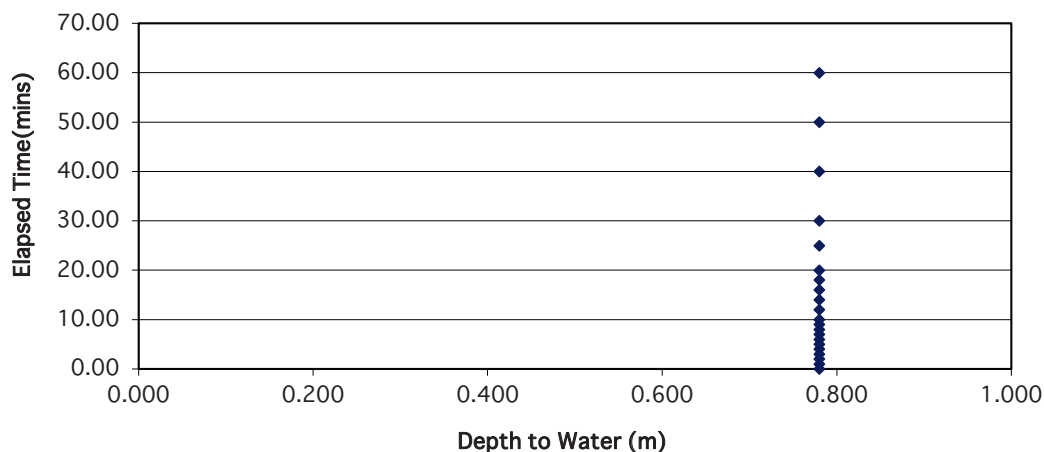
Initial depth to Water =	0.78	m
Final depth to water =	0.78	m
Elapsed time (mins)=	60.00	

Top of permeable soil		m
Base of permeable soil		m

Base area=	0.75	m ²
*Av. side area of permeable stratum over test period	4.88	m ²
Total Exposed area =	5.63	m ²

Infiltration rate (f) = Volume of water used/unit exposed area / unit time |
f= 0 m/min or 0 m/sec

Depth of water vs Elapsed Time (mins)



Soakaway Design f -value from field tests

IGSL

Contract: Old Connaught, Phase 1

Contract No. 26458

Test No. SA05

Engineer DM

Date: 23/03/2026

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	TOPSOIL	DRY
0.20	0.90	Firm brown slightly gravelly sandy CLAY.	
0.90	1.80	Firm to stiff greyish brown slightly sandy slightly gravelly silty CLAY.	

Notes: For all trial pit information, see TP/SA05.

Field Data

Field Test

Depth to Water (m)	Elapsed Time (min)
0.600	0.00
0.600	1.00
0.600	2.00
0.600	3.00
0.600	4.00
0.600	5.00
0.600	6.00
0.600	7.00
0.600	8.00
0.600	9.00
0.600	10.00
0.600	12.00
0.600	14.00
0.610	16.00
0.610	18.00
0.610	20.00
0.610	25.00
0.610	30.00
0.610	40.00
0.610	50.00
0.610	60.00

Depth of Pit (D)	1.80	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.70	m

Initial depth to Water =	0.60	m
Final depth to water =	0.61	m
Elapsed time (mins)=	60.00	

Top of permeable soil		m
Base of permeable soil		m

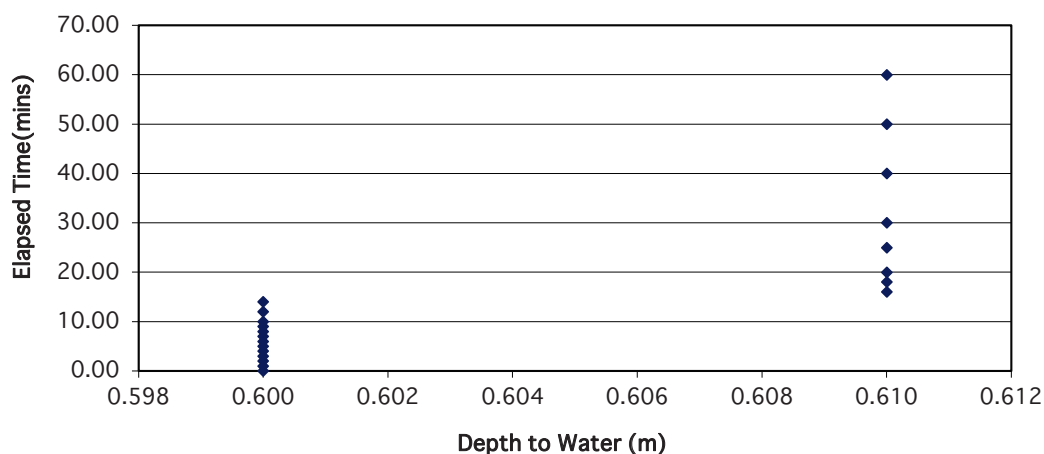
Base area=	1.02	m ²
*Av. side area of permeable stratum over test period	5.497	m ²
Total Exposed area =	6.517	m ²

Infiltration rate (f) = Volume of water used/unit exposed area / unit time |

f= 0 m/min or 0 m/sec

No fall in water after 16 mins

Depth of water vs Elapsed Time (mins)



IGSL

Contract No. 26458

Engineer NP

Date: 25/03/2026

from	to	Description	Ground water
0.00	0.20	TOPSOIL	DRY
0.20	0.50	MADE GROUND: Soft to firm brown slightly sandy slightly gravelly CLAY.	
0.50	0.70	MADE GROUND	
0.70	1.60	Medium dense grey/brown sandy GRAVEL.	

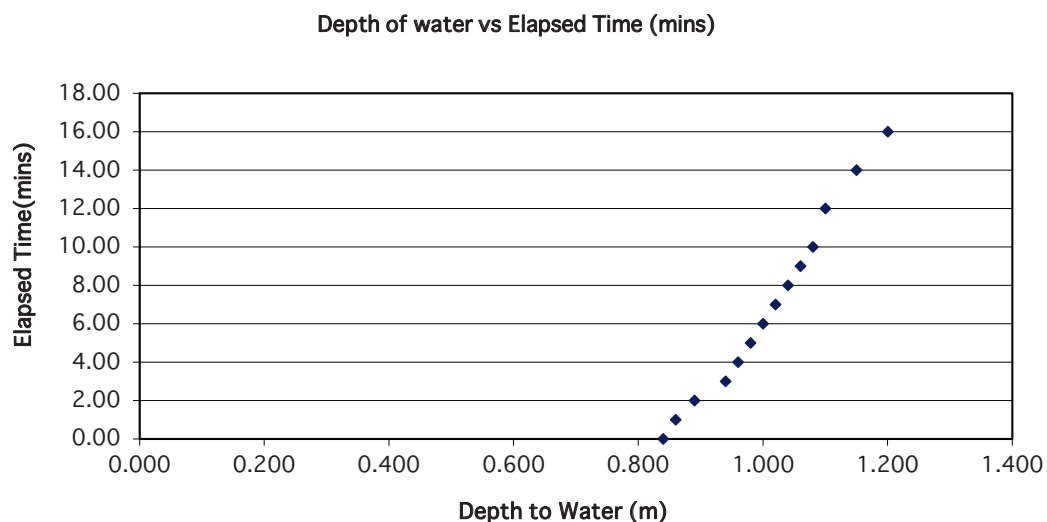
Field Data

[illegible]

Base area=	0.6	m2
le stratum over test period	2.204	m2
Total Exposed area =	2.804	m2

$$\text{Infiltration rate (f)} = \frac{\text{Volume of water used/unit}}{\text{exposed area / unit time}}$$

f= 0.00481 m/min or 8.02425E-05 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Old Connaught, Phase 1
Test No. SA06 (Stage 2)
Engineer NP
Date: 25/03/2026

Contract No. 26458

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	TOPSOIL	DRY
0.20	0.50	MADE GROUND: Soft to firm brown slightly sandy slightly gravelly CLAY.	
0.50	0.70	MADE GROUND	
0.70	1.60	Medium dense grey/brown sandy GRAVEL.	

Notes: For all trial pit information, see TP/SA06. Pit was dry after 25min.

Field Data

Field Test

Depth to Water (m)	Elapsed Time (min)
1.050	0.00
1.050	1.00
1.080	2.00
1.100	3.00
1.110	4.00
1.130	5.00
1.150	6.00
1.160	7.00
1.190	8.00
1.200	9.00
1.220	10.00
1.240	12.00
1.260	14.00
1.280	16.00
1.300	18.00
1.320	20.00
1.400	25.00

Depth of Pit (D)	1.40	m
Width of Pit (B)	0.40	m
Length of Pit (L)	1.50	m

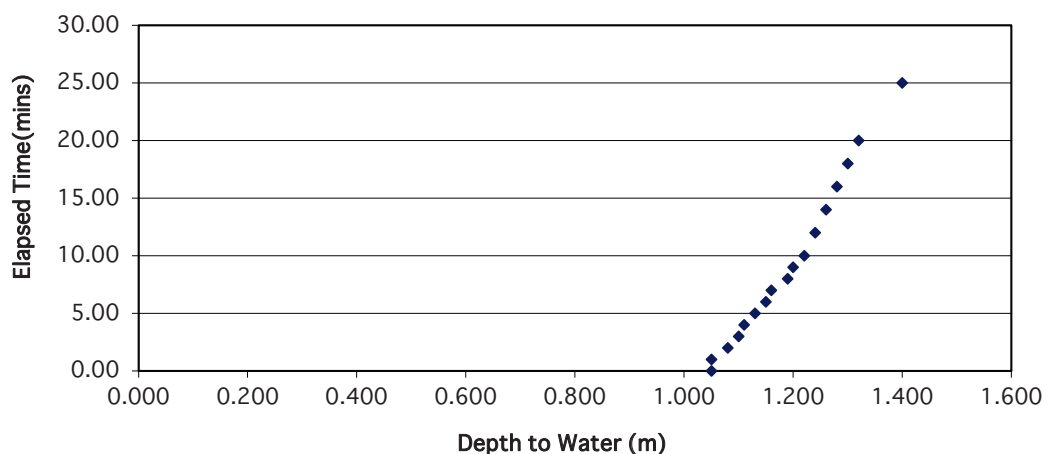
Initial depth to Water =	1.05	m
Final depth to water =	1.400	m
Elapsed time (mins)=	25.00	

Top of permeable soil		m
Base of permeable soil		m

Base area=	0.6	m ²
*Av. side area of permeable stratum over test period	0.665	m ²
Total Exposed area =	1.265	m ²

Infiltration rate (f) = Volume of water used/unit exposed area / unit time |
f= 0.00664 m/min or 0.000110672 m/sec

Depth of water vs Elapsed Time (mins)



Soakaway Design f -value from field tests

IGSL

Contract: Old Connaught, Phase 1

Contract No. 26458

Test No. SA07

Engineer NP

Date: 25/03/2026

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	TOPSOIL	DRY
0.20	1.00	Soft to firm brown slightly sandy slightly gravelly CLAY.	
1.00	1.40	Firm to stiff greyish brown slightly sandy gravelly CLAY with cobbles.	

Notes: For all trial pit information, see TP/SA07.

Field Data

Field Test

Depth to Water (m)	Elapsed Time (min)
0.710	0.00
0.710	1.00
0.710	2.00
0.710	3.00
0.710	4.00
0.710	5.00
0.710	6.00
0.710	7.00
0.710	8.00
0.710	9.00
0.710	10.00
0.710	12.00
0.710	14.00
0.710	16.00
0.710	18.00
0.710	20.00
0.710	25.00
0.710	30.00
0.710	40.00
0.710	50.00
0.710	60.00

Depth of Pit (D)	1.40	m
Width of Pit (B)	0.40	m
Length of Pit (L)	1.60	m

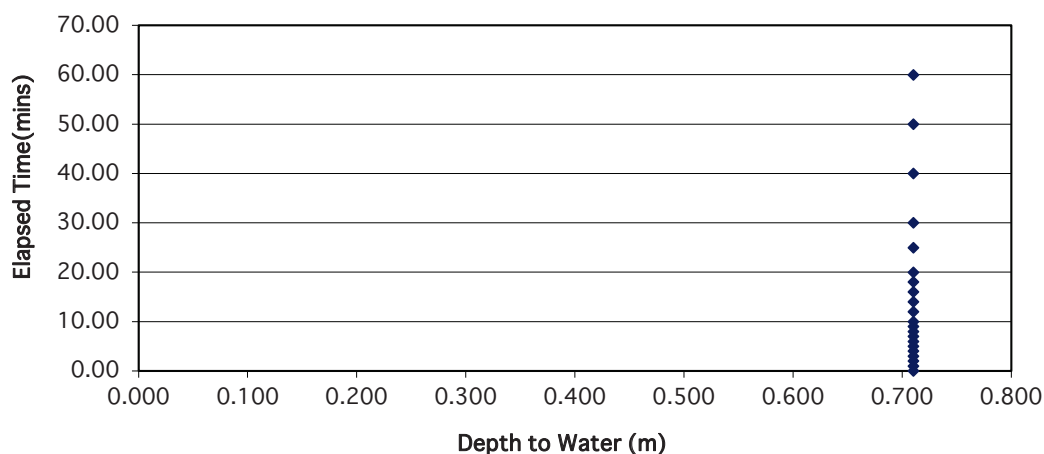
Initial depth to Water =	0.71	m
Final depth to water =	0.71	m
Elapsed time (mins)=	60.00	

Top of permeable soil		m
Base of permeable soil		m

Base area=	0.64	m ²
*Av. side area of permeable stratum over test period	2.76	m ²
Total Exposed area =	3.4	m ²

Infiltration rate (f) = Volume of water used/unit exposed area / unit time |
f= 0 m/min or 0 m/sec

Depth of water vs Elapsed Time (mins)



Appendix 9

Groundwater Monitoring Records

26458	GROUNDWATER MONITORING DATA SHEET IGSL Ltd										
Project: Phase 1 - M11 - Old Connaught											
Engineer: Atkins											
Exploratory Hole No.	Hole Depth		Ground Level	Response Zone Top	Response Zone Base	Groundwater Level 04/06/2026		Groundwater Level 05/06/2026		Groundwater Level 10/06/2026	
	m BGL	mOD	mOD	m BGL	m BGL	m BGL	mOD	m BGL	mOD	m BGL	mOD
RC02	25.00	-4.13	20.87	3.00	15.00	10.00	10.87	-		10.60	10.27
RC03	20.00	0.02	20.022	8.50	16.50	-		5.10	14.92	4.95	15.07
Notes: Water levels measured using electric dipmeter RC - denotes rotary drillhole											

Appendix 10

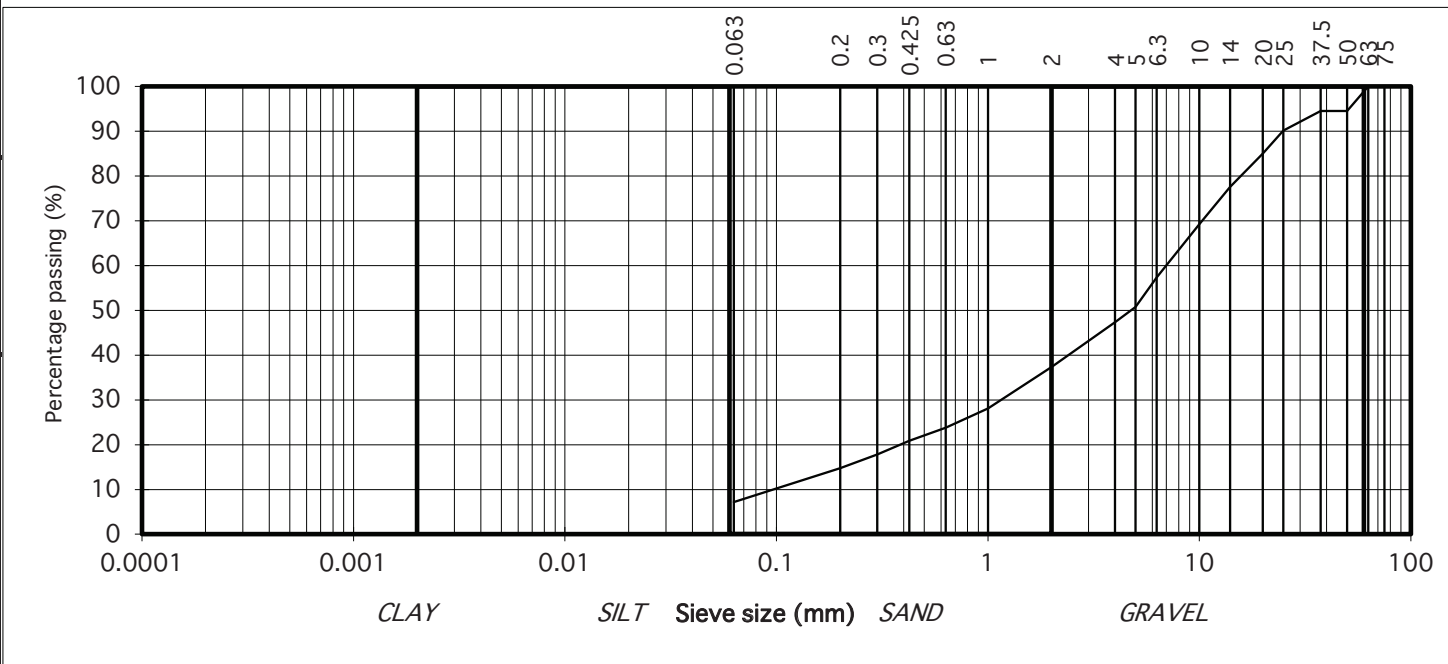
Geotechnical Laboratory Testing

IGSL Ltd Materials Laboratory Unit J5, M7 Business Park Newhall, Naas Co. Kildare 045 846176				Test Report										
				Determination of Water Content, Liquid & Plastic Limits Tested in accordance with BS1377-2-2022/EN17892-1 and EN17892-12										
Report No. R180387				Contract No. 26458		Contract Name: Old Connaught Bray Phase 1 Castlethorne								
Customer Atkins CE														
Samples Received: 14/05/26		Date Tested: 14/05/26												
BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description	
BH01	AA260236	1.0	A26/1040	B	14	30	16	14	88	WS	5.3	C L	Brown sandy gravelly CLAY	
BH01	AA260240	4.0	A26/1041	B	9.8	32	15	17	56	WS	5.3	C L	Brown sandy gravelly CLAY	
BH02	AA265208	1.0	A26/1043	B	19	30	NP	NP	94	WS	5.3		Brown sandy gravelly SILT	
BH02	AA265216	9.0	A26/1046	B	16.2	35	15	20	59	WS	5.3	C L	Brown slightly sandy, slightly gravelly, CLAY	
BH03	AA260246	1.5	A26/1047	B	15.7	37	18	19	47	WS	5.3	C I	Brown sandy gravelly CLAY	
BH03	AA260252	7.0	A26/1049	B	17.1	31	12	19	76	WS	5.3	C L	Brown sandy gravelly CLAY	
TP01	AA258594	1.5	A26/1051	B	21.2	39	18	21	98	WS	5.3	C I	Brown sandy gravelly CLAY	
TP02	AA258590	1.5	A26/1052	B	16.4	28	15	13	86	WS	5.3	C L	Brown sandy gravelly CLAY	
TP04	AA258585	1.0	A26/1055	B	17.3	33	NP	NP	47	WS	5.3		Brown sandy gravelly SILT	
TP05	AA258596	1.5	A26/1057	B	18.1	35	17	18	87	WS	5.3	C L	Brown slightly sandy, slightly gravelly, CLAY	
Preparation: WS - Wet sieved AR - As received NP - Non plastic Liquid Limit 5.2 Cone Penetrometer definitive method Clause: 5.3 Cone Penetrometer single point method				Sample Type: B - Bulk Disturbed U - Undisturbed				Remarks: Results relate only to the specimen tested, in as received condition unless otherwise noted. Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information. This report shall not be reproduced except in full without written approval from the Laboratory.						
IGSL Ltd Materials Laboratory				Persons authorized to approve reports H Byrne (Laboratory Manager)					Approved by		Date		Page	
											03/06/26		1 of 1	

TEST REPORT
Determination of Particle Size Distribution
 Tested in accordance with: BS1377-2:2022 Clause 10
 (note: Sedimentation stage not accredited)



particle size	% passing		Contract No. 26458	Report No. R180388	
75	100	COBBLES	Contract Name : Old Connaught Bray Phase 1 Castlethorne		Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
63	100		BH/TP No. BH01		
50	95		Sample No.* AA260241	Lab. Sample No. A26/1042	
37.5	95		Sample Type: B		
25	90		Depth* (m) 5.00	Customer: Atkins CE	
20	85	GRAVEL	Date Received 14/05/2026	Date Testing started 14/05/2026	
14	78		Description: Brown clayey/silty, very sandy, GRAVEL		
10	69		Remarks		
6.3	57				
5.0	51				
4.0	47				
2.0	37				
1.0	28				
0.63	24				
0.425	21	SAND			
0.3	18				
0.2	15				
0.063	7				
		SILT/CLAY			



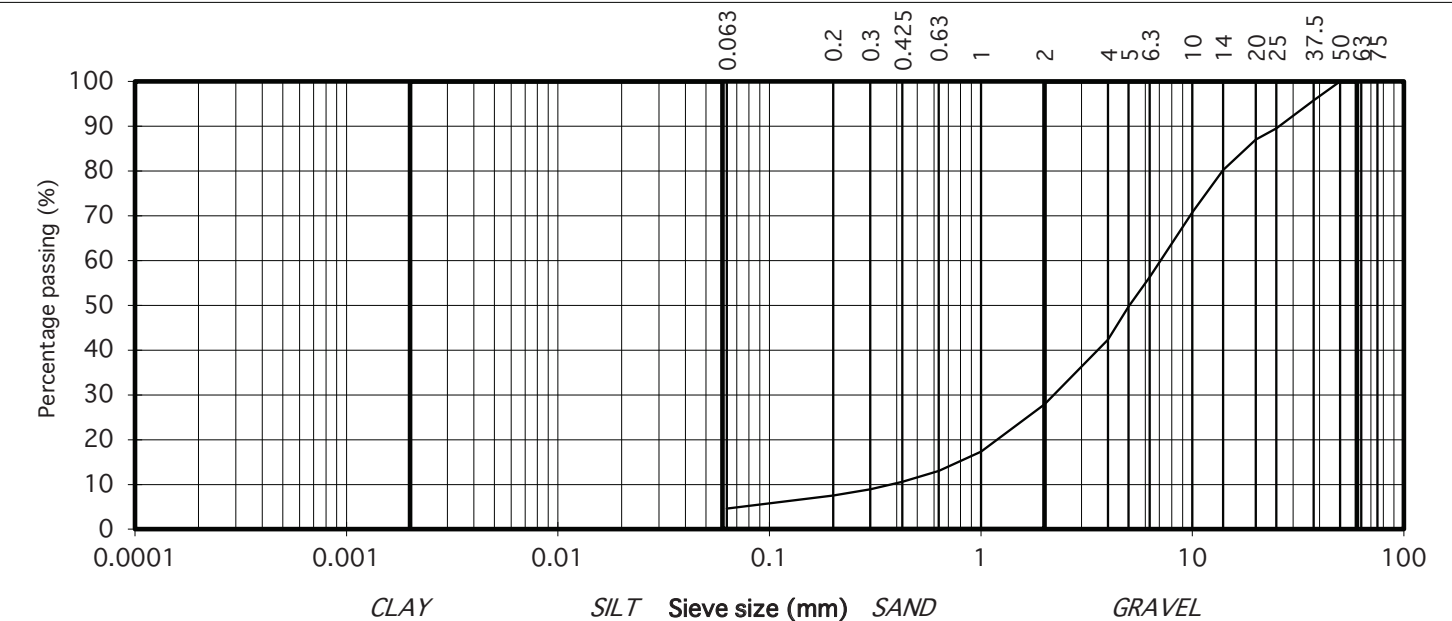
IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
<i>H Byrne</i>	29/05/26	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
 Tested in accordance with: BS1377-2:2022 Clause 10
 (note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	26458	Report No.	R180503			
75	100	COBBLES	Contract Name :	Old Connaught Bray Phase 1 Castlethorne				Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.	
63	100		BH/TP No.	BH02					
50	100	GRAVEL	Sample No.*	AA265213	Lab. Sample No.	A26/1045			
37.5	96		Sample Type:	B					
25	90		Depth* (m)	6.00	Customer:	Atkins CE			
20	87		Date Received	14/05/2026	Date Testing started	14/05/2026			
14	80		Description:	Brown slightly clayey/silty, very sandy, GRAVEL					
10	71		SAND	Remarks					
6.3	56								
5.0	50								
4.0	42								
2.0	28								
1.0	17	SILT/CLAY							
0.63	13								
0.425	11								
0.3	9								
0.2	8								
0.063	5								

IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
 Tested in accordance with: BS1377-2:2022 Clause 10
 (note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	26458	Report No.	R180500			
			Contract Name :	Old Connaught Bray Phase 1 Castlethorne				Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.	
75	100	COBBLES	BH/TP No.	BH02					
63	100		Sample No.*	AA265210	Lab. Sample No.	A26/1044			
50	100	GRAVEL	Sample Type:	B					
37.5	100		Depth* (m)	3.00	Customer:	Atkins CE			
25	99		Date Received	14/05/2026	Date Testing started	14/05/2026			
20	88		Description:	Brown clayey/silty, very sandy, GRAVEL					
14	78		SAND	Remarks					
10	69								
6.3	54								
5.0	47								
4.0	40	SILT/CLAY							
2.0	27								
1.0	18								
0.63	14								
0.425	11								
0.3	10								
0.2	8								
0.063	5								

Sieve size (mm)	Percentage passing (%)
0.075	100
0.15	99
0.3	98
0.6	95
1.18	85
2.5	65
4.75	40
7.5	25
15	15
30	10
60	8
106	5

IGSL Ltd Materials Laboratory

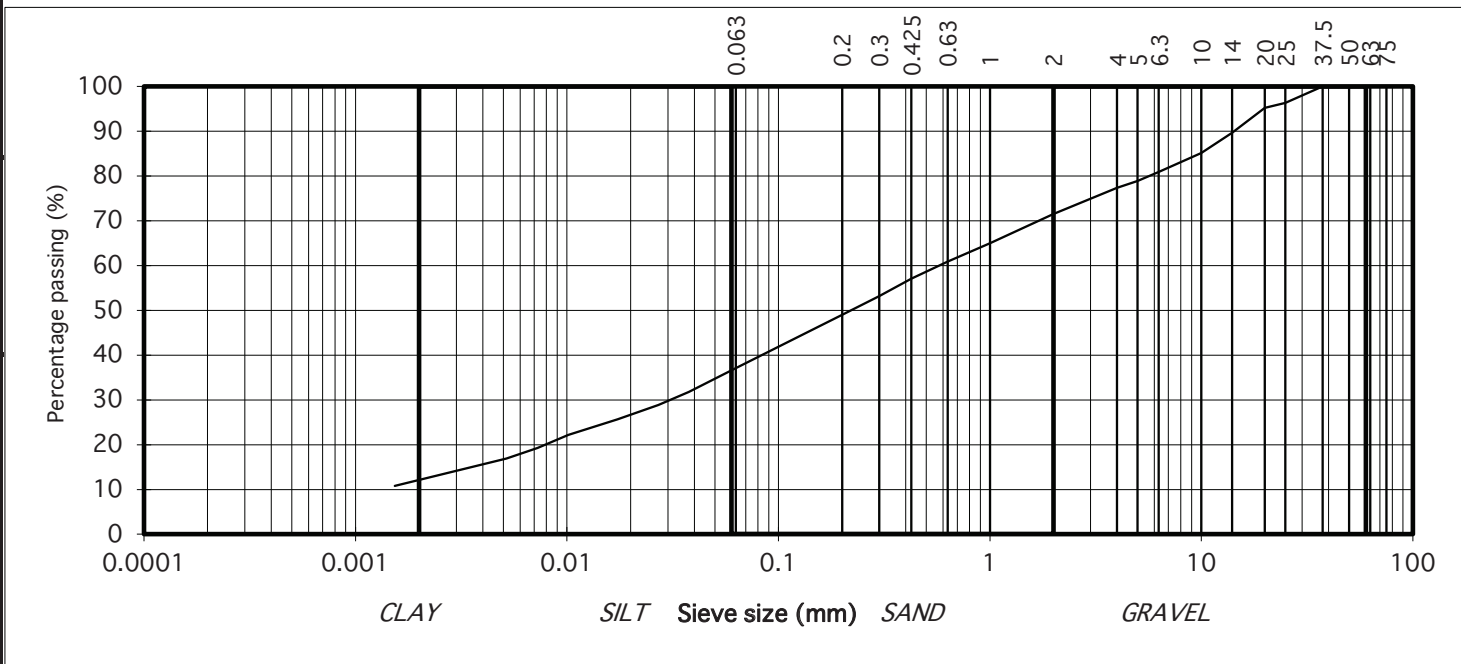
Approved by:	Date:	Page no:
	29/05/26	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
 Tested in accordance with: BS1377-2:2022 Clause 10
 (note: Sedimentation stage not accredited)



particle size	% passing		Contract No. 26458	Report No. R180501	
75	100	COBBLES	Contract Name : Old Connaught Bray Phase 1 Castlethorne		Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
63	100		BH/TP No. BH02		
50	100		Sample No.* AA265216	Lab. Sample No. A26/1046	
37.5	100		Sample Type: B		
25	96		Depth* (m) 9.00	Customer: Atkins CE	
20	95	GRAVEL	Date Received 14/05/2026	Date Testing started 14/05/2026	
14	90		Description: Brown slightly sandy, slightly gravelly, CLAY		
10	85		Remarks		
6.3	81				
5.0	79				
4.0	77	SAND			
2.0	72				
1.0	65				
0.63	61				
0.425	57				
0.3	53	SILT/CLAY			
0.2	49				
0.063	37				
0.038	32				
0.027	29				
0.017	26				
0.010	22				
0.007	19				
0.005	17				
0.002	11				



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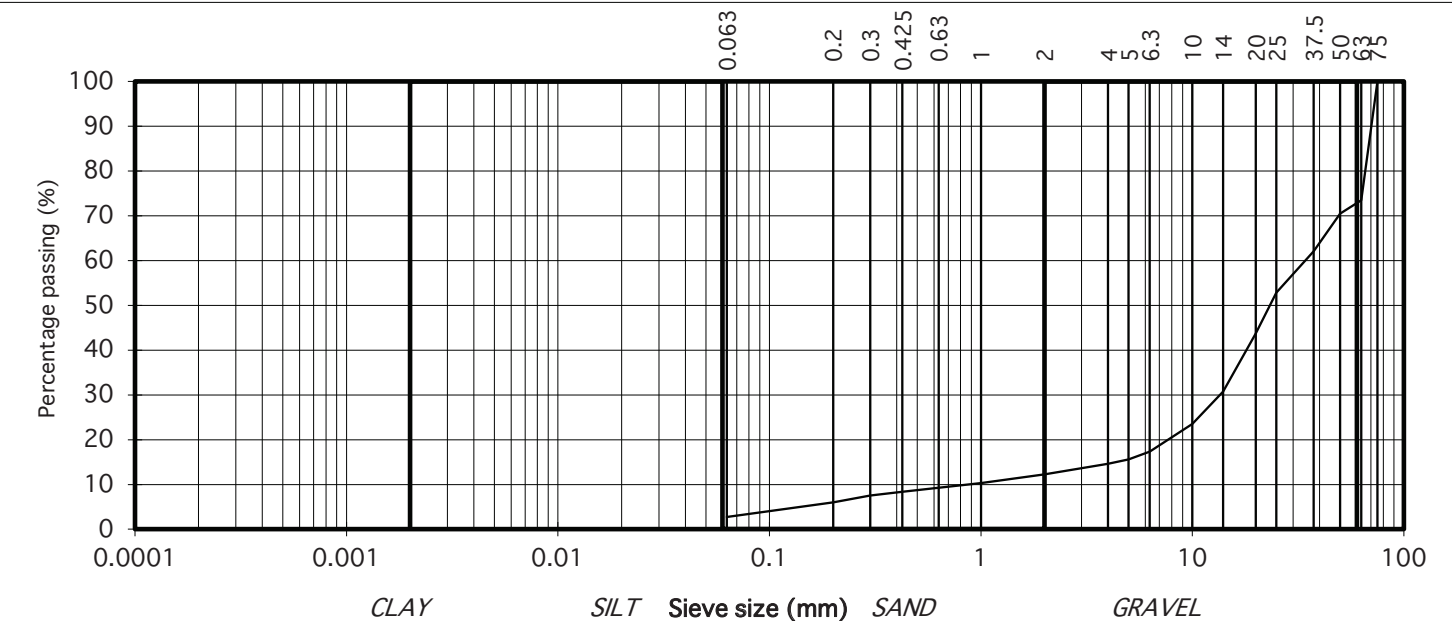
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

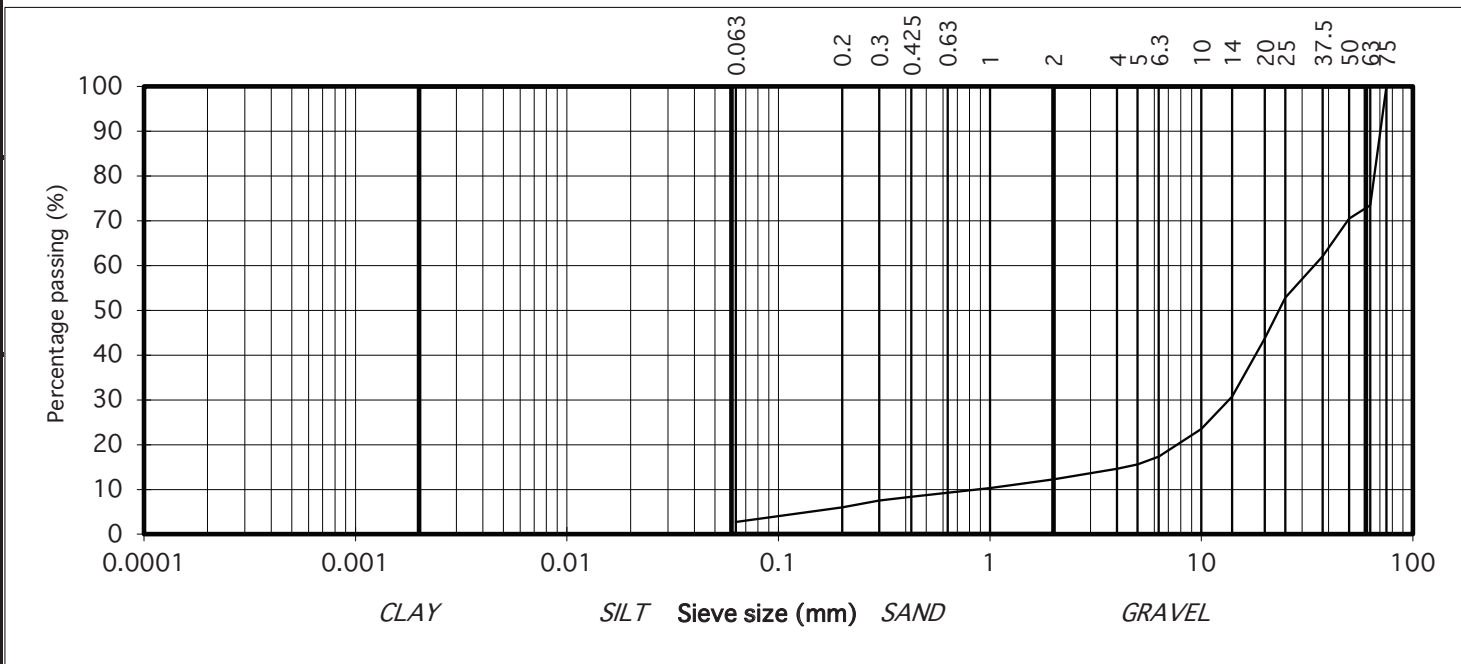
TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	26458	Report No.	R180389			
			Contract Name :	Old Connaught Bray Phase 1 Castlethorne				Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.	
75	100	COBBLES	BH/TP No.	BH03					
63	73		Sample No.*	AA260250	Lab. Sample No.	A26/1048			
50	70	GRAVEL	Sample Type:	B					
37.5	62		Depth* (m)	5.00	Customer:	Atkins CE			
25	53		Date Received	14/05/2026	Date Testing started	14/05/2026			
20	44		Description:	Brown slightly clayey/silty, sandy, GRAVEL with many cobbles					
14	31		SAND	Remarks Sample size did not meet the requirements of BS1377					
10	23								
6.3	17								
5.0	16								
4.0	15	SILT/CLAY							
2.0	12								
1.0	10								
0.63	9								
0.425	8								
0.3	8								
0.2	6								
0.063	3								



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	26458	Report No.	R180390
			Contract Name :	Old Connaught Bray Phase 1 Castlethorne		
75	100	COBBLES	BH/TP No.	BH03		
63	86		Sample No.*	AA260254	Lab. Sample No.	A26/1050
50	86	GRAVEL	Sample Type:	B		
37.5	78		Depth* (m)	9.00	Customer:	Atkins CE
25	67		Date Received	14/05/2026	Date Testing started	14/05/2026
20	58		Description:	Brown clayey/silty, sandy, GRAVEL with some cobbles		
14	47		Remarks	Sample size did not meet the requirements of BS1377		
10	40					
6.3	33					
5.0	30					
4.0	29	SAND	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.			
2.0	26					
1.0	24					
0.63	23					
0.425	21					
0.3	20	SILT/CLAY				
0.2	18					
0.063	13					

Sieve size (mm)	Percentage passing (%)
75	100
63	86
50	86
37.5	78
25	67
20	58
14	47
10	40
6.3	33
5.0	30
4.0	29
2.0	26
1.0	24
0.63	23
0.425	21
0.3	20
0.2	18
0.063	13

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Approved by:	Date:	Page no:
	03/06/26	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
 Tested in accordance with: BS1377-2:2022 Clause 10
 (note: Sedimentation stage not accredited)



particle size	% passing		Contract No. 26458	Report No. R180391	
			Contract Name : Old Connaught Bray Phase 1 Castlethorne		
75	100	COBBLES	BH/TP No. TP02		
63	100		Sample No.* AA258591	Lab. Sample No. A26/1053	
50	100		Sample Type: B		
37.5	100		Depth* (m) 2.70	Customer: Atkins CE	
25	100		Date Received 14/05/2026	Date Testing started 14/05/2026	
20	100		Description: Brown sandy, slightly gravelly, SILT/CLAY		
14	100	GRAVEL			
10	100		Remarks		
6.3	100				
5.0	100				
4.0	100				
2.0	99				
1.0	99				
0.63	98				
0.425	98	SAND			
0.3	96				
0.2	93				
0.063	52				
		SILT/CLAY			

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
	03/06/26	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
 Tested in accordance with: BS1377-2:2022 Clause 10
 (note: Sedimentation stage not accredited)



particle size	% passing		Contract No. 26458	Report No. R180502	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.																																				
75	100	COBBLES	Contract Name : Old Connaught Bray Phase 1 Castlethorne																																						
63	100		BH/TP No. TP03																																						
50	100		Sample No.* AA258584	Lab. Sample No. A26/1054																																					
37.5	100		Sample Type: B																																						
25	99		Depth* (m) 1.80	Customer: Atkins CE																																					
20	95	GRAVEL	Date Received 14/05/2026	Date Testing started 14/05/2026																																					
14	86		Description: Brown clayey/silty, very sandy, GRAVEL																																						
10	79		Remarks																																						
6.3	69		<table><tr><th>Sieve size (mm)</th><th>Percentage passing (%)</th></tr><tr><td>0.063</td><td>15</td></tr><tr><td>0.2</td><td>25</td></tr><tr><td>0.3</td><td>29</td></tr><tr><td>0.425</td><td>34</td></tr><tr><td>0.63</td><td>39</td></tr><tr><td>1</td><td>45</td></tr><tr><td>2</td><td>52</td></tr><tr><td>4</td><td>61</td></tr><tr><td>5</td><td>65</td></tr><tr><td>6.3</td><td>69</td></tr><tr><td>10</td><td>79</td></tr><tr><td>14</td><td>86</td></tr><tr><td>20</td><td>95</td></tr><tr><td>25</td><td>99</td></tr><tr><td>37.5</td><td>100</td></tr><tr><td>50</td><td>100</td></tr><tr><td>75</td><td>100</td></tr></table>			Sieve size (mm)	Percentage passing (%)	0.063	15	0.2	25	0.3	29	0.425	34	0.63	39	1	45	2	52	4	61	5	65	6.3	69	10	79	14	86	20	95	25	99	37.5	100	50	100	75	100
Sieve size (mm)	Percentage passing (%)																																								
0.063	15																																								
0.2	25																																								
0.3	29																																								
0.425	34																																								
0.63	39																																								
1	45																																								
2	52																																								
4	61																																								
5	65																																								
6.3	69																																								
10	79																																								
14	86																																								
20	95																																								
25	99																																								
37.5	100																																								
50	100																																								
75	100																																								
5.0	65																																								
4.0	61																																								
2.0	52																																								
1.0	45																																								
0.63	39																																								
0.425	34																																								
0.3	29																																								
0.2	25																																								
0.063	15																																								
		SAND																																							
		SILT/CLAY																																							

IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
	29/05/26	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

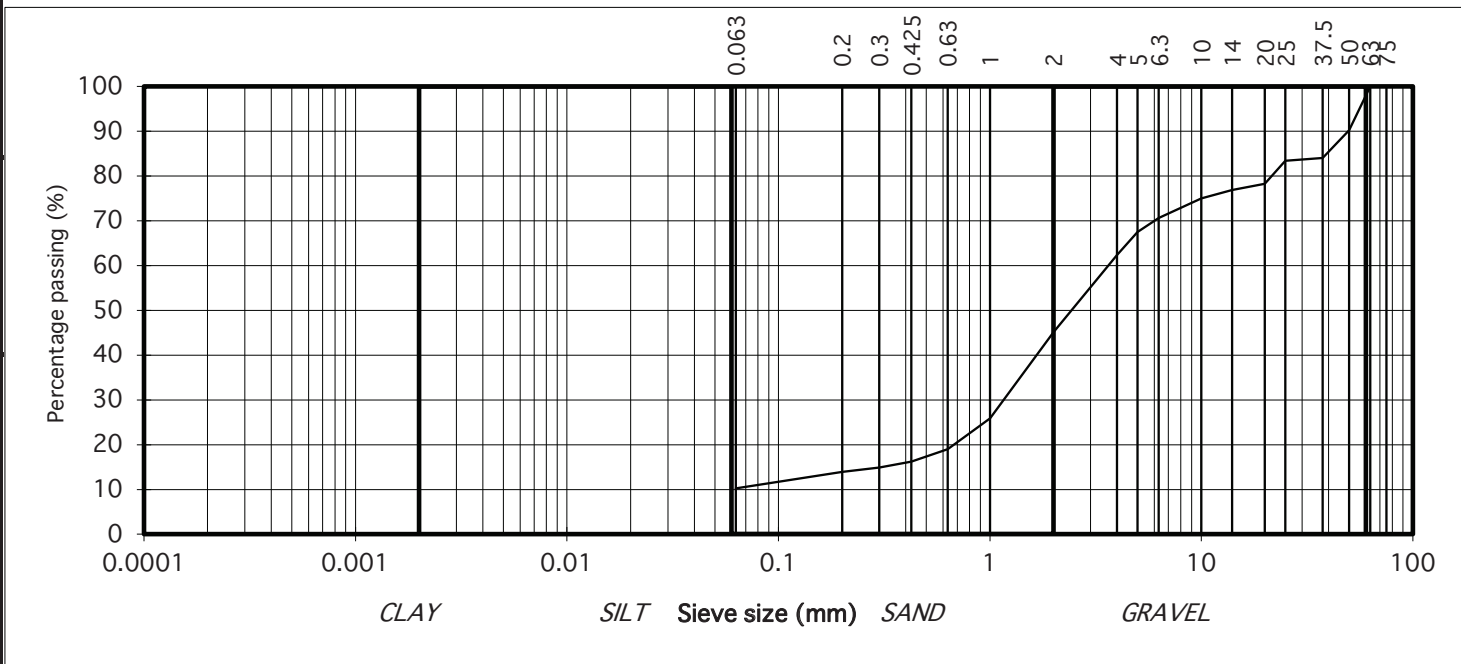
TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377-2:2022 Clause 10
(note: Sedimentation stage not accredited)



particle size	% passing		Contract No. 26458	Report No. R180392	
75	100	COBBLES	Contract Name : Old Connaught Bray Phase 1 Castlethorne		Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
63	100		BH/TP No. TP04		
50	90		Sample No.* AA258588	Lab. Sample No. A26/1056	
37.5	84		Sample Type: B		
25	83		Depth* (m) 2.30	Customer: Atkins CE	
20	78	GRAVEL	Date Received 14/05/2026	Date Testing started 14/05/2026	
14	77		Description: Brown clayey/silty, very sandy, GRAVEL		
10	75		Remarks		
6.3	71				
5.0	67				
4.0	62	SAND			
2.0	45				
1.0	26				
0.63	19				
0.425	16				
0.3	15	SILT/CLAY			
0.2	14				
0.063	10				



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
<i>H Byrne</i>	03/06/26	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
 Tested in accordance with: BS1377-2:2022 Clause 10
 (note: Sedimentation stage not accredited)



particle size	% passing		Contract No.	26458	Report No.	R180393		
			Contract Name :	Old Connaught Bray Phase 1 Castlethorne				Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			BH/TP No.	TP05				
			Sample No.*	AA258596	Lab. Sample No.	A26/1057		
			Sample Type:	B				
			Depth* (m)	1.50	Customer:	Atkins CE		
			Date Received	14/05/2026	Date Testing started	14/05/2026		
			Description:	Brown slightly sandy, slightly gravelly, CLAY				
			Remarks					
75	100	COBBLES						
63	100							
50	100							
37.5	100							
25	100							
20	97	GRAVEL						
14	95							
10	92							
6.3	89							
5.0	88							
4.0	86							
2.0	83							
1.0	80							
0.63	78		SAND					
0.425	76							
0.3	74							
0.2	73							
0.063	63							
0.037	54	SILT/CLAY						
0.027	50							
0.017	44							
0.010	38							
0.007	32							
0.005	27							
0.002	14							

Sieve size (mm)	Percentage passing (%)
75	100
63	100
50	100
37.5	100
25	100
20	97
14	95
10	92
6.3	89
5.0	88
4.0	86
2.0	83
1.0	80
0.63	78
0.425	76
0.3	74
0.2	73
0.063	63
0.037	54
0.027	50
0.017	44
0.010	38
0.007	32
0.005	27
0.002	14

IGSL Ltd Materials Laboratory

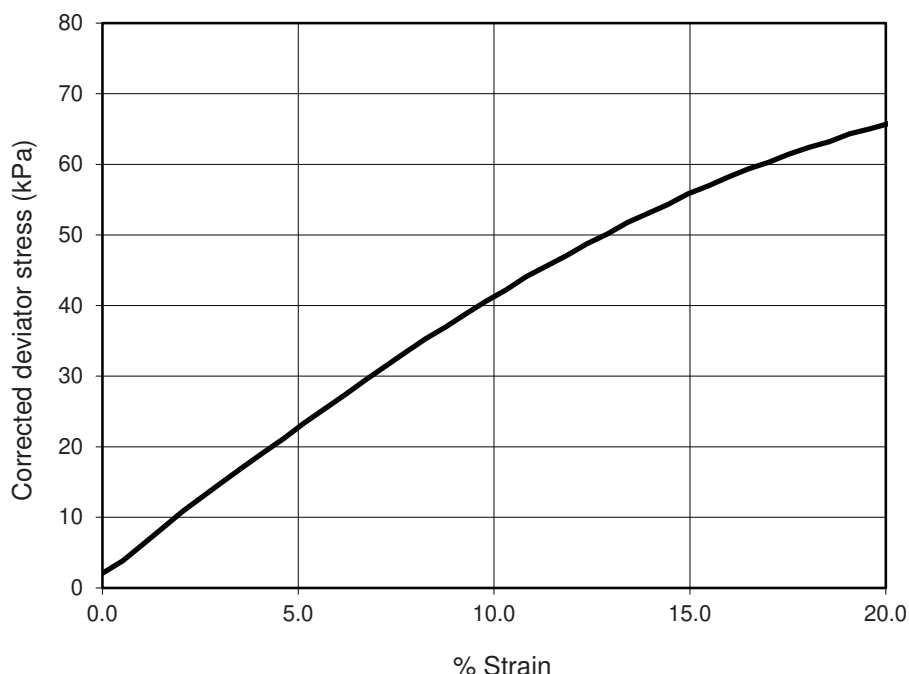
Approved by:	Date:	Page no:
	03/06/26	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

IGSL Ltd Materials Laboratory Unit F, M7 Business Park Naas Co. Kildare 045-899324	Test Report		
	Unconsolidated Undrained Triaxial Test Tested in accordance with BS EN ISO 17892 - 8 : 2018		

Report no: R179299
 Contract Name: Old Connaught Bray Phase 1 Contract No: 26458
 Location*: BH2 1.0m Sample No*: 265208
 Description: Grey mottled brown sandy SILT/CLAY
 Customer: Atkins

Height (mm)	194.0	Diameter	104.0	Cell pressure(kPa)	20
Water Content %	19.4	Bulk density (Mg/m ³)	2.11	Dry density (Mg/m ³)	1.77

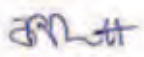


Strain at failure %	20.6	Cohesion C _u (kPa)	33
		(Undrained shear strength kPa)	
Rate of strain (%/minute)	2.0		
Thickness of membrane	0.48	Membrane correction (at failure)	5.155
Date received	-	Date tested	18/05/26

Results relate only to the specimen tested, in as received condition unless otherwise noted. Opinions and interpretations are outside the scope of accreditation.

* denotes Customer supplied information

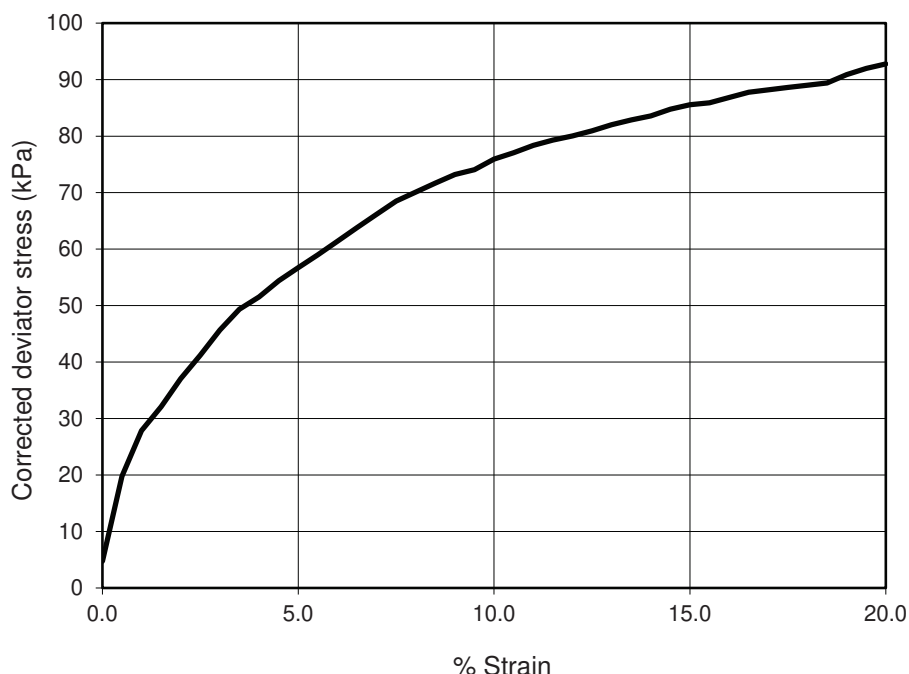
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Person authorised to approve report: J Barrett (Quality Manager)				
	IGSL Materials Laboratory	Approved by	Date	Page
			21/05/26	1 of 1

IGSL Ltd Materials Laboratory Unit F, M7 Business Park Naas Co. Kildare 045-899324	Test Report		
	Unconsolidated Undrained Triaxial Test Tested in accordance with BS EN ISO 17892 - 8 : 2018		

Report no: R179300
 Contract Name: Old Connaught Bray Phase 1 Contract No: 26458
 Location*: BH3 1.5m Sample No*: 260246
 Description: Brown silty sandy GRAVEL with cobbles
 Customer: Atkins

Height (mm)	200.0	Diameter	103.0	Cell pressure(kPa)	30
Water Content %	16.8	Bulk density (Mg/m ³)	2.19	Dry density (Mg/m ³)	1.87

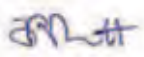


Strain at failure %	20.0	Cohesion C _u (kPa)	46
		(Undrained shear strength kPa)	
Rate of strain (%/minute)	2.0		
Thickness of membrane	0.48	Membrane correction (at failure)	5.000
Date received	-	Date tested	19/05/26

Results relate only to the specimen tested, in as received condition unless otherwise noted. Opinions and interpretations are outside the scope of accreditation.

* denotes Customer supplied information

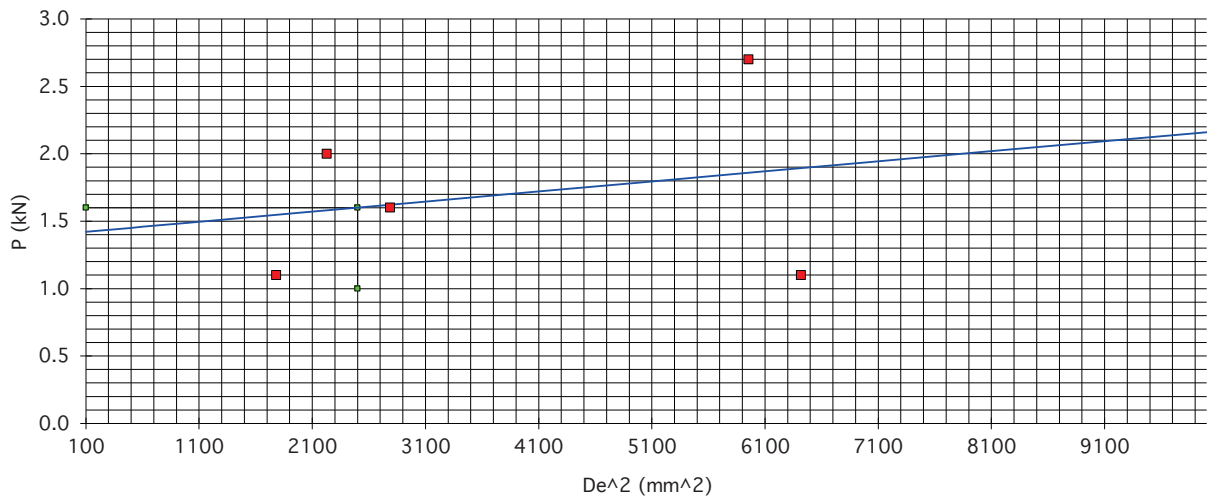
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Person authorised to approve report: J Barrett (Quality Manager)				
	IGSL Materials Laboratory	Approved by	Date	Page
			21/05/26	1 of 1

Point Load Irregular - Test Results		
Contract: Phase 1 - M11 - Old Connaught Contract No.: 26458 Date of Test: 10/06/2026 Tested by: D. O'Shea	Sample Type: Irregular Core Pieces	

Sample Type: Irregular Core Pieces

Tested by: D. O'Shea

[illegible]

Equation of Best Fit	P	=	7.5E-05	De^2 +	1.413485609
P(50) at D(50) from graph =				1.60 kN	
Is(50) = (P(50)/2500) x 1000 =				0.6 MN/m^2	
IS(50) X 20 = UCS approximately =				12.802546 MPa	

Appendix 11

Chemical & Environmental Laboratory Testing (Eurofins Chemtest Laboratory)



Final Report

Report No.: 26-10992-1

Initial Date of Issue: 22-Apr-2026

Re-Issue Details:

Client IGSL

Client Address: M7 Business Park
Naas
County Kildare
Ireland

Contact(s): Darren Keogh

Project 26458 Old Conna (Phase 1)

Quotation No.: Q26-41264

Date Received: 08-Apr-2026

Order No.:

Date Instructed: 09-Apr-2026

No. of Samples: 4

Turnaround (Wkdays): 7

Results Due: 17-Apr-2026

Date Approved: 22-Apr-2026

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: 26458 Old Conna (Phase 1)

Client: IGSL		Chemtest Job No.:							
Quotation No.: Q26-41264		Chemtest Sample ID.:							
		<i>Client Reference:</i>		CP01	CP02	CP03	TP4		
		<i>Sample Type:</i>		SOIL	SOIL	SOIL	SOIL		
		<i>Top Depth (m):</i>		1.00	2.00	1.00	1.00		
		<i>Date Sampled:</i>		29-Mar-2026	29-Mar-2026	29-Mar-2026	29-Mar-2026		
Determinand	HWOL Code	Accred.	SOP	Units	LOD				
Moisture		N	2030	%	0.020	16	17	15	18
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones	Stones	Roots
Soil Texture		N	2030		N/A	Clay	Clay	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0	8.2	8.1	8.0	7.6
Magnesium (Water Soluble)		N	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	< 0.010	0.010	< 0.010	< 0.010
Total Sulphur		U	2175	%	0.010	0.014	0.017	0.019	0.037
Chloride (Water Soluble)		M	2220	g/l	0.010	< 0.010	< 0.010	< 0.010	0.016
Nitrate (Water Soluble)		N	2220	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Ammonium (Water Soluble)		N	2220	g/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphate (Acid Soluble)		U	2430	%	0.010	0.019	0.018	0.032	0.042

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Text example All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at $\leq 30^{\circ}\text{C}$ prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Where analysis is performed on a dried and crushed sample, it has been prepared by crushing all of the sample. If material has been removed prior to crushing, or by request of the client, this will be stated on the report.

NEW_ASB Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL

DURHAM Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Report Information

Charges may apply to extended sample storage.

Water Sample Category Key for Accreditation

DW - Drinking Water (Non-Regulatory)
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
cs@etuki.eurofins.com



Final Report

Report No.: 26-09996-1

Initial Date of Issue: 29-Apr-2026

Re-Issue Details:

Client IGSL

Client Address: M7 Business Park
Naas
County Kildare
Ireland

Contact(s): Darren Keogh

Project Old Conna Phase 1

Quotation No.: **Date Received:** 31-Mar-2026

Order No.: **Date Instructed:** 02-Apr-2026

No. of Samples: 5

Turnaround (Wkdays): 7 **Results Due:** 14-Apr-2026

Date Approved: 29-Apr-2026

Approved By:

Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: Old Conna Phase 1

Client: IGSL	Chemtest Job No.:					26-09996	26-09996	26-09996	26-09996	26-09996
Quotation No.:	Chemtest Sample ID.:					2103258	2103259	2103260	2103261	2103262
	<i>Client Sample ID.:</i>					<i>TP01</i>	<i>TP02</i>	<i>TP03</i>	<i>TP04</i>	<i>TP05</i>
	<i>Sample Type:</i>					<i>SOIL</i>	<i>SOIL</i>	<i>SOIL</i>	<i>SOIL</i>	<i>SOIL</i>
	<i>Top Depth (m):</i>					<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
	<i>Bottom Depth (m):</i>					<i>1.00</i>	<i>1.00</i>	<i>1.00</i>	<i>1.00</i>	<i>1.00</i>
	<i>Date Sampled:</i>					<i>20-Mar-2026</i>	<i>20-Mar-2026</i>	<i>20-Mar-2026</i>	<i>20-Mar-2026</i>	<i>20-Mar-2026</i>
Determinand	Accred.	SOP	Type	Units	LOD					
Ammonium	U	1220	10:1	mg/l	0.050	0.21	0.14	0.23	0.16	0.20
Ammonium	N	1220	10:1	mg/kg	0.10	2.2	1.8	2.3	2.0	2.1

Results - Soil

Project: Old Conna Phase 1

Client: IGSL		Chemtest Job No.:		26-09996	26-09996	26-09996	26-09996	26-09996
Quotation No.:		Chemtest Sample ID.:		2103258	2103259	2103260	2103261	2103262
		Client Sample ID.:		TP01	TP02	TP03	TP04	TP05
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.00	0.00	0.00	0.00	0.00
		Bottom Depth (m):		1.00	1.00	1.00	1.00	1.00
		Date Sampled:		20-Mar-2026	20-Mar-2026	20-Mar-2026	20-Mar-2026	20-Mar-2026
		Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD			
ACM Type		N	2192		N/A	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	21	19	16
Soil Colour		N	2030		N/A	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones	Stones
Soil Texture		N	2030		N/A	Sand	Clay	Clay
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	0.65	0.55	< 0.40
Sulphur (Elemental)		M	2180	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Cyanide (Total)		M	2300	mg/kg	0.50	0.80	0.80	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.7	4.0	5.0
Sulphate (Total)		U	2430	%	0.010	0.085	0.056	0.042
Arsenic		M	2455	mg/kg	0.5	18	17	21
Barium		M	2455	mg/kg	0.5	61	38	39
Cadmium		M	2455	mg/kg	0.10	0.95	0.53	0.65
Chromium		M	2455	mg/kg	0.5	26	25	29
Molybdenum		M	2455	mg/kg	0.5	1.2	0.7	0.8
Antimony		N	2455	mg/kg	2.0	< 2.0	< 2.0	< 2.0
Copper		M	2455	mg/kg	0.50	19	15	17
Mercury		M	2455	mg/kg	0.05	0.07	< 0.05	0.06
Nickel		M	2455	mg/kg	0.50	25	24	26
Lead		M	2455	mg/kg	0.50	57	29	23
Selenium		M	2455	mg/kg	0.25	0.83	0.54	0.40
Zinc		M	2455	mg/kg	0.50	85	67	74
Chromium (Trivalent)		N	2490	mg/kg	1.0	26	25	29
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Aliphatic EPH >C10-C12	EH_2D_AL_#1	M	5002	mg/kg	2.00	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	EH_2D_AL_#1	M	5002	mg/kg	2.00	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C16-C21	EH_2D_AL_#1	M	5002	mg/kg	2.00	130	< 2.0	< 2.0
Aliphatic EPH >C21-C35	EH_2D_AL_#1	M	5002	mg/kg	3.00	46	< 3.0	< 3.0
Aliphatic EPH >C35-C40	EH_2D_AL_#1	N	5002	mg/kg	10.00	< 10	< 10	< 10

Results - Soil

Project: Old Conna Phase 1

Client: IGS		Chemtest Job No.:		26-09996	26-09996	26-09996	26-09996	26-09996
Quotation No.:		Chemtest Sample ID.:		2103258	2103259	2103260	2103261	2103262
		Client Sample ID.:		TP01	TP02	TP03	TP04	TP05
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.00	0.00	0.00	0.00	0.00
		Bottom Depth (m):		1.00	1.00	1.00	1.00	1.00
		Date Sampled:		20-Mar-2026	20-Mar-2026	20-Mar-2026	20-Mar-2026	20-Mar-2026
		Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD			
Total Aliphatic EPH >C10-C35	EH_2D_AL_#1	M	5002	mg/kg	7.00	180	< 7.0	< 7.0
Aromatic EPH >C10-C12	EH_2D_AR_#1	U	5002	mg/kg	2.00	< 2.0	< 2.0	< 2.0
Aromatic EPH >C12-C16	EH_2D_AR_#1	U	5002	mg/kg	2.00	19	< 2.0	< 2.0
Aromatic EPH >C16-C21	EH_2D_AR_#1	U	5002	mg/kg	2.00	< 2.0	< 2.0	< 2.0
Aromatic EPH >C21-C35	EH_2D_AR_#1	U	5002	mg/kg	2.00	2.7	< 2.0	2.4
Aromatic EPH >C35-C40	EH_2D_AR_#1	N	5002	mg/kg	1.00	< 1.0	< 1.0	< 1.0
Total Aromatic EPH >C10-C35	EH_2D_AR_#1	U	5002	mg/kg	4.00	22	< 4.0	5.7
Total EPH >C10-C35	EH_2D_Total_#1	U	5002	mg/kg	10.00	200	< 10	12
Mineral Oil EPH	EH_2D_AL_#1	N	5002	mg/kg	10	180	< 10	< 10
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Naphthalene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Acenaphthene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Fluorene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Phenanthrene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Anthracene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Fluoranthene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Pyrene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Benzo[a]anthracene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Chrysene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Benzo[b]fluoranthene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Benzo[k]fluoranthene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Benzo[a]pyrene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-c,d)Pyrene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)Anthracene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Benzo[g,h,i]perylene		M	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Coronene		N	5003	mg/kg	0.05	< 0.05	< 0.05	< 0.05
PCB 28		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Total Phenols		M	2920	mg/kg	0.10	0.16	< 0.10	< 0.10

Results - Single Stage WAC

Project: Old Conna Phase 1

Chemtest Job No: 26-09996						Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 2103258						Inert Waste Landfill	Limits	
Sample Ref:							Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID: TP01								
Client Reference:								
Top Depth(m): 0.00								
Bottom Depth(m): 1.00								
Sampling Date: 20-Mar-2026								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	1.7	3	5	6
Loss On Ignition	2610		M	%	6.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	5002	EH 2D Total #1	N	mg/kg	180	500	--	--
Total (Of 17) PAH's	5003		N	mg/kg	< 0.1	100	--	--
pH at 20C	2010		M		7.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.020	--	To evaluate	To evaluate
Eluate Analysis				10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455		U	0.0055	0.055	0.5	2	25
Barium	1455		U	0.033	0.33	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0017	0.017	0.5	10	70
Copper	1455		U	0.0040	0.040	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0055	0.056	0.5	10	30
Nickel	1455		U	0.0037	0.037	0.4	10	40
Lead	1455		U	0.0042	0.042	0.5	10	50
Antimony	1455		N	0.0014	0.014	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.015	0.15	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.38	3.8	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	53	530	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.4	54	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.1
WAC Sample Weight	646.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Old Conna Phase 1

Chemtest Job No: 26-09996 Chemtest Sample ID: 2103259 Sample Ref: Sample ID: TP02 Client Reference: Top Depth(m): 0.00 Bottom Depth(m): 1.00 Sampling Date: 20-Mar-2026						Landfill Waste Acceptance Criteria Limits		
						Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	1.0	3	5	6
Loss On Ignition	2610		M	%	4.9	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	5002	EH_2D_Total_#1	N	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	5003		N	mg/kg	< 0.1	100	--	--
pH at 20C	2010		M		7.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis				10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455		U	0.0035	0.035	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0041	0.041	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0009	0.0090	0.5	10	30
Nickel	1455		U	0.0018	0.018	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		N	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	< 0.003	< 0.025	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.26	2.6	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	120	1200	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.1
WAC Sample Weight	683.6

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Old Conna Phase 1

Chemtest Job No: 26-09996 Chemtest Sample ID: 2103260 Sample Ref: Sample ID: TP03 Client Reference: Top Depth(m): 0.00 Bottom Depth(m): 1.00 Sampling Date: 20-Mar-2026						Landfill Waste Acceptance Criteria Limits		
						Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	0.69	3	5	6
Loss On Ignition	2610		M	%	3.3	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	5002	EH_2D_Total_#1	N	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	5003		N	mg/kg	< 0.1	100	--	--
pH at 20C	2010		M		7.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.014	--	To evaluate	To evaluate
Eluate Analysis				10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455		U	0.0028	0.028	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0021	0.021	0.5	10	70
Copper	1455		U	0.0030	0.030	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0006	0.0062	0.5	10	30
Nickel	1455		U	0.0012	0.012	0.4	10	40
Lead	1455		U	0.0018	0.018	0.5	10	50
Antimony	1455		N	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.007	0.073	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.21	2.1	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	30	300	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.3	53	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11
WAC Sample Weight	805.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Old Conna Phase 1

Chemtest Job No: 26-09996 Chemtest Sample ID: 2103261 Sample Ref: Sample ID: TP04 Client Reference: Top Depth(m): 0.00 Bottom Depth(m): 1.00 Sampling Date: 20-Mar-2026						Landfill Waste Acceptance Criteria Limits		
Determinand	SOP	HWOL Code	Accred.	Units		Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon	2625		M	%	1.4	3	5	6
Loss On Ignition	2610		M	%	4.5	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	5002	EH_2D_Total_#1	N	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	5003		N	mg/kg	< 0.1	100	--	--
pH at 20C	2010		M		7.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis				10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455		U	0.0009	0.0095	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0009	0.0087	0.5	10	70
Copper	1455		U	0.0016	0.016	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0011	0.011	0.5	10	30
Nickel	1455		U	0.0009	0.0086	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		N	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.005	0.047	4	50	200
Chloride	1220		U	1.3	13	800	15000	25000
Fluoride	1220		U	0.25	2.5	10	150	500
Sulphate	1220		U	1.3	13	1000	20000	50000
Total Dissolved Solids	1020		N	82	810	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.4
WAC Sample Weight	748.0

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Old Conna Phase 1

Chemtest Job No: 26-09996						Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 2103262						Inert Waste Landfill	Limits	
Sample Ref:							Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID: TP05								
Client Reference:								
Top Depth(m): 0.00								
Bottom Depth(m): 1.00								
Sampling Date: 20-Mar-2026								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	2.3	3	5	6
Loss On Ignition	2610		M	%	6.5	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
WAC Total C10-C40	5002	EH_2D_Total_#1	N	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	5003		N	mg/kg	< 0.1	100	--	--
pH at 20C	2010		M		7.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis				10:1 Eluate mg/kg	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455		U	0.0024	0.024	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0019	0.019	0.5	10	70
Copper	1455		U	0.0030	0.030	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0008	0.0078	0.5	10	30
Nickel	1455		U	0.0015	0.015	0.4	10	40
Lead	1455		U	0.0012	0.012	0.5	10	50
Antimony	1455		N	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.006	0.057	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.34	3.4	10	150	500
Sulphate	1220		U	1.0	10	1000	20000	50000
Total Dissolved Solids	1020		N	45	450	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.1	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	10
WAC Sample Weight	781.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	PL GW
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos Quantification in Soils Sediments Ballast & Aggregate Crushed Concrete & Demolition Rubble	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N-dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8–C10 Aromatics: >C5–C7,>C7–C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
5002	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Hexane extraction / GCxGC FID detection	
5003	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Hexane / Acetone extraction GC-MS	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Text example All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at $\leq 30^{\circ}\text{C}$ prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Where analysis is performed on a dried and crushed sample, it has been prepared by crushing all of the sample. If material has been removed prior to crushing, or by request of the client, this will be stated on the report.

NEW_ASB Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL

DURHAM Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - The required amount of sample for analysis was not received
- H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water (Non-Regulatory)
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
cs@etuki.eurofins.com

Appendix 12

As-Surveyed Site Plan