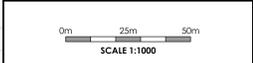


**DO NOT SCALE (A0)**  
**NOTES**

- GENERAL NOTES**
1. ALL MATERIALS AND WORKMANSHIP IS TO COMPLY WITH JPG CONSULTANTS STANDARD SPECIFICATION & ALL RELEVANT BRITISH & EUROPEAN STANDARDS.
  2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL & E.C. CONSULTANTS AND JPG CONSULTANTS DRAWINGS.
  3. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ENGINEER IMMEDIATELY SO THAT CORRECTION CAN BE SOUGHT PRIOR TO COMMENCEMENT OF WORKS.

- LEGEND**
- 5.000 DENOTES PROPOSED MAJOR CONTOURS
  - 1.000 DENOTES PROPOSED MINOR CONTOURS
  - 1:40 DENOTES PROPOSED GRADIENTS
  - DENOTES DEVELOPABLE PLATEAU
  - DENOTES ATTENUATION BASINS
  - DENOTES LANDSCAPING AREA
  - DENOTES FILLED EMBANKMENT
  - DENOTES CUT EMBANKMENT



NO WORKS WITHIN 15m STAND OFF FROM RETAINED WOODLAND.

P04	REVISED TO SUB PLANNING COMMENTS	04.10.23	JOM	LSG
P03	REVISED HIGHWAY ALIGNMENT	17.04.23	CPH	LSG
P02	REVISED ATTENUATION LAYOUT	11.04.23	CPH	LSG
P01	FIRST ISSUE	10.03.23	CPH	LSG

REV	DESCRIPTION	DATE	CHK	BY

Project  
 BARNSLEY WEST

Drawing Title  
 PROPOSED EARTHWORKS LEVELS

**INFORMATION**

www.jpg.group  
 t admin@jpg.group | t +44 (0)113 263 1155



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## **Appendix B   Exploratory Hole Logs**



5 John Charles Way  
Leeds  
LS12 6QA

# Rotary Open Hole Log

Project Name: Barnsley West		Client: Strata Sterling Barnsley West Ltd		Date: 29/03/2019	
Location: Barnsley		Contractor: Allied Exploration & Geotechnics Ltd		Co-ords: E431897.22 N406740.14	
Project No. : 4848		Crew Name: P. Dixon & L. Kitson		Drilling Equipment: Comacchio 305	
Borehole Number <b>BH108</b>	Hole Type RO	Level 130.24m AoD	Logged By P. Dixon	Scale 1:100	Page Number Sheet 1 of 2

Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.40	129.84	MADE GROUND: TOPSOIL. MADE GROUND: Stiff grey COLLIERY SPOIL.	1	
								2	
								3	
								4	
								5	
								6	
								7	
								8	
								9	
								10	
					13.00	117.24	Grey MUDSTONE. (Pennine Middle Coal Measures).	13	
					14.10	116.14	Grey SANDSTONE. (Pennine Middle Coal Measures).	14	
					15.40	114.84	Grey MUDSTONE. (Pennine Middle Coal Measures).	15	
					17.00	113.24	Grey SANDSTONE. (Pennine Middle Coal Measures).	17	
					17.70	112.54	Grey MUDSTONE. (Pennine Middle Coal Measures).	18	
								19	
								20	

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
12.00	159	Rockbit	13.50	123	0.00	27.00	90		0.00	27.00	Air
27.00	120										

**Remarks**  
Fast groundwater flow encountered at 5.10m bgl, rose to 4.20m bgl. Inspection pit dug prior to drilling. All descriptions derived from drillers daily record.





5 John Charles Way  
Leeds  
LS12 6QA

# Rotary Open Hole Log

Project Name: Barnsley West		Client: Strata Sterling Barnsley West Ltd	Date: 29/03/2019
Location: Barnsley		Contractor: Allied Exploration & Geotechnics Ltd	Co-ords: E431897.22 N406740.14
Project No. : 4848		Crew Name: P. Dixon & L. Kitson	Drilling Equipment: Comacchio 305

Borehole Number <b>BH108</b>	Hole Type RO	Level 130.24m AoD	Logged By P. Dixon	Scale 1:100	Page Number Sheet 2 of 2
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Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
Water Strikes					22.60	107.64		Grey MUDSTONE. (Pennine Middle Coal Measures).	21
					23.40	106.84		COAL. (Pennine Middle Coal Measures).	22
					27.00	103.24		Grey MUDSTONE. (Pennine Middle Coal Measures).	23
								End of Borehole at 27.00m	24
									25
									26
									27
									28
									29
									30
									31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
12.00	159	Rockbit	13.50	123	0.00	27.00	90		0.00	27.00	Air
27.00	120										

**Remarks**  
Fast groundwater flow encountered at 5.10m bgl, rose to 4.20m bgl. Inspection pit dug prior to drilling. All descriptions derived from drillers daily record.





5 John Charles Way  
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# Rotary Open Hole Log

Project Name: Barnsley West		Client: Strata Sterling Barnsley West Ltd	Date: 04/04/2019
Location: Barnsley		Contractor: Allied Exploration & Geotechnics Ltd	Co-ords: E431858.63 N406514.84
Project No. : 4848		Crew Name: P. Dixon & L. Kitson	Drilling Equipment: Comacchio 305

Borehole Number <b>BH109</b>	Hole Type RO	Level 149.00m AoD	Logged By P. Dixon	Scale 1:100	Page Number Sheet 1 of 1
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Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30	148.70		MADE GROUND: TOPSOIL.	1
								MADE GROUND: Compact COLLIERY SPOIL.	2
						11.20	137.80		Grey MUDSTONE. (Pennine Middle Coal Measures).
									4
									5
									6
					15.15	133.85		End of Borehole at 15.15m	7
									8
									9
									10
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
11.60	146	Rockbit	1.00	150	0.00	15.15	90		0.00	15.15	Air
15.15	120		11.60	123							

**Remarks**  
Groundwater not encountered. Inspection pit dug prior to drilling. All descriptions derived from drillers daily record. Extensometer equipment installed.





5 John Charles Way  
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# Rotary Open Hole Log

Project Name: Barnsley West		Client: Strata Sterling Barnsley West Ltd	Date: 01/04/2019
Location: Barnsley		Contractor: Allied Exploration & Geotechnics Ltd	Co-ords: E431859.20 N406513.88
Project No. : 4848		Crew Name: P. Dixon & L. Kitson	Drilling Equipment: Comacchio 305

Borehole Number <b>BH109A</b>	Hole Type RO	Level 149.01m AoD	Logged By P. Dixon	Scale 1:100	Page Number Sheet 1 of 2
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Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30	148.71		MADE GROUND: TOPSOIL.	1
								MADE GROUND: Compact COLLIERY SPOIL.	2
									3
									4
									5
									6
									7
									8
									9
									10
									11
					11.20	137.81		Grey MUDSTONE. (Pennine Middle Coal Measures).	12
									13
									14
									15
									16
									17
									18
					18.30	130.71		COAL. (Pennine Middle Coal Measures).	19
				18.70	130.31			Grey MUDSTONE. (Pennine Middle Coal Measures).	20

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
11.50	146	Rockbit	1.00	150	0.00	24.00	90		0.00	24.00	Air
24.00	120		11.30	123							

**Remarks**  
Fast groundwater flow encountered at 5.10m bgl. Inspection pit dug prior to drilling. All descriptions derived from drillers daily record. Groundwater and gas monitoring equipment installed.





5 John Charles Way  
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# Rotary Open Hole Log

Project Name: Barnsley West		Client: Strata Sterling Barnsley West Ltd	Date: 01/04/2019
Location: Barnsley		Contractor: Allied Exploration & Geotechnics Ltd	Co-ords: E431859.20 N406513.88
Project No. : 4848		Crew Name: P. Dixon & L. Kitson	Drilling Equipment: Comacchio 305

Borehole Number <b>BH109A</b>	Hole Type RO	Level 149.01m AoD	Logged By P. Dixon	Scale 1:100	Page Number Sheet 2 of 2
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Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					21.50	127.51		Grey MUDSTONE. (Pennine Middle Coal Measures).	21
								Grey SANDSTONE with mudstone bands. (Pennine Middle Coal Measures).	22
					24.00	125.01		End of Borehole at 24.00m	24
									25
									26
									27
									28
									29
									30
									31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
11.50	146	Rockbit	1.00	150	0.00	24.00	90		0.00	24.00	Air
24.00	120		11.30	123							

**Remarks**  
Fast groundwater flow encountered at 5.10m bgl. Inspection pit dug prior to drilling. All descriptions derived from drillers daily record. Groundwater and gas monitoring equipment installed.





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# Rotary Open Hole Log

Project Name: Barnsley West		Client: Strata Sterling Barnsley West Ltd		Date: 05/04/2019	
Location: Barnsley		Contractor: Allied Exploration & Geotechnics Ltd		Co-ords: E431417.07 N406718.02	
Project No. : 4848		Crew Name: L. Hayes & K. Fullard		Drilling Equipment: Boart Longyear DB520	
Borehole Number <b>BH121</b>	Hole Type RO	Level 144.67m AoD	Logged By L. Hayes	Scale 1:100	Page Number Sheet 1 of 2

Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
BH121					0.20	144.47		MADE GROUND: TOPSOIL.	
					0.50	144.17		MADE GROUND: Brown clay FILL.	
								Grey MUDSTONE. (Pennine Middle Coal Measures).	1
									2
									3
					3.40	141.27		Brown grey MUDSTONE. (Pennine Middle Coal Measures).	4
									5
									6
					6.30	138.37		COAL with interbedded mudstone. (Pennine Middle Coal Measures).	7
									8
					8.00	136.67		Grey MUDSTONE. (Pennine Middle Coal Measures).	9
									10
									11
									12
									13
									14
					14.60	130.07		COAL. (Pennine Middle Coal Measures).	15
					15.00	129.67		Grey MUDSTONE. (Pennine Middle Coal Measures).	16
				16.00	128.67		COAL. (Pennine Middle Coal Measures).	17	
				16.50	128.17		MUDSTONE. (Pennine Middle Coal Measures).	18	
								19	
				17.40	127.27		Grey SANDSTONE. (Pennine Middle Coal Measures).	20	

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
3.00	120	Rock roller	1.50	123	0.00	40.00	90		1.20	40.00	Air
40.00	92										

**Remarks**  
Groundwater not encountered. Inspection pit dug prior to drilling. All descriptions derived from drillers daily record.





5 John Charles Way  
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# Rotary Open Hole Log

Project Name: Barnsley West		Client: Strata Sterling Barnsley West Ltd	Date: 05/04/2019
Location: Barnsley		Contractor: Allied Exploration & Geotechnics Ltd	Co-ords: E431417.07 N406718.02
Project No. : 4848		Crew Name: L. Hayes & K. Fullard	Drilling Equipment: Boart Longyear DB520

Borehole Number <b>BH121</b>	Hole Type RO	Level 144.67m AoD	Logged By L. Hayes	Scale 1:100	Page Number Sheet 2 of 2
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Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					21.00	123.67		Grey SANDSTONE. (Pennine Middle Coal Measures).	21
								Grey MUDSTONE. (Pennine Middle Coal Measures).	22
					24.40	120.27		Grey SANDSTONE. (Pennine Middle Coal Measures).	24
					26.40	118.27		Grey MUDSTONE. (Pennine Middle Coal Measures).	26
					29.20	115.47		COAL. (Pennine Middle Coal Measures).	29
					29.50	115.17		Grey MUDSTONE. (Pennine Middle Coal Measures).	30
					30.30	114.37		Grey and brown SANDSTONE. (Pennine Middle Coal Measures).	31
					33.50	111.17		Grey MUDSTONE. (Pennine Middle Coal Measures).	33
					37.50	107.17		Grey SANDSTONE. (Pennine Middle Coal Measures).	37
					40.00	104.67		End of Borehole at 40.00m	40

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
3.00	120	Rock roller	1.50	123	0.00	40.00	90		1.20	40.00	Air
40.00	92										

**Remarks**  
Groundwater not encountered. Inspection pit dug prior to drilling. All descriptions derived from drillers daily record.





5 John Charles Way  
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# Rotary Open Hole Log

Project Name: Barnsley West		Client: Strata Sterling Barnsley West Ltd	Date: 01/04/2019 - 02/04/2019
Location: Barnsley		Contractor: Allied Exploration & Geotechnics Ltd	Co-ords: E431949.67 N406830.54
Project No. : 4848		Crew Name: P. Dixon & L. Kitson	Drilling Equipment: Comacchio 305

Borehole Number <b>BH122</b>	Hole Type RO	Level 126.80m AoD	Logged By P. Dixon	Scale 1:100	Page Number Sheet 1 of 2
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Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.50	126.30		MADE GROUND: TOPSOIL.	
					1.10	125.70		Firm orangish brown CLAY. (Residual soil - Pennine Middle Coal Measures).	1
								Weathered grey sandy MUDSTONE. (Pennine Middle Coal Measures).	2
									3
									4
					4.80	122.00		Dark grey SHALE. (Pennine Middle Coal Measures).	5
					7.30	119.50		Grey MUDSTONE. (Pennine Middle Coal Measures).	7
					7.60	119.20		Grey MUDSTONE. (Pennine Middle Coal Measures).	8
					8.10	118.70		Grey SANDSTONE. (Pennine Middle Coal Measures).	8
					8.20	118.60		COAL. (Pennine Middle Coal Measures).	9
				9.10	117.70		Grey SANDSTONE. (Pennine Middle Coal Measures).	9	
							Weak grey MUDSTONE. (Pennine Middle Coal Measures).	10	
								11	
								12	
								13	
								14	
								15	
				15.40	111.40		COAL. (Pennine Middle Coal Measures).	16	
								17	
				17.70	109.10		Weak grey MUDSTONE. (Pennine Middle Coal Measures).	18	
								19	
								20	

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
1.00	146	Rockbit	1.00	150	0.00	21.00	90		1.00	6.00	Air Water
6.00	120		6.00	123					6.00	21.00	

Remarks  
Fast groundwater flow encountered at 5.20m bgl. Inspection pit dug prior to drilling. All descriptions derived from drillers daily record.





5 John Charles Way  
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LS12 6QA

# Rotary Open Hole Log

Project Name: Barnsley West	Client: Strata Sterling Barnsley West Ltd	Date: 01/04/2019 - 02/04/2019
Location: Barnsley	Contractor: Allied Exploration & Geotechnics Ltd	Co-ords: E431949.67 N406830.54
Project No. : 4848	Crew Name: P. Dixon & L. Kitson	Drilling Equipment: Comacchio 305

Borehole Number <b>BH122</b>	Hole Type RO	Level 126.80m AoD	Logged By P. Dixon	Scale 1:100	Page Number Sheet 2 of 2
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Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					21.00	105.80	Weak grey MUDSTONE. (Pennine Middle Coal Measures).		
							End of Borehole at 21.00m	21	
								22	
								23	
								24	
								25	
								26	
								27	
								28	
								29	
								30	
								31	
								32	
								33	
								34	
								35	
								36	
								37	
								38	
								39	
								40	

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
1.00	146	Rockbit	1.00	150	0.00	21.00	90		1.00	6.00	Air
6.00	120		6.00	123					6.00	21.00	

**Remarks**  
Fast groundwater flow encountered at 5.20m bgl. Inspection pit dug prior to drilling. All descriptions derived from drillers daily record.





5 John Charles Way  
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LS12 6QA

# Rotary Open Hole Log

Project Name: Barnsley West		Client: Strata Sterling Barnsley West Ltd	Date: 03/04/2019 - 04/04/2019
Location: Barnsley		Contractor: Allied Exploration & Geotechnics Ltd	Co-ords: E432176.63 N406680.48
Project No. : 4848		Crew Name: P. Dixon & L. Kitson	Drilling Equipment: Comacchio 305

Borehole Number <b>BH125</b>	Hole Type RO	Level 131.60m AoD	Logged By P. Dixon	Scale 1:100	Page Number Sheet 1 of 2
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Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
Well Borehole BH125 					0.25	131.35	MADE GROUND: TOPSOIL.		
					1.10	130.50	Grey MUDSTONE. (Pennine Middle Coal Measures).	1	
					1.70	129.90	Grey SANDSTONE. (Pennine Middle Coal Measures).	2	
					3.30	128.30	Weathered brown SANDSTONE. (Pennine Middle Coal Measures).	3	
					4.30	127.30	COAL. (Pennine Middle Coal Measures).	4	
					6.40	125.20	Grey MUDSTONE. (Pennine Middle Coal Measures).	5	
					8.60	123.00	Brown SANDSTONE. (Pennine Middle Coal Measures).	6	
					10.50	121.10	Grey MUDSTONE. (Pennine Middle Coal Measures).	7	
					12.20	119.40	Grey SANDSTONE with white sandstone and quartz bands. (Pennine Middle Coal Measures).	8	
					15.00	116.60	Grey MUDSTONE. (Pennine Middle Coal Measures).	9	
					15.50	116.10	COAL. (Pennine Middle Coal Measures).	10	
					15.80	115.80	Grey MUDSTONE. (Pennine Middle Coal Measures).	11	
								12	
								13	
								14	
								15	
							16		
							17		
							18		
							19		
							20		

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
6.00	146	Rockbit	1.00	150	0.00	40.00	90		1.00	40.00	Air
40.00	120		6.00	123							

**Remarks**  
Fast groundwater flow encountered at 4.80m bgl. Inspection pit dug prior to drilling. All descriptions derived from drillers daily record.





5 John Charles Way  
Leeds  
LS12 6QA

# Rotary Open Hole Log

Project Name: Barnsley West		Client: Strata Sterling Barnsley West Ltd		Date: 03/04/2019 - 04/04/2019	
Location: Barnsley		Contractor: Allied Exploration & Geotechnics Ltd		Co-ords: E432176.63 N406680.48	
Project No. : 4848		Crew Name: P. Dixon & L. Kitson		Drilling Equipment: Comacchio 305	
Borehole Number <b>BH125</b>	Hole Type RO	Level 131.60m AoD	Logged By P. Dixon	Scale 1:100	Page Number Sheet 2 of 2

Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
								Grey MUDSTONE. (Pennine Middle Coal Measures).	21
					23.90	107.70			22
					24.00	107.60			23
								COAL. (Pennine Middle Coal Measures).	24
								Grey MUDSTONE. (Pennine Middle Coal Measures).	
					25.10	106.50			25
					25.50	106.10		COAL. (Pennine Middle Coal Measures).	
								Grey MUDSTONE. (Pennine Middle Coal Measures).	26
									27
									28
									29
									30
								31	
								32	
								33	
								34	
								35	
								36	
				36.60	95.00				
				36.90	94.70		COAL. (Pennine Middle Coal Measures).		
							Grey MUDSTONE. (Pennine Middle Coal Measures).	37	
				38.10	93.50			38	
							Grey SANDSTONE. (Pennine Middle Coal Measures).		
								39	
				40.00	91.60			40	
End of Borehole at 40.00m									

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
6.00	146	Rockbit	1.00	150	0.00	40.00	90		1.00	40.00	Air
40.00	120		6.00	123							

**Remarks**  
Fast groundwater flow encountered at 4.80m bgl. Inspection pit dug prior to drilling. All descriptions derived from drillers daily record.





5 John Charles Way  
Leeds  
LS12 6QA

# Trial Pit Log

Project Name: Barnsley West	Client: Strata Sterling Barnsley West Ltd	Date: 16/05/2019
Location: Barnsley	Contractor: Allied Exploration & Geotechnics Ltd	Co-ords: E431410.64 N406707.87
Project No. : 4848	Crew Name: M. Simons	Equipment: 3CX with a 2ft bucket

Location Number <b>TP108</b>	Location Type TP	Level 144.79m AoD	Logged By JAM	Scale 1:20	Page Number Sheet 1 of 1
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Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
TP108		0.00 - 0.10	ES		0.10	144.69		MADE GROUND: Dark brown slightly sandy slightly gravelly CLAY with rootlets. Gravel is angular to rounded fine to coarse of mudstone, sandstone and coal. (Topsoil).	1
					0.40	144.39		MADE GROUND: Stiff dark greyish brown slightly gravelly sandy CLAY. Gravel is angular to rounded fine to medium of mudstone, coal and sandstone.	
					0.55	144.24		MADE GROUND: Firm light orangish brown slightly gravelly sandy CLAY. Gravel is angular to rounded, fine of mudstone and coal.	
								MADE GROUND: Soft becoming firm light grey slightly sandy gravelly CLAY with high cobble and low boulder content. Gravel is angular fine to coarse of mudstone, siltstone, sandstone and coal. Cobbles are angular of mostly mudstone, siltstone, sandstone and rare brick. Boulders are angular up to 300mm across of mudstone, siltstone and sandstone.	
		2.50 - 2.80	B						2
		2.60 - 2.70	ES						
		2.70 - 2.80	D						
	3.10		HSV=71		2.80	141.99	Firm medium strength thinly laminated light orangish brown and grey slightly sandy slightly gravelly CLAY. Gravel is subrounded fine to medium of mudstone and coal. (Residual soil - Pennine Middle Coal Measures)	3	
					3.40	141.39	Ironstone cobbles encountered at 3.40m bgl.	4	
End of Trial Pit at 3.40m									

Dimensions		Trench Support and Comment			Pumping Data			
Pit Length 3.50	Pit Width 0.60	Pit Stability Sides Stable	Shoring Used None	Remarks		Date	Rate	Remarks

Remarks  
Groundwater not encountered. No visual or olfactory evidence of potential hydrocarbon contamination encountered.





5 John Charles Way  
Leeds  
LS12 6QA

# Trial Pit Log

Project Name: Barnsley West		Client: Strata Sterling Barnsley West Ltd	Date: 16/05/2019
Location: Barnsley		Contractor: Allied Exploration & Geotechnics Ltd	Co-ords: E431937.80 N406836.93
Project No. : 4848		Crew Name: M. Simons	Equipment: 3CX with a 2ft bucket

Location Number <b>TP109</b>	Location Type TP	Level 126.60m AoD	Logged By JAM	Scale 1:20	Page Number Sheet 1 of 1
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Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.00 - 0.15	ES		0.15	126.45		MADE GROUND: Dark brown slightly gravelly slightly sandy CLAY with rootlets. Gravel is angular fine to medium of mixed lithology, including brick, coal and mudstone. (Topsoil).	1	
		0.60 - 1.00	ES		0.55	126.05		MADE GROUND: Firm light orangish brown slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse of sandstone.		
		1.50 - 1.60 1.50 - 1.90	D B		1.50	125.10		Firm light grey and orangish brown slightly gravelly CLAY. Gravel is angular of mudstone, coal and ironstone. (Residual soil - Pennine Middle Coal Measures)	2	
					2.90	123.70		Thinly laminated light grey MUDSTONE with occasionally brown destructured mudstone bands, recovered as clayey gravel. (Pennine Middle Coal Measures).		
				3.30	123.30		End of Trial Pit at 3.30m			4

Dimensions		Trench Support and Comment			Pumping Data			
Pit Length 2.50	Pit Width 0.60	Pit Stability Sides Stable	Shoring Used None	Remarks		Date	Rate	Remarks

Remarks  
Perched groundwater encountered at 1.00m bgl, 1.50m bgl & 3.00m bgl. No visual or olfactory evidence of potential hydrocarbon contamination encountered.





5 John Charles Way  
Leeds  
LS12 6QA

# Trial Pit Log

Project Name: Barnsley West		Client: Strata Sterling Barnsley West Ltd	Date: 16/05/2019
Location: Barnsley		Contractor: Allied Exploration & Geotechnics Ltd	Co-ords: E432010.71 N406478.38
Project No. : 4848		Crew Name: M. Simons	Equipment: 3CX with a 2ft bucket

Location Number <b>TP110</b>	Location Type TP	Level 149.71m AoD	Logged By JAM	Scale 1:20	Page Number Sheet 1 of 1
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Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
▼		0.00 - 0.20	ES		0.20	149.51		MADE GROUND: Dark brown slightly sandy slightly gravelly CLAY with rootlets. Gravel is angular to subrounded fine to coarse of brick, coal and mudstone. (Topsoil).
		2.00 - 2.10 2.00 - 2.50	D B					MADE GROUND: Soft dark greyish brown slightly sandy gravelly CLAY with low cobble and boulder content. Gravel is angular to rounded fine to coarse of mudstone, sandstone and coal. Cobbles are angular of mudstone, siltstone and sandstone. Boulders are angular up to 400mm across of sandstone. (Colliery spoil).
						2.60	147.11	
					2.90	146.81		End of Trial Pit at 2.90m

Dimensions		Trench Support and Comment			Pumping Data			
Pit Length 2.50	Pit Width 0.60	Pit Stability Sides Stable	Shoring Used None	Remarks		Date	Rate	Remarks

Remarks  
Perched groundwater encountered at 2.50m bgl. No visual or olfactory evidence of potential hydrocarbon contamination encountered.





5 John Charles Way  
Leeds  
LS12 6QA

# Trial Pit Log

Project Name: Barnsley West		Client: Strata Sterling Barnsley West Ltd		Date: 16/05/2019	
Location: Barnsley		Contractor: Allied Exploration & Geotechnics Ltd		Co-ords: E431827.39 N406528.21	
Project No. : 4848		Crew Name: M. Simons		Equipment: JCB 3CX with a 2ft bucket	
Location Number <b>TP112</b>	Location Type TP	Level 148.37m AoD	Logged By JAM	Scale 1:20	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.00 - 0.20	ES		0.20	148.17		MADE GROUND: Dark brown slightly sandy slightly gravelly CLAY with rootlets. Gravel is angular to subrounded fine to coarse of brick, coal and mudstone. (Topsoil).
		2.20 - 2.40	ES					MADE GROUND: Firm dark brown and grey slightly sandy gravelly CLAY with low cobble content. Gravel is angular fine to coarse of mudstone, sandstone and coal. Cobbles are angular to subrounded of mudstone and sandstone. (Colliery spoil)
		2.50 - 2.80	B		2.50	145.87		MADE GROUND: Dark brownish grey slightly clayey sandy GRAVEL with high cobble and medium boulder content. Gravel is angular fine to coarse of mudstone, siltstone, sandstone and coal. Cobbles are angular of sandstone and mudstone. Boulders are angular up to 300mm across of sandstone and mudstone. (Colliery spoil).
					2.80	145.57		End of Trial Pit at 2.80m

Dimensions		Trench Support and Comment			Pumping Data			
Pit Length 3.00	Pit Width 0.60	Pit Stability Sides Stable	Shoring Used None	Remarks		Date	Rate	Remarks

Remarks  
Groundwater not encountered. No visual or olfactory evidence of potential hydrocarbon contamination encountered. Half inch plastic water pipe encountered at NGR 431826.761, 406526.534.





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## **Appendix C Chemical Analysis Certificates and HazWasteOnline Waste Classification**



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## STATISTICAL ASSESSMENT OF CHEMICAL ANALYSIS

The results of the chemical analysis have been assessed in accordance with CL:AIRE (Contaminated Land: Applications in Real Environments) 'Guidance on Comparing Soil Contamination Data with a Critical Concentration' published by the CIEH, May 2008.

This guidance provides a statistical approach to objectively evaluate the evidence for and against particular propositions/hypothesis and has the useful attribute of enabling decision makers to reach conclusions about the available evidence, with at least some understanding of the validity of the results.

The guidance approaches this in the context of assessing the results from two different perspectives, the Planning Scenario and Part 2A.

When assessing in terms of the Planning Scenario, the key question would be 'can we confidently say that the level of contamination on this land is low relative to some appropriate measure of risk?' Under Part 2A, the question would be 'can we confidently say that the level of contamination is high relative to some appropriate measure of risk?'

These questions are addressed through the use of formal hypothesis – the "Null Hypothesis" and the "Alternative Hypothesis".

This assessment will be carried out in accordance with the Planning Scenario, where the aim is to demonstrate 'suitability for use'. The Null Hypothesis is that the level of contamination is the same as, or higher than the critical concentration/GAC. The Alternative Hypothesis is that the level of contamination is lower than the critical concentration/GAC. Under Part 2A the opposite set of propositions are applicable.

By convention, the Null Hypothesis is the starting proposition against which the key question, as expressed by the Alternative Hypothesis, can be tested.

The assessment of the results relies on there being a normal distribution of results for a particular contaminant and that the data set under consideration is representative of the particular material which is being assessed. If more than one dataset is present, then the hypothesis should be applied individually for each data set.

Under the Planning Scenario, the statistical test is used to demonstrate that there is a 95% probability that the true population mean falls below the critical concentration/GAC.

Appropriate data sets must be created to enable the statistical testing to be carried out and three key elements must be considered prior to statistical analysis. These are as follows:

- Dealing with non-detects;
- Understanding the statistical distribution of data; and
- Dealing with outliers.

The results can then be assessed, and the results will be compared against the following:

- Sample Mean – if the sample mean of the data set is in excess of the GAC then the Upper Confidence Limit of the true population mean will be higher than the critical concentration.
- 95% of the Upper Confidence Limit.
- One Sample T Test (parametric test) carried out at the 95% confidence level.

On the basis of these tests, the validity of the Null Hypothesis can be assessed.



# DETS

## Certificate of Analysis

*Certificate Number* 19-09384

28-May-19

*Client* JPG (Leeds) LTD  
Civil & Structural Engineers  
5 John Charles Way  
Leeds  
LS12 6QA

*Our Reference* 19-09384

*Client Reference* 4848

*Order No* (not supplied)

*Contract Title* Barnsley West, 4848

*Description* 11 Soil samples, 3 Leachate samples.

*Date Received* 20-May-19

*Date Started* 20-May-19

*Date Completed* 28-May-19

*Test Procedures* Identified by prefix DETSn (details on request).

*Notes* Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*



Adam Fenwick  
Contracts Manager



## Summary of Chemical Analysis

### Soil Samples

Our Ref 19-09384

Client Ref 4848

Contract Title Barnsley West, 4848

Lab No	1503794	1503795	1503796	1503797	1503798	1503799	1503800
Sample ID	TP108	TP108	TP109	TP109	TP110	TP111	TP111
Depth	0.00-0.10	2.60-2.70	0.00-0.15	0.60-1.00	0.00-0.20	0.00-0.20	0.80-1.00
Other ID							
Sample Type	SOIL						
Sampling Date	16/05/19	16/05/19	16/05/19	16/05/19	16/05/19	16/05/19	16/05/19
Sampling Time	n/s						

Test	Method	LOD	Units							
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg	17	7.9	8.5	2.7	12	17	11
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	< 0.1	< 0.1	0.2	0.1	0.2	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	19	19	15	15	18	15	16
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0			< 1.0			< 1.0
Copper	DETSC 2301#	0.2	mg/kg	35	36	23	28	25	37	28
Lead	DETSC 2301#	0.3	mg/kg	51	23	25	22	34	68	30
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	0.13	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	21	34	21	33	22	16	19
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	100	91	81	150	95	84	67
<b>Inorganics</b>										
pH	DETSC 2008#			7.0	7.3	7.8	8.4	7.1	7.3	7.7
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.3	< 0.1	< 0.1	< 0.1	0.2	0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	7.2	3.3	3.2	1.8	3.4	4.7	1.7
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	7.2			4.6			3.6
Chloride Aqueous Extract	DETSC 2055	1	mg/l	14			7.4			9.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	75	160	38	28	21	< 10	22
Sulphide	DETSC 2024*	10	mg/kg	52			40			< 10
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.10			0.02			0.03
<b>PAHs</b>										
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.4
Fluoranthene	DETSC 3301	0.1	mg/kg	0.3	0.1	< 0.1	< 0.1	< 0.1	0.2	2.5
Pyrene	DETSC 3301	0.1	mg/kg	0.3	0.2	< 0.1	< 0.1	< 0.1	0.3	2.3
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.3
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.9
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.7
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.7
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.7
PAH Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	14
<b>Phenols</b>										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
<b>OCPs</b>										
alpha-BHC	DETSC 3441*	0.1	mg/kg						< 0.1	

## Summary of Chemical Analysis

### Soil Samples

Our Ref 19-09384

Client Ref 4848

Contract Title Barnsley West, 4848

Lab No	1503794	1503795	1503796	1503797	1503798	1503799	1503800
Sample ID	TP108	TP108	TP109	TP109	TP110	TP111	TP111
Depth	0.00-0.10	2.60-2.70	0.00-0.15	0.60-1.00	0.00-0.20	0.00-0.20	0.80-1.00
Other ID							
Sample Type	SOIL						
Sampling Date	16/05/19	16/05/19	16/05/19	16/05/19	16/05/19	16/05/19	16/05/19
Sampling Time	n/s						

Test	Method	LOD	Units						
gamma-BHC (Lindane)	DETSC 3441*	0.1	mg/kg						< 0.1
beta-BHC	DETSC 3441*	0.1	mg/kg						< 0.1
delta-BHC	DETSC 3441*	0.1	mg/kg						< 0.1
Heptachlor	DETSC 3441*	0.1	mg/kg						< 0.1
Aldrin	DETSC 3441*	0.1	mg/kg						< 0.1
Heptachlor epoxide	DETSC 3441*	0.1	mg/kg						< 0.1
gamma-Chlordane	DETSC 3441*	0.1	mg/kg						< 0.1
Endosulphan I & Alpha-chlorodane	DETSC 3441*	0.1	mg/kg						< 0.1
4,4-DDE	DETSC 3441*	0.1	mg/kg						< 0.1
Dieldrin	DETSC 3441*	0.1	mg/kg						< 0.1
Endrin	DETSC 3441*	0.1	mg/kg						< 0.1
Endosulphan II & 4,4-DDD	DETSC 3441*	0.1	mg/kg						< 0.1
Endrin aldehyde	DETSC 3441*	0.1	mg/kg						< 0.1
4,4-DDT	DETSC 3441*	0.1	mg/kg						< 0.1
Endosulphan sulphate	DETSC 3441*	0.1	mg/kg						< 0.1
Methoxychlor	DETSC 3441*	0.1	mg/kg						< 0.1
Endrin ketone	DETSC 3441*	0.1	mg/kg						< 0.1
<b>OPPs</b>									
Dichlorvos	DETSC 3443*	0.1	mg/kg						< 0.1
Mevinphos	DETSC 3443*	0.1	mg/kg						< 0.1
Demeton-O	DETSC 3443*	0.1	mg/kg						< 0.1
Ethoprop	DETSC 3443*	0.1	mg/kg						< 0.1
Naled	DETSC 3443*	0.1	mg/kg						< 0.1
Phorate	DETSC 3443*	0.1	mg/kg						< 0.1
Demeton-S	DETSC 3443*	0.1	mg/kg						< 0.1
Diazinon	DETSC 3443*	0.1	mg/kg						< 0.1
Disulfoton	DETSC 3443*	0.1	mg/kg						< 0.1
Methylparathion	DETSC 3443*	0.1	mg/kg						< 0.1
Ronnel	DETSC 3443*	0.1	mg/kg						< 0.1
Fenthion	DETSC 3443*	0.1	mg/kg						< 0.1
Chlopyrifos	DETSC 3443*	0.1	mg/kg						< 0.1
Trichlorinate	DETSC 3443*	0.1	mg/kg						< 0.1
Merphos	DETSC 3443*	0.1	mg/kg						< 0.1
Stirofos	DETSC 3443*	0.1	mg/kg						< 0.1
Tokuthion	DETSC 3443*	0.1	mg/kg						< 0.1
Fensulfothion	DETSC 3443*	0.1	mg/kg						< 0.1
Bolstar	DETSC 3443*	0.1	mg/kg						< 0.1
Azinphos methyl	DETSC 3443*	0.1	mg/kg						< 0.1
Coumaphos	DETSC 3443*	0.1	mg/kg						< 0.1
<b>Triazines</b>									
Atraton	DETSC 3445*	0.1	mg/kg						< 0.1
Prometon	DETSC 3445*	0.1	mg/kg						< 0.1

## Summary of Chemical Analysis

### Soil Samples

Our Ref 19-09384

Client Ref 4848

Contract Title Barnsley West, 4848

<b>Lab No</b>	1503794	1503795	1503796	1503797	1503798	1503799	1503800
<b>Sample ID</b>	TP108	TP108	TP109	TP109	TP110	TP111	TP111
<b>Depth</b>	0.00-0.10	2.60-2.70	0.00-0.15	0.60-1.00	0.00-0.20	0.00-0.20	0.80-1.00
<b>Other ID</b>							
<b>Sample Type</b>	SOIL						
<b>Sampling Date</b>	16/05/19	16/05/19	16/05/19	16/05/19	16/05/19	16/05/19	16/05/19
<b>Sampling Time</b>	n/s						

Test	Method	LOD	Units						
Simazine	DETSC 3445*	0.1	mg/kg						< 0.1
Atrazine	DETSC 3445*	0.1	mg/kg						< 0.1
Propazine	DETSC 3445*	0.1	mg/kg						< 0.1
Terbutylazine	DETSC 3445*	0.1	mg/kg						< 0.1
Secbumeton	DETSC 3445*	0.1	mg/kg						< 0.1
Symetryn	DETSC 3445*	0.1	mg/kg						< 0.1
Ametryn	DETSC 3445*	0.1	mg/kg						< 0.1
Prometryne	DETSC 3445*	0.1	mg/kg						< 0.1
Terbutryn	DETSC 3445*	0.1	mg/kg						< 0.1

## Summary of Chemical Analysis

### Soil Samples

Our Ref 19-09384

Client Ref 4848

Contract Title Barnsley West, 4848

Lab No	1503801	1503802	1503803	1503804
Sample ID	TP111	TP112	TP112	TP115
Depth	2.00-2.20	0.00-0.20	2.20-2.40	0.00-0.25
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	16/05/19	16/05/19	16/05/19	16/05/19
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>Metals</b>							
Arsenic	DETSC 2301#	0.2	mg/kg	9.9	8.6	6.5	11
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	0.1	< 0.1	0.1
Chromium	DETSC 2301#	0.15	mg/kg	8.2	15	16	17
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	20	21	33	29
Lead	DETSC 2301#	0.3	mg/kg	53	33	17	34
Mercury	DETSC 2325#	0.05	mg/kg	0.08	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	11	13	35	22
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	40	87	84	87
<b>Inorganics</b>							
pH	DETSC 2008#			9.2	6.7	8.2	7.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	0.5	< 0.1	0.2
Organic matter	DETSC 2002#	0.1	%	2.4	14	1.3	5.5
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg		25		
Chloride Aqueous Extract	DETSC 2055	1	mg/l		48		
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	49	68	24	24
Sulphide	DETSC 2024*	10	mg/kg		12		
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.12		
<b>PAHs</b>							
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.5	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	0.4	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	2.4	< 1.6	< 1.6	< 1.6
<b>Phenols</b>							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.9	< 0.3	0.4
<b>OCPs</b>							
alpha-BHC	DETSC 3441*	0.1	mg/kg				< 0.1

## Summary of Chemical Analysis

### Soil Samples

Our Ref 19-09384

Client Ref 4848

Contract Title Barnsley West, 4848

Lab No	1503801	1503802	1503803	1503804
Sample ID	TP111	TP112	TP112	TP115
Depth	2.00-2.20	0.00-0.20	2.20-2.40	0.00-0.25
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	16/05/19	16/05/19	16/05/19	16/05/19
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
gamma-BHC (Lindane)	DETSC 3441*	0.1	mg/kg				< 0.1
beta-BHC	DETSC 3441*	0.1	mg/kg				< 0.1
delta-BHC	DETSC 3441*	0.1	mg/kg				< 0.1
Heptachlor	DETSC 3441*	0.1	mg/kg				< 0.1
Aldrin	DETSC 3441*	0.1	mg/kg				< 0.1
Heptachlor epoxide	DETSC 3441*	0.1	mg/kg				< 0.1
gamma-Chlordane	DETSC 3441*	0.1	mg/kg				< 0.1
Endosulphan I & Alpha-chlorodane	DETSC 3441*	0.1	mg/kg				< 0.1
4,4-DDE	DETSC 3441*	0.1	mg/kg				< 0.1
Dieldrin	DETSC 3441*	0.1	mg/kg				< 0.1
Endrin	DETSC 3441*	0.1	mg/kg				< 0.1
Endosulphan II & 4,4-DDD	DETSC 3441*	0.1	mg/kg				< 0.1
Endrin aldehyde	DETSC 3441*	0.1	mg/kg				< 0.1
4,4-DDT	DETSC 3441*	0.1	mg/kg				< 0.1
Endosulphan sulphate	DETSC 3441*	0.1	mg/kg				< 0.1
Methoxychlor	DETSC 3441*	0.1	mg/kg				< 0.1
Endrin ketone	DETSC 3441*	0.1	mg/kg				< 0.1
<b>OPPs</b>							
Dichlorvos	DETSC 3443*	0.1	mg/kg				< 0.1
Mevinphos	DETSC 3443*	0.1	mg/kg				< 0.1
Demeton-O	DETSC 3443*	0.1	mg/kg				< 0.1
Ethoprop	DETSC 3443*	0.1	mg/kg				< 0.1
Naled	DETSC 3443*	0.1	mg/kg				< 0.1
Phorate	DETSC 3443*	0.1	mg/kg				< 0.1
Demeton-S	DETSC 3443*	0.1	mg/kg				< 0.1
Diazinon	DETSC 3443*	0.1	mg/kg				< 0.1
Disulfoton	DETSC 3443*	0.1	mg/kg				< 0.1
Methylparathion	DETSC 3443*	0.1	mg/kg				< 0.1
Ronnel	DETSC 3443*	0.1	mg/kg				< 0.1
Fenthion	DETSC 3443*	0.1	mg/kg				< 0.1
Chlopyrifos	DETSC 3443*	0.1	mg/kg				< 0.1
Trichlorinate	DETSC 3443*	0.1	mg/kg				< 0.1
Merphos	DETSC 3443*	0.1	mg/kg				< 0.1
Stirofos	DETSC 3443*	0.1	mg/kg				< 0.1
Tokuthion	DETSC 3443*	0.1	mg/kg				< 0.1
Fensulfothion	DETSC 3443*	0.1	mg/kg				< 0.1
Bolstar	DETSC 3443*	0.1	mg/kg				< 0.1
Azinphos methyl	DETSC 3443*	0.1	mg/kg				< 0.1
Coumaphos	DETSC 3443*	0.1	mg/kg				< 0.1
<b>Triazines</b>							
Atraton	DETSC 3445*	0.1	mg/kg				< 0.1
Prometon	DETSC 3445*	0.1	mg/kg				< 0.1

## Summary of Chemical Analysis

### Soil Samples

Our Ref 19-09384

Client Ref 4848

Contract Title Barnsley West, 4848

<b>Lab No</b>	1503801	1503802	1503803	1503804
<b>Sample ID</b>	TP111	TP112	TP112	TP115
<b>Depth</b>	2.00-2.20	0.00-0.20	2.20-2.40	0.00-0.25
<b>Other ID</b>				
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	16/05/19	16/05/19	16/05/19	16/05/19
<b>Sampling Time</b>	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Simazine	DETSC 3445*	0.1	mg/kg				< 0.1
Atrazine	DETSC 3445*	0.1	mg/kg				< 0.1
Propazine	DETSC 3445*	0.1	mg/kg				< 0.1
Terbutylazine	DETSC 3445*	0.1	mg/kg				< 0.1
Secbumeton	DETSC 3445*	0.1	mg/kg				< 0.1
Symetryn	DETSC 3445*	0.1	mg/kg				< 0.1
Ametryn	DETSC 3445*	0.1	mg/kg				< 0.1
Prometryne	DETSC 3445*	0.1	mg/kg				< 0.1
Terbutryn	DETSC 3445*	0.1	mg/kg				< 0.1

## Summary of Chemical Analysis

### Leachate Samples

Our Ref 19-09384

Client Ref 4848

Contract Title Barnsley West, 4848

Lab No	1503805	1503806	1503807
Sample ID	TP108	TP111	TP112
Depth	2.60-2.70	2.00-2.20	2.20-2.40
Other ID			
Sample Type	LEACHATE	LEACHATE	LEACHATE
Sampling Date	16/05/19	16/05/19	16/05/19
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Preparation</b>						
NRA Leachate Preparation	DETSC 1009*			Y	Y	Y
<b>Metals</b>						
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.19	1.2	0.28
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	3.2	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	< 0.4	1.5	< 0.4
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	0.16	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25	< 0.25
Zinc, Dissolved	DETSC 2306	1.3	ug/l	4.2	2.5	2.8
<b>Inorganics</b>						
pH	DETSC 2008			7.6	8.8	8.7
Cyanide, Free	DETSC 2130	20	ug/l	< 20	< 20	< 20
Sulphate as SO4	DETSC 2055	0.1	mg/l	24	6.8	3.6
<b>PAHs</b>						
Naphthalene	DETSC 3304	0.05	ug/l	0.06	< 0.05	0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	0.01	< 0.01	0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.02	0.02	0.02
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	0.02	0.01
Pyrene	DETSC 3304	0.01	ug/l	< 0.01	0.02	0.01
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	0.01	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	0.02	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	0.20	< 0.20
<b>Phenols</b>						
Phenol	DETSC 3451*	0.5	ug/l	< 0.50	< 0.50	< 0.50

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 19-09384

*Client Ref* 4848

*Contract Title* Barnsley West, 4848

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1503794	TP108 0.00-0.10	SOIL	NAD	none	Luke Donaghy
1503796	TP109 0.00-0.15	SOIL	NAD	none	Luke Donaghy
1503798	TP110 0.00-0.20	SOIL	NAD	none	Luke Donaghy
1503801	TP111 2.00-2.20	SOIL	NAD	none	Luke Donaghy

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* - not included in laboratory scope of accreditation.

## Information in Support of the Analytical Results

Our Ref 19-09384  
 Client Ref 4848  
 Contract Barnsley West, 4848

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1503794	TP108 0.00-0.10 SOIL	16/05/19	GJ 250ml, GJ 60ml, PT 1L		
1503795	TP108 2.60-2.70 SOIL	16/05/19	GJ 250ml, GJ 60ml, PT 1L		
1503796	TP109 0.00-0.15 SOIL	16/05/19	GJ 250ml, GJ 60ml, PT 1L		
1503797	TP109 0.60-1.00 SOIL	16/05/19	GJ 250ml, GJ 60ml, PT 1L		
1503798	TP110 0.00-0.20 SOIL	16/05/19	GJ 250ml, GJ 60ml, PT 1L		
1503799	TP111 0.00-0.20 SOIL	16/05/19	GJ 250ml, GJ 60ml, PT 1L		
1503800	TP111 0.80-1.00 SOIL	16/05/19	GJ 250ml, GJ 60ml, PT 1L		
1503801	TP111 2.00-2.20 SOIL	16/05/19	GJ 250ml, GJ 60ml, PT 1L		
1503802	TP112 0.00-0.20 SOIL	16/05/19	GJ 250ml, GJ 60ml, PT 1L		
1503803	TP112 2.20-2.40 SOIL	16/05/19	GJ 250ml, GJ 60ml, PT 1L		
1503804	TP115 0.00-0.25 SOIL	16/05/19	GJ 250ml, GJ 60ml, PT 1L		
1503805	TP108 2.60-2.70 LEACHATE	16/05/19	GJ 250ml, GJ 60ml, PT 1L		
1503806	TP111 2.00-2.20 LEACHATE	16/05/19	GJ 250ml, GJ 60ml, PT 1L		
1503807	TP112 2.20-2.40 LEACHATE	16/05/19	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.  
 Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.  
 The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-  
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

# Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- a) understand the origin of the waste
- b) select the correct List of Waste code(s)
- c) confirm that the list of determinands, results and sampling plan are fit for purpose
- d) select and justify the chosen metal species (Appendix B)
- e) correctly apply moisture correction and other available corrections
- f) add the meta data for their user-defined substances (Appendix A)
- g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



YIMZ1-JLVKS-4KNUA

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

## Job name

Employment Land, Barnsley West

## Description/Comments

## Project

4848

## Site

Barnsley

## Classified by

Name: **Dominic Horne**  
 Date: **22 Mar 2023 14:56 GMT**  
 Telephone: **0113 263 1155**  
 Company: **JPG (LEEDS) Ltd**  
**5 John Charles Way**  
**Leeds**  
**LS12 6QA**

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

**HazWasteOnline™ Certification:**

**CERTIFIED**

### Course

Hazardous Waste Classification  
 Most recent 3 year Refresher

### Date

11 Mar 2020  
 06 Dec 2022

Next 3 year Refresher due by Dec 2025

## Purpose of classification

2 - Material Characterisation

## Address of the waste

Hermit Lane, Higham, Barnsley

Post Code **S75 2RW**

## SIC for the process giving rise to the waste

## Description of industry/producer giving rise to the waste

N/A.

## Description of the specific process, sub-process and/or activity that created the waste

N/A.

## Description of the waste

Topsoil, Colliery Spoil and Made Ground.



### Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	TP108	0.00-0.10	Non Hazardous		3
2	TP108[2]	2.60-2.70	Non Hazardous		5
3	TP109	0.00-0.15	Non Hazardous		7
4	TP109[2]	0.60-1.00	Non Hazardous		9
5	TP110	0.00-0.20	Non Hazardous		11
6	TP112	0.00-0.20	Non Hazardous		13
7	TP112[2]	2.20-2.40	Non Hazardous		15

### Related documents

#	Name	Description
1	JPG WASTE STREAM V21	waste stream template used to create this Job

### Report

Created by: Dominic Horne

Created date: 22 Mar 2023 14:56 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	17
Appendix B: Rationale for selection of metal species	18
Appendix C: Version	18

Classification of sample: TP108

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample name:	LoW Code:	
<b>TP108</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.00-0.10 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				17	mg/kg	1.32	22.446	mg/kg	0.00224 %		
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium oxide }				0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
	048-002-00-0	215-146-2	1306-19-0									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				19	mg/kg	1.462	27.77	mg/kg	0.00278 %		
		215-160-9	1308-38-9									
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
5	copper { dicopper oxide; copper (I) oxide }				35	mg/kg	1.126	39.406	mg/kg	0.00394 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead chromate }			1	51	mg/kg	1.56	79.551	mg/kg	0.0051 %		
	082-004-00-2	231-846-0	7758-97-6									
7	mercury { mercury(II) sulfide }				<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<LOD
		215-696-3	1344-48-5									
8	nickel { nickel chromate }				21	mg/kg	2.976	62.502	mg/kg	0.00625 %		
	028-035-00-7	238-766-5	14721-18-7									
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
	034-002-00-8											
10	zinc { zinc chromate }				100	mg/kg	2.774	277.415	mg/kg	0.0277 %		
	024-007-00-3	236-878-9	13530-65-9									
11	pH				7	pH		7	pH	7pH		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.3	mg/kg	1.884	0.565	mg/kg	0.0000565 %		
	006-007-00-5											
13	naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
14	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	fluoranthene	205-912-4	206-44-0		0.3 mg/kg		0.3 mg/kg	0.00003 %		
20	pyrene	204-927-3	129-00-0		0.3 mg/kg		0.3 mg/kg	0.00003 %		
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	chrysene	601-048-00-0	205-923-4	218-01-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	phenol	604-001-00-2	203-632-7	108-95-2	<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0486 %		

- Key**
- User supplied data
  - Determinand values ignored for classification, see column 'Conc. Not Used' for reason
  - Determinand defined or amended by HazWasteOnline (see Appendix A)
  - ⚙ Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
  - <LOD** Below limit of detection
  - ND** Not detected
  - CLP: Note 1** Only the metal concentration has been used for classification

Classification of sample: TP108[2]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample name:	LoW Code:	
<b>TP108[2]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>2.60-2.70 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				7.9	mg/kg	1.32	10.431	mg/kg	0.00104 %		
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium oxide }				<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				19	mg/kg	1.462	27.77	mg/kg	0.00278 %		
		215-160-9	1308-38-9									
4	copper { dicopper oxide; copper (I) oxide }				36	mg/kg	1.126	40.532	mg/kg	0.00405 %		
	029-002-00-X	215-270-7	1317-39-1									
5	lead { lead chromate }			1	23	mg/kg	1.56	35.876	mg/kg	0.0023 %		
	082-004-00-2	231-846-0	7758-97-6									
6	mercury { mercury(II) sulfide }				<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<LOD
		215-696-3	1344-48-5									
7	nickel { nickel chromate }				34	mg/kg	2.976	101.193	mg/kg	0.0101 %		
	028-035-00-7	238-766-5	14721-18-7									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
	034-002-00-8											
9	zinc { zinc chromate }				91	mg/kg	2.774	252.447	mg/kg	0.0252 %		
	024-007-00-3	236-878-9	13530-65-9									
10	pH				7.3	pH		7.3	pH	7.3 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD
	006-007-00-5											
12	naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
13	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8									
14	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9									
15	fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	fluoranthene	205-912-4	206-44-0		0.1 mg/kg		0.1 mg/kg	0.00001 %		
19	pyrene	204-927-3	129-00-0		0.2 mg/kg		0.2 mg/kg	0.00002 %		
20	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	chrysene	601-048-00-0	205-923-4	218-01-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	phenol	604-001-00-2	203-632-7	108-95-2	<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0458 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- 🧪 Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP109

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample name:	LoW Code:	
<b>TP109</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.00-0.15 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				8.5	mg/kg	1.32	11.223	mg/kg	0.00112 %		
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium oxide }				<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				15	mg/kg	1.462	21.923	mg/kg	0.00219 %		
		215-160-9	1308-38-9									
4	copper { dicopper oxide; copper (I) oxide }				23	mg/kg	1.126	25.895	mg/kg	0.00259 %		
	029-002-00-X	215-270-7	1317-39-1									
5	lead { lead chromate }			1	25	mg/kg	1.56	38.995	mg/kg	0.0025 %		
	082-004-00-2	231-846-0	7758-97-6									
6	mercury { mercury(II) sulfide }				<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<LOD
		215-696-3	1344-48-5									
7	nickel { nickel chromate }				21	mg/kg	2.976	62.502	mg/kg	0.00625 %		
	028-035-00-7	238-766-5	14721-18-7									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
	034-002-00-8											
9	zinc { zinc chromate }				81	mg/kg	2.774	224.706	mg/kg	0.0225 %		
	024-007-00-3	236-878-9	13530-65-9									
10	pH				7.8	pH		7.8	pH	7.8 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD
	006-007-00-5											
12	naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
13	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8									
14	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9									
15	fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	chrysene	601-048-00-0	205-923-4	218-01-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	phenol	604-001-00-2	203-632-7	108-95-2	<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0374 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP109[2]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample name:	LoW Code:	
<b>TP109[2]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.60-1.00 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				2.7	mg/kg	1.32	3.565	mg/kg	0.000356 %		
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium oxide }				0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
	048-002-00-0	215-146-2	1306-19-0									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				15	mg/kg	1.462	21.923	mg/kg	0.00219 %		
		215-160-9	1308-38-9									
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
5	copper { dicopper oxide; copper (I) oxide }				28	mg/kg	1.126	31.525	mg/kg	0.00315 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead chromate }			1	22	mg/kg	1.56	34.316	mg/kg	0.0022 %		
	082-004-00-2	231-846-0	7758-97-6									
7	mercury { mercury(II) sulfide }				<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<LOD
		215-696-3	1344-48-5									
8	nickel { nickel chromate }				33	mg/kg	2.976	98.217	mg/kg	0.00982 %		
	028-035-00-7	238-766-5	14721-18-7									
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
	034-002-00-8											
10	zinc { zinc chromate }				150	mg/kg	2.774	416.122	mg/kg	0.0416 %		
	024-007-00-3	236-878-9	13530-65-9									
11	pH				8.4	pH		8.4	pH	8.4 pH		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD
	006-007-00-5											
13	naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
14	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	chrysene	601-048-00-0	205-923-4	218-01-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	phenol	604-001-00-2	203-632-7	108-95-2	<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0598 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- ⚗ Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP110

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample name:	LoW Code:	
<b>TP110</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.00-0.20 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				12	mg/kg	1.32	15.844	mg/kg	0.00158 %		
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium oxide }				0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %		
	048-002-00-0	215-146-2	1306-19-0									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				18	mg/kg	1.462	26.308	mg/kg	0.00263 %		
		215-160-9	1308-38-9									
4	copper { dicopper oxide; copper (I) oxide }				25	mg/kg	1.126	28.147	mg/kg	0.00281 %		
	029-002-00-X	215-270-7	1317-39-1									
5	lead { lead chromate }			1	34	mg/kg	1.56	53.034	mg/kg	0.0034 %		
	082-004-00-2	231-846-0	7758-97-6									
6	mercury { mercury(II) sulfide }				0.13	mg/kg	1.16	0.151	mg/kg	0.0000151 %		
		215-696-3	1344-48-5									
7	nickel { nickel chromate }				22	mg/kg	2.976	65.478	mg/kg	0.00655 %		
	028-035-00-7	238-766-5	14721-18-7									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
	034-002-00-8											
9	zinc { zinc chromate }				95	mg/kg	2.774	263.544	mg/kg	0.0264 %		
	024-007-00-3	236-878-9	13530-65-9									
10	pH				7.1	pH		7.1	pH	7.1 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.2	mg/kg	1.884	0.377	mg/kg	0.0000377 %		
	006-007-00-5											
12	naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
13	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8									
14	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9									
15	fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	chrysene	601-048-00-0	205-923-4	218-01-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	phenol	604-001-00-2	203-632-7	108-95-2	<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0437 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP112

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample name:	LoW Code:	
<b>TP112</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>0.00-0.20 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				8.6	mg/kg	1.32	11.355	mg/kg	0.00114 %		
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium oxide }				0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %		
	048-002-00-0	215-146-2	1306-19-0									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				15	mg/kg	1.462	21.923	mg/kg	0.00219 %		
		215-160-9	1308-38-9									
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
5	copper { dicopper oxide; copper (I) oxide }				21	mg/kg	1.126	23.644	mg/kg	0.00236 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead chromate }			1	33	mg/kg	1.56	51.474	mg/kg	0.0033 %		
	082-004-00-2	231-846-0	7758-97-6									
7	mercury { mercury(II) sulfide }				<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<LOD
		215-696-3	1344-48-5									
8	nickel { nickel chromate }				13	mg/kg	2.976	38.691	mg/kg	0.00387 %		
	028-035-00-7	238-766-5	14721-18-7									
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
	034-002-00-8											
10	zinc { zinc chromate }				87	mg/kg	2.774	241.351	mg/kg	0.0241 %		
	024-007-00-3	236-878-9	13530-65-9									
11	pH				6.7	pH		6.7	pH	6.7 pH		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.5	mg/kg	1.884	0.942	mg/kg	0.0000942 %		
	006-007-00-5											
13	naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
14	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	chrysene	601-048-00-0	205-923-4	218-01-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	phenol	604-001-00-2	203-632-7	108-95-2	0.9 mg/kg		0.9 mg/kg	0.00009 %		
Total:								0.0376 %		

- Key**
- User supplied data
  - Determinand values ignored for classification, see column 'Conc. Not Used' for reason
  - Determinand defined or amended by HazWasteOnline (see Appendix A)
  - ⚙ Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
  - <LOD** Below limit of detection
  - ND** Not detected
  - CLP: Note 1** Only the metal concentration has been used for classification

Classification of sample: TP112[2]

✔ **Non Hazardous Waste**  
Classified as **17 05 04**  
in the List of Waste

Sample details

Sample name:	LoW Code:	
<b>TP112[2]</b>	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
<b>2.20-2.40 m</b>		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				6.5	mg/kg	1.32	8.582	mg/kg	0.000858 %		
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium oxide }				<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16	mg/kg	1.462	23.385	mg/kg	0.00234 %		
		215-160-9	1308-38-9									
4	copper { dicopper oxide; copper (I) oxide }				33	mg/kg	1.126	37.154	mg/kg	0.00372 %		
	029-002-00-X	215-270-7	1317-39-1									
5	lead { lead chromate }			1	17	mg/kg	1.56	26.517	mg/kg	0.0017 %		
	082-004-00-2	231-846-0	7758-97-6									
6	mercury { mercury(II) sulfide }				<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<LOD
		215-696-3	1344-48-5									
7	nickel { nickel chromate }				35	mg/kg	2.976	104.169	mg/kg	0.0104 %		
	028-035-00-7	238-766-5	14721-18-7									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
	034-002-00-8											
9	zinc { zinc chromate }				84	mg/kg	2.774	233.028	mg/kg	0.0233 %		
	024-007-00-3	236-878-9	13530-65-9									
10	pH				8.2	pH		8.2	pH	8.2 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD
	006-007-00-5											
12	naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
13	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8									
14	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9									
15	fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	chrysene	601-048-00-0	205-923-4	218-01-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	phenol	604-001-00-2	203-632-7	108-95-2	<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
Total:								0.0426 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- 🧪 Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

## Appendix A: Classifier defined and non GB MCL determinands

- chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H332, Acute Tox. 4; H302, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Resp. Sens. 1; H334, Skin Sens. 1; H317, Repr. 1B; H360FD, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

- mercury(II) sulfide** (EC Number: 215-696-3, CAS Number: 1344-48-5)

Description/Comments: Data from ECHA's C&L and SDS Sigma Aldrich V6 dated 17/9/2019

Threshold for EUH031 based on calculation method in WM3 Box C12.1

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/8530>

Data source date: 14 May 2020

Hazard Statements: EUH031 >= 1 %, EUH031, Skin Sens. 1; H317, STOT RE 2; H373

- pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

- salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

GB MCL index number: 006-007-00-5

Description/Comments: Conversion factor based on a worst case compound: sodium cyanide

Additional Hazard Statement(s): EUH032 >= 0.2 %

Reason for additional Hazards Statement(s):

20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

- acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H302, Acute Tox. 1; H330, Acute Tox. 1; H310, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315

- acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, Aquatic Chronic 2; H411

- fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Acute 1; H400, Aquatic Chronic 1; H410

- phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Acute Tox. 4; H302, Eye Irrit. 2; H319, STOT SE 3; H335, Carc. 2; H351, Skin Sens. 1; H317, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, Skin Irrit. 2; H315

- anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Skin Sens. 1; H317, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

- fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Acute Tox. 4; H302, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

• **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Carc. 2; H351

• **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 23 Jul 2015

Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

## Appendix B: Rationale for selection of metal species

### arsenic {arsenic trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings.

### cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides.

### chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass.

### chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments

### copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

### lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight.

### mercury {mercury(II) sulfide}

Worst case CLP species based on hazard statements/molecular weight.

### nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight.

### selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil.

### zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight.

### cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide]

## Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021

HazWasteOnline Classification Engine Version: 2023.73.5544.10256 (14 Mar 2023)

HazWasteOnline Database: 2023.73.5544.10256 (14 Mar 2023)

This classification utilises the following guidance and legislation:

**WM3 v1.2.GB - Waste Classification** - 1st Edition v1.2.GB - Oct 2021

**CLP Regulation** - Regulation 1272/2008/EC of 16 December 2008

**1st ATP** - Regulation 790/2009/EC of 10 August 2009

**2nd ATP** - Regulation 286/2011/EC of 10 March 2011

**3rd ATP** - Regulation 618/2012/EU of 10 July 2012

**4th ATP** - Regulation 487/2013/EU of 8 May 2013

**Correction to 1st ATP** - Regulation 758/2013/EU of 7 August 2013

**5th ATP** - Regulation 944/2013/EU of 2 October 2013

**6th ATP** - Regulation 605/2014/EU of 5 June 2014

**WFD Annex III replacement** - Regulation 1357/2014/EU of 18 December 2014

**Revised List of Waste 2014** - Decision 2014/955/EU of 18 December 2014

**7th ATP** - Regulation 2015/1221/EU of 24 July 2015

**8th ATP** - Regulation (EU) 2016/918 of 19 May 2016

**9th ATP** - Regulation (EU) 2016/1179 of 19 July 2016

**10th ATP** - Regulation (EU) 2017/776 of 4 May 2017

**HP14 amendment** - Regulation (EU) 2017/997 of 8 June 2017

**13th ATP** - Regulation (EU) 2018/1480 of 4 October 2018

**14th ATP** - Regulation (EU) 2020/217 of 4 October 2019

**15th ATP** - Regulation (EU) 2020/1182 of 19 May 2020

**The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)**

**Regulations 2020** - UK: 2020 No. 1567 of 16th December 2020

**The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020** - UK:

2020 No. 1540 of 16th December 2020

**GB MCL List** - version 1.1 of 09 June 2021



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## **Appendix D Geotechnical Testing Results**



# LABORATORY REPORT



4043

**Contract Number: PSL19/2340**

Report Date: 17 May 2019  
Client's Reference: 4848  
Client Name: JPG  
5 John Charles Way  
Leeds  
West Yorkshire  
LS12 6QD

**For the attention of: Joseph Morley**

Contract Title: Barnsley West  
Date Received: 10/4/2019  
Date Commenced: 10/4/2019  
Date Completed: 17/5/2019

**Notes: Opinions and Interpretations are outside the UKAS Accreditation**

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

  
R Gunson  
(Director)

A Watkins  
(Director)

R Berriman  
(Quality Manager)

S Royle  
(Laboratory Manager)

S Eyre  
(Senior Technician)

L Knight  
(Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,  
Doncaster DN4 0AR  
tel: +44 (0)844 815 6641  
fax: +44 (0)844 815 6642  
e-mail: [rgunson@prosoils.co.uk](mailto:rgunson@prosoils.co.uk)  
[awatkins@prosoils.co.uk](mailto:awatkins@prosoils.co.uk)

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# SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP101	T1	T	1.90	2.00	Brown mottled grey slightly gravelly sandy CLAY.
TP102	T2	T	0.80		Grey gravelly sandy CLAY.
TP102A	T3	T	2.00	2.20	Brown slightly gravelly sandy CLAY.
TP103	T8	T	2.00	2.50	Grey gravelly sandy CLAY.
TP104	T4	T	3.00		Grey gravelly sandy CLAY.
TP105	T6	T	2.00	2.40	Grey gravelly sandy CLAY.
TP106	T7	T	1.50	2.00	Grey gravelly sandy CLAY.
TP113	T5	T	2.20		Grey gravelly sandy CLAY.
TP101	B1	BB	1.50	2.00	Grey very gravelly sandy CLAY.
TP101	B2	BB	1.50	2.00	Grey gravelly sandy CLAY.
TP102	B3	BB	0.80	1.00	Brown very gravelly sandy very silty CLAY.
TP102	B4	BB	0.80	1.00	Brown gravelly slightly sandy CLAY.
TP102A	B5	BB	2.00	2.20	Brown very gravelly sandy CLAY
TP102A	B6	BB	2.00	2.20	Brown very gravelly sandy CLAY.
TP103	B15	BB	2.00	2.50	Brown very gravelly slightly sandy CLAY.
TP103	B16	BB	2.00	2.50	Brown very gravelly slightly sandy CLAY.
TP104	B7	BB	2.50	3.00	Grey gravelly sandy CLAY.
TP104	B8	BB	2.50	3.00	Grey gravelly sandy CLAY.
TP105	B11	BB	2.00	2.40	Grey sandy clayey silty GRAVEL.



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# SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m <sup>3</sup> Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
TP101	T1	T	1.90	2.00	16			44	22	22	90	Intermediate plasticity CI.
TP102	T2	T	0.80		16			42	21	21	85	Intermediate plasticity CI.
TP102A	T3	T	2.00	2.20	19							
TP103	T8	T	2.00	2.50	15							
TP104	T4	T	3.00		12			45	23	22	83	Intermediate plasticity CI.
TP105	T6	T	2.00	2.40	16			43	22	21	82	Intermediate plasticity CI.
TP106	T7	T	1.50	2.00	15			46	23	23	98	Intermediate plasticity CI.
TP113	T5	T	2.20		14			39	20	19	93	Intermediate plasticity CI.
TP101	B1	BB	1.50	2.00			2.68					
TP102	B4	BB	0.80	1.00			2.68					
TP103	B15	BB	2.00	2.50			2.68					
TP104	B8	BB	2.50	3.00			2.68					
TP105	B12	BB	2.00	2.40			2.66					
TP113	B10	BB	2.00	2.50			2.67					

SYMBOLS : NP : Non Plastic

\* : Liquid Limit and Plastic Limit Wet Sieved.



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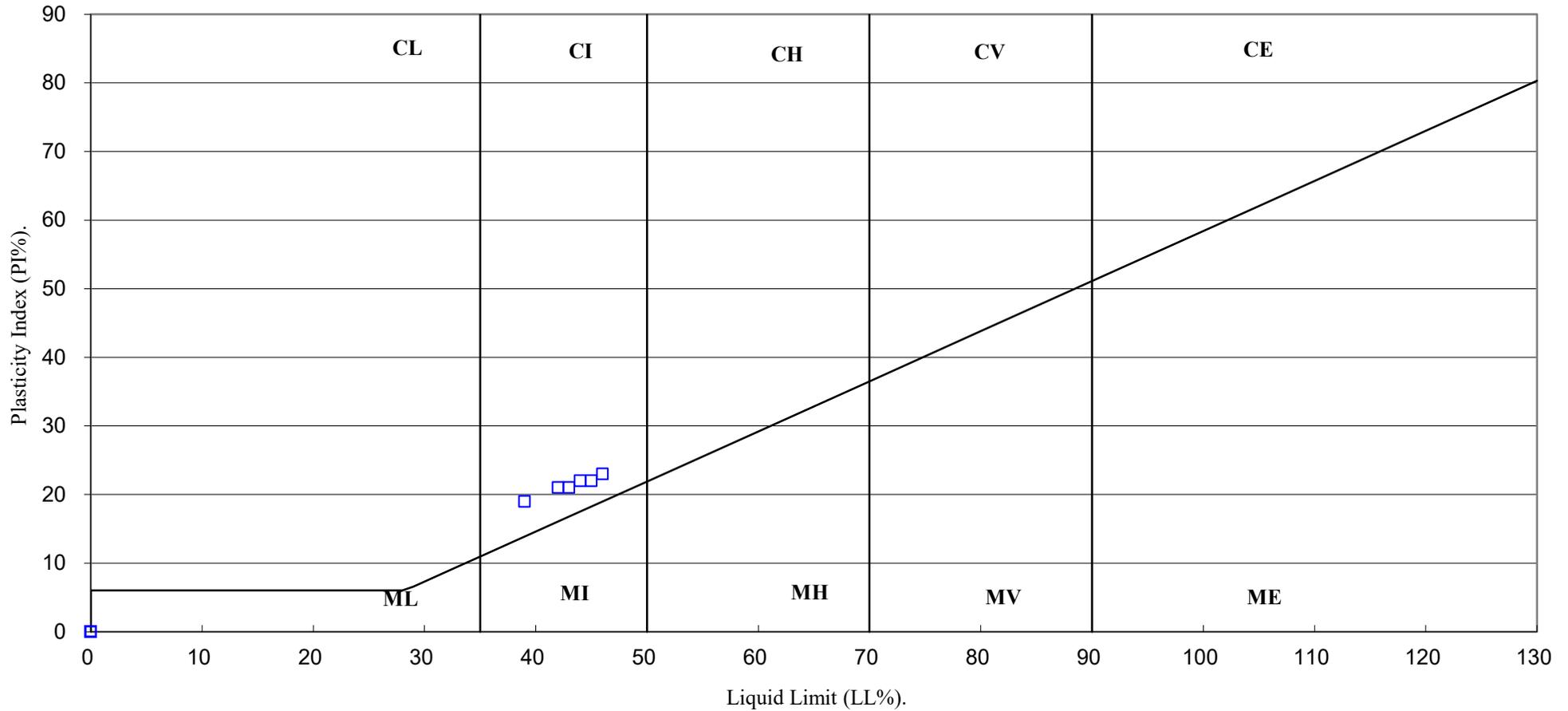
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# PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



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# PARTICLE SIZE DISTRIBUTION TEST

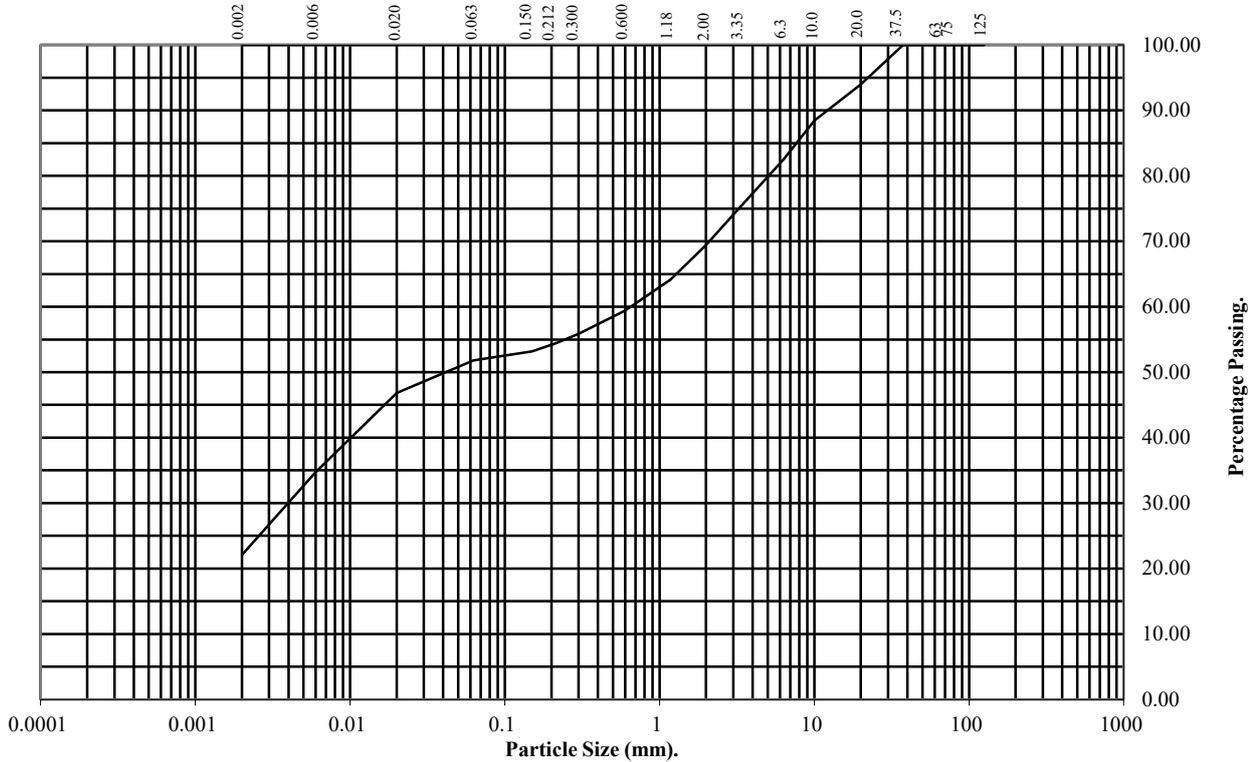
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP102 Top Depth (m): 0.80

Sample Number: B3 Base Depth(m): 1.00

Sample Type: BB



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	94
10	88
6.3	82
3.35	75
2	69
1.18	64
0.6	59
0.3	56
0.212	54
0.15	53
0.063	52

Particle Diameter	Percentage Passing
0.02	47
0.006	35
0.002	22

Soil Fraction	Total Percentage
Cobbles	0
Gravel	31
Sand	17
Silt	30
Clay	22

**Remarks:**  
See Summary of Soil Descriptions



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# PARTICLE SIZE DISTRIBUTION TEST

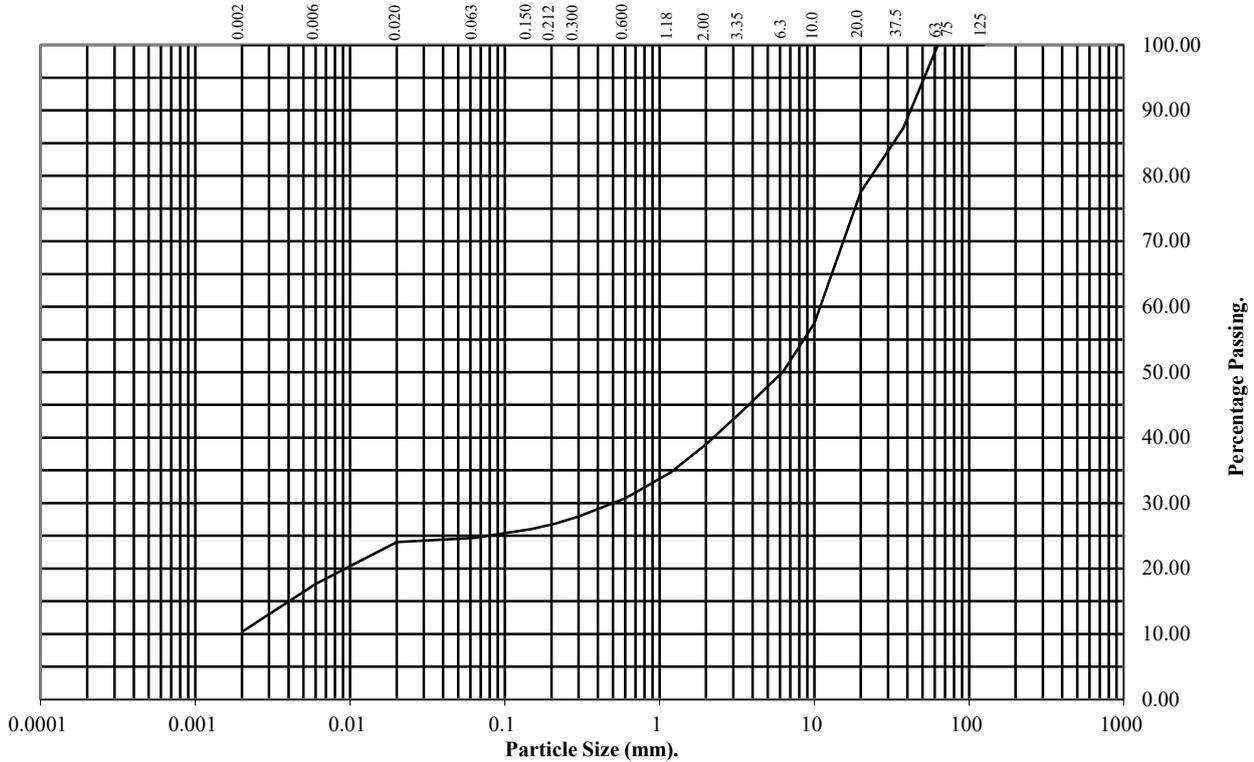
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP105 Top Depth (m): 2.00

Sample Number: B11 Base Depth(m): 2.40

Sample Type: BB



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	87
20	78
10	58
6.3	50
3.35	44
2	39
1.18	35
0.6	31
0.3	28
0.212	27
0.15	26
0.063	25

Particle Diameter	Percentage Passing
0.02	24
0.006	18
0.002	10

Soil Fraction	Total Percentage
Cobbles	0
Gravel	61
Sand	14
Silt	15
Clay	10

**Remarks:**  
See Summary of Soil Descriptions



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# PARTICLE SIZE DISTRIBUTION TEST

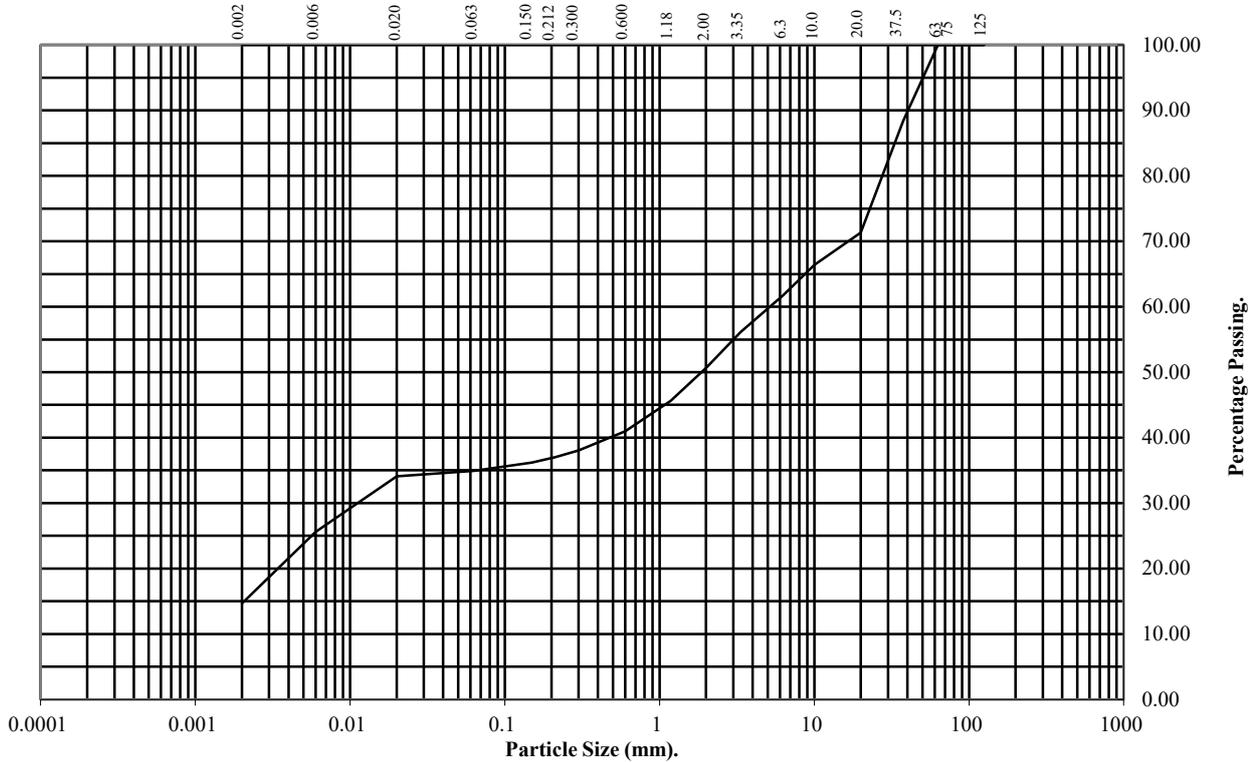
**BS1377 : Part 2 : 1990**

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

**Hole Number:** TP113 **Top Depth (m):** 2.00

**Sample Number:** B10 **Base Depth(m):** 2.40

**Sample Type:** BB



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	88
20	71
10	66
6.3	62
3.35	56
2	51
1.18	46
0.6	41
0.3	38
0.212	37
0.15	36
0.063	35

Particle Diameter	Percentage Passing
0.02	34
0.006	26
0.002	15

Soil Fraction	Total Percentage
Cobbles	0
Gravel	49
Sand	16
Silt	20
Clay	15

**Remarks:**  
See Summary of Soil Descriptions



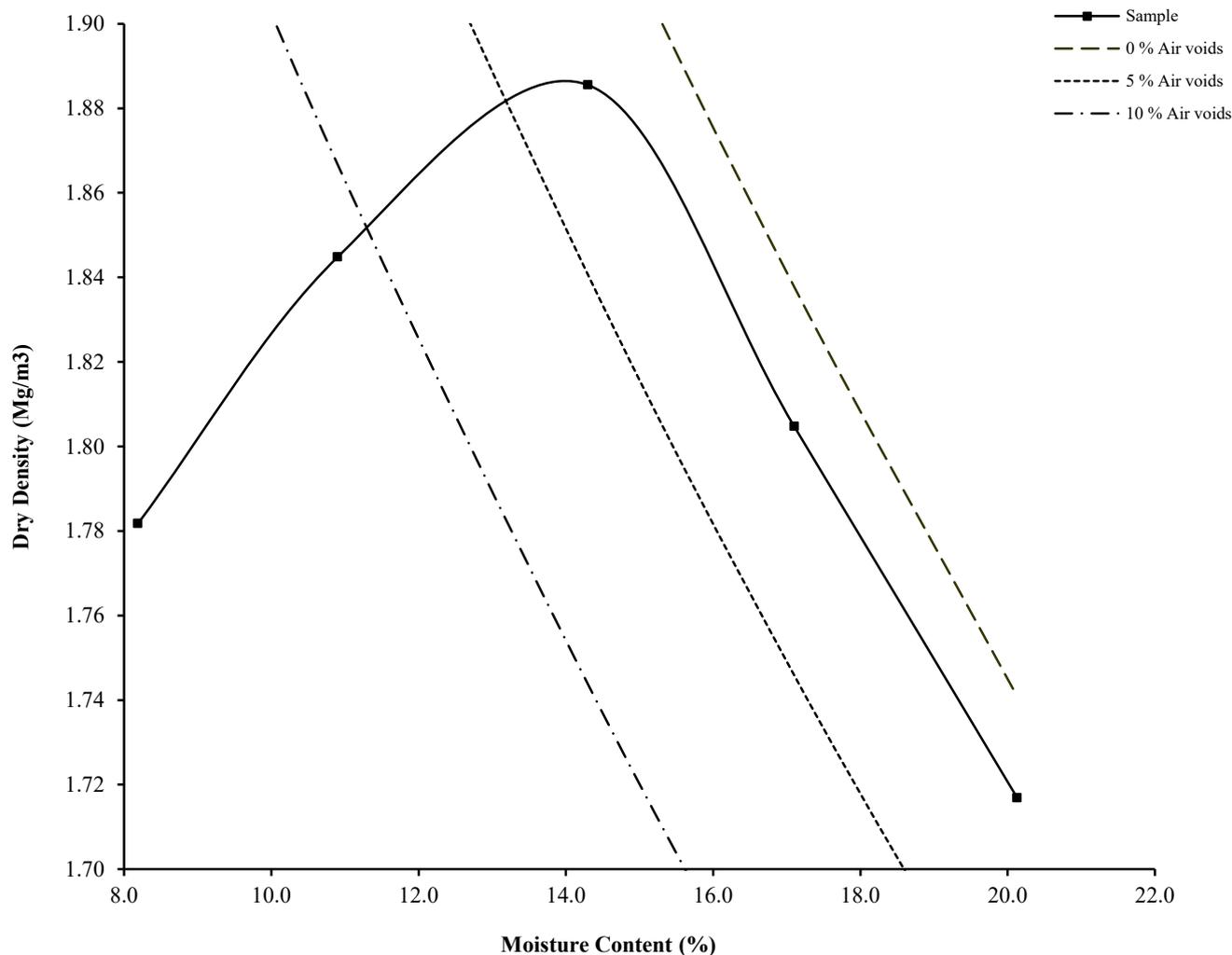
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# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP101 Top Depth (m) : 1.50  
 Sample Number: B1 Base Depth (m) : 2.00  
 Sample Type: BB



Initial Moisture Content:	14	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.68	Measured	Material Retained on 37.5 mm Test Sieve (%):	2
Maximum Dry Density (Mg/m <sup>3</sup> ):	1.89		Material Retained on 20.0 mm Test Sieve (%):	11
Optimum Moisture Content (%):	14			
Remarks See summary of soil descriptions.				



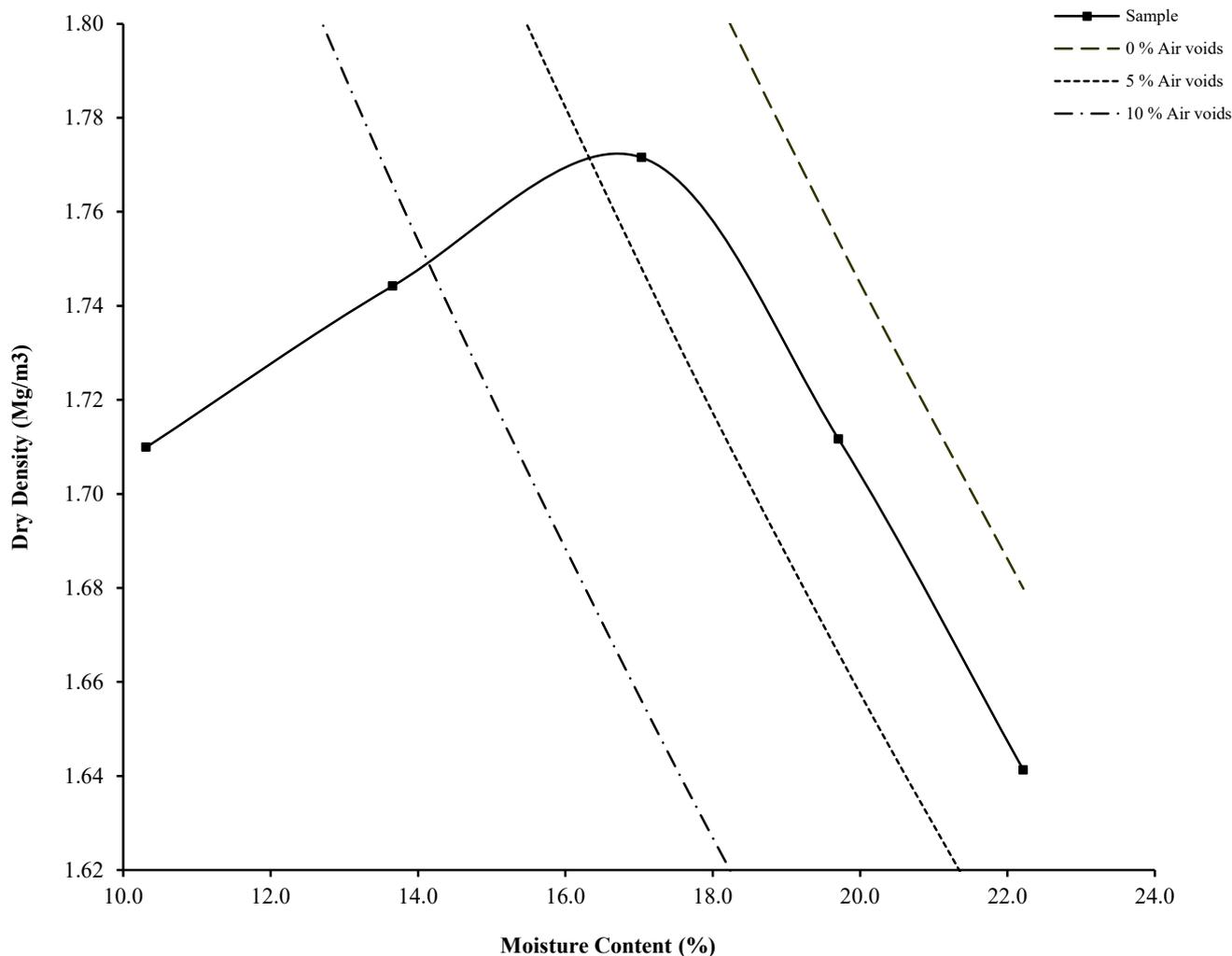
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# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP102A Top Depth (m) : 2.00  
 Sample Number: B5 Base Depth (m) : 2.20  
 Sample Type: BB



Initial Moisture Content:	17	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.68	Assumed	Material Retained on 37.5 mm Test Sieve (%):	1
Maximum Dry Density (Mg/m <sup>3</sup> ):	1.77		Material Retained on 20.0 mm Test Sieve (%):	4
Optimum Moisture Content (%):	15			
Remarks See summary of soil descriptions.				



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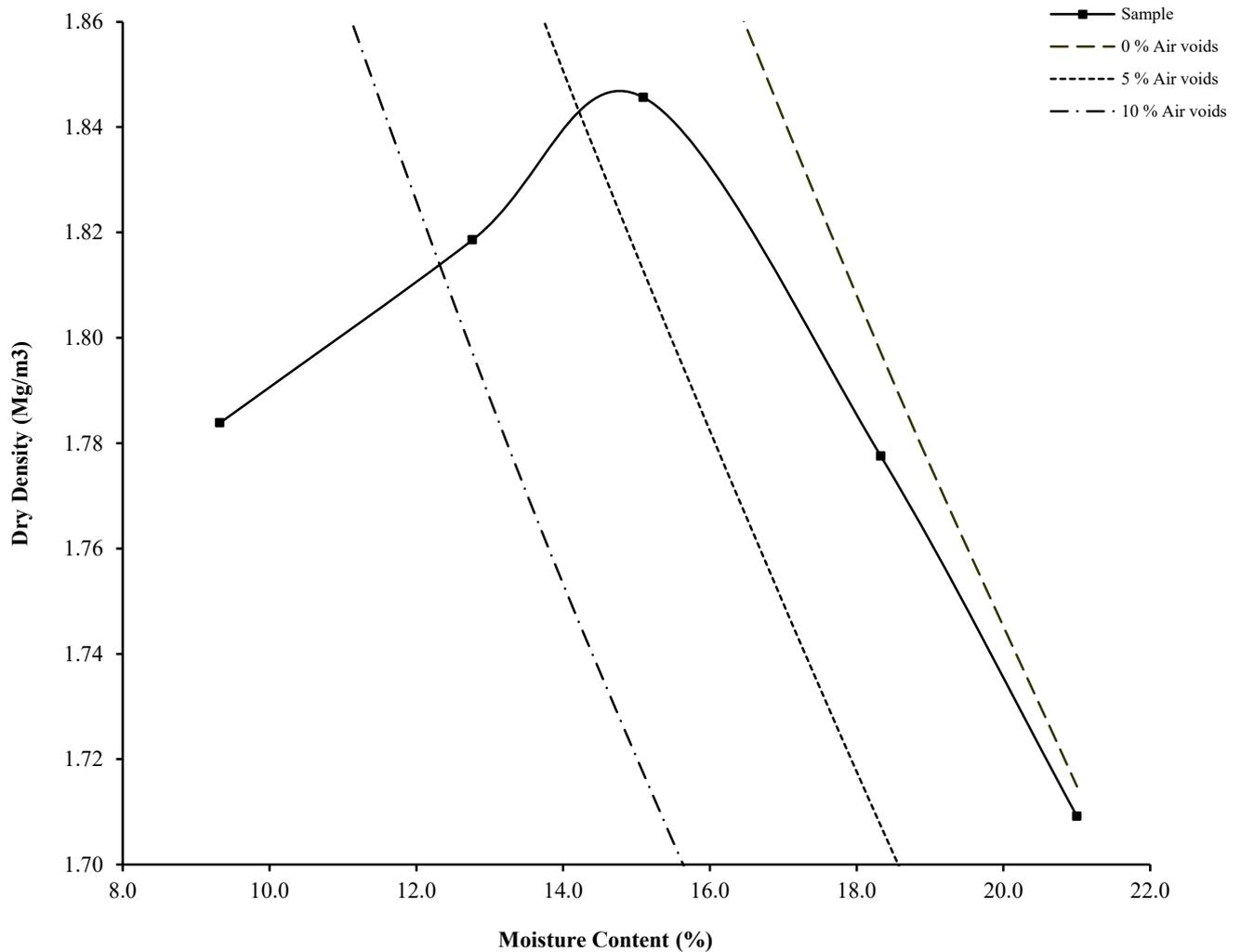
# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP103 Top Depth (m) : 2.00

Sample Number: B15 Base Depth (m) : 2.50

Sample Type: BB



Initial Moisture Content:	15	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.68	Measured	Material Retained on 37.5 mm Test Sieve (%):	1
Maximum Dry Density (Mg/m <sup>3</sup> ):	1.85	Material Retained on 20.0 mm Test Sieve (%):	0	
Optimum Moisture Content (%):	15			
Remarks See summary of soil descriptions.				



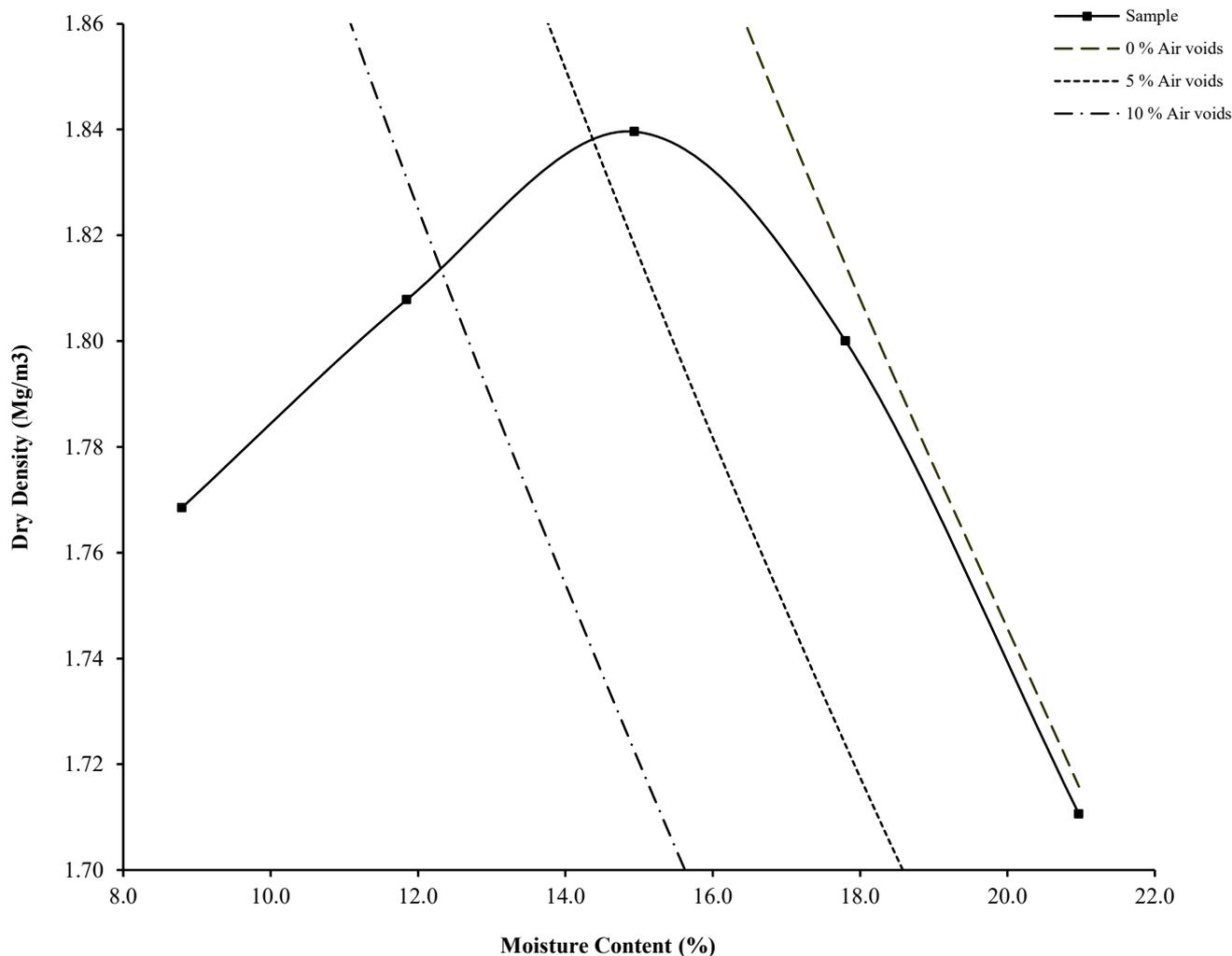
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# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP106 Top Depth (m) : 1.50  
 Sample Number: B13 Base Depth (m) : 2.00  
 Sample Type: BB



Initial Moisture Content:	15	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.68	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m <sup>3</sup> ):	1.84	Material Retained on 20.0 mm Test Sieve (%):	6	
Optimum Moisture Content (%):	15			
Remarks See summary of soil descriptions.				



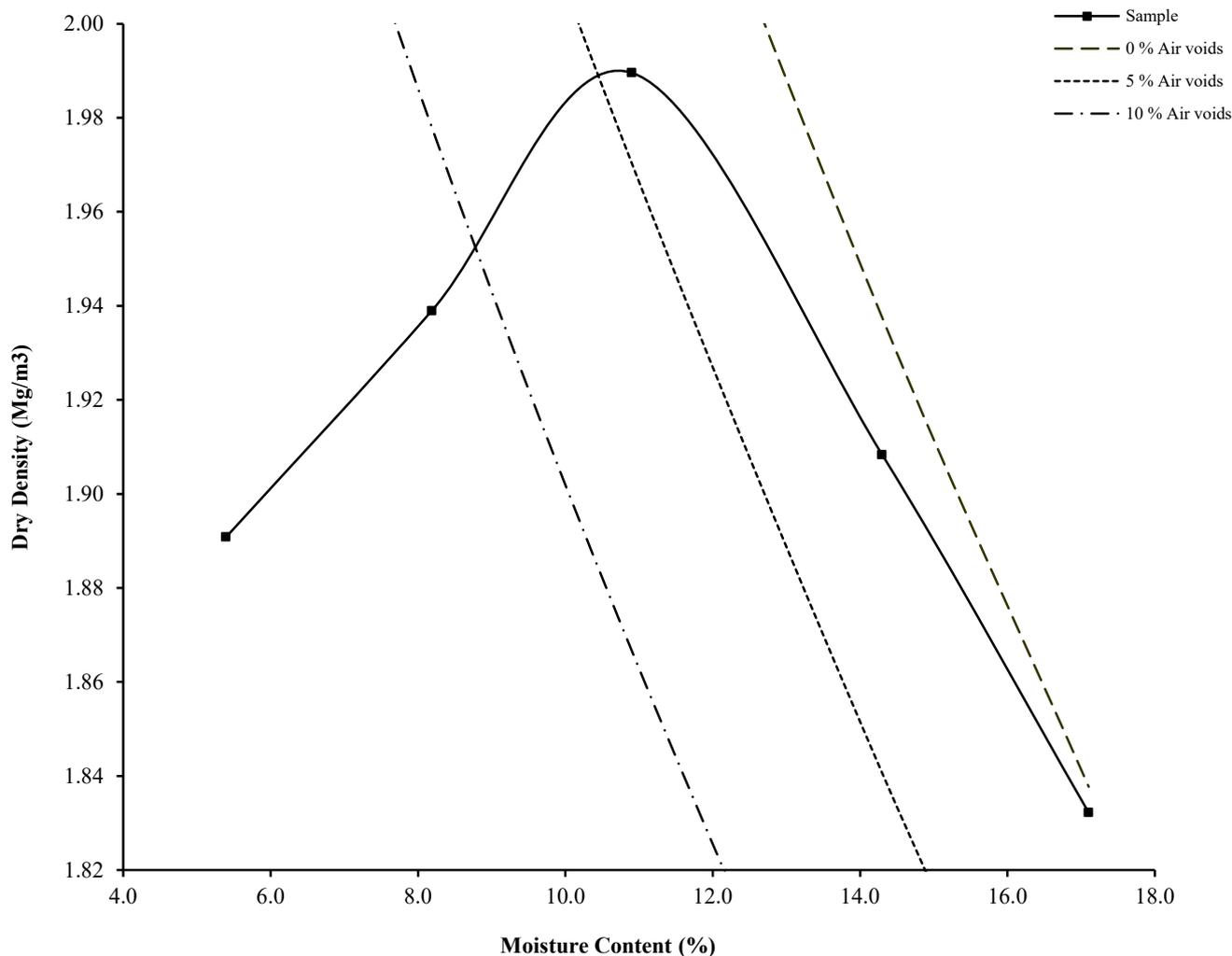
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# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP101 Top Depth (m) : 1.50  
 Sample Number: B1 Base Depth (m) : 2.00  
 Sample Type: BB



Initial Moisture Content:	14	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.68	Measured	Material Retained on 37.5 mm Test Sieve (%):	2
Maximum Dry Density (Mg/m <sup>3</sup> ):	1.99		Material Retained on 20.0 mm Test Sieve (%):	11
Optimum Moisture Content (%):	11			
Remarks See summary of soil descriptions.				



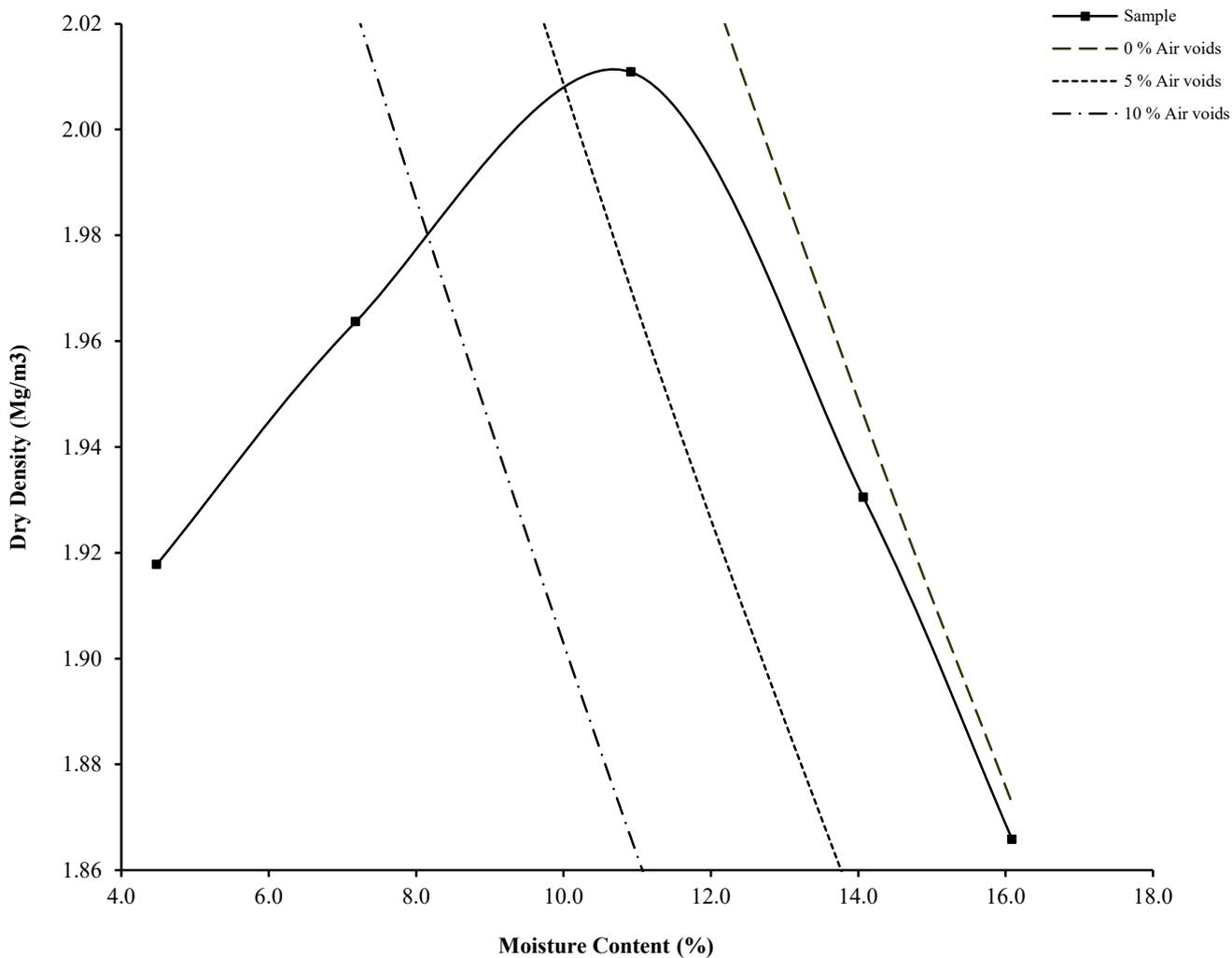
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# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP102 Top Depth (m) : 0.80  
 Sample Number: B3 Base Depth (m) : 1.00  
 Sample Type: BB



Initial Moisture Content:	13	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.68	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m <sup>3</sup> ):	2.01		Material Retained on 20.0 mm Test Sieve (%):	6
Optimum Moisture Content (%):	11			
Remarks See summary of soil descriptions.				



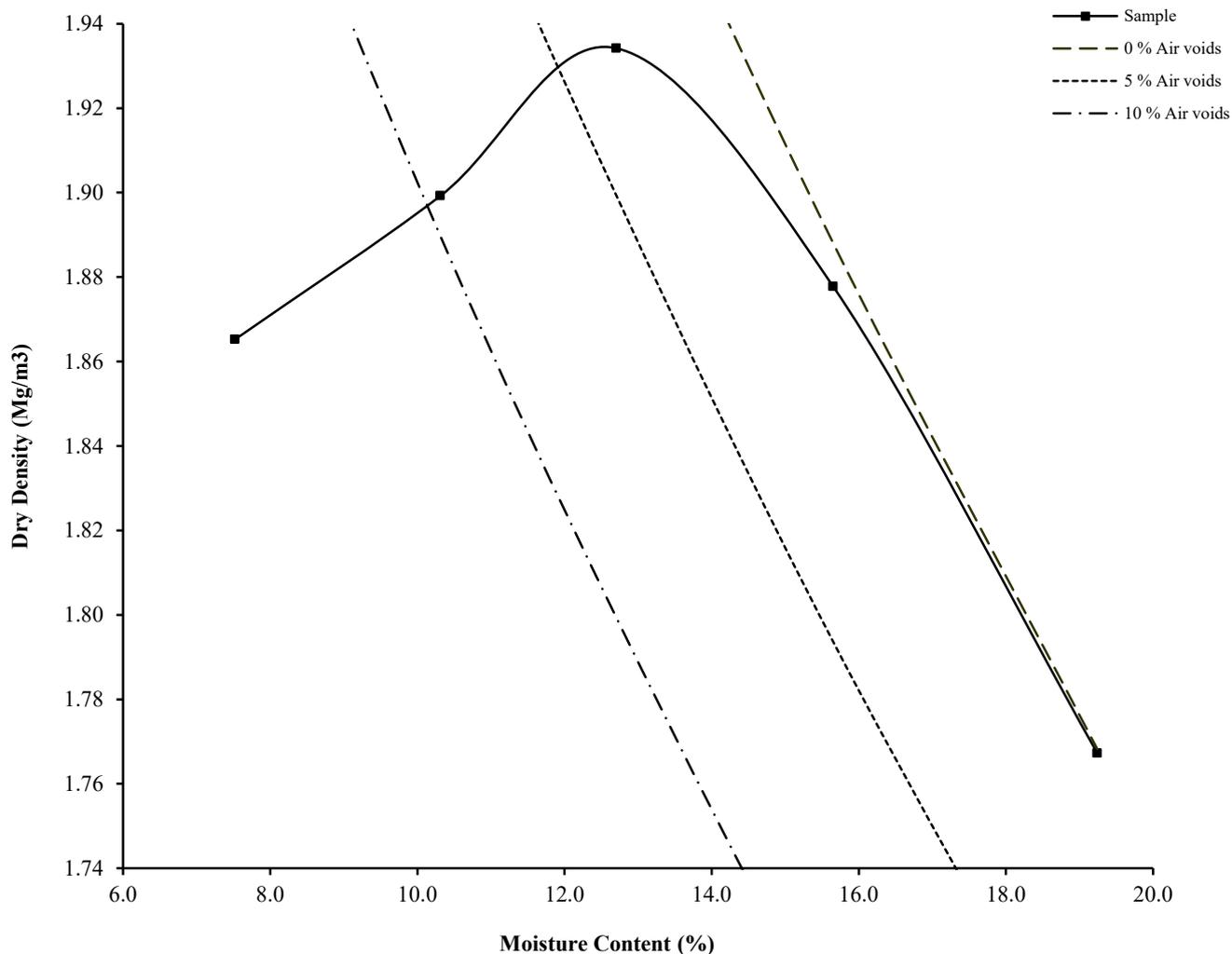
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# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP102A Top Depth (m) : 2.00  
 Sample Number: B6 Base Depth (m) : 2.20  
 Sample Type: BB



Initial Moisture Content:	17	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.68	Measured	Material Retained on 37.5 mm Test Sieve (%):	1
Maximum Dry Density (Mg/m <sup>3</sup> ):	1.93	Material Retained on 20.0 mm Test Sieve (%):	4	
Optimum Moisture Content (%):	13			
Remarks				
See summary of soil descriptions.				



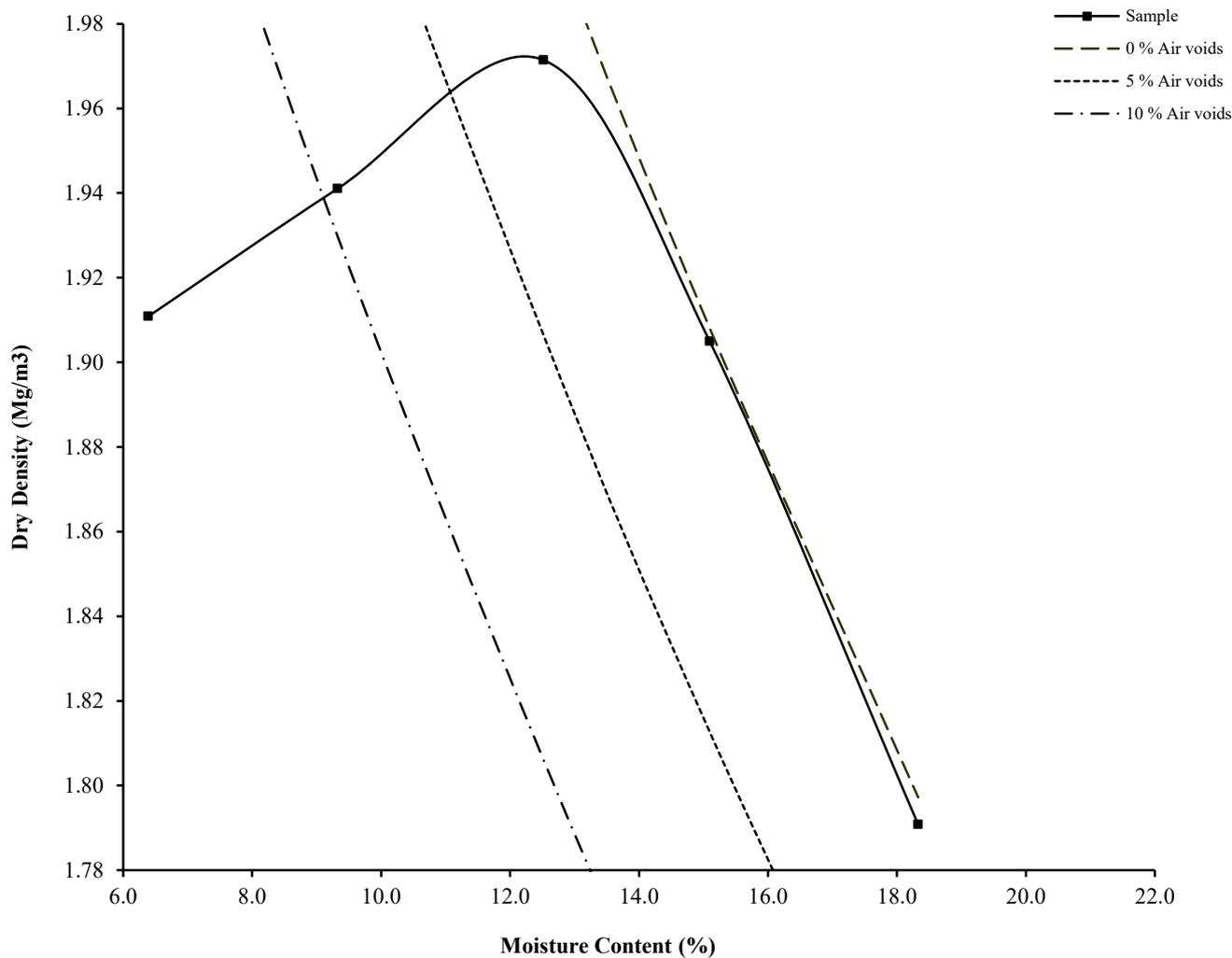
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# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP103 Top Depth (m) : 2.00  
 Sample Number: B16 Base Depth (m) : 2.50  
 Sample Type: BB



Initial Moisture Content:	15	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.68	Assumed	Material Retained on 37.5 mm Test Sieve (%):	1
Maximum Dry Density (Mg/m <sup>3</sup> ):	1.97	Material Retained on 20.0 mm Test Sieve (%):	0	
Optimum Moisture Content (%):	12			
Remarks See summary of soil descriptions.				



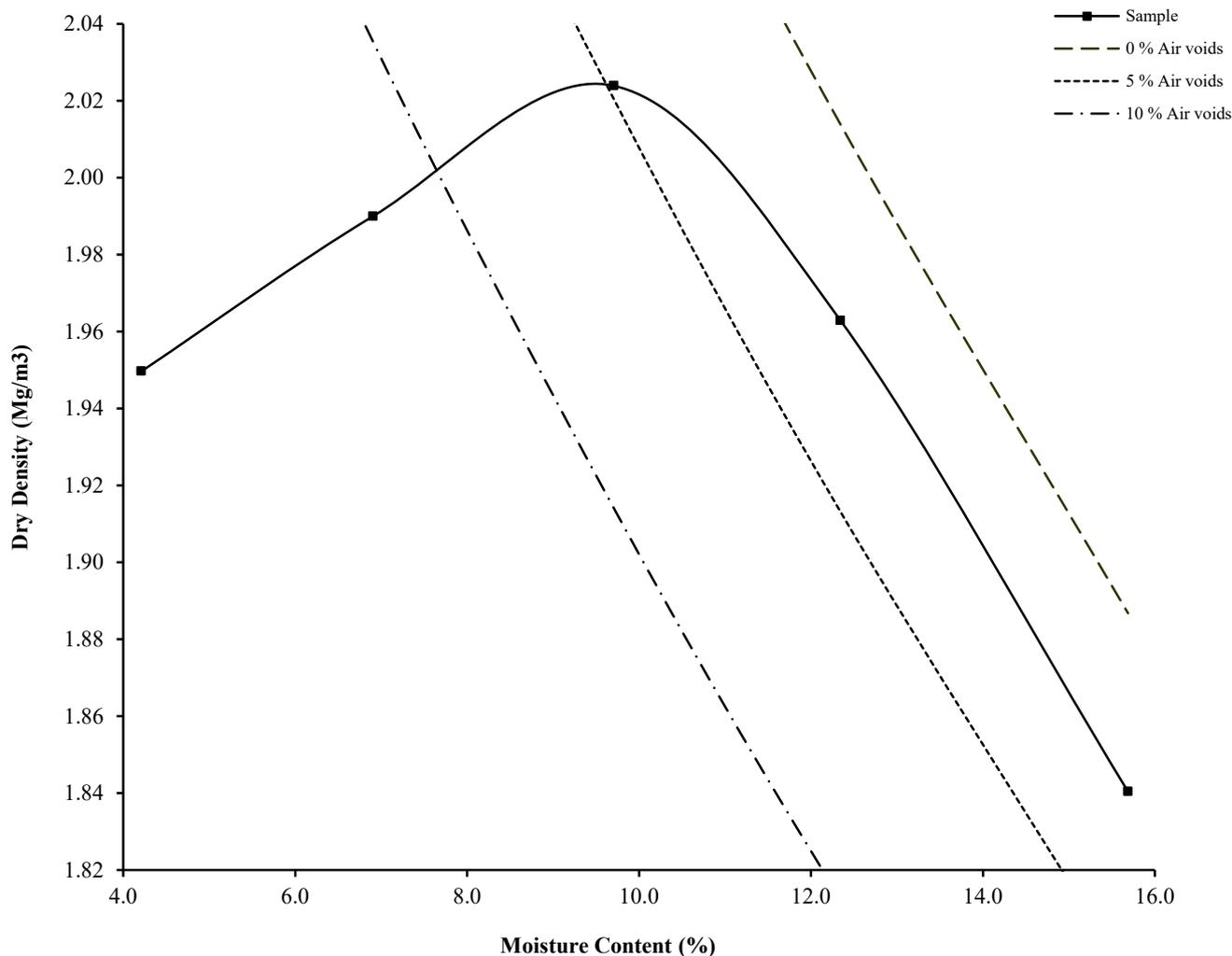
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# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP104 Top Depth (m) : 2.50  
 Sample Number: B7 Base Depth (m) : 3.00  
 Sample Type: BB



Initial Moisture Content:	12	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.68	Assumed	Material Retained on 37.5 mm Test Sieve (%):	9
Maximum Dry Density (Mg/m <sup>3</sup> ):	2.02		Material Retained on 20.0 mm Test Sieve (%):	16
Optimum Moisture Content (%):	10			
Remarks				
See summary of soil descriptions.				



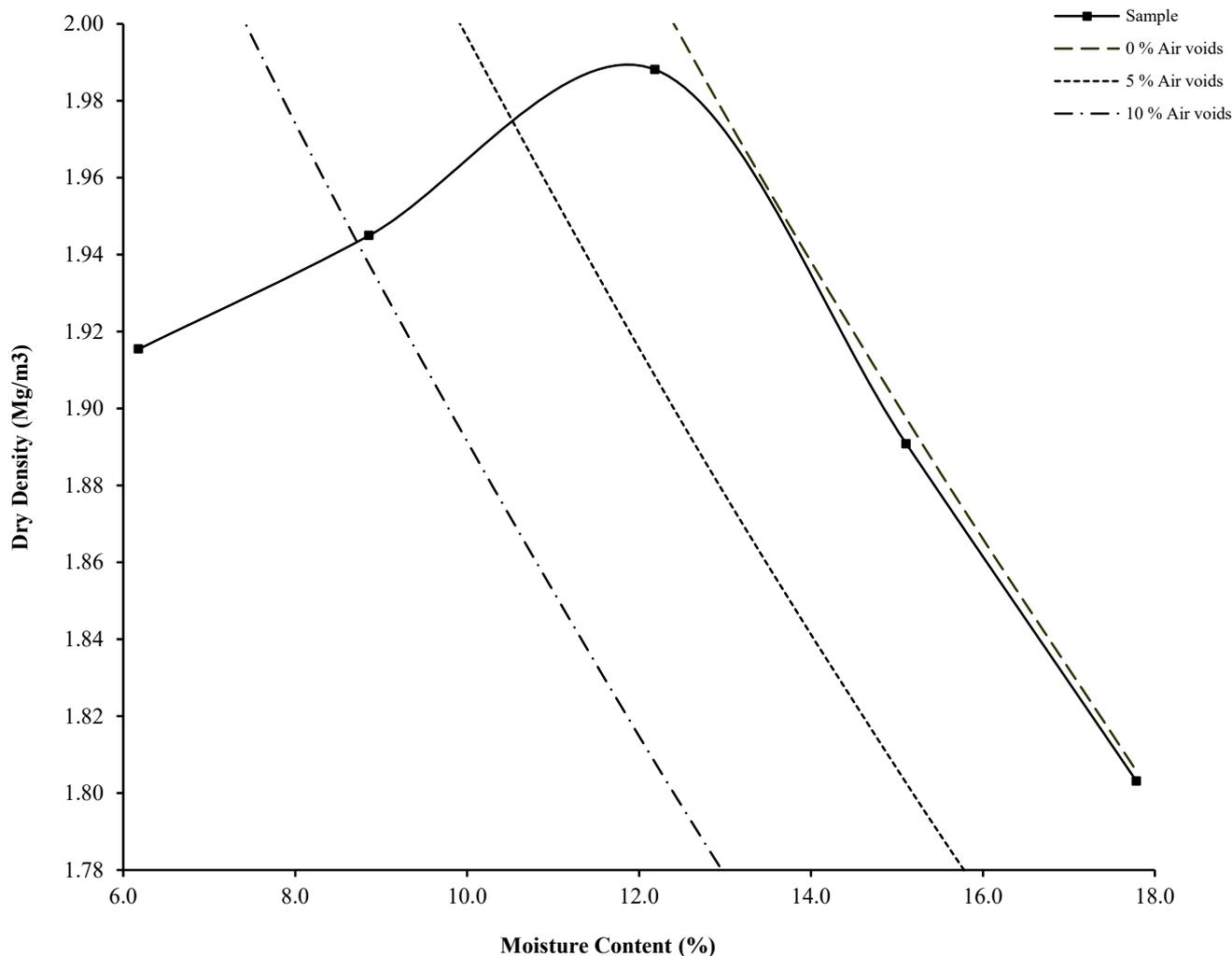
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# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP105 Top Depth (m) : 2.00  
 Sample Number: B12 Base Depth (m) : 2.40  
 Sample Type: BB



Initial Moisture Content:	12	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.66	Measured	Material Retained on 37.5 mm Test Sieve (%):	1
Maximum Dry Density (Mg/m <sup>3</sup> ):	1.99		Material Retained on 20.0 mm Test Sieve (%):	14
Optimum Moisture Content (%):	12			
Remarks See summary of soil descriptions.				



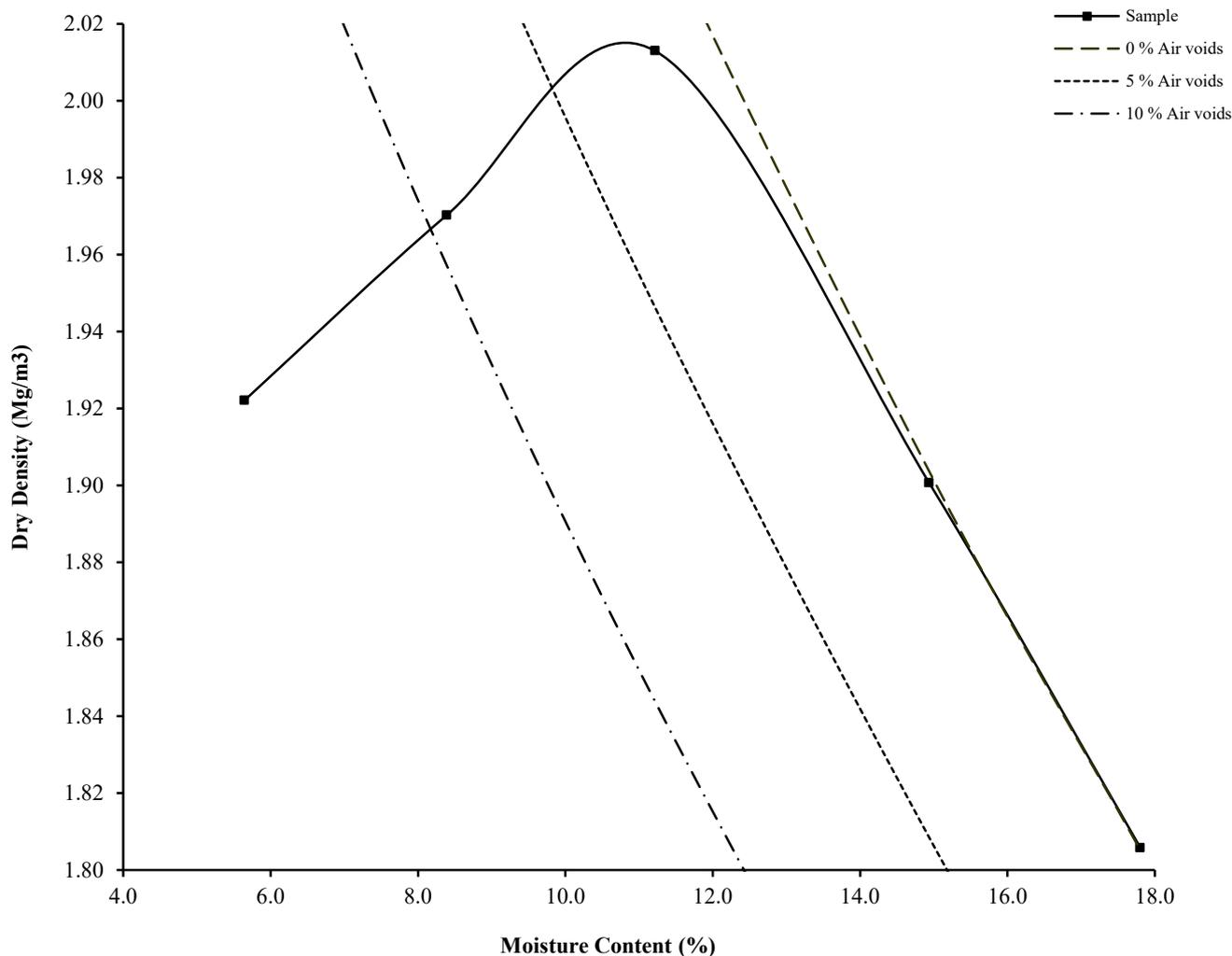
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# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP106 Top Depth (m) : 1.50  
 Sample Number: B13 Base Depth (m) : 2.00  
 Sample Type: BB



Initial Moisture Content:	15	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.66	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m <sup>3</sup> ):	2.01		Material Retained on 20.0 mm Test Sieve (%):	6
Optimum Moisture Content (%):	11			
Remarks See summary of soil descriptions.				



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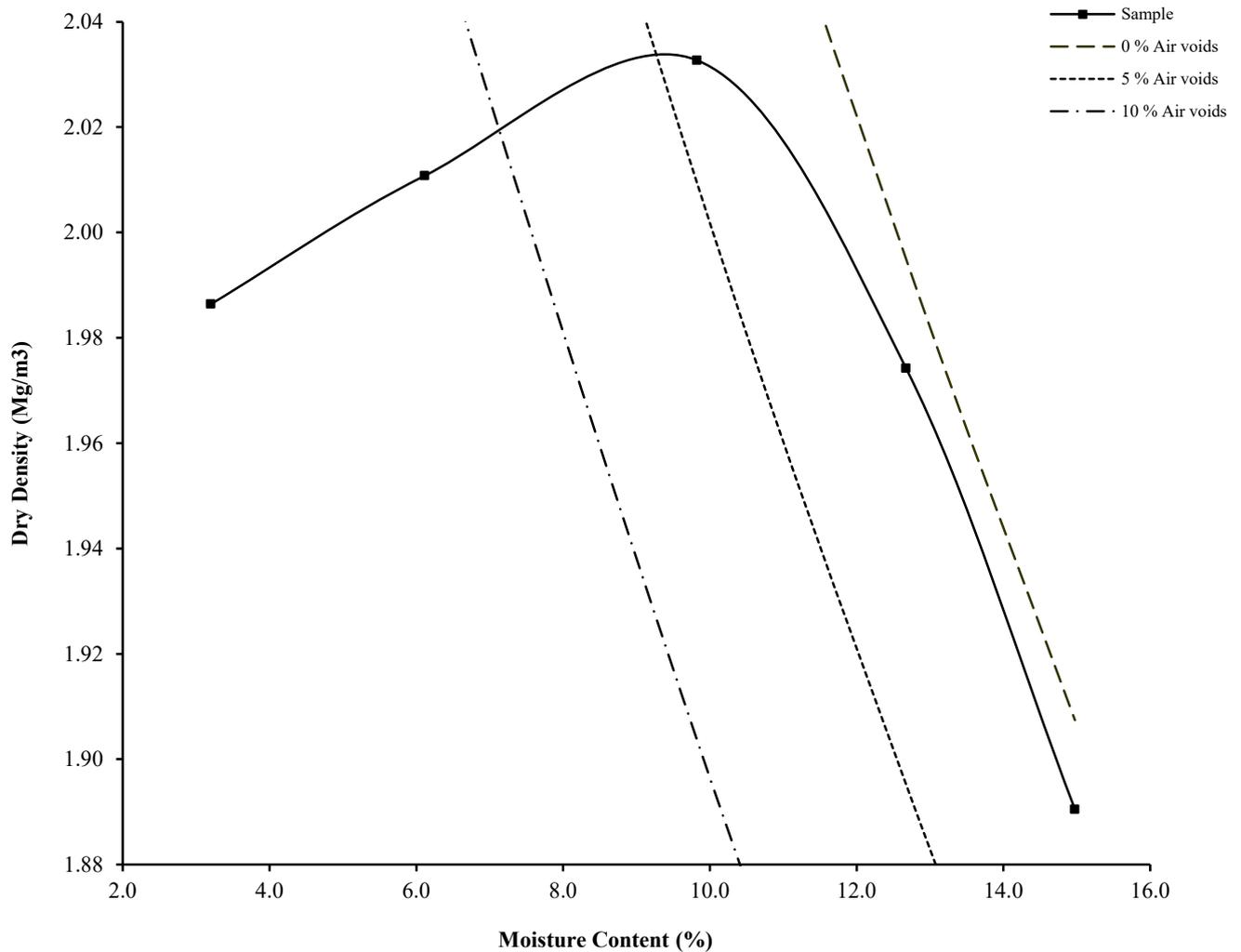
# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP113 Top Depth (m) : 2.00

Sample Number: B9 Base Depth (m) : 2.50

Sample Type: BB



Initial Moisture Content:	15	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.67	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m <sup>3</sup> ):	2.03		Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	10			
Remarks				
See summary of soil descriptions.				



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# CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

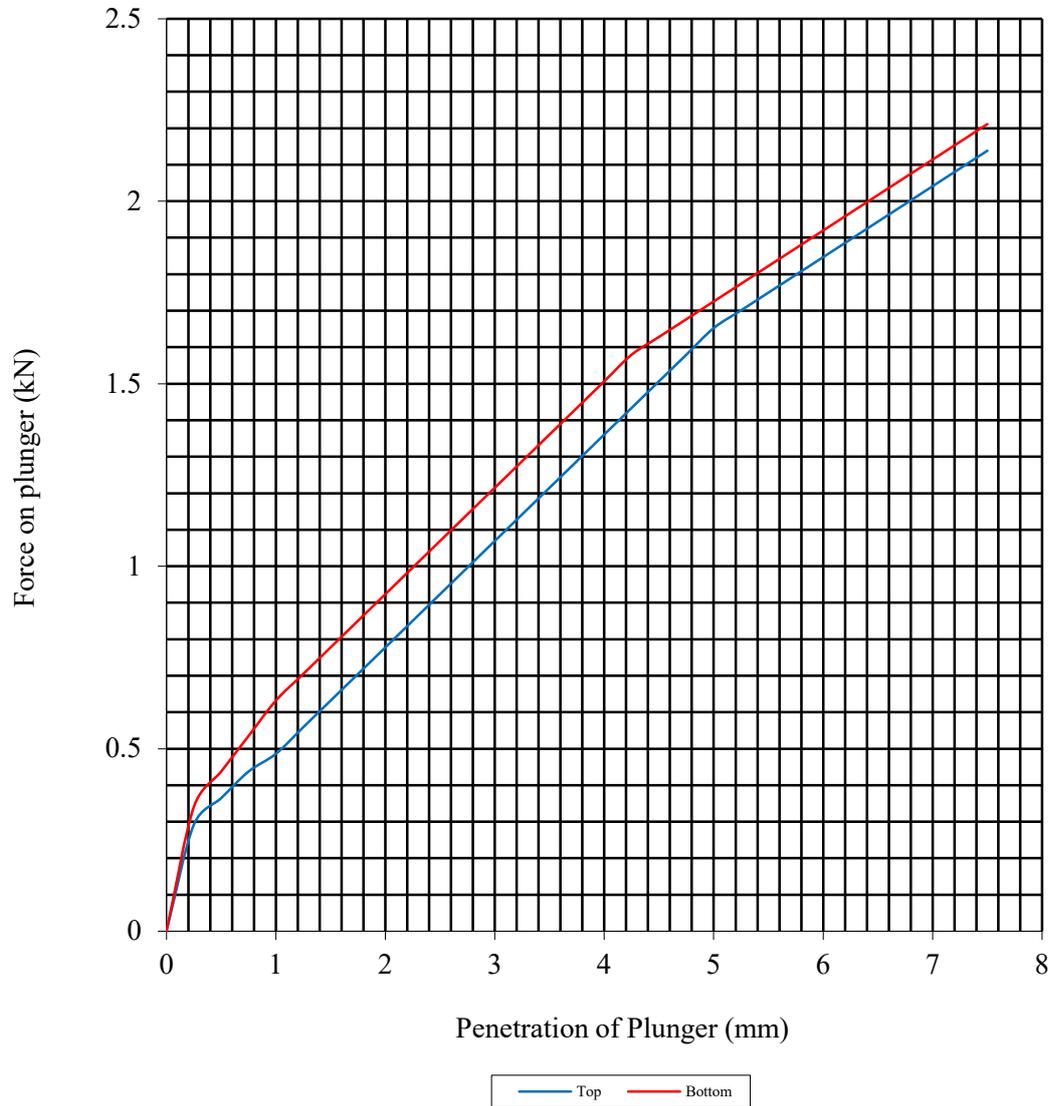
Hole Number: TP101

Top Depth (m): 1.50

Sample Number: B2

Base Depth (m): 2.00

Sample Type: BB



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	12	Surcharge Kg:	4.20	Sample Top	12	Sample Top	8.3
Bulk Density Mg/m <sup>3</sup> :	2.10	Soaking Time hrs	0	Sample Bottom	12	Sample Bottom	8.6
Dry Density Mg/m <sup>3</sup> :	1.87	Swelling mm:	0.00	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:	1						
Compaction Conditions	2.5kg						



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# CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

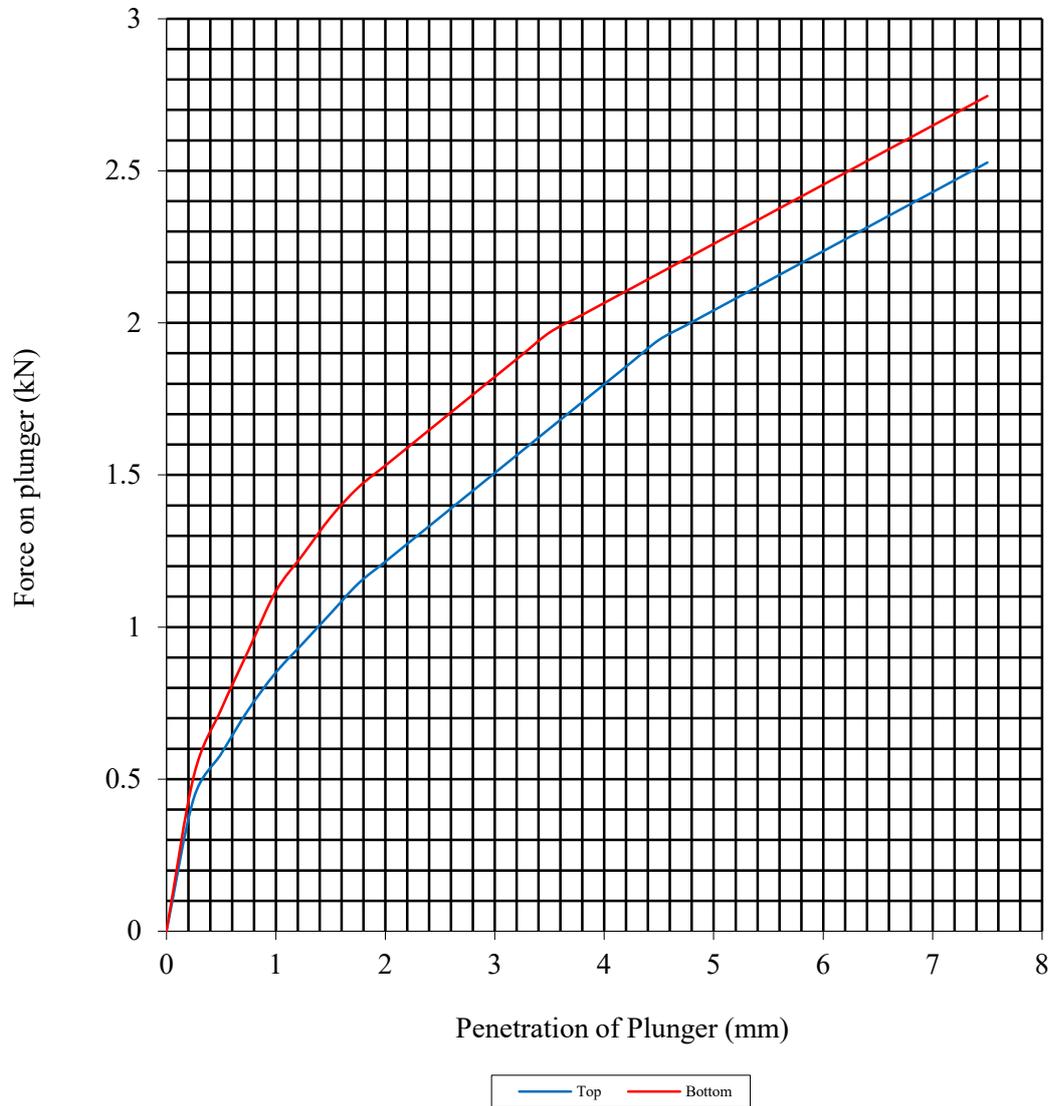
Hole Number: TP101

Top Depth (m): 1.50

Sample Number: B2

Base Depth (m): 2.00

Sample Type: BB



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	12	Surcharge Kg:	4.20	Sample Top	12	Sample Top	10.3
Bulk Density Mg/m <sup>3</sup> :	2.16	Soaking Time hrs	0	Sample Bottom	12	Sample Bottom	12.7
Dry Density Mg/m <sup>3</sup> :	1.93	Swelling mm:	0.00	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:		1					
Compaction Conditions		4.5kg					



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# CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

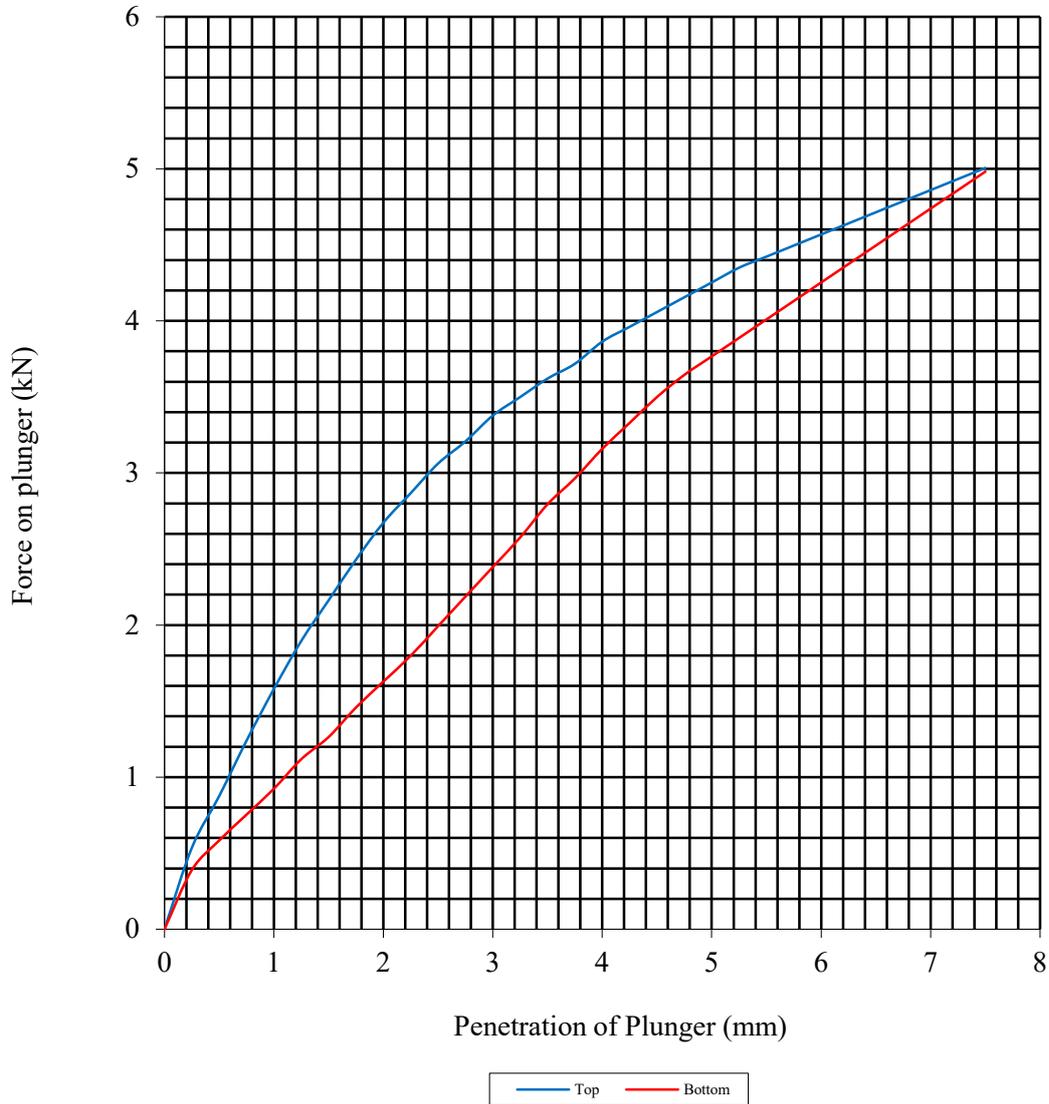
Hole Number: TP102

Top Depth (m): 0.80

Sample Number: B4

Base Depth (m): 1.00

Sample Type: BB



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	12	Surcharge Kg:	4.20	Sample Top	12	Sample Top	23.2
Bulk Density Mg/m <sup>3</sup> :	2.25	Soaking Time hrs	0	Sample Bottom	12	Sample Bottom	18.8
Dry Density Mg/m <sup>3</sup> :	2.00	Swelling mm:	0.00	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:		10					
Compaction Conditions		4.5kg					



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# CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

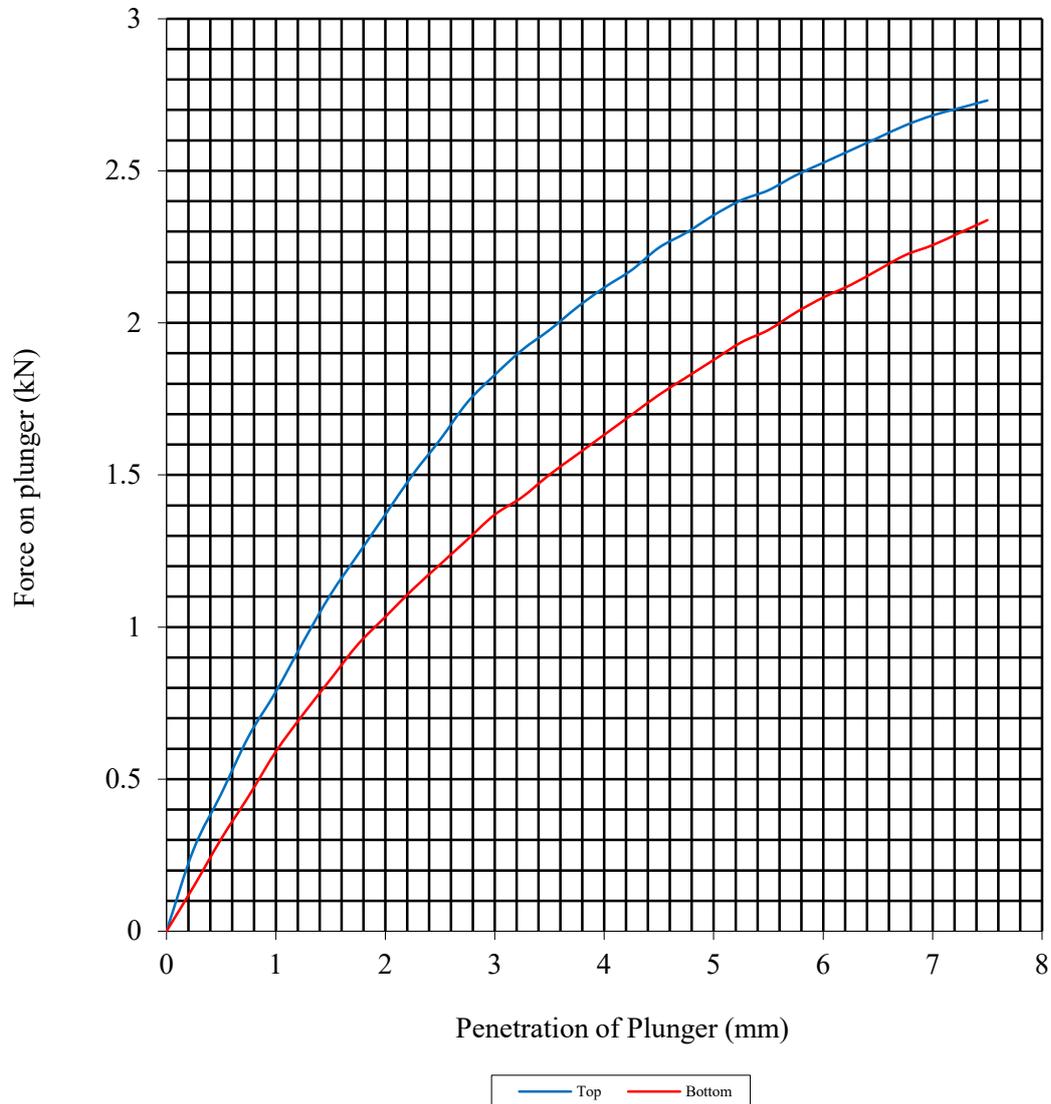
Hole Number: TP104

Top Depth (m): 2.50

Sample Number: B7

Base Depth (m): 3.00

Sample Type: BB



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	13	Surcharge Kg:	4.20	Sample Top	12	Sample Top	12.2
Bulk Density Mg/m <sup>3</sup> :	2.15	Soaking Time hrs	0	Sample Bottom	13	Sample Bottom	9.4
Dry Density Mg/m <sup>3</sup> :	1.91	Swelling mm:	0.00	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:	25						
Compaction Conditions	2.5kg						



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# CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

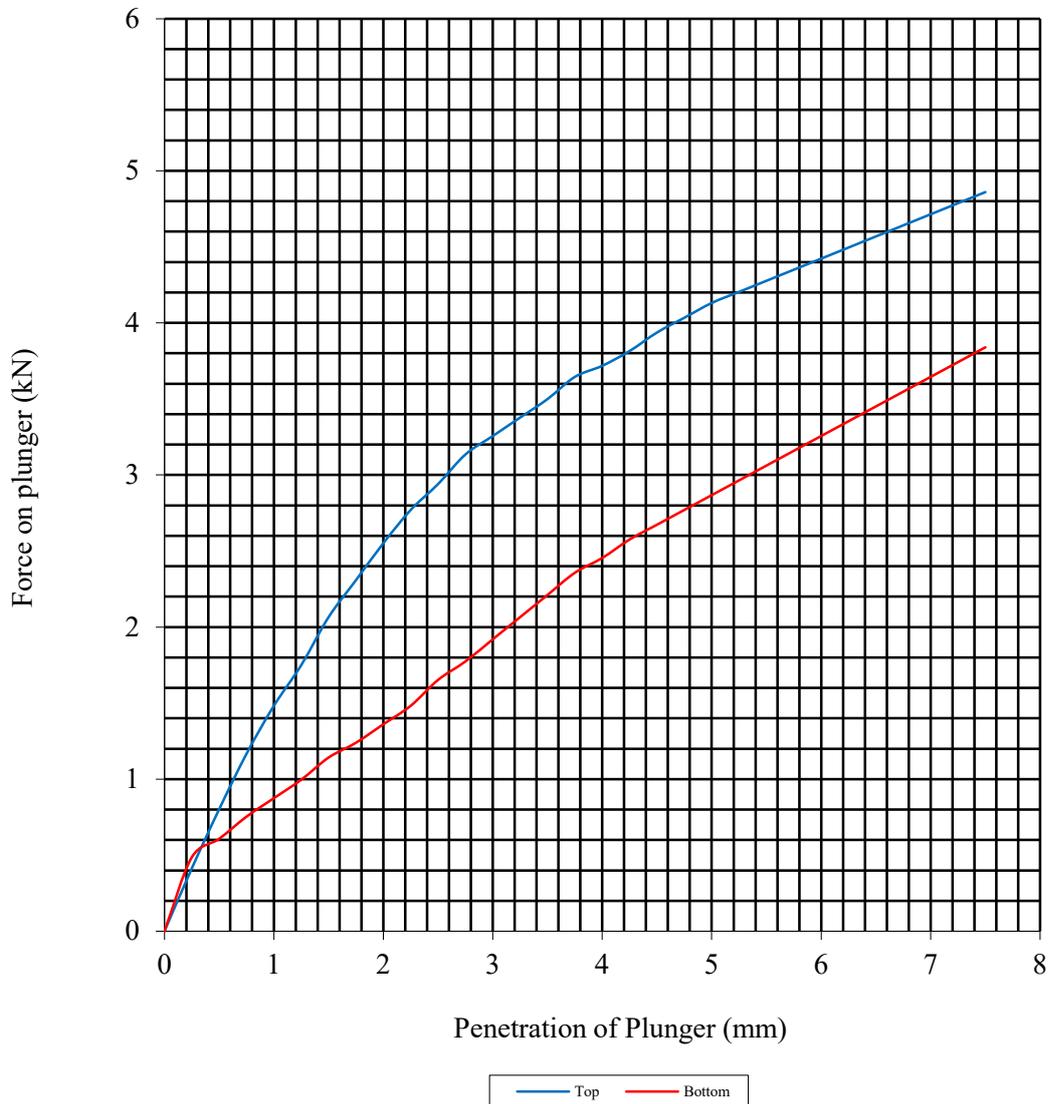
Hole Number: TP105

Top Depth (m): 2.00

Sample Number: B11

Base Depth (m): 2.40

Sample Type: BB



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	12	Surcharge Kg:	4.20	Sample Top	12	Sample Top	22.3
Bulk Density Mg/m <sup>3</sup> :	2.21	Soaking Time hrs	0	Sample Bottom	12	Sample Bottom	14.3
Dry Density Mg/m <sup>3</sup> :	1.97	Swelling mm:	0.00	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			22				
Compaction Conditions		4.5kg					



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# CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

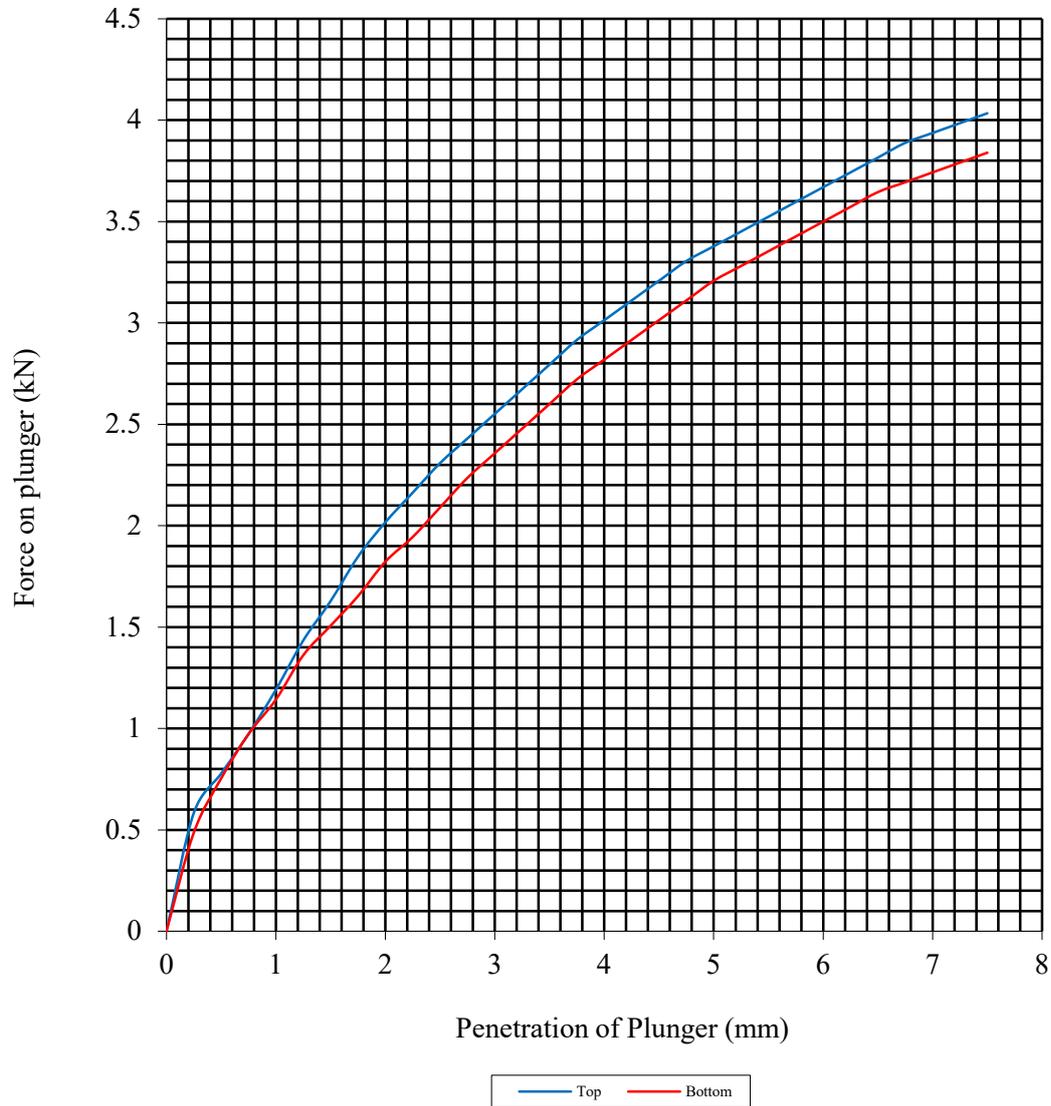
Hole Number: TP106

Top Depth (m): 1.50

Sample Number: B14

Base Depth (m): 2.00

Sample Type: BB



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	14	Surcharge Kg:	4.20	Sample Top	14	Sample Top	17.5
Bulk Density Mg/m <sup>3</sup> :	2.19	Soaking Time hrs	0	Sample Bottom	14	Sample Bottom	16.0
Dry Density Mg/m <sup>3</sup> :	1.91	Swelling mm:	0.00	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:		9					
Compaction Conditions		4.5kg					



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# MOISTURE CONDITION VALUE

BS1377 : Part 4 : 1990 Clause 5.4

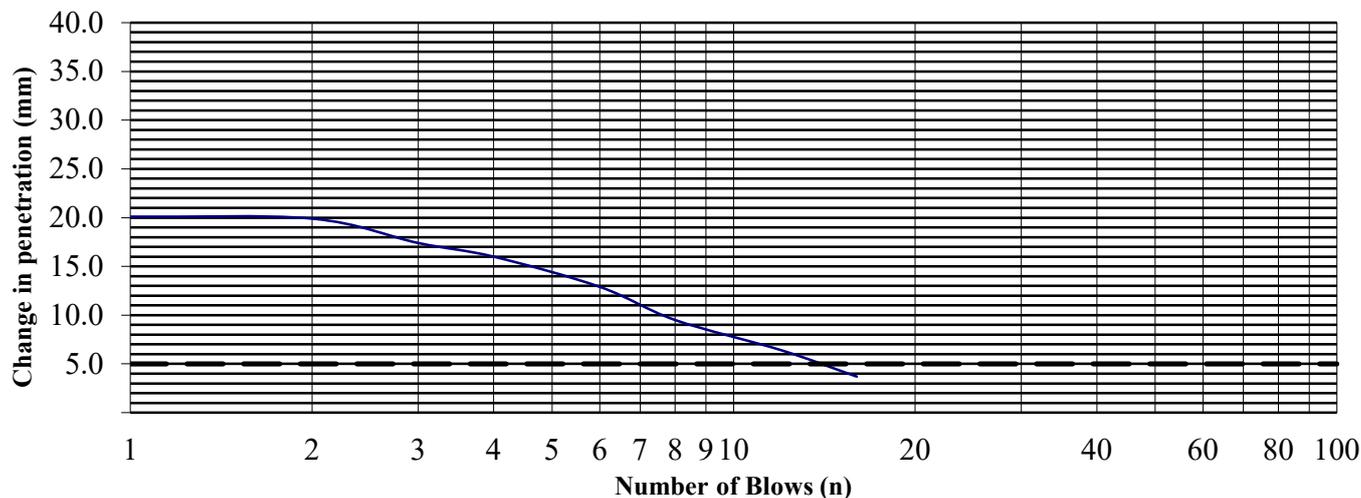
Hole Number: TP101 Top Depth (m): 1.50

Sample Number: 2B Base Depth (m): 2.00

Sample Type: B

Material Retained on the 20mm BS Test Sieve (%):	0
Interpretation based on steepest straight line intercept with 5mm change in penetration.	

## MCV Determination



Blows (N)	Penetration (mm)	n to 4n (mm)
1	78.4	20.1
2	68.6	19.9
3	62.5	17.4
4	58.3	16.0
6	52.5	12.9
8	48.7	9.5
12	45.1	6.4
16	42.3	3.7
24	39.6	
32	39.2	
48	38.7	
64	38.6	
96		
128		
192		
256		

## Test Results.

Moisture Content (%)	15
MCV	11.5



**PSL**  
Professional Soils Laboratory

Barnsley West

Contract No:

PSL19/2340

Client Ref:

4848

# MOISTURE CONDITION VALUE

BS1377 : Part 4 : 1990 Clause 5.4

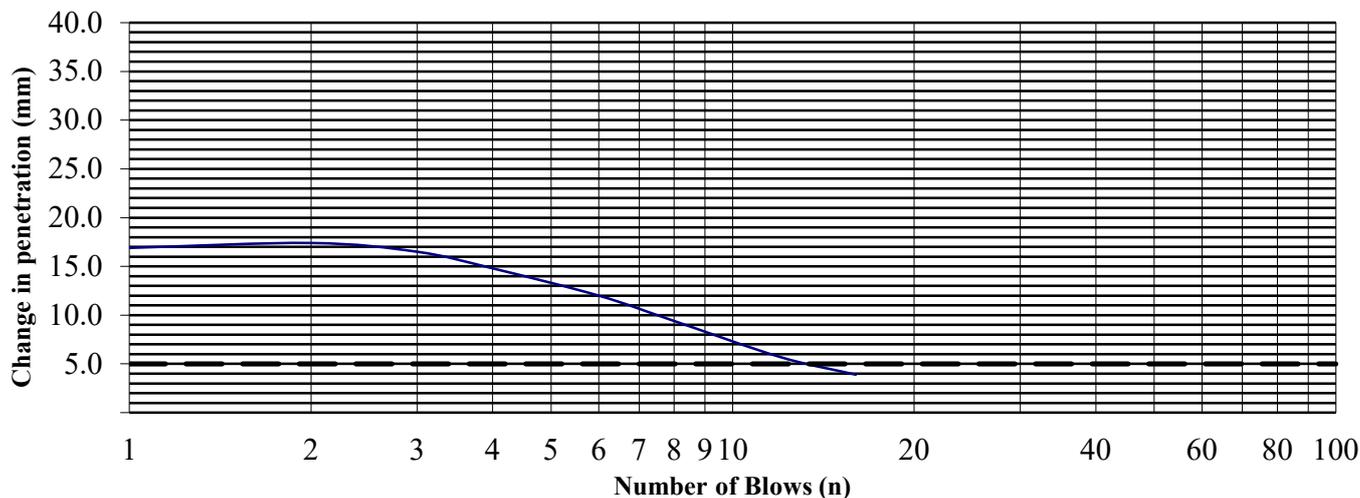
Hole Number: TP102 Top Depth (m): 0.80

Sample Number: B4 Base Depth (m): 1.00

Sample Type: B

Material Retained on the 20mm BS Test Sieve (%):	6
Interpretation based on steepest straight line intercept with 5mm change in penetration.	

## MCV Determination



Blows (N)	Penetration (mm)	n to 4n (mm)
1	88.5	16.9
2	80.6	17.4
3	75.6	16.5
4	71.6	14.8
6	66.4	12.0
8	63.2	9.4
12	59.1	5.7
16	56.8	3.9
24	54.4	
32	53.8	
48	53.4	
64	52.9	
96		
128		
192		
256		

## Test Results.

Moisture Content (%)	11
MCV	11.1



**PSL**  
Professional Soils Laboratory

Barnsley West

Contract No:

PSL19/2340

Client Ref:

4848

# MOISTURE CONDITION VALUE

BS1377 : Part 4 : 1990 Clause 5.4

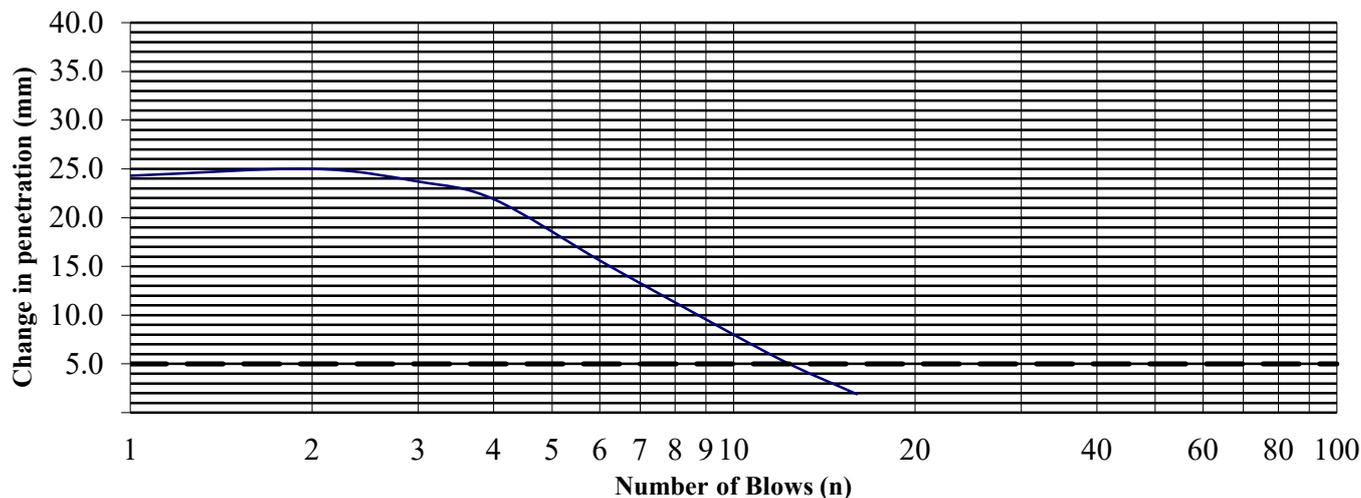
Hole Number: TP102A Top Depth (m): 2.00

Sample Number: B6 Base Depth (m): 2.20

Sample Type: B

Material Retained on the 20mm BS Test Sieve (%):	5
Interpretation based on steepest straight line intercept with 5mm change in penetration.	

## MCV Determination



Blows (N)	Penetration (mm)	n to 4n (mm)
1	89.1	24.3
2	77.4	25.0
3	70.1	23.7
4	64.8	21.9
6	57.2	15.6
8	52.4	11.3
12	46.4	5.4
16	42.9	1.9
24	41.6	
32	41.1	
48	41.0	
64	41.0	
96		
128		
192		
256		

## Test Results.

Moisture Content (%)	16
MCV	10.9



Barnsley West

Contract No:  
PSL19/2340  
Client Ref:  
4848

# MOISTURE CONDITION VALUE

BS1377 : Part 4 : 1990 Clause 5.4

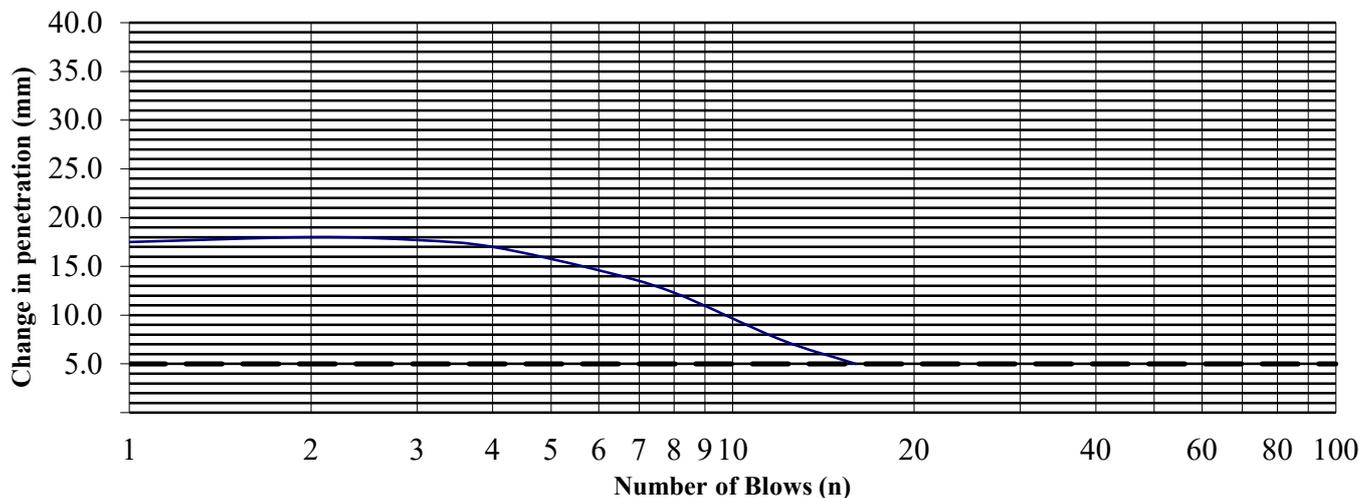
Hole Number: TP103 Top Depth (m): 2.00

Sample Number: B16 Base Depth (m): 2.50

Sample Type: B

Material Retained on the 20mm BS Test Sieve (%):	1
Interpretation based on steepest straight line intercept with 5mm change in penetration.	

## MCV Determination



Blows (N)	Penetration (mm)	n to 4n (mm)
1	68.4	17.5
2	59.8	18.0
3	54.6	17.7
4	50.9	17.0
6	45.2	14.6
8	41.8	12.3
12	36.9	7.5
16	33.9	5.0
24	30.6	
32	29.5	
48	29.4	
64	28.9	
96		
128		
192		
256		

## Test Results.

Moisture Content (%)	15
MCV	11.8



**PSL**  
Professional Soils Laboratory

Barnsley West

Contract No:

PSL19/2340

Client Ref:

4848

# MOISTURE CONDITION VALUE

BS1377 : Part 4 : 1990 Clause 5.4

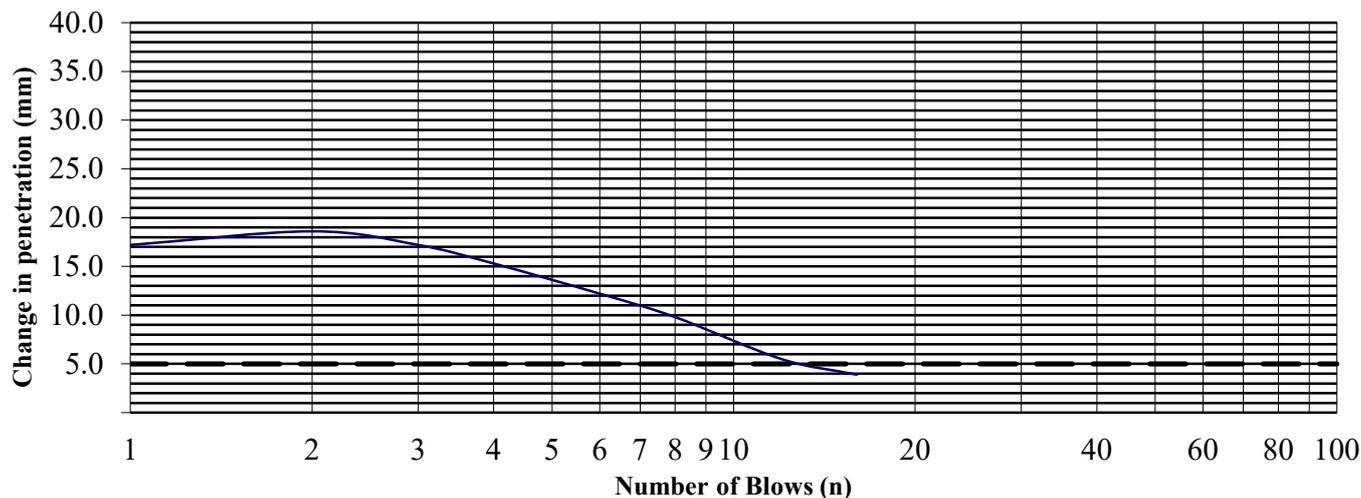
Hole Number: TP106 Top Depth (m): 1.50

Sample Number: B13 Base Depth (m): 2.00

Sample Type: B

Material Retained on the 20mm BS Test Sieve (%):	6
Interpretation based on steepest straight line intercept with 5mm change in penetration.	

## MCV Determination



Blows (N)	Penetration (mm)	n to 4n (mm)
1	71.5	17.2
2	64.4	18.6
3	58.4	17.2
4	54.3	15.3
6	48.8	12.2
8	45.8	9.8
12	41.2	5.5
16	39.0	3.9
24	36.6	
32	36.0	
48	35.7	
64	35.1	
96		
128		
192		
256		

## Test Results.

Moisture Content (%)	14
MCV	11.0



**PSL**  
Professional Soils Laboratory

Barnsley West

Contract No:

PSL19/2340

Client Ref:

4848

# MOISTURE CONDITION VALUE

BS1377 : Part 4 : 1990 Clause 5.4

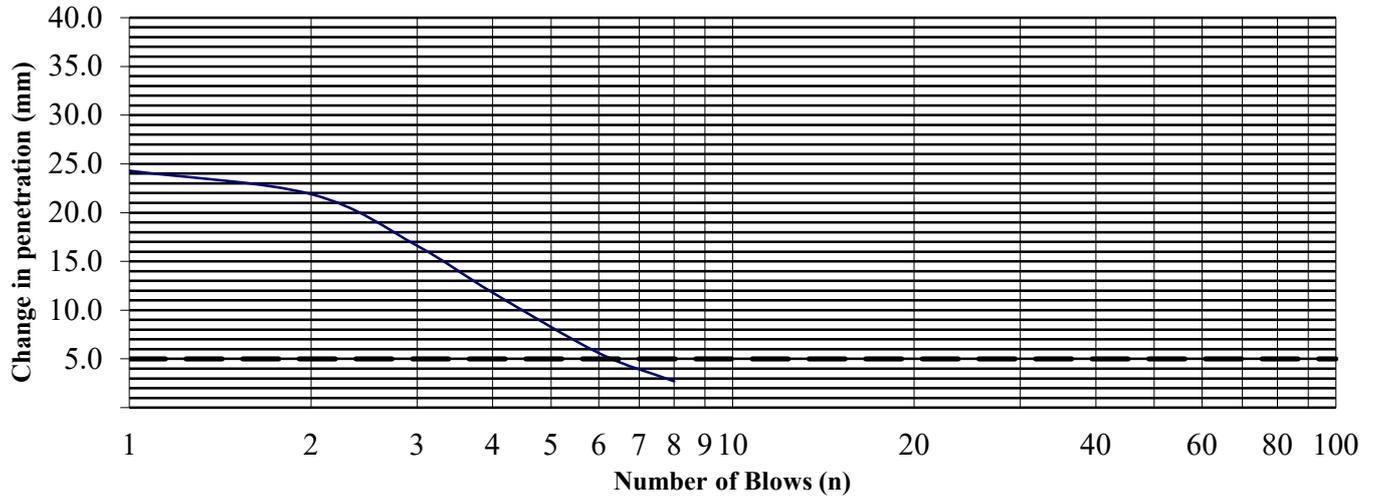
Hole Number: TP113 Top Depth (m): 2.00

Sample Number: B9 Base Depth (m): 2.50

Sample Type: B

Material Retained on the 20mm BS Test Sieve (%):	0
Interpretation based on steepest straight line intercept with 5mm change in penetration.	

## MCV Determination



Blows (N)	Penetration (mm)	n to 4n (mm)
1	74.4	24.3
2	62.5	21.9
3	55.1	16.6
4	50.1	11.8
6	43.6	5.6
8	40.6	2.7
12	38.5	
16	38.3	
24	38.0	
32	37.9	
48		
64		
96		
128		
192		
256		

### Test Results.

Moisture Content (%)	15
MCV	8.1



Barnsley West

Contract No:  
PSL19/2340  
Client Ref:  
4848

# MOISTURE CONDITION VALUE CALIBRATION

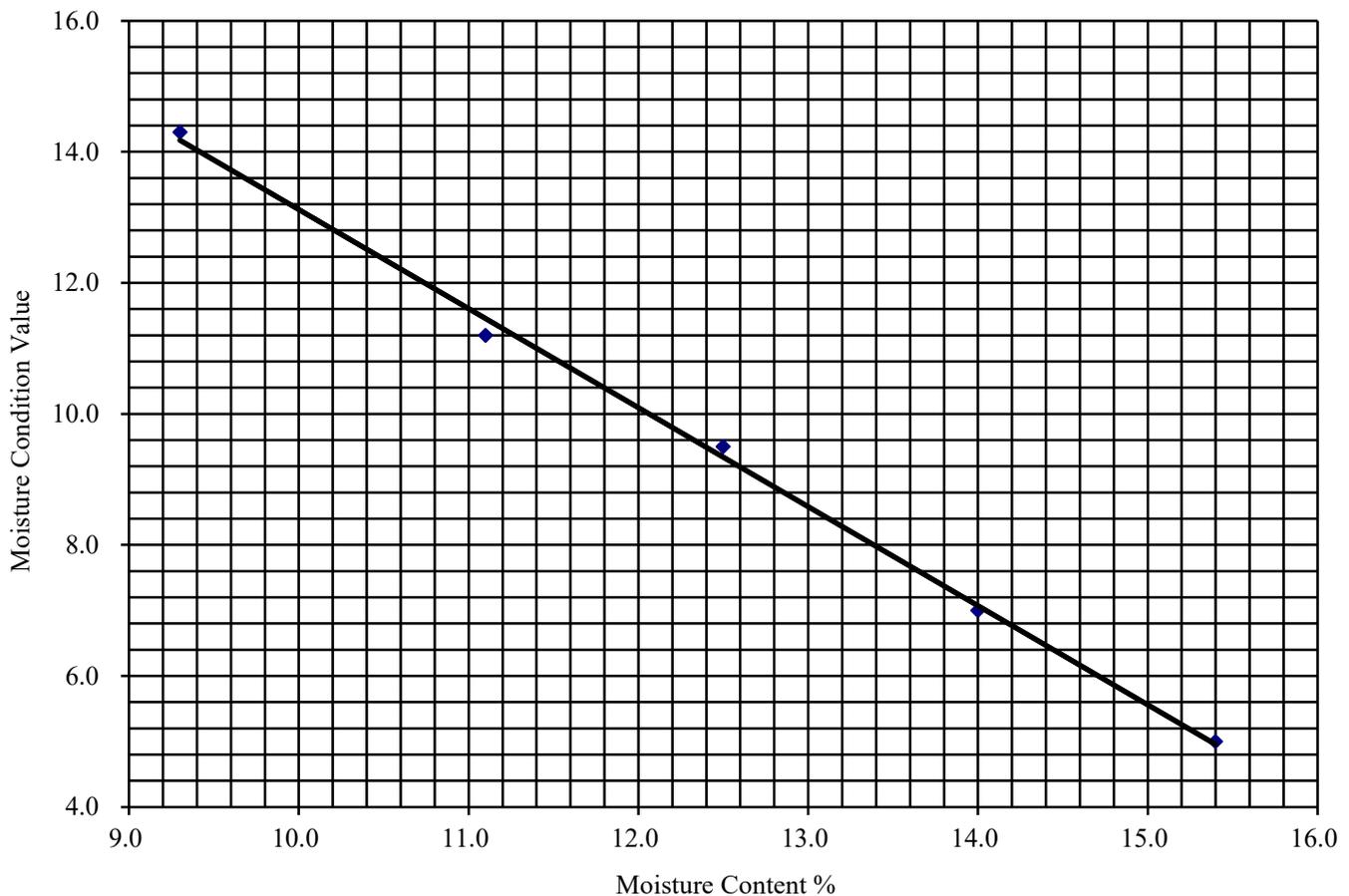
BS1377 : Part 4 : 1990 Clause 5.5

Hole Number: TP104 Top Depth (m): 2.50

Sample Number: B8 Base Depth (m): 3.00

Sample Type: BB

Initial Moisture Content (%):	13
Single/Separate Samples Tested	Separate
Material Retained on the 20mm BS Test Sieve (%):	0



### Test Results.

Test Number	1	2	3	4	5
Moisture Content (%)	9.3	11.1	12.5	14.0	15.4
MCV	14.3	11.2	9.5	7.0	5.0



**PSL**  
Professional Soils Laboratory

Barnsley West

Contract No:
PSL19/2340
Client Ref:
4848

# MOISTURE CONDITION VALUE CALIBRATION

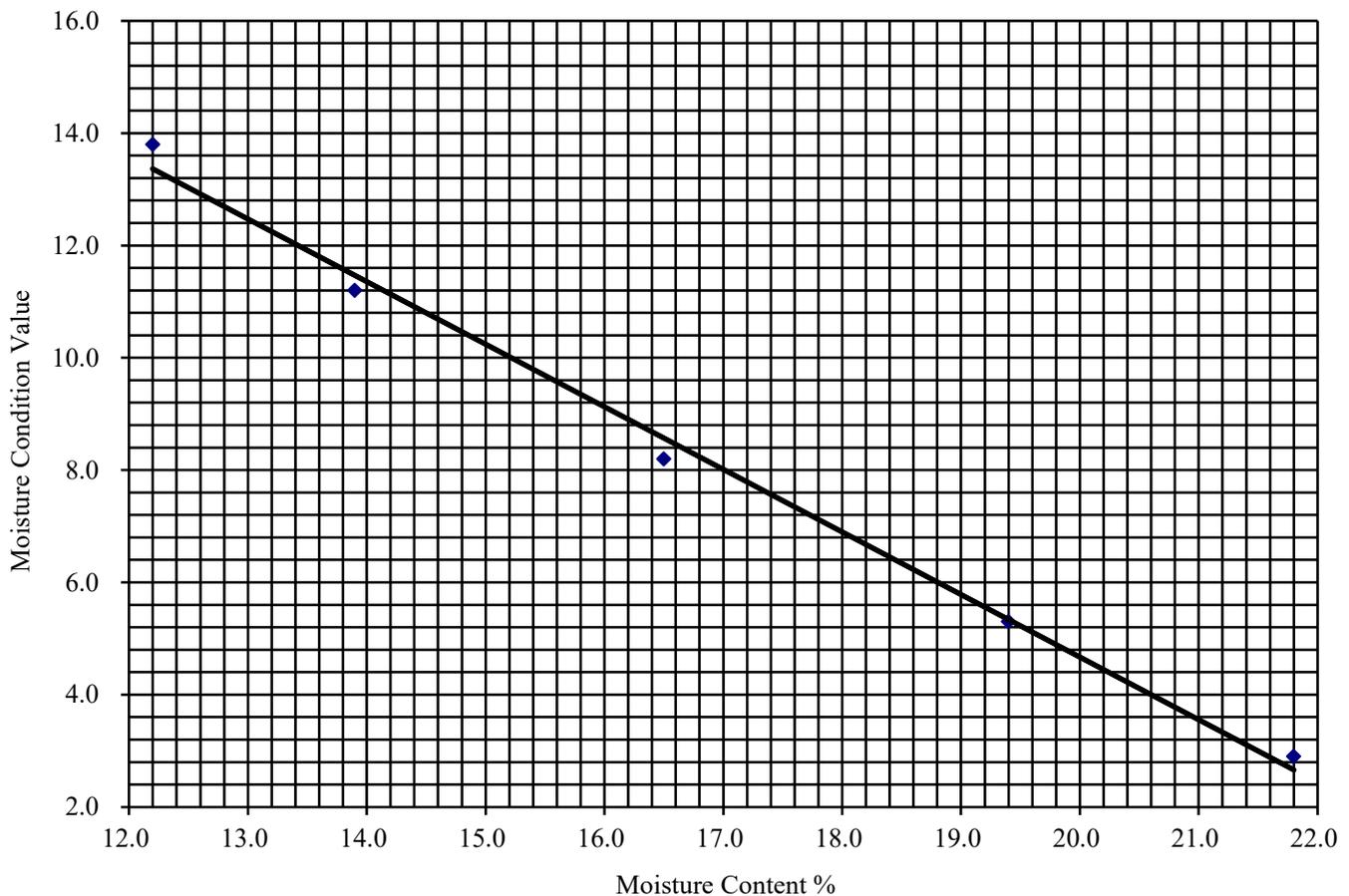
BS1377 : Part 4 : 1990 Clause 5.5

Hole Number: TP106 Top Depth (m): 1.50

Sample Number: B14 Base Depth (m): 2.00

Sample Type: BB

Initial Moisture Content (%):	14
Single/Separate Samples Tested	Separate
Material Retained on the 20mm BS Test Sieve (%):	9



### Test Results.

Test Number	1	2	3	4	5
Moisture Content (%)	12.2	13.9	16.5	19.4	21.8
MCV	13.8	11.2	8.2	5.3	2.9



Barnsley West

Contract No:	PSL19/2340
Client Ref:	4848



# DETS

## Certificate of Analysis

*Certificate Number* 19-07200

29-Apr-19

*Client* Professional Soils Laboratory Ltd  
5/7 Hexthorpe Road  
Hexthorpe  
DN4 0AR

*Our Reference* 19-07200

*Client Reference* PSL19/2340

*Order No* (not supplied)

*Contract Title* Barnsley West

*Description* 8 Soil samples.

*Date Received* 17-Apr-19

*Date Started* 17-Apr-19

*Date Completed* 29-Apr-19

*Test Procedures* Identified by prefix DETSn (details on request).

*Notes* Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*



Adam Fenwick  
Contracts Manager



## Summary of Chemical Analysis Soil Samples

Our Ref 19-07200

Client Ref PSL19/2340

Contract Title Barnsley West

Lab No	1489697	1489698	1489699	1489700	1489701	1489702	1489703	1489704
Sample ID	TP101	TP102	TP102A	TP103	TP104	TP105	TP106	TP113
Depth	1.90-2.00	0.80	2.00-2.20	2.00-2.50	3.00	2.00-2.40	1.50-2.00	1.50-2.00
Other ID	1	2	3	8	4	6	7	5
Sample Type	T	T	T	T	T	T	T	T
Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units								
<b>Inorganics</b>											
pH	DETSC 2008#			7.5	7.4	7.2	7.3	7.5	7.9	7.3	7.8
Calorific Value	DETSC 5008	1	MJ/kg	< 1.0	< 1.0	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
Organic matter	DETSC 2002#	0.1	%	1.6	2.8	1.6		2.6	2.7	1.8	2.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	230	220	180	19	96	120	1100	290
Sulphur as S, Total	DETSC 2320	0.01	%	0.03		0.02		0.07		0.10	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.07		0.05		0.04		0.20	

## Information in Support of the Analytical Results

Our Ref 19-07200  
 Client Ref PSL19/2340  
 Contract Barnsley West

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1489697	TP101 1.90-2.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Calorific Value (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
1489698	TP102 0.80 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Calorific Value (365 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
1489699	TP102A 2.00-2.20 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Calorific Value (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
1489700	TP103 2.00-2.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1489701	TP104 3.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Calorific Value (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
1489702	TP105 2.00-2.40 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Calorific Value (365 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
1489703	TP106 1.50-2.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Calorific Value (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
1489704	TP113 1.50-2.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Calorific Value (365 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

## Information in Support of the Analytical Results

*Our Ref* 19-07200  
*Client Ref* PSL19/2340  
*Contract* Barnsley West

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.  
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.  
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-  
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



# LABORATORY REPORT



4043

**Contract Number: PSL19/3110**

Report Date: 17 June 2019  
Client's Reference: 4848  
Client Name: JPG Leeds  
5 John Charles Way  
Leeds  
West Yorkshire  
LS12 6QD

**For the attention of: Joseph Morley**

Contract Title: Barnsley West  
Date Received: 20/5/2019  
Date Commenced: 20/5/2019  
Date Completed: 17/6/2019

**Notes: Opinions and Interpretations are outside the UKAS Accreditation**

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

R Gunson  
(Director)

L Knight  
(Senior Technician)

A Watkins  
(Director)

S Eyre  
(Senior Technician)

R Berriman  
(Quality Manager)

S Royle  
(Laboratory Manager)

5 – 7 Hexthorpe Road, Hexthorpe,  
Doncaster DN4 0AR  
tel: +44 (0)844 815 6641  
fax: +44 (0)844 815 6642  
e-mail: [rgunson@prosoils.co.uk](mailto:rgunson@prosoils.co.uk)  
[awatkins@prosoils.co.uk](mailto:awatkins@prosoils.co.uk)

Page 1 of

# SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP108	T2	D	2.70	2.80	Grey slightly gravelly very sandy CLAY.
TP109	T3	D	1.50	1.60	Brown mottled grey slightly gravelly sandy CLAY.
TP110	T4	D	2.00	2.10	Brown slightly gravelly sandy CLAY.
TP115	T1	D	2.50	2.60	Brown very gravelly very sandy CLAY.
TP108	B5	BB	2.50	2.60	Grey mottled brown gravelly very sandy CLAY.
TP108	B6	BB	2.50	2.60	Grey mottled brown very gravelly sandy CLAY.
TP109	B7	BB	1.50	1.90	Grey mottled brown gravelly sandy CLAY.
TP109	B8	BB	1.50	1.90	Grey mottled brown gravelly sandy CLAY.
TP110	B9	BB	2.00	2.50	Brown mottled grey gravelly sandy CLAY.
TP111	B1	BB	2.20	2.50	MADE GROUND brown very sandy slightly clayey silty gravel.
TP111	B2	BB	2.20	2.50	MADE GROUND brown very sandy slightly clayey silty gravel.
TP112	B10	BB	2.50	2.80	Grey very sandy clayey GRAVEL.
TP115	B3	BB	2.50	3.00	Brown very gravelly sandy CLAY.
TP115	B4	BB	2.50	3.00	Brown very gravelly sandy CLAY.



Barnsley West

**Contract No:**

**PSL19/3110**

**Client Ref:**

**4848**

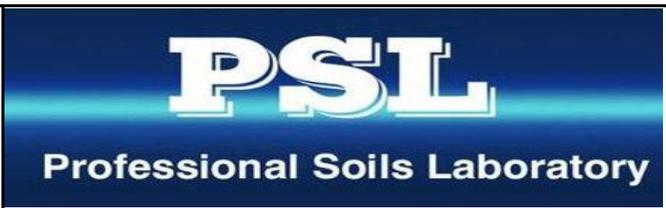
# SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m <sup>3</sup> Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
TP108	T2	D	2.70	2.80	11			34	18	16	94	Low plasticity CL.
TP109	T3	D	1.50	1.60	18			48	23	25	99	Intermediate plasticity CI.
TP110	T4	D	2.00	2.10	16			49	25	24	90	Intermediate plasticity CI.
TP115	T1	D	2.50	2.60	9.2			32	17	15	66	Low plasticity CL.
TP108	B5	BB	2.50	2.60	13			38	19	19	85	Intermediate plasticity CI.
TP108	B6	BB	2.50	2.60	14		2.69					
TP109	B7	BB	1.50	1.90	17		2.67					
TP110	B9	BB	2.00	2.50	18			42	20	22	92	Intermediate plasticity CI.
TP111	B1	BB	2.20	2.50			2.51					
TP111	B2	BB	2.20	2.50	18							
TP115	B4	BB	2.50	3.00	12							

SYMBOLS : NP : Non Plastic

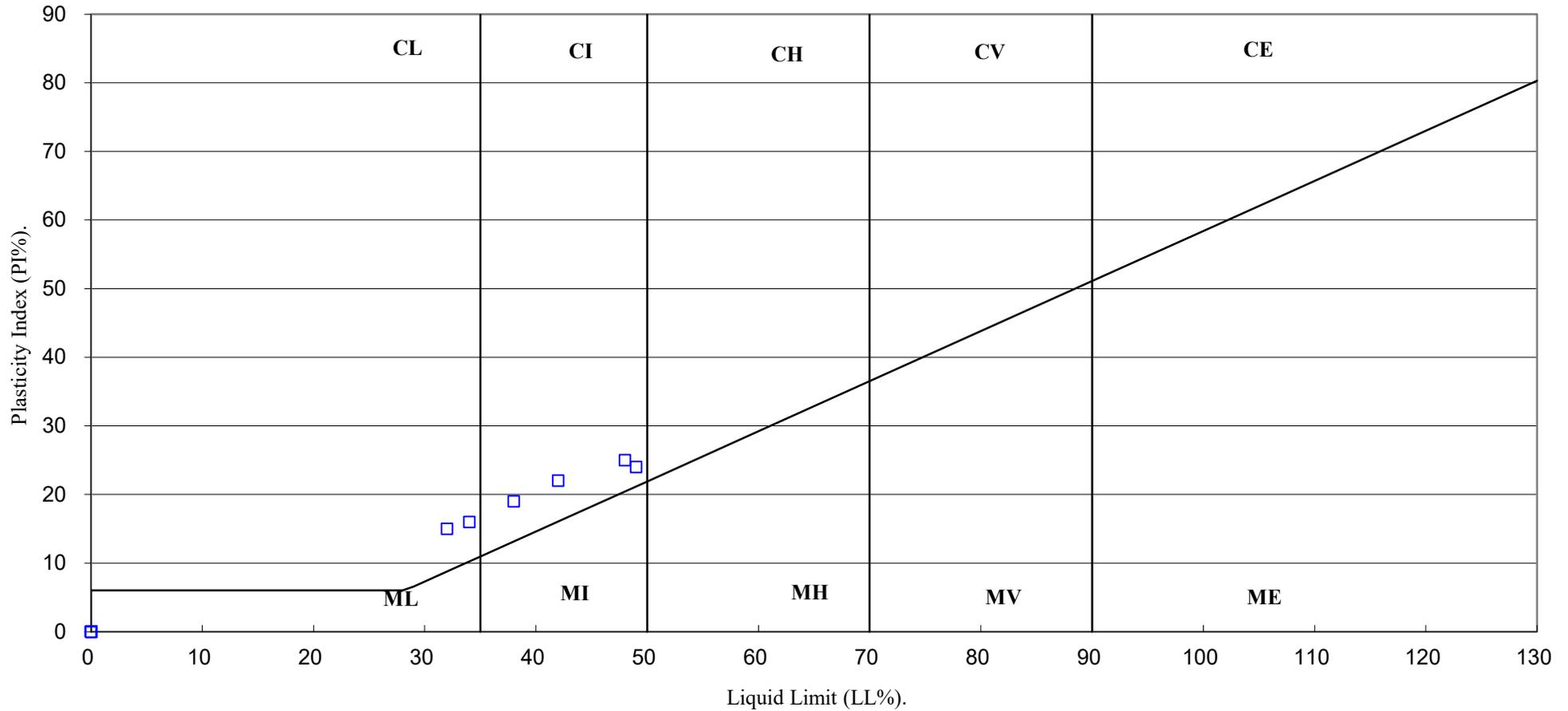
\* : Liquid Limit and Plastic Limit Wet Sieved.



Barnsley West

Contract No:
PSL19/3110
Client Ref:
4848

# PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



4043

**PSL**  
Professional Soils Laboratory

Barnsley West

Contract No:

PSL19/3110

Client Ref:

4848

# PARTICLE SIZE DISTRIBUTION TEST

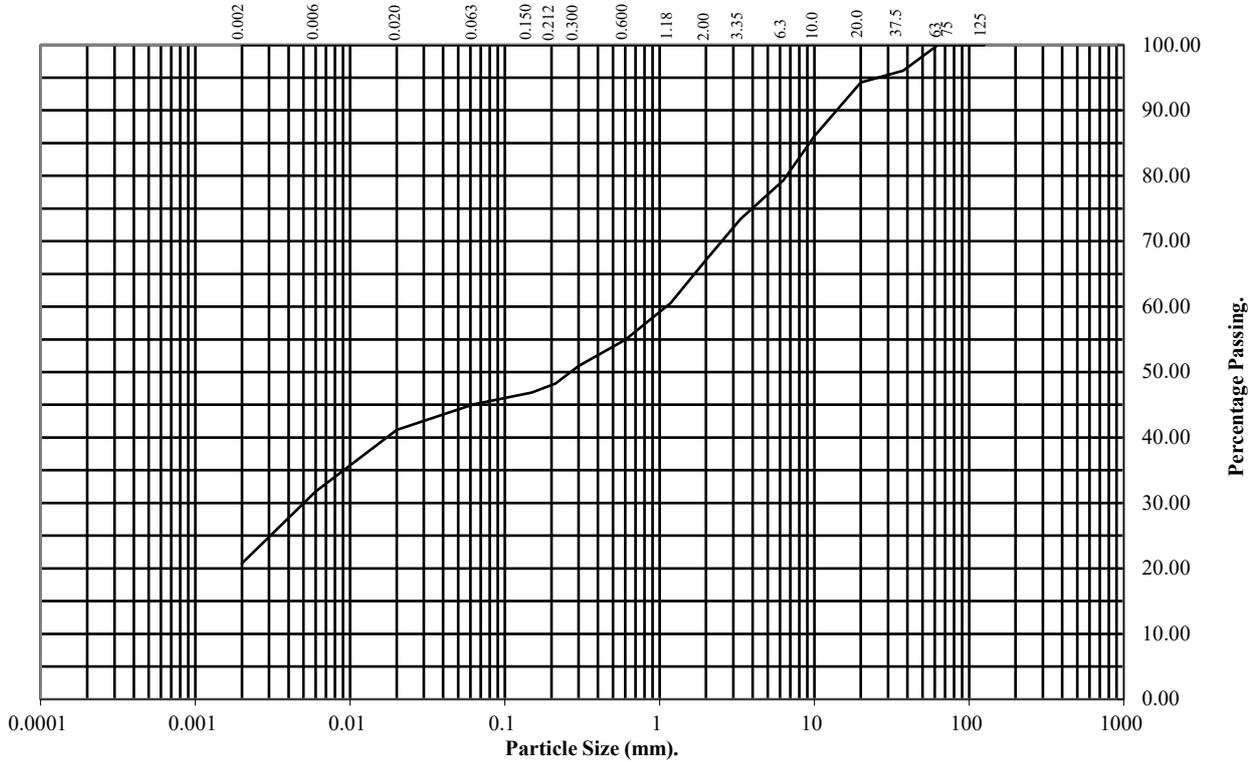
**BS1377 : Part 2 : 1990**

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

**Hole Number:** TP108 **Top Depth (m):** 2.50

**Sample Number:** B6 **Base Depth(m):** 2.60

**Sample Type:** BB



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	96
20	94
10	86
6.3	79
3.35	73
2	67
1.18	61
0.6	55
0.3	51
0.212	48
0.15	47
0.063	45

Particle Diameter	Percentage Passing
0.02	41
0.006	32
0.002	21

Soil Fraction	Total Percentage
Cobbles	0
Gravel	33
Sand	22
Silt	24
Clay	21

**Remarks:**  
See Summary of Soil Descriptions



Barnsley West

<b>Contract No:</b>
<b>PSL19/3110</b>
<b>Client Ref:</b>
<b>4848</b>

# PARTICLE SIZE DISTRIBUTION TEST

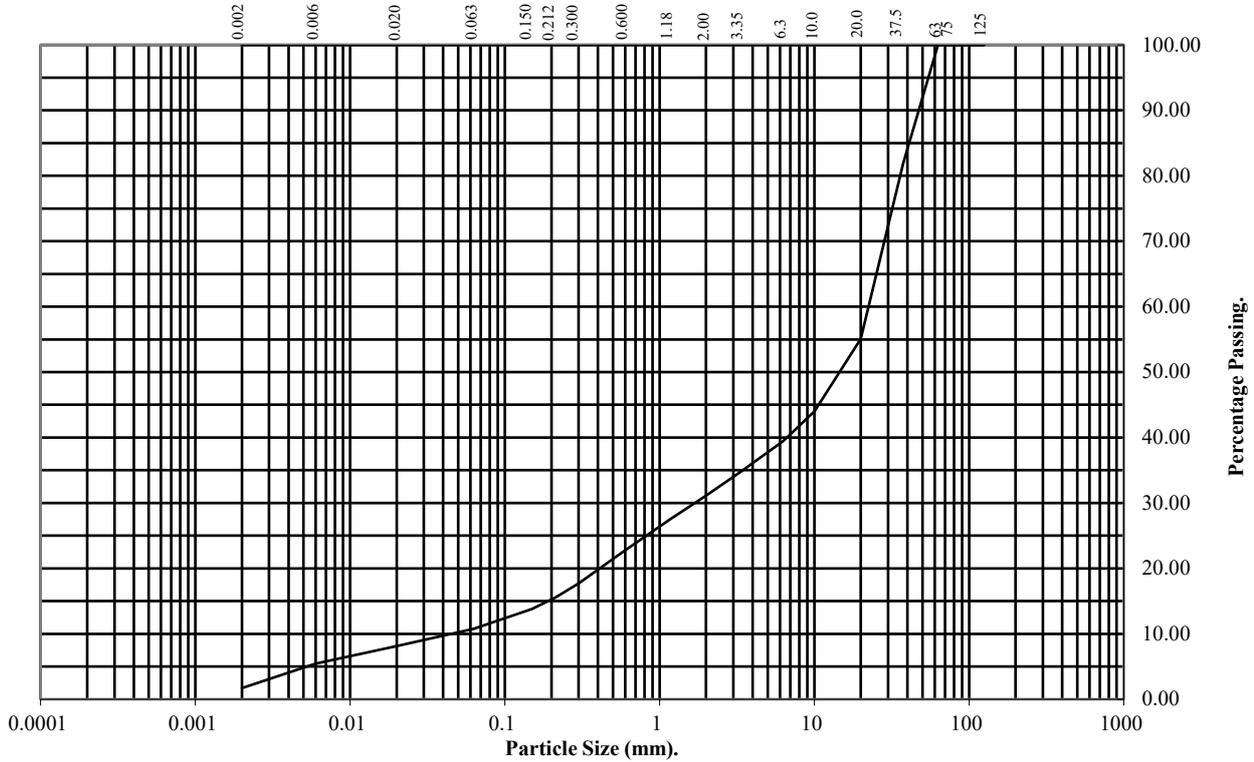
**BS1377 : Part 2 : 1990**

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

**Hole Number:** TP111 **Top Depth (m):** 2.20

**Sample Number:** B1 **Base Depth(m):** 2.50

**Sample Type:** BB



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	82
20	55
10	44
6.3	39
3.35	35
2	31
1.18	28
0.6	23
0.3	18
0.212	16
0.15	14
0.063	11

Particle Diameter	Percentage Passing
0.02	8
0.006	5
0.002	2

Soil Fraction	Total Percentage
Cobbles	0
Gravel	69
Sand	20
Silt	9
Clay	2

**Remarks:**  
See Summary of Soil Descriptions



Barnsley West

<b>Contract No:</b>
<b>PSL19/3110</b>
<b>Client Ref:</b>
<b>4848</b>

# PARTICLE SIZE DISTRIBUTION TEST

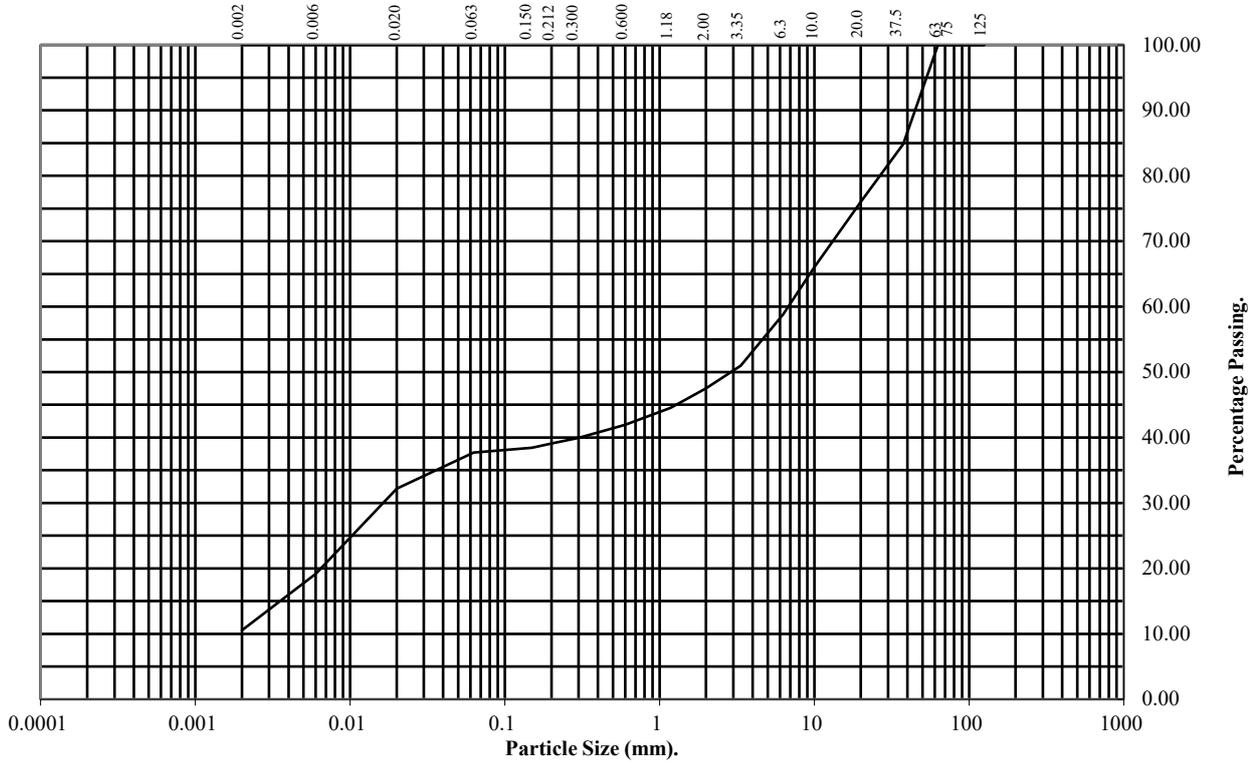
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP115 Top Depth (m): 2.50

Sample Number: B3 Base Depth(m): 3.00

Sample Type: BB



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	85
20	76
10	66
6.3	59
3.35	51
2	48
1.18	45
0.6	42
0.3	40
0.212	39
0.15	38
0.063	38

Particle Diameter	Percentage Passing
0.02	32
0.006	19
0.002	11

Soil Fraction	Total Percentage
Cobbles	0
Gravel	52
Sand	10
Silt	27
Clay	11

**Remarks:**  
See Summary of Soil Descriptions



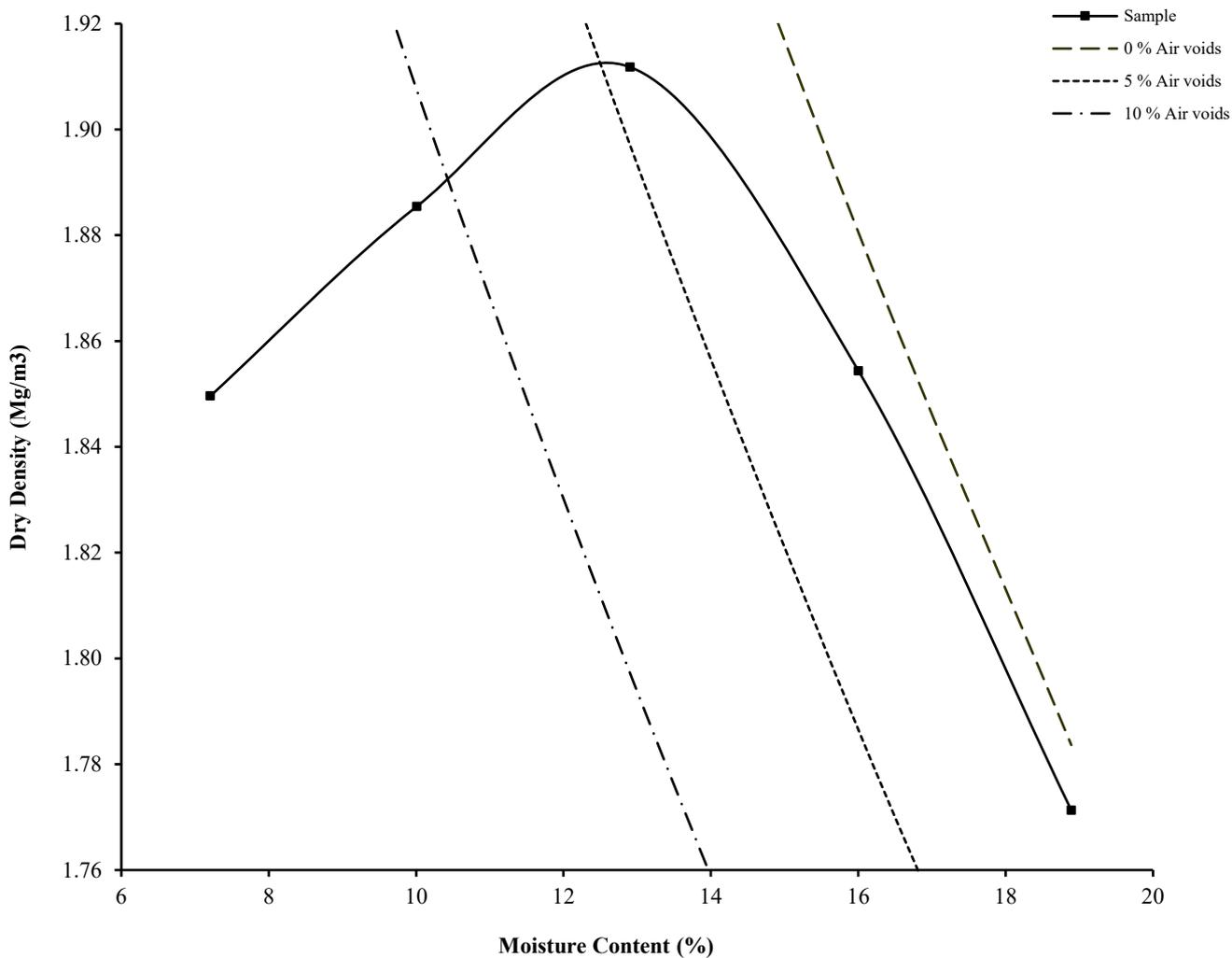
Barnsley West

<b>Contract No:</b>
<b>PSL19/3110</b>
<b>Client Ref:</b>
<b>4848</b>

# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP108 Top Depth (m) : 2.50  
 Sample Number: B5 Base Depth (m) : 2.60  
 Sample Type: BB



Initial Moisture Content:	13	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.69	Assumed	Material Retained on 37.5 mm Test Sieve (%):	6
Maximum Dry Density (Mg/m <sup>3</sup> ):	1.91		Material Retained on 20.0 mm Test Sieve (%):	8
Optimum Moisture Content (%):	13			
Remarks See summary of soil descriptions.				

		Barnsley West	Contract
			PSL19/3110
			Client Ref
			4848

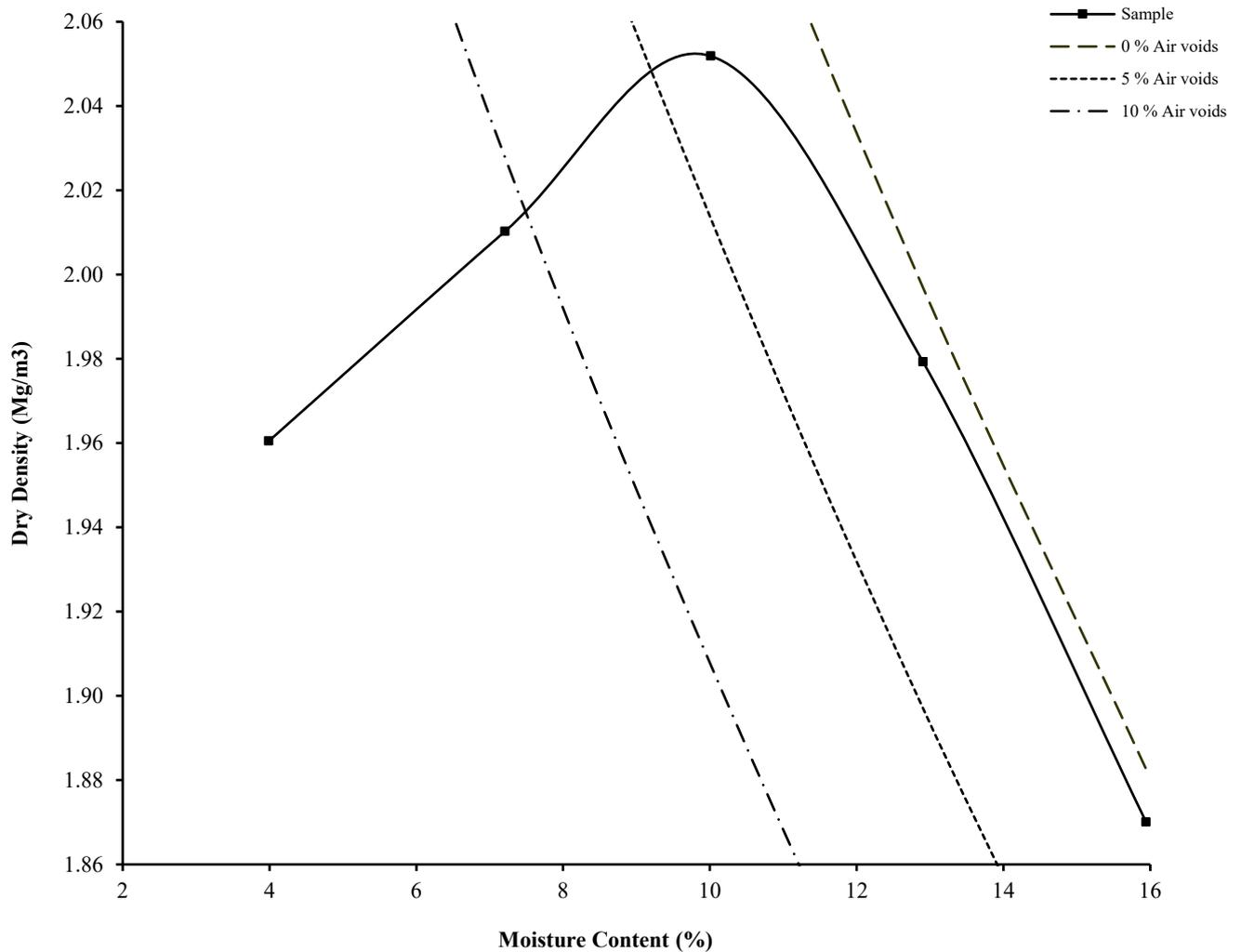
# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP108 Top Depth (m) : 2.50

Sample Number: B5 Base Depth (m) : 2.60

Sample Type: BB



Initial Moisture Content:	13	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.69	Assumed	Material Retained on 37.5 mm Test Sieve (%):	6
Maximum Dry Density (Mg/m <sup>3</sup> ):	2.05	Material Retained on 20.0 mm Test Sieve (%):	8	
Optimum Moisture Content (%):	10			
Remarks				
See summary of soil descriptions.				



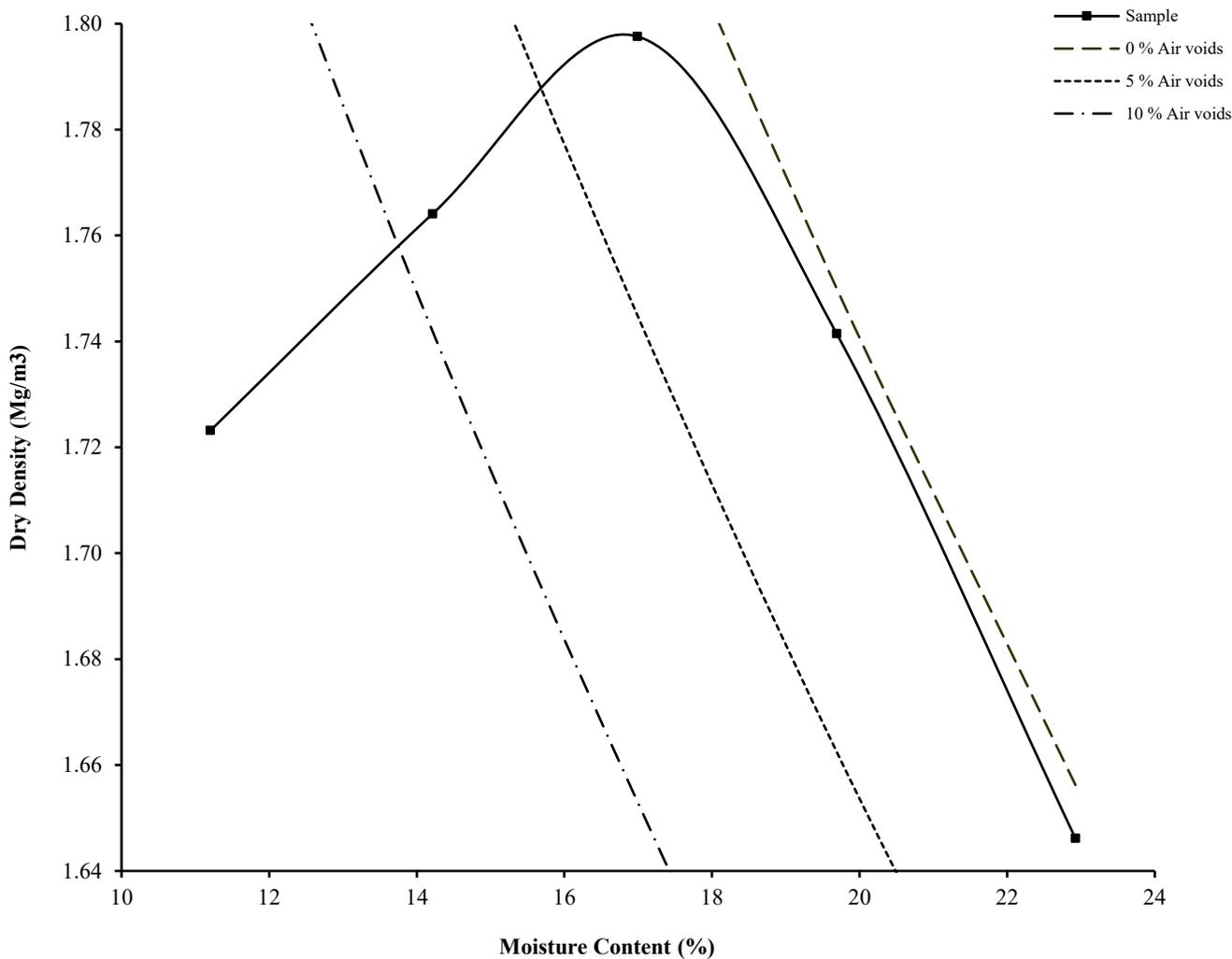
Barnsley West

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# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP109 Top Depth (m) : 1.50  
 Sample Number: B7 Base Depth (m) : 1.90  
 Sample Type: BB



Initial Moisture Content:	17	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.67	Measured	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m <sup>3</sup> ):	1.80		Material Retained on 20.0 mm Test Sieve (%):	13
Optimum Moisture Content (%):	17			
Remarks See summary of soil descriptions.				



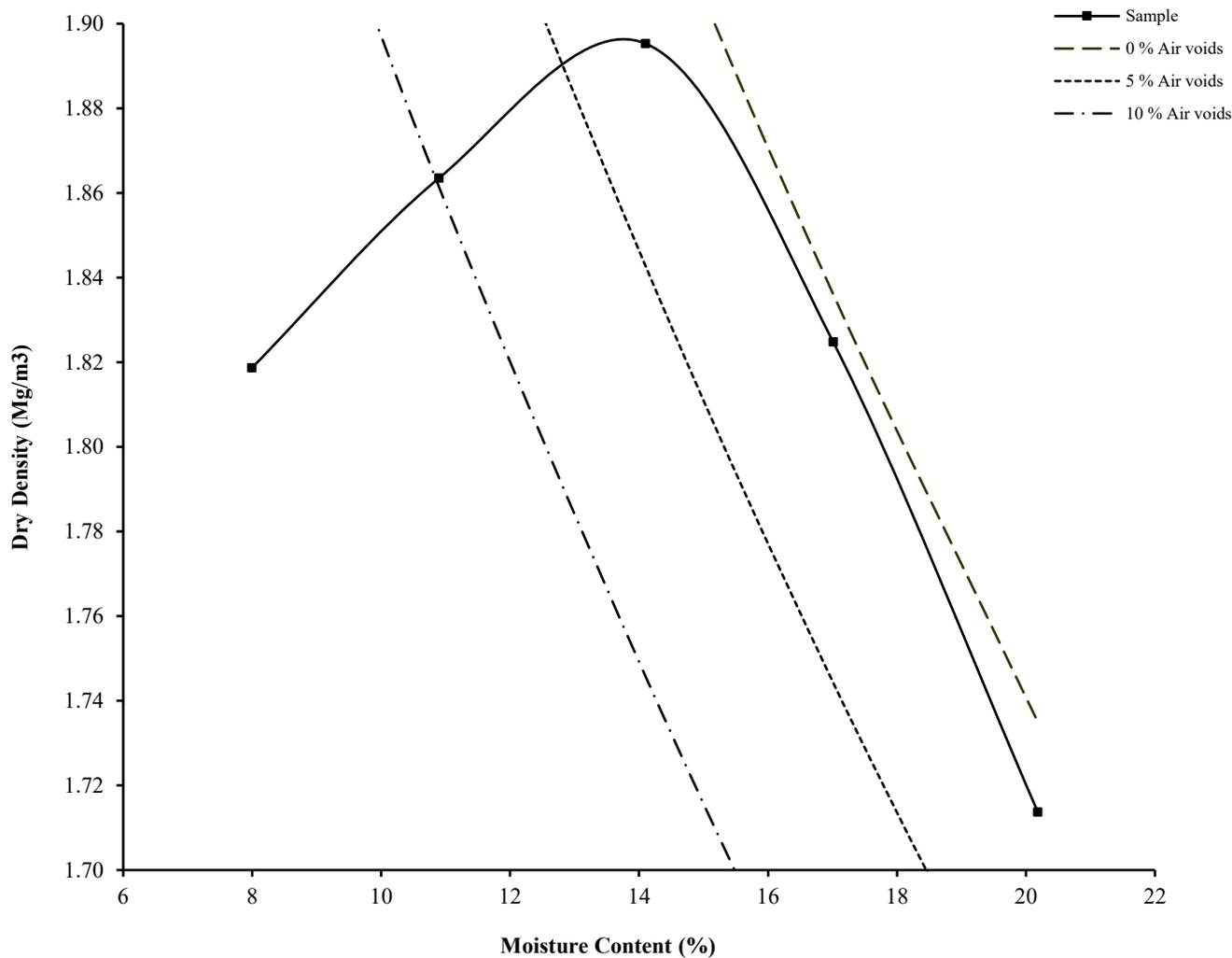
Barnsley West

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# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP109 Top Depth (m) : 1.50  
 Sample Number: B8 Base Depth (m) : 1.90  
 Sample Type: BB



Initial Moisture Content:	17	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.67	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m <sup>3</sup> ):	1.90		Material Retained on 20.0 mm Test Sieve (%):	10
Optimum Moisture Content (%):	14			
Remarks				
See summary of soil descriptions.				



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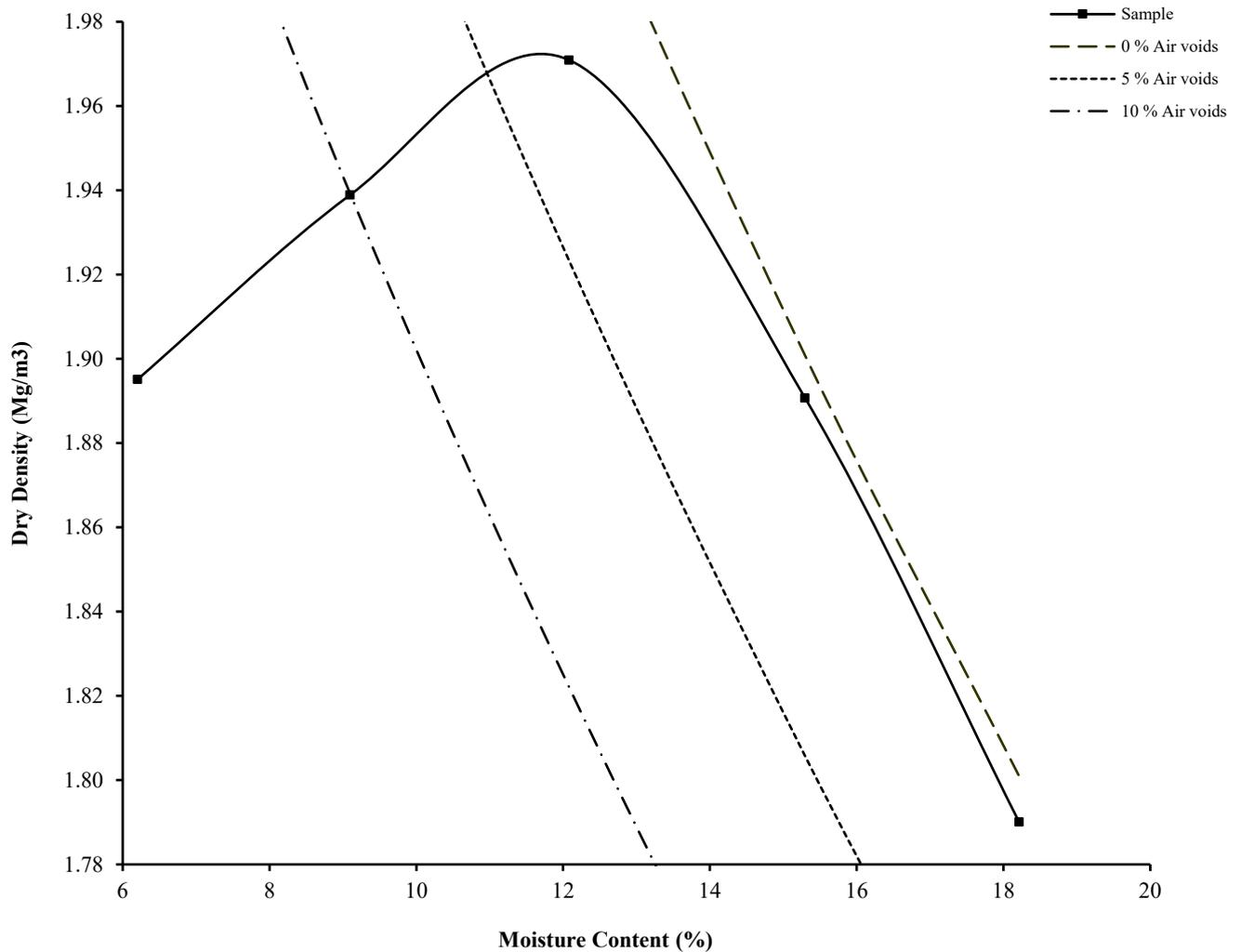
# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP110 Top Depth (m) : 2.00

Sample Number: B9 Base Depth (m) : 2.50

Sample Type: BB



Initial Moisture Content:	18	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.68	Assumed	Material Retained on 37.5 mm Test Sieve (%):	3
Maximum Dry Density (Mg/m <sup>3</sup> ):	1.97		Material Retained on 20.0 mm Test Sieve (%):	8
Optimum Moisture Content (%):	12			
Remarks				
See summary of soil descriptions.				



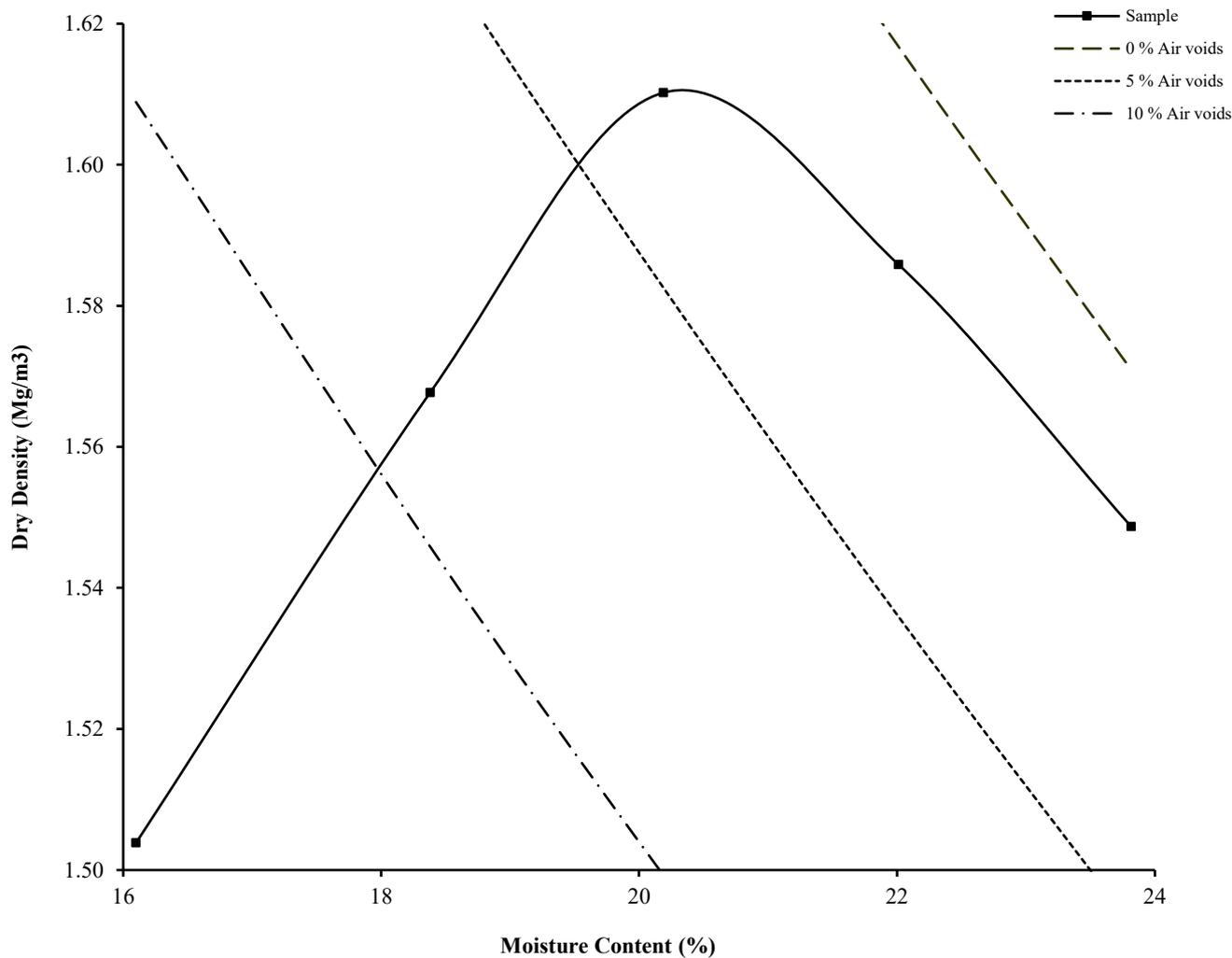
Barnsley West

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Client Ref
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# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP111 Top Depth (m) : 2.20  
 Sample Number: B2 Base Depth (m) : 2.50  
 Sample Type: BB



Initial Moisture Content:	18	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.51	Measured	Material Retained on 37.5 mm Test Sieve (%):	17
Maximum Dry Density (Mg/m <sup>3</sup> ):	1.61		Material Retained on 20.0 mm Test Sieve (%):	21
Optimum Moisture Content (%):	20			
Remarks See summary of soil descriptions.				



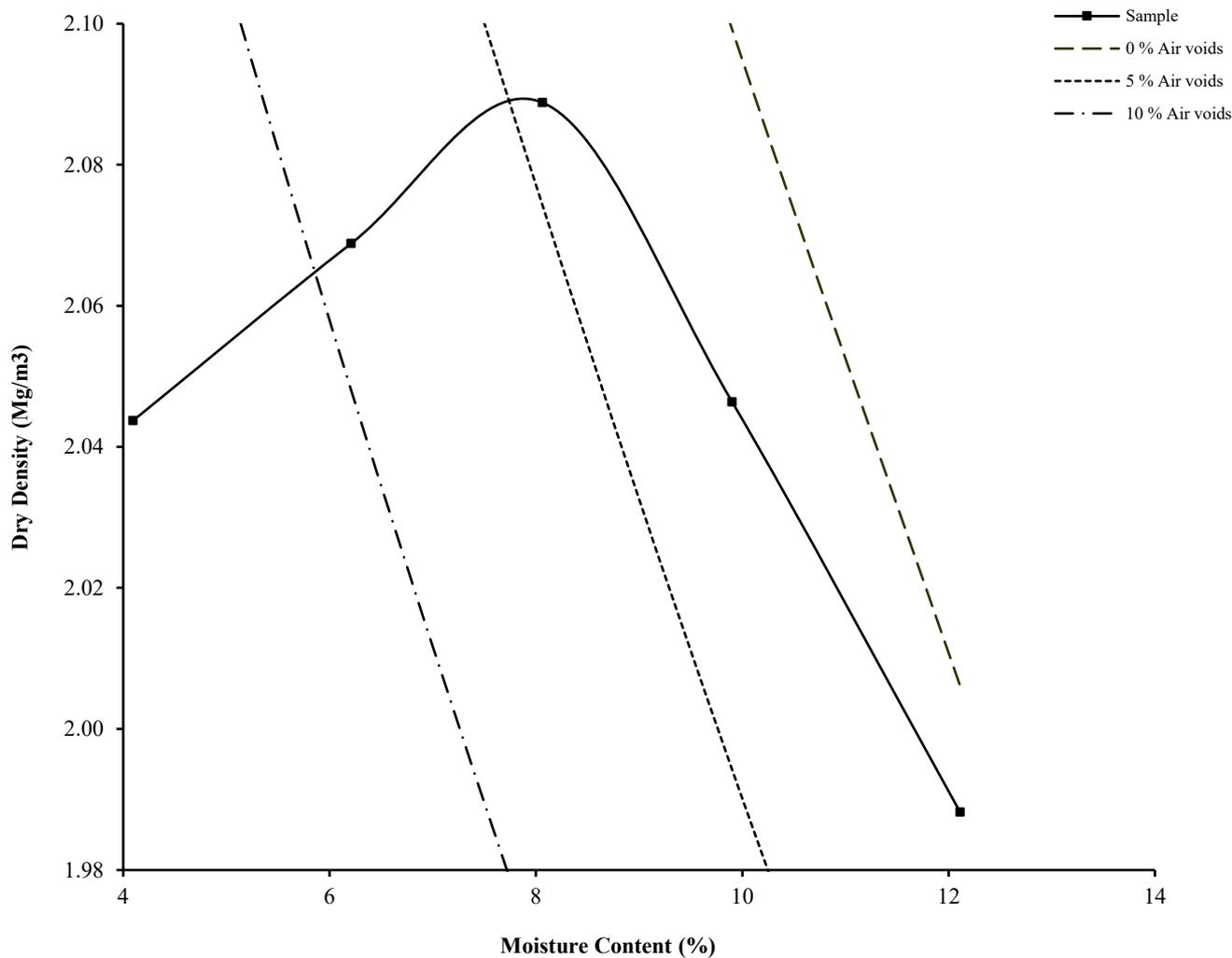
Barnsley West

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<b>PSL19/3110</b>
<b>Client Ref</b>
<b>4848</b>

# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP112 Top Depth (m) : 2.50  
 Sample Number: B10 Base Depth (m) : 2.80  
 Sample Type: BB



Initial Moisture Content:	10	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	15
Maximum Dry Density (Mg/m <sup>3</sup> ):	2.09		Material Retained on 20.0 mm Test Sieve (%):	10
Optimum Moisture Content (%):	8			
Remarks See summary of soil descriptions.				



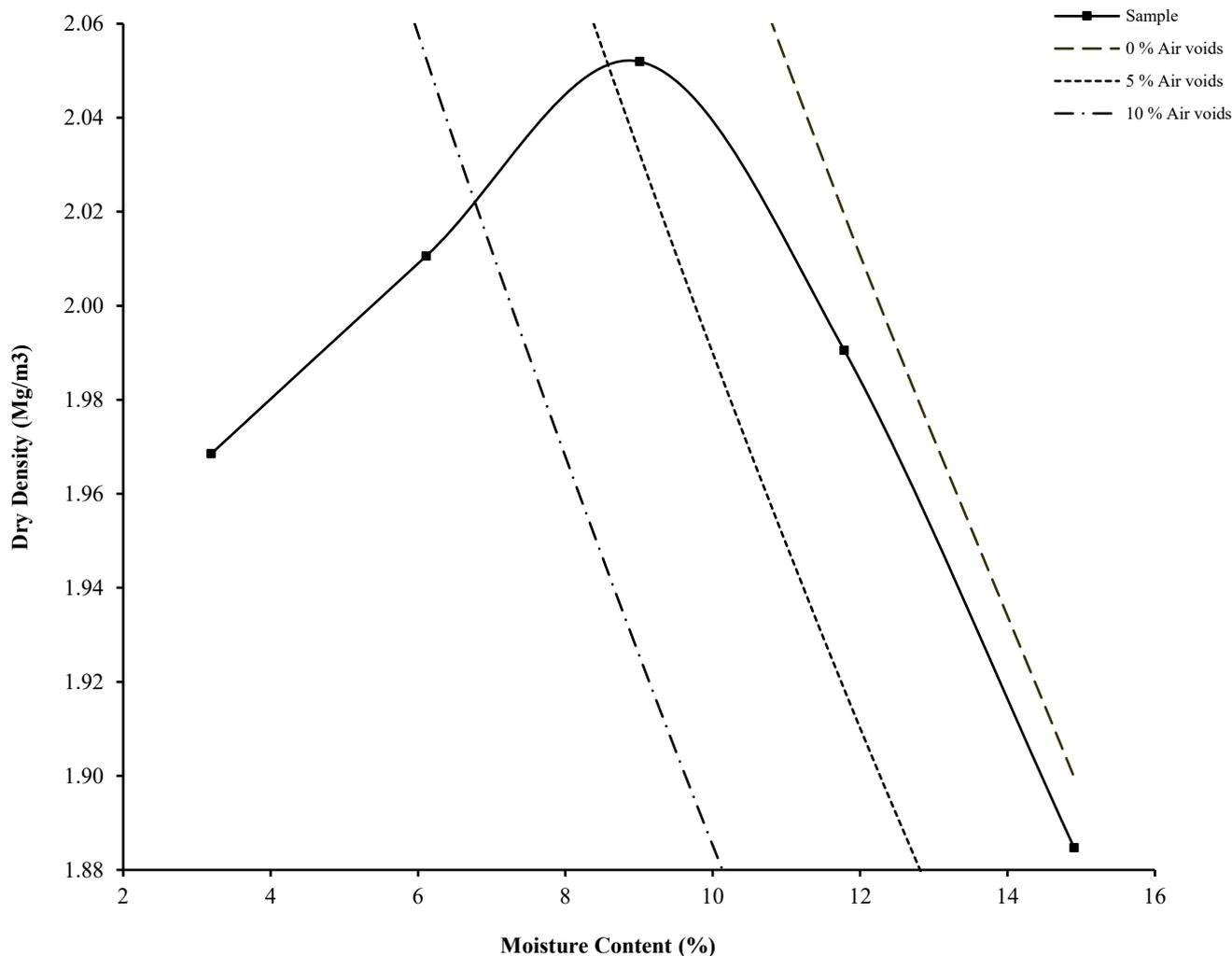
Barnsley West

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<b>Client Ref</b>
<b>4848</b>

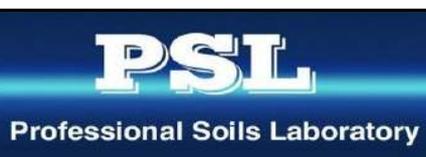
# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP115 Top Depth (m) : 2.50  
 Sample Number: B3 Base Depth (m) : 3.00  
 Sample Type: BB



Initial Moisture Content:	12	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m <sup>3</sup> ):	2.65	Measured	Material Retained on 37.5 mm Test Sieve (%):	15
Maximum Dry Density (Mg/m <sup>3</sup> ):	2.05		Material Retained on 20.0 mm Test Sieve (%):	9
Optimum Moisture Content (%):	9			
Remarks				
See summary of soil descriptions.				



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# CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

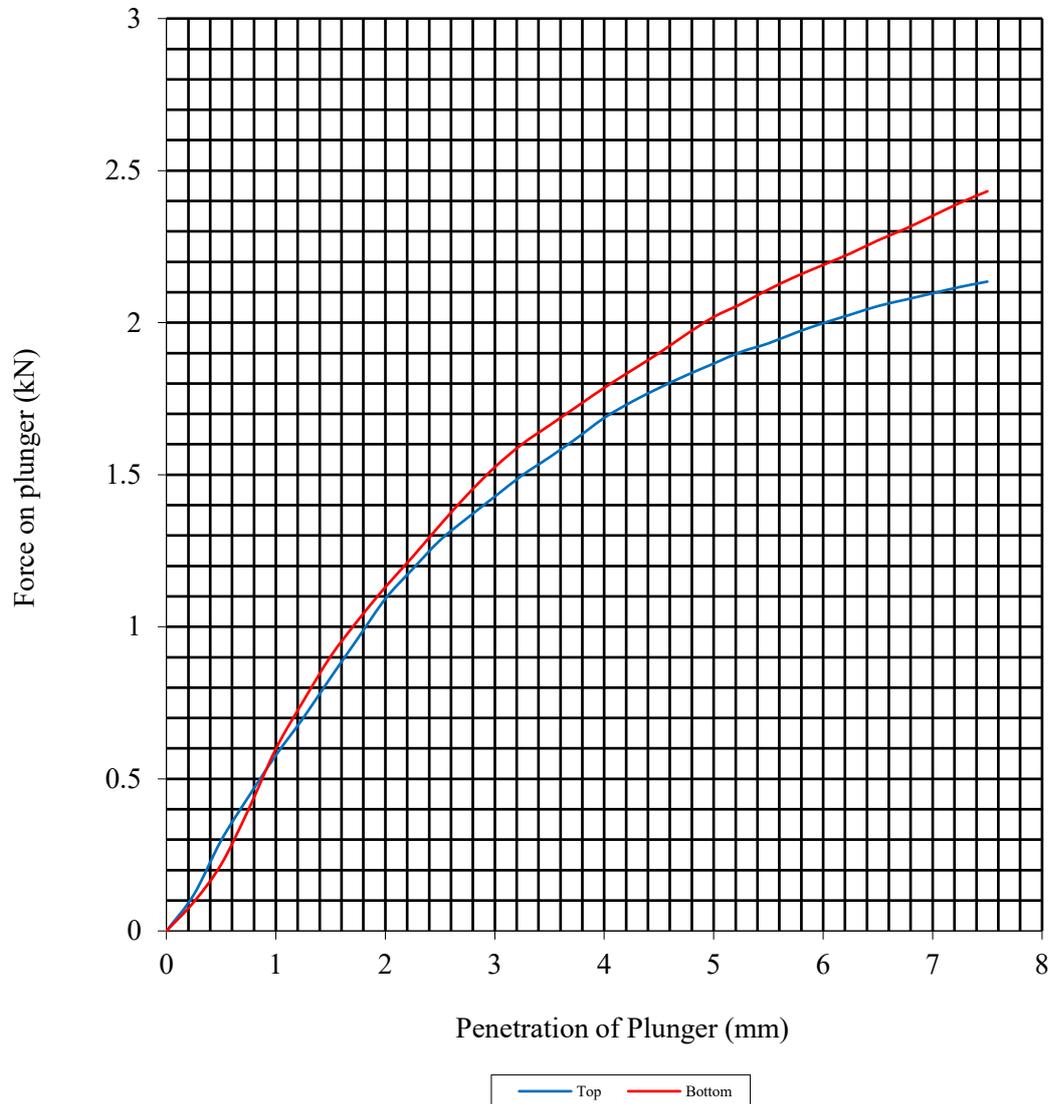
Hole Number: TP109

Top Depth (m): 1.50

Sample Number: B7

Base Depth (m): 1.90

Sample Type: BB



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	17	Surcharge Kg:	4.20	Sample Top	17	Sample Top	9.7
Bulk Density Mg/m <sup>3</sup> :	2.11	Soaking Time hrs	0	Sample Bottom	17	Sample Bottom	10.1
Dry Density Mg/m <sup>3</sup> :	1.80	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:	13						
Compaction Conditions	2.5kg						



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# CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

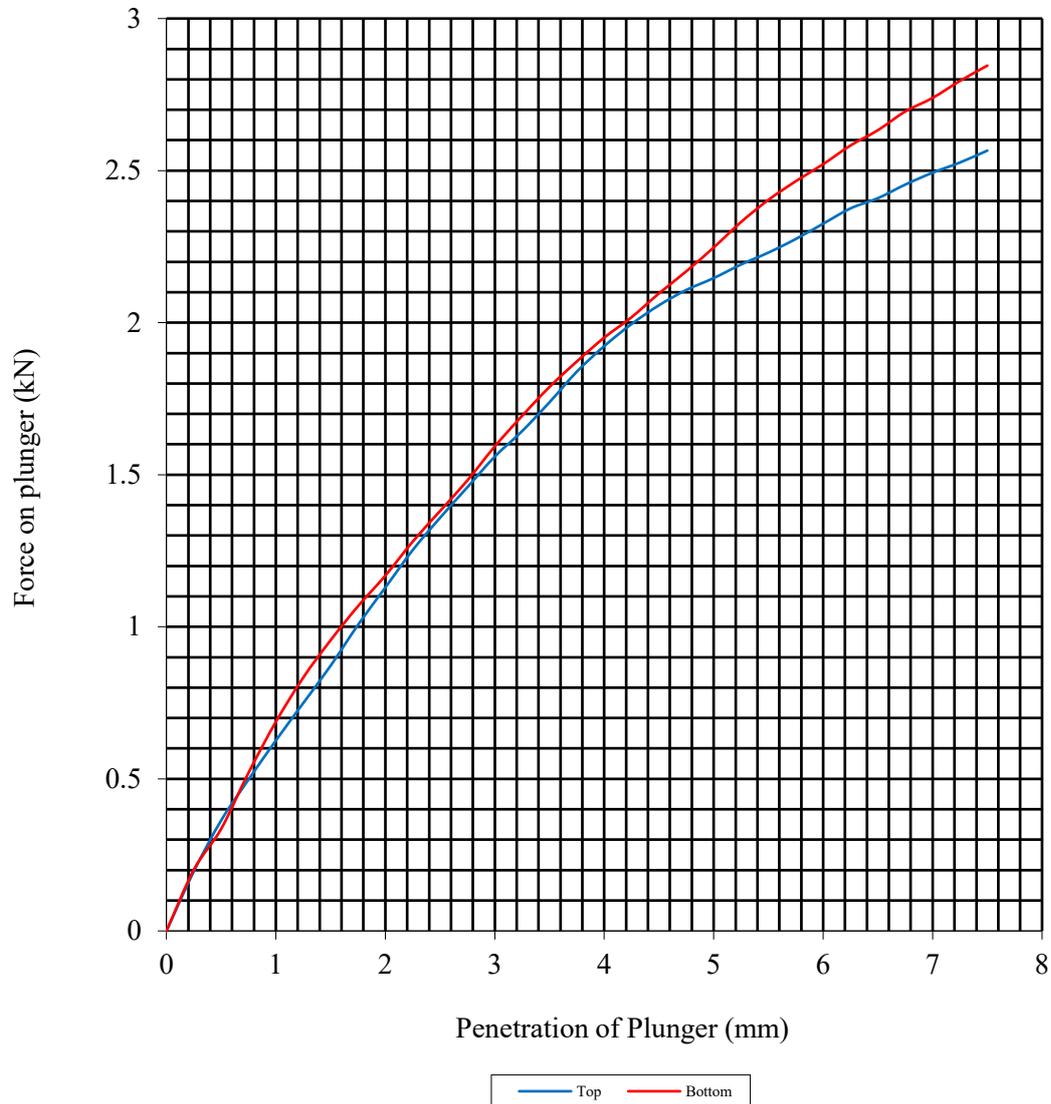
Hole Number: TP109

Top Depth (m): 1.50

Sample Number: B8

Base Depth (m): 1.90

Sample Type: BB



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	17	Surcharge Kg:	4.20	Sample Top	17	Sample Top	10.7
Bulk Density Mg/m <sup>3</sup> :	2.15	Soaking Time hrs	0	Sample Bottom	17	Sample Bottom	11.2
Dry Density Mg/m <sup>3</sup> :	1.84	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			10				
Compaction Conditions		4.5kg					



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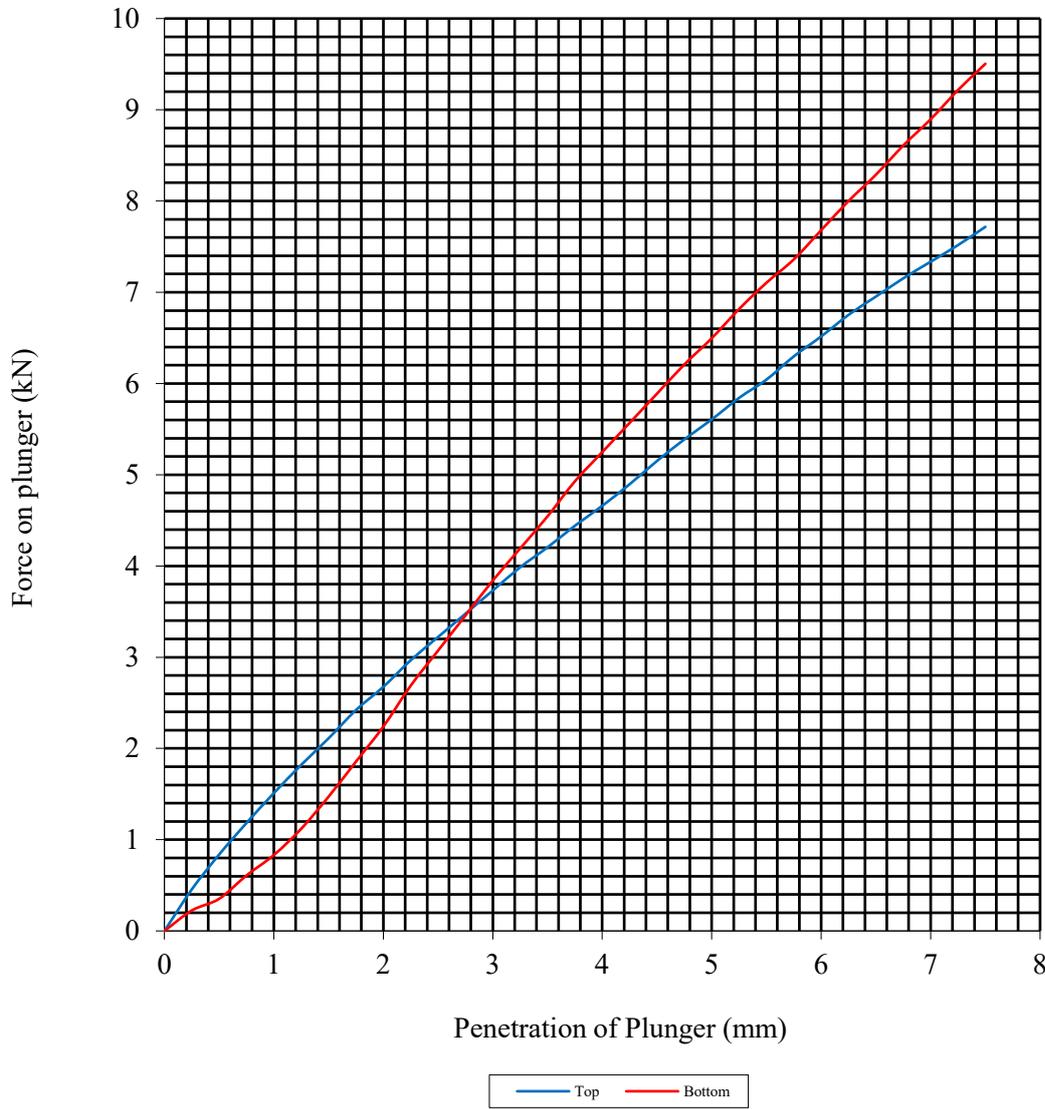
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# CALIFORNIA BEARING RATIO TEST

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP111 Top Depth (m): 2.20  
 Sample Number: B2 Base Depth (m): 2.50  
 Sample Type: BB



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	18	Surcharge Kg:	4.20	Sample Top	18	Sample Top	28.0
Bulk Density Mg/m <sup>3</sup> :	1.85	Soaking Time hrs	0	Sample Bottom	18	Sample Bottom	32.5
Dry Density Mg/m <sup>3</sup> :	1.56	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			38				
Compaction Conditions			2.5kg				



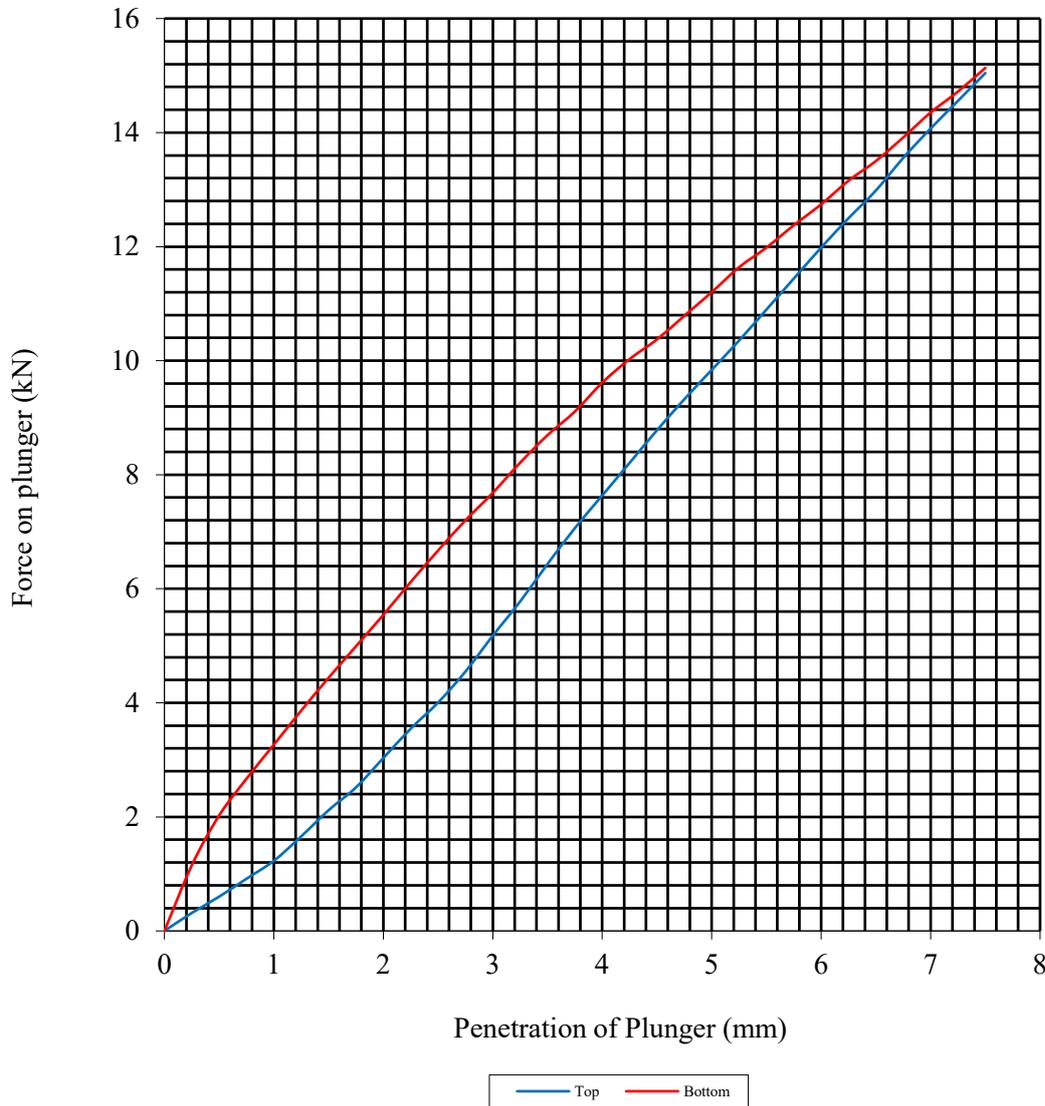
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# CALIFORNIA BEARING RATIO TEST

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP111 Top Depth (m): 2.20  
 Sample Number: B2 Base Depth (m): 2.50  
 Sample Type: BB



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	18	Surcharge Kg:	4.20	Sample Top	18	Sample Top	49.2
Bulk Density Mg/m <sup>3</sup> :	1.99	Soaking Time hrs	0	Sample Bottom	18	Sample Bottom	56.0
Dry Density Mg/m <sup>3</sup> :	1.68	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:		38					
Compaction Conditions		4.5kg					



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# CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

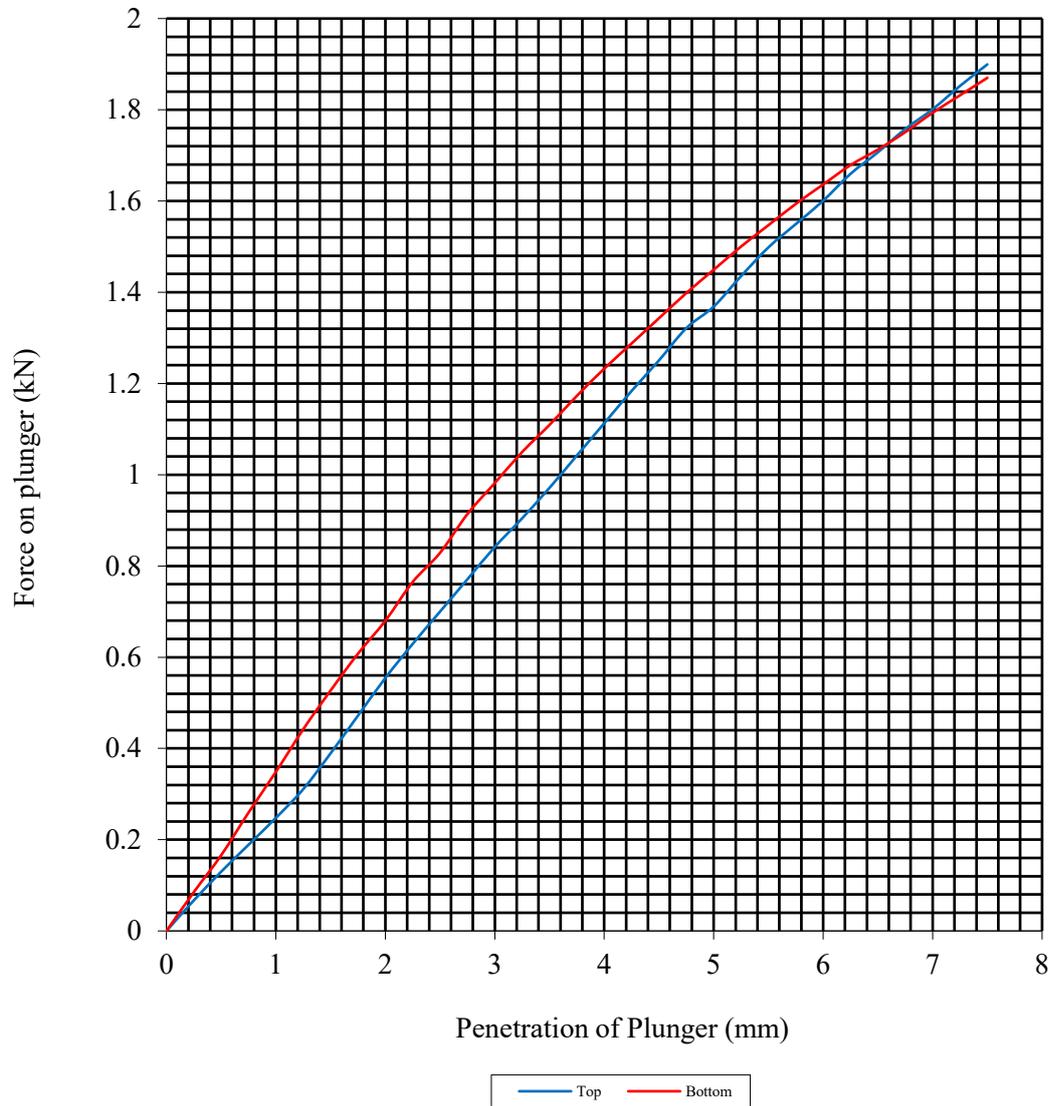
Hole Number: TP115

Top Depth (m): 2.50

Sample Number: B4

Base Depth (m): 3.00

Sample Type: BB



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	12	Surcharge Kg:	4.20	Sample Top	12	Sample Top	6.8
Bulk Density Mg/m <sup>3</sup> :	2.12	Soaking Time hrs	0	Sample Bottom	12	Sample Bottom	7.2
Dry Density Mg/m <sup>3</sup> :	1.89	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:	24						
Compaction Conditions	2.5kg						



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# CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

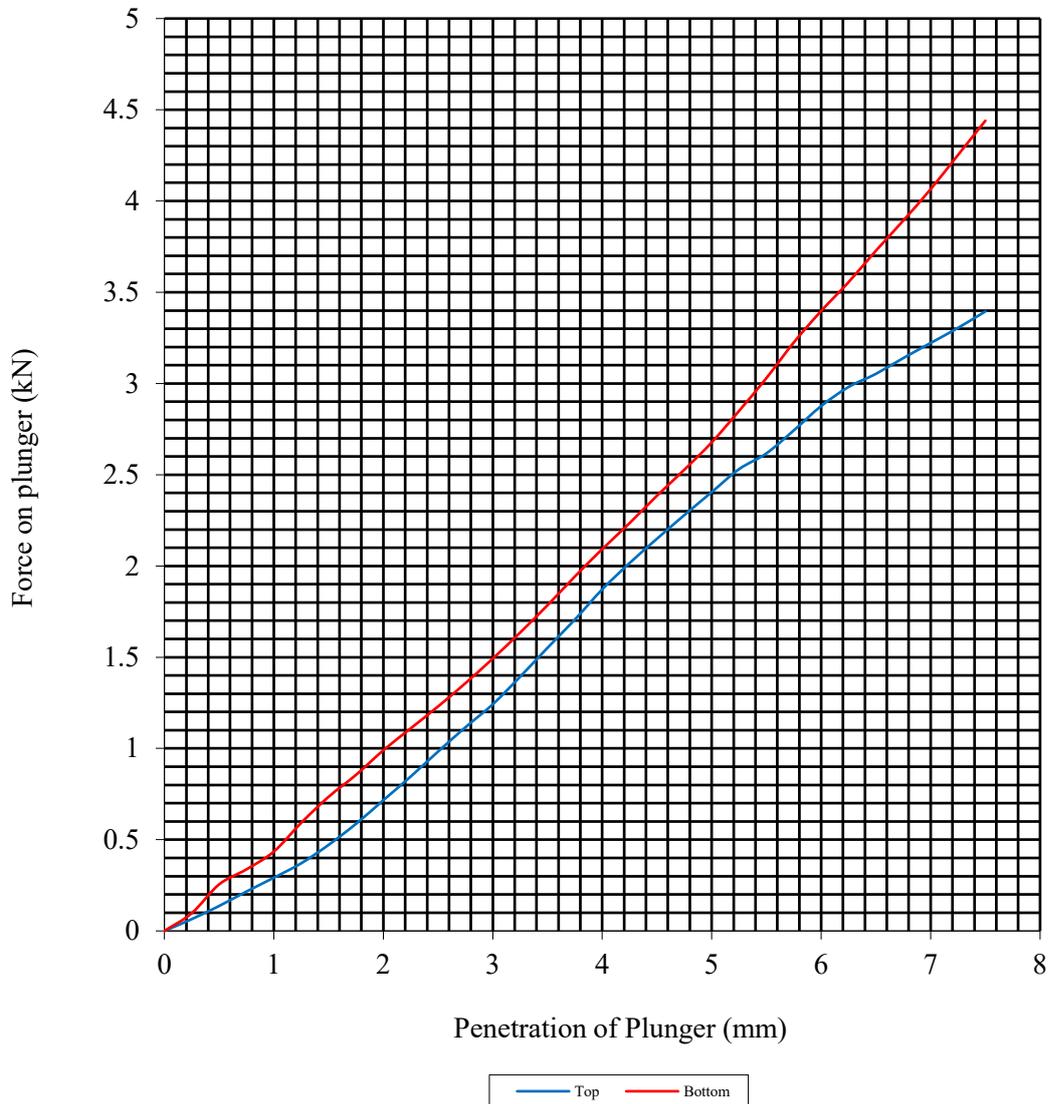
Hole Number: TP115

Top Depth (m): 2.50

Sample Number: B4

Base Depth (m): 3.00

Sample Type: BB



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	12	Surcharge Kg:	4.20	Sample Top	12	Sample Top	12.0
Bulk Density Mg/m <sup>3</sup> :	2.24	Soaking Time hrs	0	Sample Bottom	12	Sample Bottom	13.4
Dry Density Mg/m <sup>3</sup> :	2.00	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			24				
Compaction Conditions		4.5kg					



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# MOISTURE CONDITION VALUE

BS1377 : Part 4 : 1990 Clause 5.4

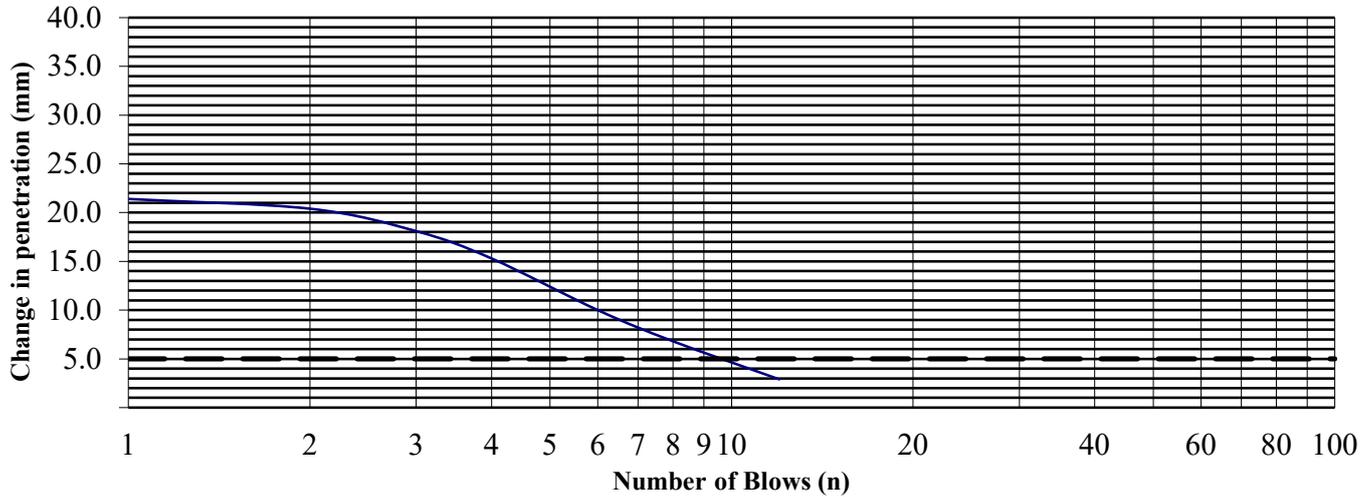
Hole Number: TP108 Top Depth (m): 2.50

Sample Number: 5 Base Depth (m): 2.60

Sample Type: B

Material Retained on the 20mm BS Test Sieve (%):	14
Interpretation based on steepest straight line intercept with 5mm change in penetration.	

## MCV Determination



Blows (N)	Penetration (mm)	n to 4n (mm)
1	75.1	21.4
2	64.3	20.4
3	58.0	18.1
4	53.7	15.3
6	47.7	10.0
8	43.9	6.8
12	39.9	2.9
16	38.4	
24	37.7	
32	37.1	
48	37.0	
64		
96		
128		
192		
256		

### Test Results.

Moisture Content (%)	13
MCV	9.9



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# MOISTURE CONDITION VALUE

BS1377 : Part 4 : 1990 Clause 5.4

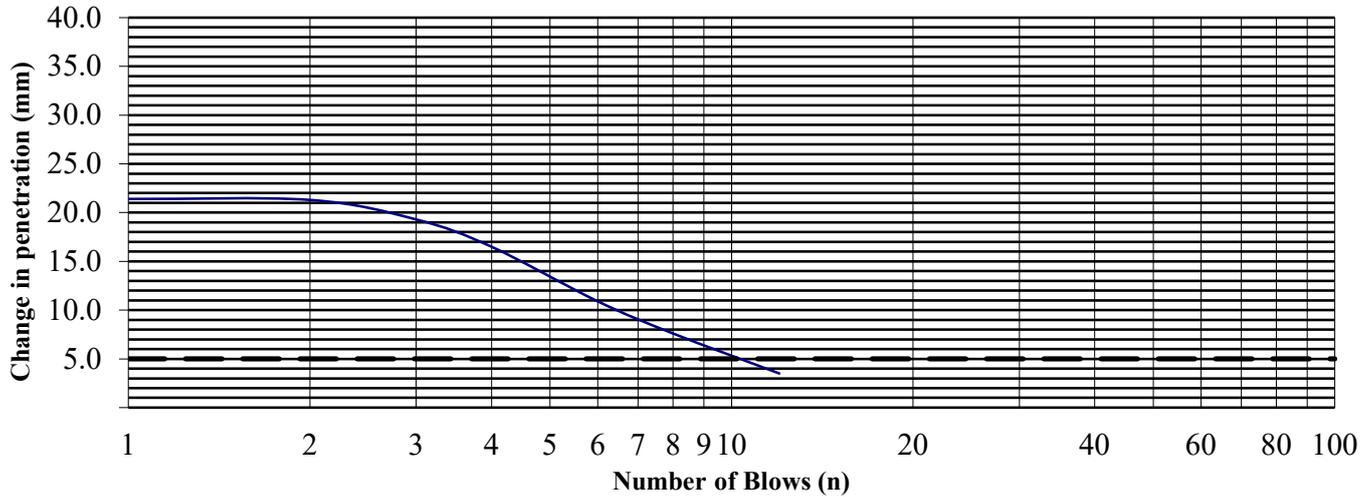
Hole Number: TP109 Top Depth (m): 1.50

Sample Number: 8 Base Depth (m): 1.90

Sample Type: B

Material Retained on the 20mm BS Test Sieve (%):	10
Interpretation based on steepest straight line intercept with 5mm change in penetration.	

## MCV Determination



Blows (N)	Penetration (mm)	n to 4n (mm)
1	77.0	21.4
2	66.8	21.3
3	60.6	19.3
4	55.6	16.5
6	49.1	10.9
8	45.5	7.6
12	41.3	3.5
16	39.1	
24	38.2	
32	37.9	
48	37.8	
64		
96		
128		
192		
256		

### Test Results.

Moisture Content (%)	17
MCV	9.5



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# MOISTURE CONDITION VALUE CALIBRATION

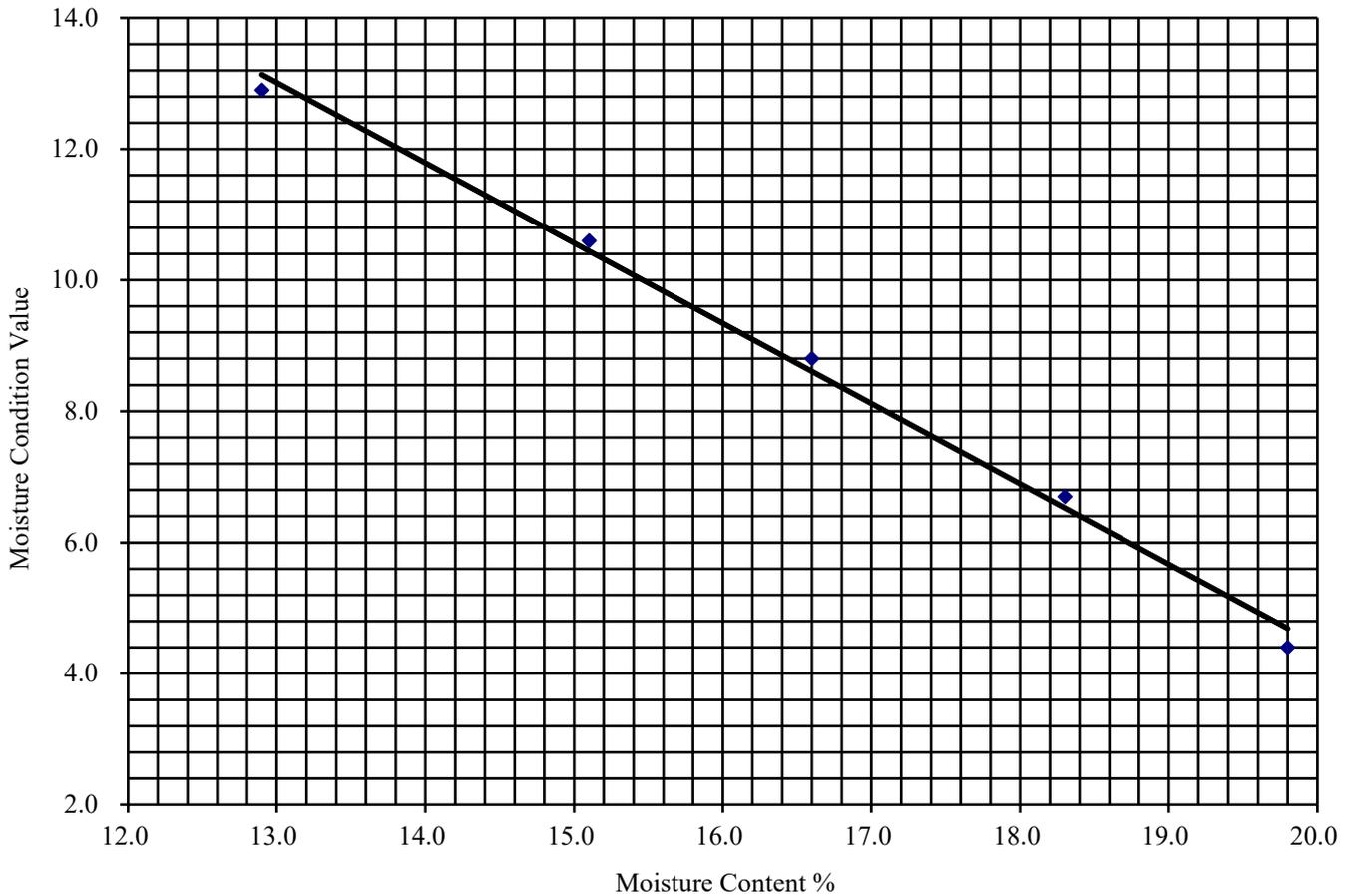
BS1377 : Part 4 : 1990 Clause 5.5

Hole Number: TP110 Top Depth (m): 2.00

Sample Number: 9 Base Depth (m): 2.50

Sample Type: B

Initial Moisture Content (%):	18
Single/Separate Samples Tested	Separate
Material Retained on the 20mm BS Test Sieve (%):	11



### Test Results.

Test Number	1	2	3	4	5
Moisture Content (%)	12.9	15.1	16.6	18.3	19.8
MCV	12.9	10.6	8.8	6.7	4.4



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# MOISTURE CONDITION VALUE CALIBRATION

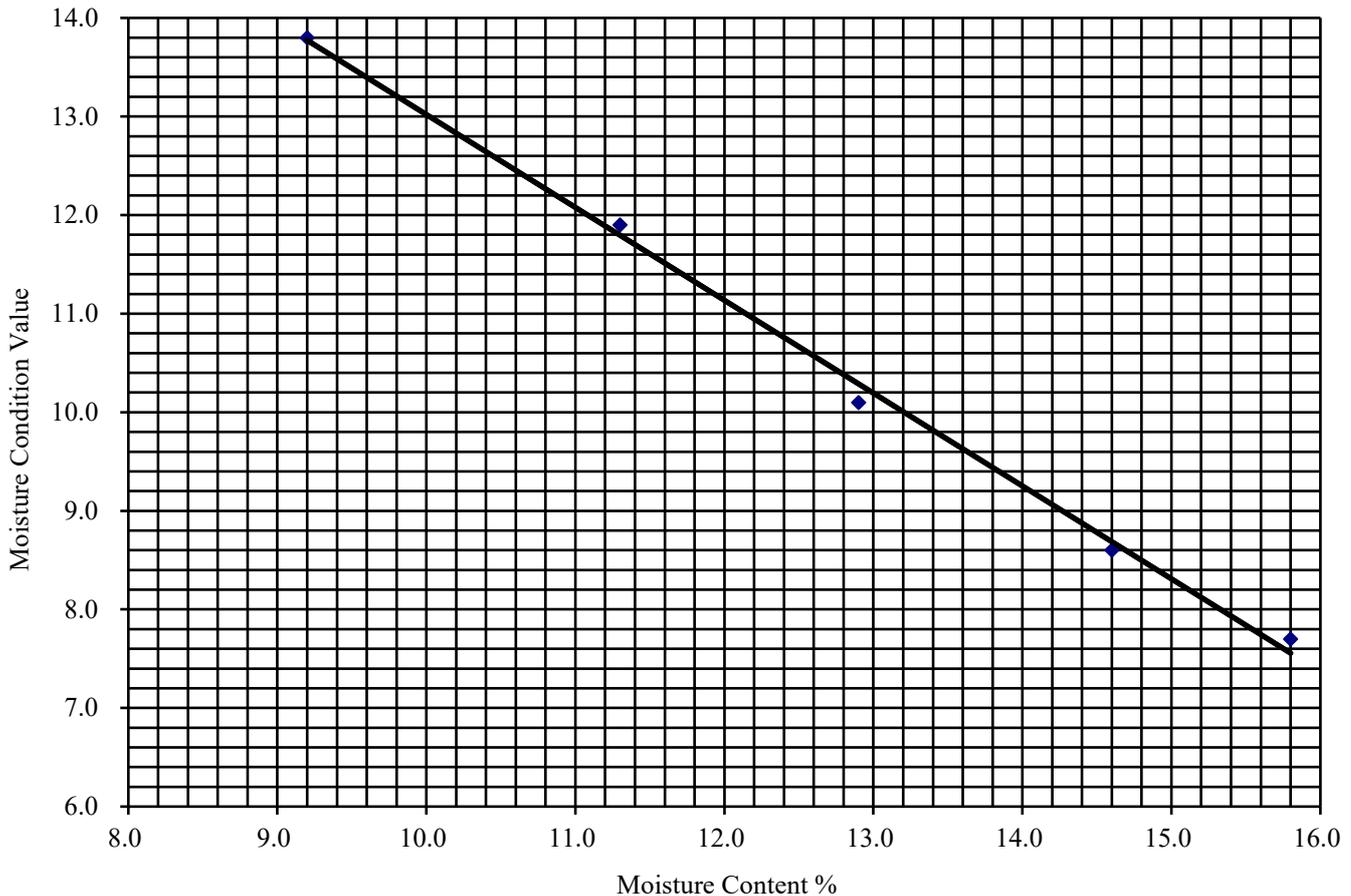
BS1377 : Part 4 : 1990 Clause 5.5

**Hole Number:** TP112                      **Top Depth (m):** 2.50

**Sample Number:** 10                      **Base Depth (m):** 2.80

**Sample Type:** B

Initial Moisture Content (%):	10
Single/Separate Samples Tested	Separate
Material Retained on the 20mm BS Test Sieve (%):	25



### Test Results.

Test Number	1	2	3	4	5
Moisture Content (%)	9.2	11.3	12.9	14.6	15.8
MCV	13.8	11.9	10.1	8.6	7.7



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# MOISTURE CONDITION VALUE

BS1377 : Part 4 : 1990 Clause 5.4

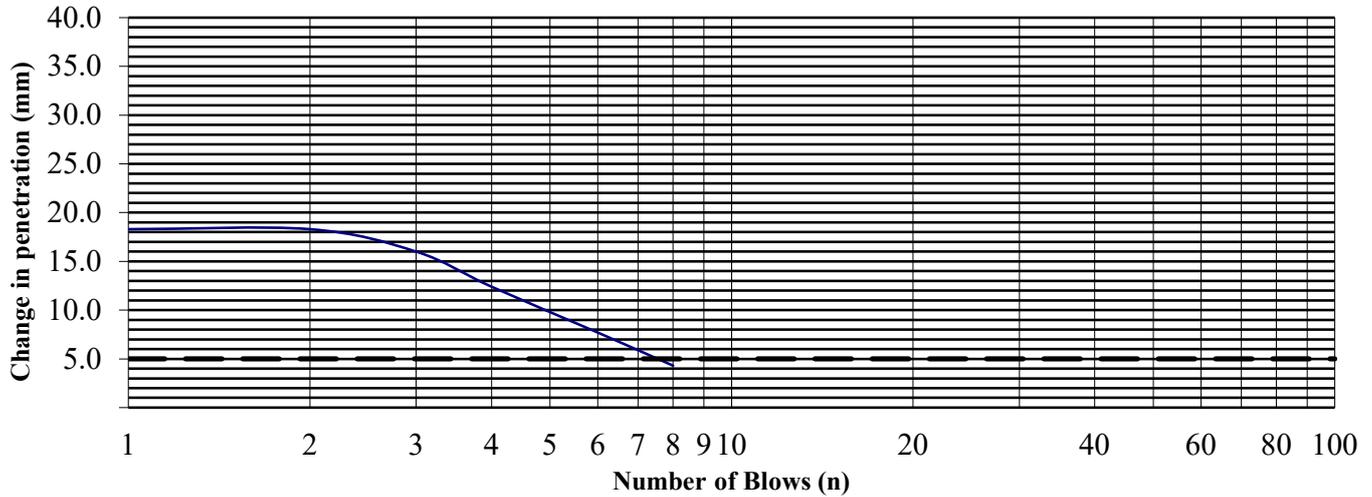
Hole Number: TP115 Top Depth (m): 2.50

Sample Number: 4 Base Depth (m): 3.00

Sample Type: B

Material Retained on the 20mm BS Test Sieve (%):	24
Interpretation based on steepest straight line intercept with 5mm change in penetration.	

## MCV Determination



Blows (N)	Penetration (mm)	n to 4n (mm)
1	67.7	18.3
2	59.1	18.3
3	53.6	16.0
4	49.4	12.4
6	44.4	7.7
8	40.8	4.3
12	37.6	
16	37.0	
24	36.7	
32	36.5	
48		
64		
96		
128		
192		
256		

### Test Results.

Moisture Content (%)	12
MCV	8.3



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# DETS

## Certificate of Analysis

*Certificate Number* 19-10180

06-Jun-19

*Client* Professional Soils Laboratory Ltd  
5/7 Hexthorpe Road  
Hexthorpe  
DN4 0AR

*Our Reference* 19-10180

*Client Reference* PSL19/3110

*Order No* (not supplied)

*Contract Title* Barnsley West

*Description* 4 Soil samples.

*Date Received* 31-May-19

*Date Started* 31-May-19

*Date Completed* 06-Jun-19

*Test Procedures* Identified by prefix DETSn (details on request).

*Notes* Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*



Adam Fenwick  
Contracts Manager



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## Summary of Chemical Analysis

### Soil Samples

Our Ref 19-10180

Client Ref PSL19/3110

Contract Title Barnsley West

Lab No	1509073	1509074	1509075	1509076
Sample ID	TP108	TP109	TP110	TP115
Depth	2.70-2.80	1.50-1.60	2.00-2.10	2.50-2.60
Other ID	T2	T3	T4	T1
Sample Type	D	D	D	D
Sampling Date	30/05/19	30/05/19	30/05/19	30/05/19
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>Inorganics</b>							
pH	DETSC 2008#			7.6	8.1	7.3	8.2
Calorific Value	DETSC 5008	1	MJ/kg	7.1	< 1.0	< 1.0	< 1.0
Organic matter	DETSC 2002#	0.1	%	4.3	0.6	1.0	1.1
Sulphate Aqueous Extract as SO <sub>4</sub>	DETSC 2076#	10	mg/l	250	51	26	26
Sulphur as S, Total	DETSC 2320	0.01	%	0.41	0.01	0.02	< 0.01
Sulphate as SO <sub>4</sub> , Total	DETSC 2321#	0.01	%	0.05	0.02	0.01	0.01

## Information in Support of the Analytical Results

Our Ref 19-10180  
 Client Ref PSL19/3110  
 Contract Barnsley West

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1509073	TP108 2.70-2.80 SOIL	30/05/19	PT 500ml		
1509074	TP109 1.50-1.60 SOIL	30/05/19	PT 500ml		
1509075	TP110 2.00-2.10 SOIL	30/05/19	PT 500ml		
1509076	TP115 2.50-2.60 SOIL	30/05/19	PT 500ml		

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

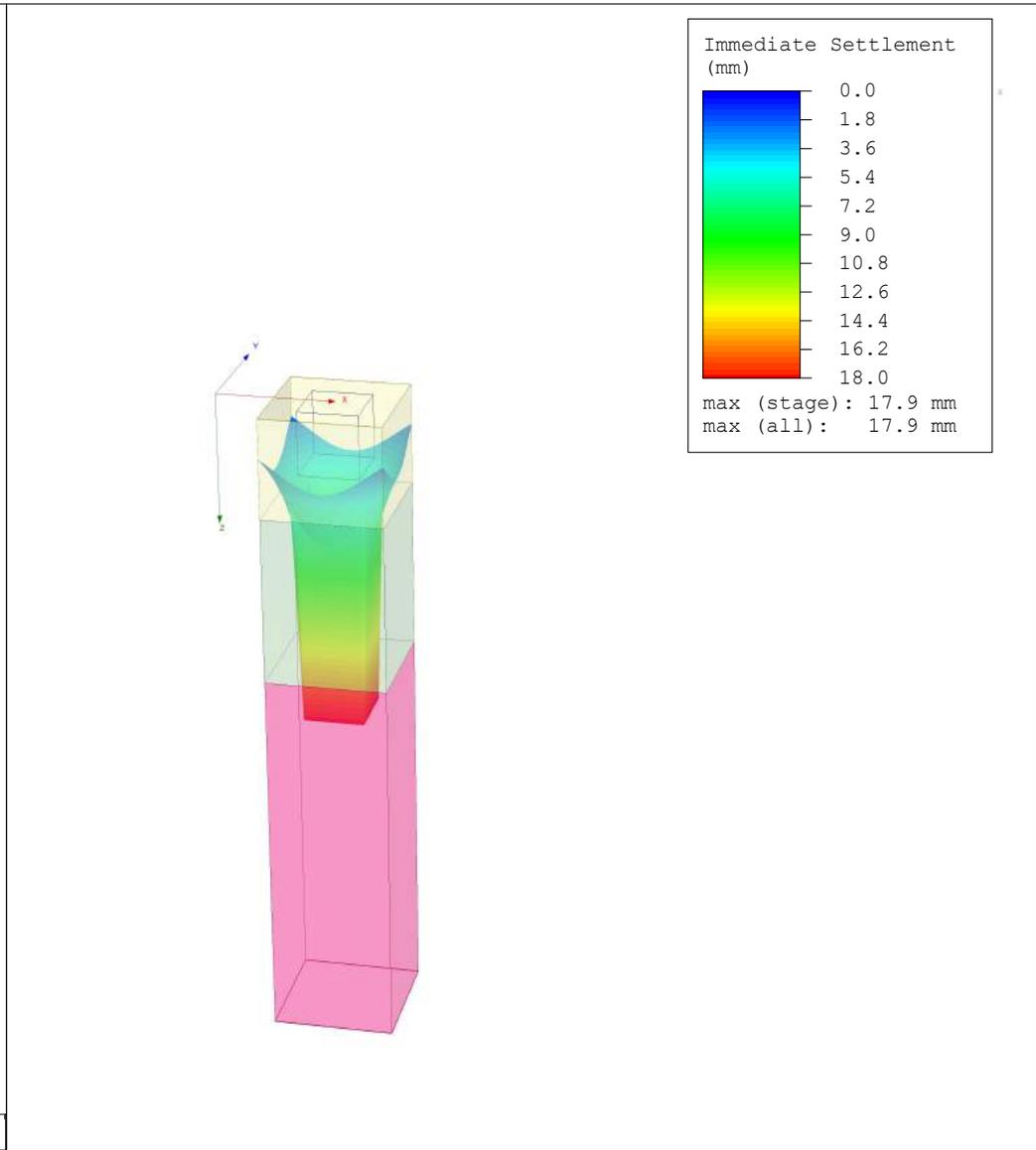
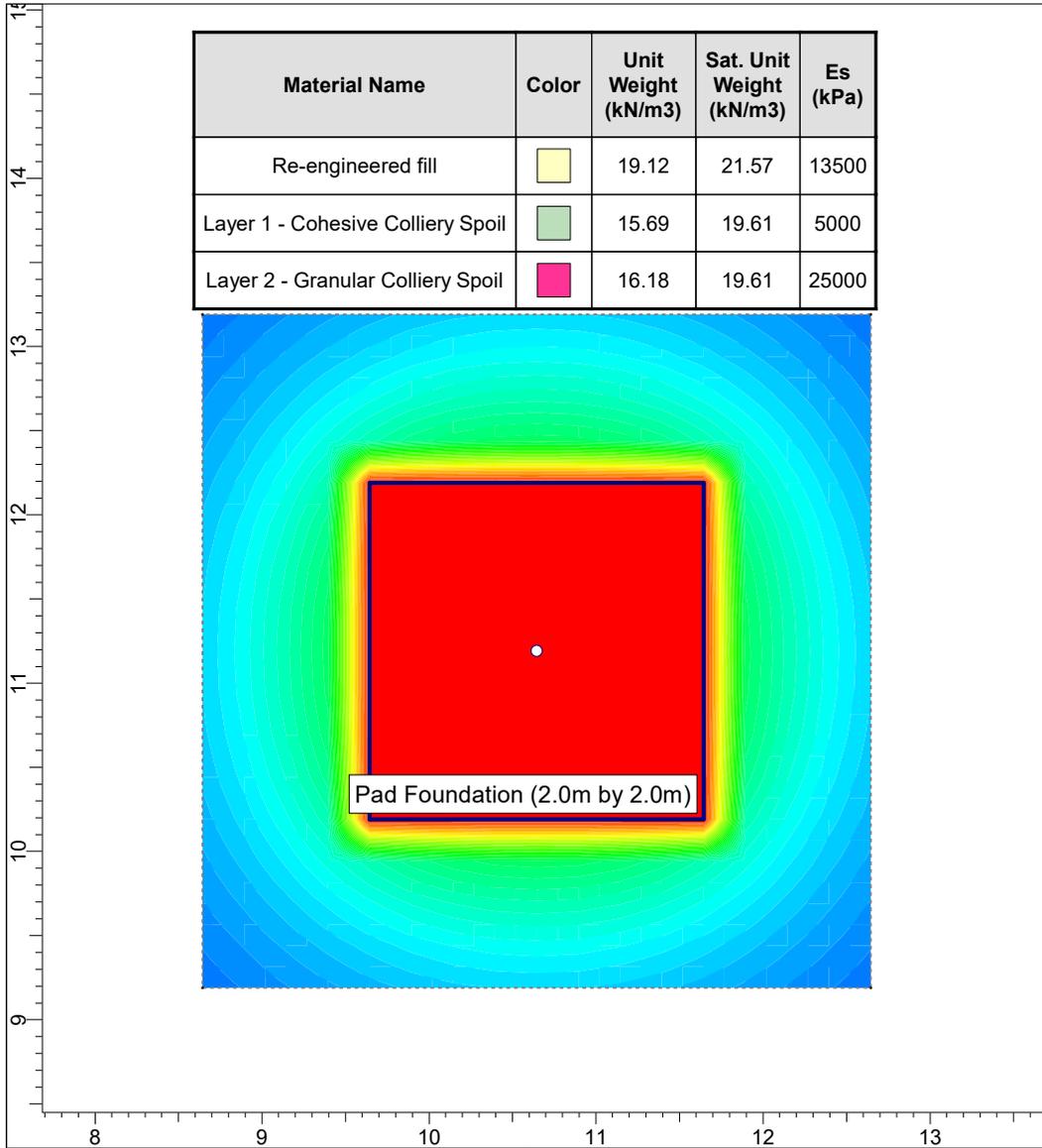
Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.  
 Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.  
 The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

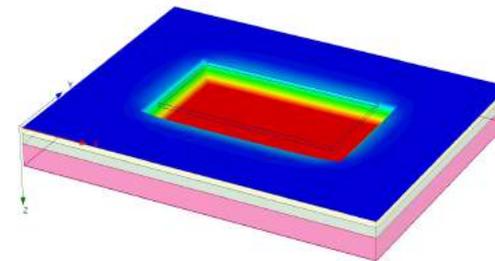
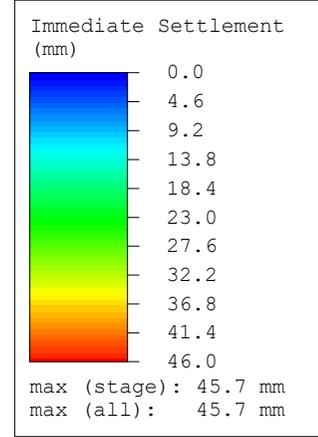
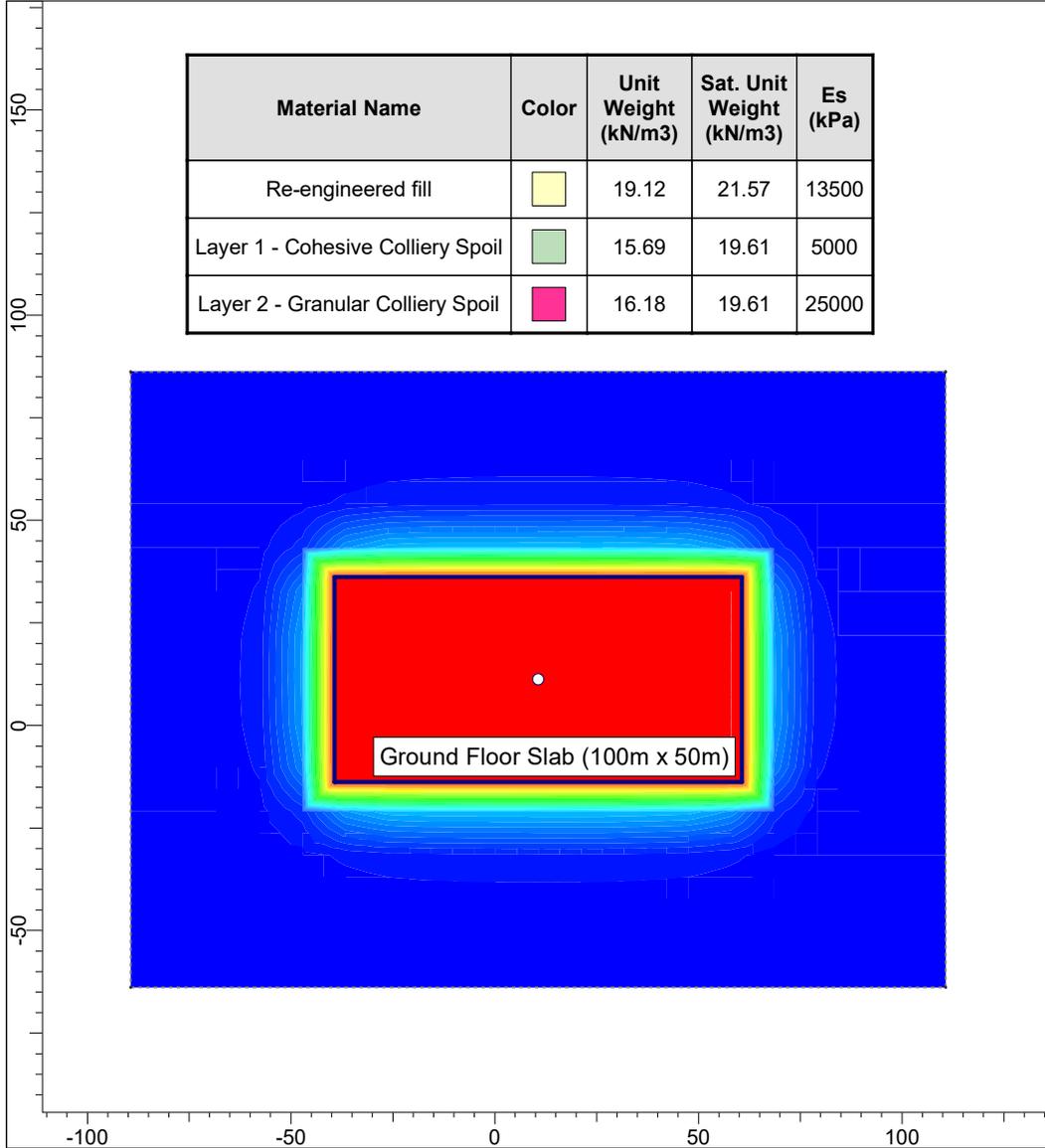
From the issue date of this test certificate, samples will be held for the following times prior to disposal :-  
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



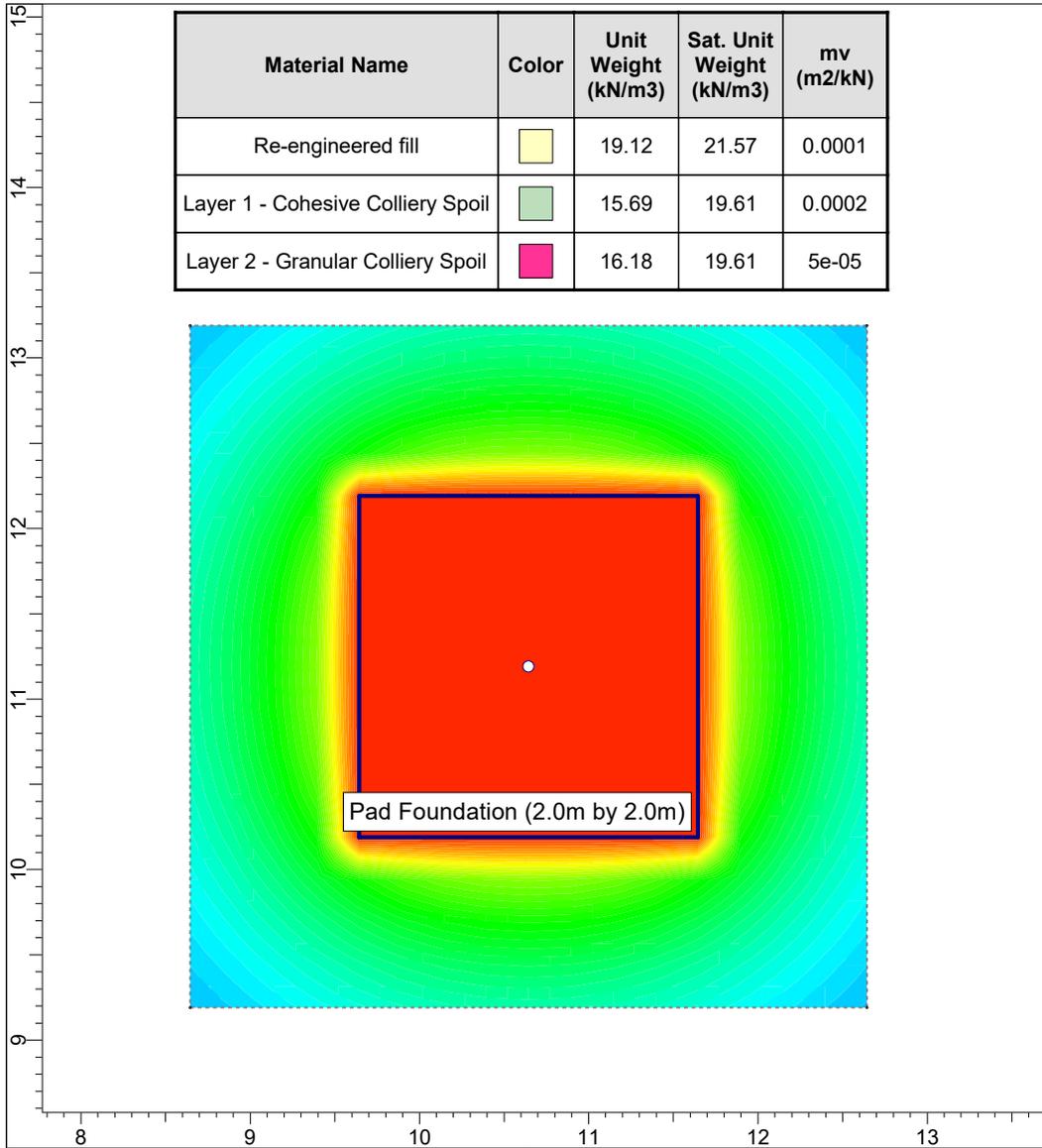
## **Appendix E Settlement Analysis (Settle 3D)**



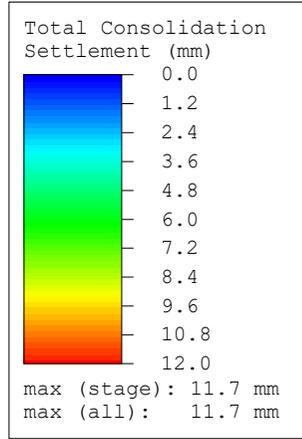
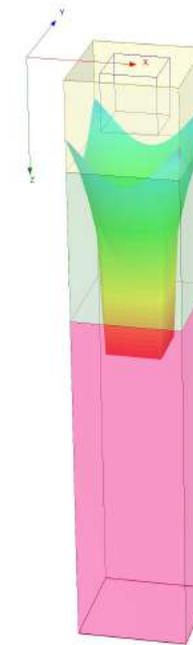
	Project			4848 - Barnsley West		
	Analysis Description			Boussinesq - Immediate Settlement Only Hunters Cottage		
	Drawn By			DMH		Company
	Date			March 2023		File Name
					JPG Leeds Limited	
					Pad Foundation - 120kPa - Empirical Parameters.s3z	



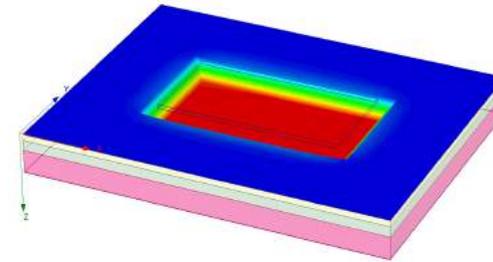
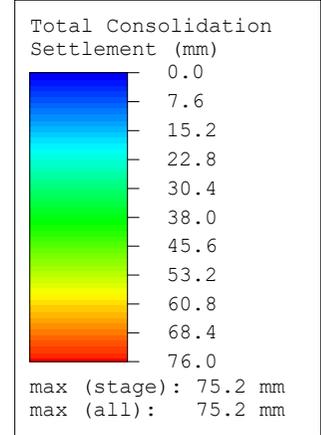
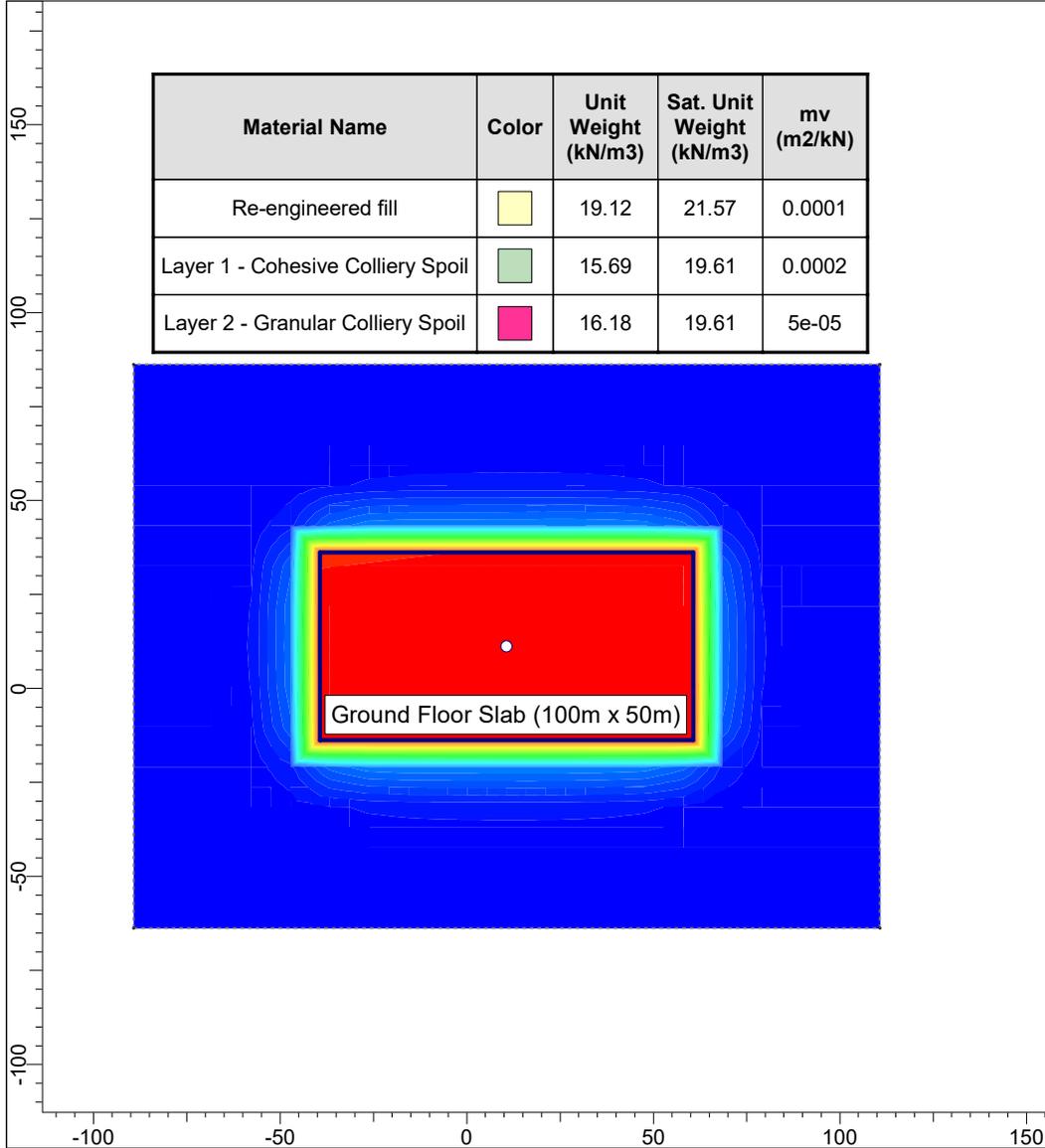
	Project		4848 - Barnsley West
	Analysis Description		Boussinesq - Immediate Settlement Only Hunters Cottage
	Drawn By	DMH	Company JPG Leeds Limited
	Date	March 2023	File Name Ground Bearing Floor Slab - 50kPa - Empirical Parameters.s3z



Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Sat. Unit Weight (kN/m <sup>3</sup> )	mv (m <sup>2</sup> /kN)
Re-engineered fill		19.12	21.57	0.0001
Layer 1 - Cohesive Colliery Spoil		15.69	19.61	0.0002
Layer 2 - Granular Colliery Spoil		16.18	19.61	5e-05



	Project			4848 - Barnsley West	
	Analysis Description			Boussinesq - Consolidation Settlement Only Hunters Cottage	
	Drawn By		DMH	Company	JPG Leeds Limited
	Date		March 2023	File Name	Pad Foundation - 120kPa - Third Party Geotechnical Parameters.s3z



	Project		4848 - Barnsley West
	Analysis Description		Boussinesq - Consolidation Settlement Only Hunters Cottage
	Drawn By	DMH	Company JPG Leeds Limited
	Date	March 2023	File Name Ground Bearing Floor Slab - 50kPa - Third Party Geotechnical Parameters s37



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## **Appendix F Gas and Groundwater Monitoring Results**















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## **Appendix G Notes on Limitations**



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## General

JPG (Leeds) Limited have prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from JPG (Leeds) Limited; a charge may be levied against such approval.

JPG (Leeds) Limited accepts no responsibility or liability for:

- a) the consequences of this document being used for any purpose or project other than for which it was commissioned, and
- b) the use of this document by any third party with whom an agreement has not been executed.

## Phase I Desk Study Reports

The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources (including any information provided by the Client), together with (where appropriate) a brief walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties where appropriate. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only for the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, JPG (Leeds) Limited reserves the right to review such information and if warranted, to modify the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

## Phase II Geo-Environmental Investigations

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, geotechnical characteristics and ground and groundwater conditions to allow a reasonable assessment of the environmental risks together with engineering and development implications.

The objectives of the investigation have been limited to establishing the risks associated with potential human receptors, building materials, the environment (including adjacent land) and controlled waters (surface water and groundwater).

The number of sampling points and the methods of sampling and testing do not preclude the existence of localised "hotspots" of contamination where concentrations may be significantly higher than those actually encountered.

The risk assessment and opinions provided, inter alia, take into consideration currently available guidance values relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

The scope of the investigation was selected on the basis of the specific development proposed by the Client and may be inappropriate to another form of development or scheme.

5 John Charles Way  
LEEDS  
LS12 6QA

Tel: 0113 263 1155  
admin@jpg.group  
www.jpg.group

