Appendix 10-9: Ground Investigations Ireland - 244 Airfield Surveys Phase 2 - Report

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Ground Investigations Ireland

244 Airfield Surveys Phase 2

Ground Investigation Report

DOCUMENT CONTROL SHEET

Project Title	244 Airfield Surveys Phase 2
Engineer	Kilwex
Client	DAA
Project No	7926-07-18
Document Title	Factual Ground Investigation Report

Rev.	Status	Author(s)	Reviewed By	Approved By	Office of Origin	Issue Date
A	fINAL	S Kealy	C Finnerty	F McNamara	Dublin	10 January 2019

GROUND INVESTIGATIONS IRELAND

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CONTENTS

1.0 Preamble 3
2.0 Overview 3
2.1. Background 3
2.2. Purpose and Scope 3
3.0 Subsurface Exploration 3
3.1. General 3
3.2. Trial Pits & Observation Pits 4
3.3. Slit Trenching 4
3.4. Cable Percussion Boreholes 4
3.5. Insitu Plate Bearing Test 5
3.6. TRL Dynamic Cone Penetrometer 5
3.7. Laboratory Testing 5
4.0 Ground Conditions 6
4.1. General 6
4.2. Groundwater/Gas 6

APPENDICES

Appendix 1 Site Location Plan
Appendix 2 Trial Pit & Observation Pit Records
Appendix 3 Slit Trench Records
Appendix 4 Cable Percussion Borehole Records
Appendix 5 Plate Test Records
Appendix 6 TRL Probe Records – Observation Pit
Appendix 7 Core Hole and TRL Probe Records
Appendix 8 Laboratory Testing

1.0 Preamble

On the instructions of the DAA and Kilwex, a site investigation was carried out by Ground Investigations Ireland Ltd., between August and November 2018 in Dublin Airport.

2.0 Overview

2.1. Background

The site is currently greenfield/brownfield and is directly adjacent to the existing apron and runway. The ground investigation was carried out to assist in the design of proposed future projects, carried out near to the apron and the runway.

2.2. Purpose and Scope

The purpose of the site investigation was to investigate subsurface conditions utilising a variety of investigative methods in accordance with the project specification. The scope of the work undertaken for this project included the following:

- Visit project site to observe existing conditions
- Carry out 27 No. Trial Pits to a maximum depth of 3.0m BGL
- Carry out 8 No. Observation Trenches to a maximum depth of 3.0m BGL
- Carry out 17 No. Cable Percussion boreholes to a maximum depth of 6.0m BGL
- Carry out 34 Insitu Plate Bearing Test to determine ground bearing capacity.
- Carry out 55 TRL probes to determine CBR parameters.
- Carry out 29 Slit Trenches to determine location and type of underground services.
- Geotechnical & Environmental Laboratory testing

3.0 Subsurface Exploration

3.1. General

During the ground investigation a programme of intrusive investigation specified by the Consulting Engineer was undertaken to determine the sub surface conditions at the proposed site. Regular sampling and in-situ testing was undertaken in the exploratory holes to facilitate the geotechnical descriptions and to enable laboratory testing to be carried out on the soil samples recovered during excavation and drilling.
The procedures used in this site investigation are in accordance with Eurocode 7 Part 2: Ground Investigation and testing (ISEN 1997 – 2:2007) and B.S. 5930:2015.

3.2. Trial Pits & Observation Pits

The trial pits were excavated using a 13T tracked excavator at the locations shown in the exploratory hole location plan in Appendix 1. The locations were checked using a CAT scan to minimise the potential for encountering services during the excavation. The trial pits were sampled, logged and photographed by an Engineering Geologist prior to backfilling with arisings. TRL probing was carried out in the observation pits. Plate testing and hand shear vane testing (where possible) was carried out in the trial pits and observation trenches. Notes were made of any services, inclusions, pit stability, groundwater encountered and the characteristics of the strata encountered and are presented on the trial pit logs which are provided in Appendix 2 of this Report.

3.3. Slit Trenching

The Slit Trenches were excavated at various locations around the proposed site to identify and locate existing services and to obtain a soil profile. The soil was excavated by vacuum no-dig techniques in order to avoid damaging any services that may be underlying. A spotter was also used to watch the trench while excavating to alert the driver when services were visible. The soils and services were then logged and photographed for each excavation by the Engineer. The excavation was then backfilled and reinstated in accordance with the project specification. The slit trench records are provided in Appendix 3 of this Report.

3.4. Cable Percussion Boreholes

The Cable Percussion Boreholes were drilled using a Dando 2000 drilling rig with regular in-situ testing and sampling undertaken to facilitate the production of geotechnical logs and laboratory testing.

The standard method of boring in soil for site investigation is known as the Cable Percussion method. It consists of using a Shell in non cohesive soils and a clay cutter in cohesive soils, both operated on a wire cable. Very hard soils, boulders and other hard obstructions are broken up by chiselling and the fragments removed with the Shell. Where ground conditions made it necessary, the borehole was lined with 200mm diameter steel casing. While the use of the Cable Percussion method of boring gives the maximum data on soil conditions, some mixing of laminated soil is inevitable. For this reason, thin lenses of granular material may not be noticed. Disturbed samples were taken from the boring tools at suitable depths, so that there is a representative sample at the top of each change in stratum and thereafter at regular intervals down the borehole until the next stratum was encountered. The disturbed samples were then sealed and sent to the laboratory where they were visually examined to confirm the description of the relevant strata.

Standard Penetration Tests were carried out in the boreholes. The results of these tests, together with the depths at which the tests were taken are shown on the accompanying borehole records. The test consists of a thick wall sampler tube, 50mm external diameter, being driven into the soil by a monkey weighing 63.5kg and with a free drop of 760mm. For gravels and glacial till the driving shoe was replaced by a solid 60º cone. The Standard Penetration Test number referred to as the ‘N’ value is the number of blows required to drive the tube 300mm, after an initial penetration of 150mm. The number gives a guide to the consistency of the soil and can also be used to estimate the relative strength/density at the depth of the

test and also to estimate the bearing capacity and compressibility of the soil. The cable percussion borehole logs are provided in Appendix 4 of this Report.

3.5. Insitu Plate Bearing Test

The plate bearing tests were carried out using a 600mm diameter plate at the locations shown on the site plan in Appendix 1. The plate was loaded in increments using a hydraulic jack and an excavator to provide a reaction and the displacement was monitored in accordance with BS1377 Part 9 using independently mounted digital strain gauges. The constrained modulus and equivalent CBR are calculated in accordance with HD29/75 and are provided on the test reports in Appendix 5 of this Report.

3.6. TRL Dynamic Cone Penetrometer

The TRL DCP tests were carried out at locations specified by the Consulting Engineer to determine a CBR design value for the design of external pavements. The testing was carried out below the Topsoil or existing pavement at the depths detailed on the test report. The test consists of dropping a 10kg weight on an anvil to drive a small diameter cone and recording the blows for a given penetration. The results of the DCP testing is included in Appendix 6 of this Report.

3.7. Laboratory Testing

Samples were selected from the exploratory holes for a range of geotechnical and environmental testing to assist in the classification of soils and to provide information for the proposed design.
Environmental testing, including Waste Acceptance Criteria (WAC), pH and sulphate testing was carried out by Jones Environmental Laboratory in the UK.
Geotechnical testing consisting of moisture content, Atterberg limits, Particle Size Distribution (PSD), hydrometer, Moisture Condition Value (MCV), CBR's, 2.5kg Vibrating Rammer Compaction tests, 4.5kg Vibrating Rammer Compaction tests and Moisture Condition Value/Moisture Content Relationship (5 Point) were carried out in Prosoils Geotechnical Laboratory in the UK.
The results of the laboratory testing are included in Appendix 7 of this Report.

4.0 Ground Conditions

4.1. General

The ground conditions encountered during the investigation are summarised below with reference to insitu and laboratory test results. The full details of the strata encountered during the ground investigation are provided in the exploratory hole logs included in the appendices of this report.

The sequence of strata encountered were consistent across the site and are generally comprised;

- Topsoil/Surfacing
- Made Ground
- Cohesive Deposits

TOPSOIL/SURFACING: Topsoil was encountered in the majority of exploratory holes and was present to a maximum depth of 0.30m BGL.

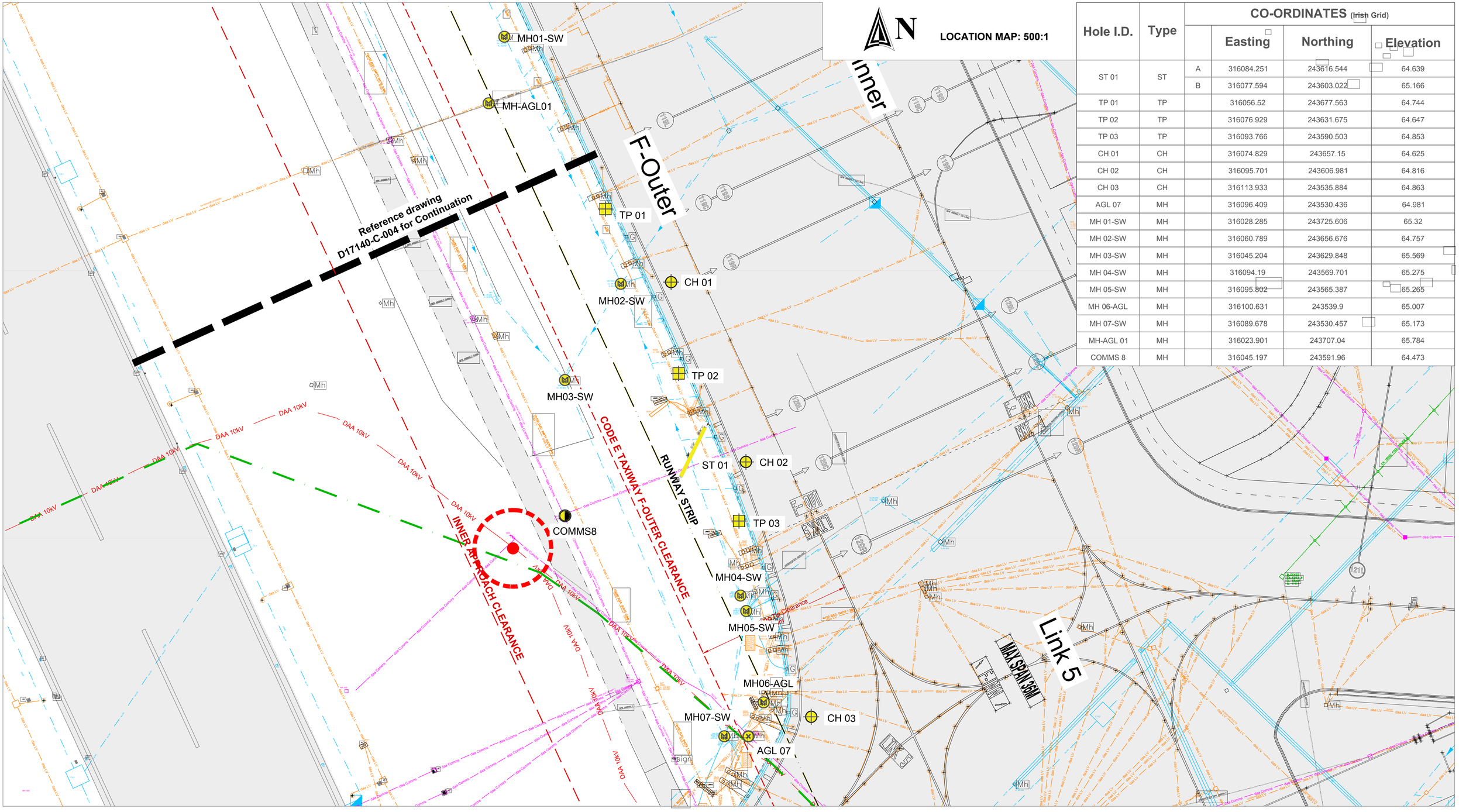
MADE GROUND: Made Ground deposits were encountered in the majority of the exploratory holes beneath the Topsoil/Surfacing and was present to a maximum depth of 2.60m BGL. These deposits were described generally as *brown slightly sandy slightly gravelly CLAY with occasional cobbles and contained occasional fragments of concrete, red brick, glass and plastic.*

COHESIVE DEPOSITS: Cohesive deposits were encountered beneath the Made Ground and were described typically as dark *brown slightly sandy slightly gravelly CLAY with occasional cobbles underlain by a stiff dark grey/ brown or black slightly sandy gravelly CLAY with occasional cobbles and rare boulders*. The secondary sand and gravel constituents varied across the site and with depth, with granular lenses occasionally present in the glacial till matrix. These deposits had some, occasional or frequent cobble and boulder content where noted on the exploratory hole logs.

4.2. Groundwater

Groundwater strikes are noted on the exploratory hole logs where they occurred and where possible drilling was suspended for twenty minutes to allow the subsequent rise in groundwater to be recorded. We would point out that these exploratory holes did not remain open for sufficiently long periods of time to establish the hydrogeological regime and groundwater levels would be expected to vary with the tide, time of year, rainfall, nearby construction and other factors.

APPENDIX 1 - Site Location Plan



Hole I.D.	Type		CO-ORDINATES (Irish Grid) Easting	Northing	Elevation
ST 01	ST	A	316084.251	243616.544	64.639
		B	316077.594	243603.022	65.166
TP 01	TP		316056.52	243677.563	64.744
TP 02	TP		316076.929	243631.675	64.647
TP 03	TP		316093.766	243590.503	64.853
CH 01	CH		316074.829	243657.15	64.625
CH 02	CH		316095.701	243606.981	64.816
CH 03	CH		316113.933	243535.884	64.863
AGL 07	MH		316096.409	243530.436	64.981
MH 01-SW	MH		316028.285	243725.606	65.32
MH 02-SW	MH		316060.789	243656.676	64.757
MH 03-SW	MH		316045.204	243629.848	65.569
MH 04-SW	MH		316094.19	243569.701	65.275
MH 05-SW	MH		316095.802	243565.387	65.265
MH 06-AGL	MH		316100.631	243539.9	65.007
MH 07-SW	MH		316089.678	243530.457	65.173
MH-AGL 01	MH		316023.901	243707.04	65.784
COMMS 8	MH		316045.197	243591.96	64.473

244 Airfield Survey

DRAWING No.:	Location Map 01
DATE:	October/November 2018
CLIENT:	DAA

ST01
TP01, TP02, TP03
CH01, CH02, CH03
AGL07
MH01-SW, MH02-SW, MH03-SW, MH04-SW, MH05-SW, MH06-AGL, MH07-SW
MH-AGL 01, COMMS8

Version:	Date:	Drawn By:	Checked By:
Draft 4	07/01/2019	G.S.	S.K.

Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

Existing Services

- Existing Watermains
- Existing Surface Water
- Existing Foul Sewer
- Existing Comms
- Existing Gas
- Existing MV
- Existing LV
- Unidentified Services

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LOCATION MAP: 500:1

Hole I.D.	Type		CO-ORDINATES (Irish Grid) Easting	Northing	Elevation
ST 02	ST	A	316124.117	243462.559	64.327
		B	316138.141	243456.403	64.542
ST 03	ST	A	316155.215	243430.052	64.614
		B	316152.302	243438.729	64.554
TP 04	TP		316141.442	243451.838	64.503
TP 05	TP		316161.277	243425.747	64.578
TP 06	TP		316170.301	243392.875	64.163
TP 07	TP		316212.733	243310.83	63.636
BH 01	BH		316333.983	243291.18	64.789
CH 04	CH		316160.612	243452.501	64.486
CH 05	CH		316179.572	243407.736	64.305
CH 08	CH		316318.087	243302.848	0
AGL 18 (No Access)	MH		316157.074	243363.005	63.553
AGL 19	MH		316171.087	243409.301	64.328
MH 08-SW	MH		316131.908	243446.484	64.451
MH 09-SW1	MH		316156.231	243409.788	64.35
MH 10-SW	MH		316152.022	243405.424	64.257
MH 11	MH		316146.224	243400.64	0
MH 14-SW	MH		316190.988	243319.029	63.631

244 Airfield Survey

DRAWING No.:	Location Map 02
DATE:	October/November 2018
CLIENT:	DAA

ST02, ST03
TP04, TP05, TP06, TP07
BH01
CH04, CH05, CH08
AGL18, AGL19
MH08-SW, MH09-SW1, MH10-SW, MH11, MH14-SW

Version:	Date:	Drawn By:	Checked By:
Draft 4	07/01/2019	G.S.	S.K.

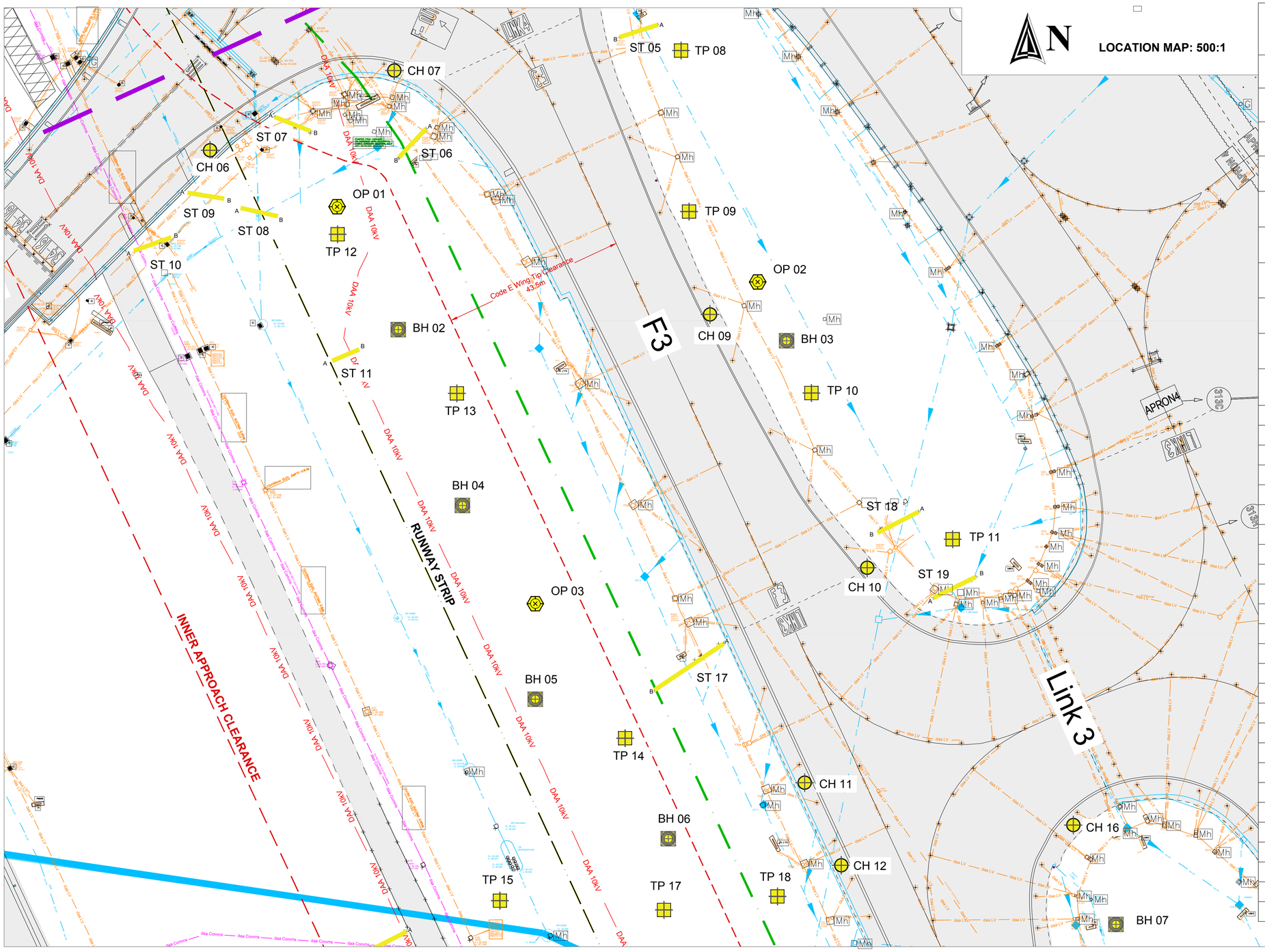
Legend

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- Manhole w/ Comms
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Existing Services

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- Existing Surface Water
- Existing Foul Sewer
- Existing Comms
- Existing Gas
- Existing MV
- Existing LV
- Unidentified Services

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Hole I.D.	Type		CO-ORDINATES (Irish Grid) Easting	Northing	Elevation
ST 05	ST	A	316336.452	243283.63	64.81
		B	316327.419	243280.743	64.766
ST 06	ST	A	316281.099	243258.853	64.191
		B	316274.658	243252.001	64.105
ST 07	ST	A	316245.01	243261.628	63.597
		B	316253.552	243258.283	63.735
ST 08	ST	A	316236.861	243239.92	63.4485
		B	316245.696	243237.96	63.466
ST 09	ST	A	316224.17	243243.55	63.38
		B	316232.9	243242.15	63.48
ST 10	ST	A	316211.4	243229.71	63.21
		B	316220.22	243232.88	63.27
ST 11	ST	A	316258.7323	243203.43	63.6391
		B	316265.1481	243206.13	63.7622
ST 17	ST	A	316352.224	243135.884	64.105
		B	316335.699	243124.802	64.283
ST 18	ST	A	316398.778	243167.358	64.533
		B	316388.949	243162.336	64.53
ST 19	ST	A	316402.348	243146.826	64.565
		B	316412.451	243151.833	64.682
TP 08	TP		316342.039	243277.515	64.935
TP 09	TP		316343.943	243239.067	64.757
TP 10	TP		316373.18	243195.731	64.604
TP 11	TP		316406.912	243160.81	64.62
TP 12	TP		316260.0003	243233.6385	63.7026
TP 13	TP		316288.492	243195.6525	64.5034
TP 14	TP		316328.6764	243113.2988	64.404
TP 15	TP		316298.7663	243074.5049	63.0687
TP 17	TP		316337.9638	243072.2968	63.7561
TP 18	TP		316365.064	243075.523	63.841
BH 02	BH		316274.4962	243210.8794	64.2113
BH 03	BH		316367.238	243208.214	64.683
BH 04	BH		316289.8194	243168.8841	64.1905
BH 05	BH		316307.2154	243122.6202	63.8687
BH 06	BH		316338.9905	243089.3009	64.0321
BH 07	BH		316445.922	243068.843	64.2
CH 06	CH		316229.537	243253.694	63.455
CH 07	CH		316273.529	243272.733	0
CH 09	CH		316348.955	243214.497	64.648
CH 10	CH		316386.492	243154.013	64.528
CH 11	CH		316371.567	243102.681	64.014
CH 12	CH		316380.307	243082.957	63.901
CH 16	CH		316435.731	243092.563	64.42
OP 01	OP		316259.8792	243240.2243	63.7406
OP 02	OP		316360.335	243222.252	64.768
OP 03	OP		316307.2227	243145.4286	64.1697

244 Airfield Survey

DRAWING No.:	Location Map 03
DATE:	October/November 2018
CLIENT:	DAA

ST05, ST06, ST07, ST08, ST09, ST10, ST11, ST17, ST18, ST19
TP08, TP09, TP10, TP11,TP12,TP13,TP14,TP15,TP17, TP18
BH02, BH03, BH04, BH05, BH06, BH07
CH06, CH07, CH09, CH10, CH11, CH12, CH16
OP01, OP02, OP03

Version:	Date:	Drawn By:	Checked By:
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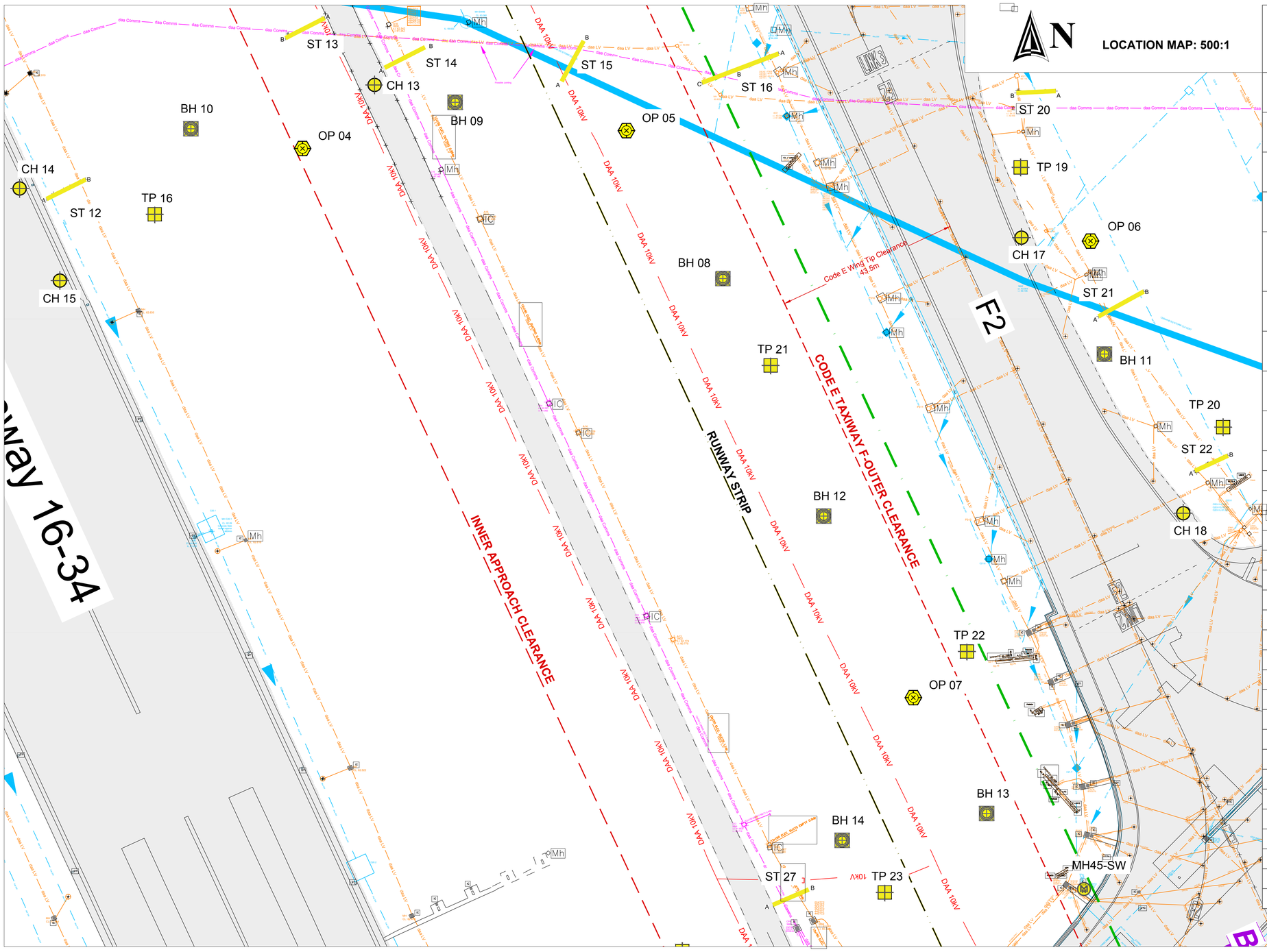
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Hole I.D.	Type		CO-ORDINATES (Irish Grid) Easting	Northing	Elevation
ST 12	ST	A	316210.322	243024.058	62.798
		B	316219.616	243028.677	62.703
ST 13	ST	A	316276.51	243067.099	62.803
		B	316267.199	243062.374	62.816
ST 14	ST	A	316290.824	243055.29	62.8646
		B	316300.376	243060.1632	62.9949
ST 15	ST	A	316332.9406	243052.07	63.1876
		B	316338.1678	243061.67	63.5722
ST 16	ST	A	316384.563	243058.63	63.756
		B	316374.743	243054.773	63.756
		C	316366.395	243051.748	63.819
ST 20	ST	A	316450.543	243049.741	64.055
		B	316441.238	243049.296	0
ST 21	ST	A	316460.789	242996.08	63.6
		B	316471.539	243002.002	63.586
ST 22	ST	A	316483.725	242959.299	63.356
		B	316491.548	242962.923	63.36
ST 27	ST	A	316383.2562	242855.9646	62.013
		B	316391.7372	242859.6058	62.0251
TP 16	TP		316236.1	243020.4	63.05
TP 19	TP		316442.22	243031.562	63.985
TP 20	TP		316490.43	242969.711	63.401
TP 21	TP		316382.6874	242984.4048	63.4673
TP 22	TP		316429.423	242916.294	62.69
TP 23	TP		316409.8796	242858.9172	62.1473
BH 08	BH		316371.3283	243005.0946	63.6
BH 09	BH		316307.5756	243047.0623	63.0692
BH 10	BH		316244.7	243040.8	63.34
BH 11	BH		316462.162	242987.12	63.575
BH 12	BH		316395.3307	242948.5381	63.1071
BH 13	BH		316434.1193	242877.7073	62.3259
BH 14	BH		316399.726	242871.3184	62.2542
CH 13	CH		316288.381	243051.197	62.84
CH 14	CH		316203.87	243026.531	62.828
CH 15	CH		316213.454	243004.609	62.814
CH 17	CH		316442.412	243014.831	63.668
CH 18	CH		316480.931	242949.216	63.211
MH 45-SW	MH		316457.297	242859.723	62.046
OP 04	OP		316271.2507	243036.0603	62.6689
OP 05	OP		316348.3571	243040.314	63.5033
OP 06	OP		316458.866	243014.02	63.729
OP 07	OP		316416.6767	242905.301	62.2754

244 Airfield Survey

DRAWING No.:	Location Map 04
DATE:	October/November 2018
CLIENT:	DAA

ST12, ST13, ST14, ST15, ST16, ST20, ST21, ST22, ST27
TP16, TP19, TP20, TP21, TP22, TP23
BH08, BH09, BH10, BH11, BH12, BH13, BH14
CH13, CH14, CH15, CH17, CH18
MH45-SW
OP04, OP05, OP06, OP07

Version:	Date:	Drawn By:	Checked By:
Draft 4	07/01/2019	G.S.	S.K.

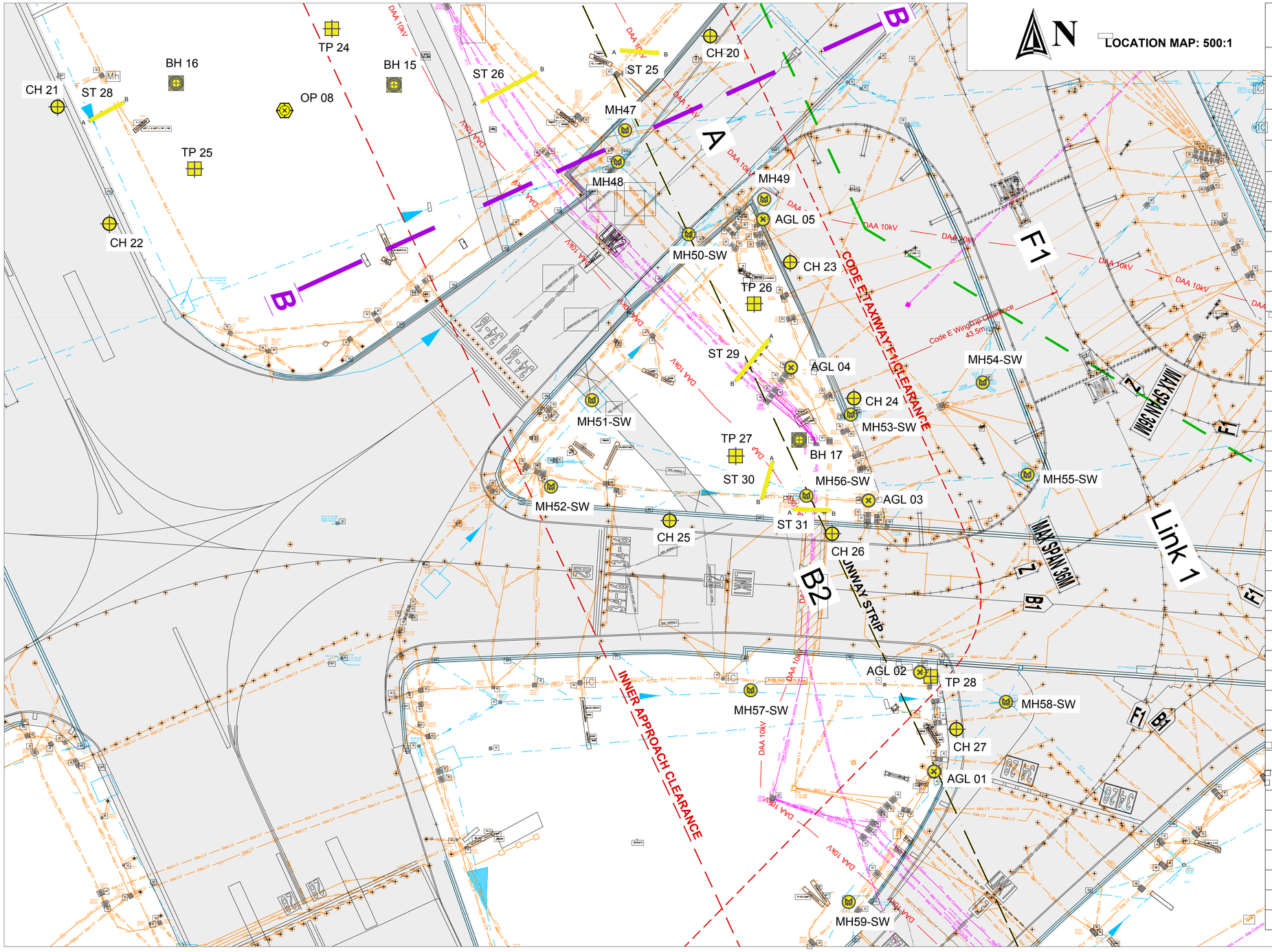
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Hole I.D.	Type		CO-ORDINATES (Irish Grid) Easting	Northing	Elevation
ST 25	ST	A	316430.1283	242839.8064	61.8991
		B	316439.423	242839.1748	61.8587
ST 26	ST	A	316397.0221	242827.52	61.6602
		B	316410.4984	242834.61	61.7594
ST 28	ST	A	316304.083	242823.068	62.382
		B	316312.179	242827.413	62.258
ST 29	ST	A	316465.492	242771.058	61.54
		B	316457.653	242761.376	61.603
ST 30	ST	A	316466.34	242742.065	61.669
		B	316463.873	242733.289	61.474
ST 31	ST	A	316471.251	242730.803	61.389
		B	316480.102	242730.518	61.302
TP 24	TP		316360.6	242844.9	62.45
TP 25	TP		316329.053	242811.6971	62.1
TP 26	TP		316462	242779.6	61.92
TP 27	TP		316457.597	242743.431	61.62
TP 28	TP		316503.901	242691.065	61.019
BH 15	BH		316376.4434	242831.6078	61.9089
BH 16	BH		316324.7	242832	62.94
BH 17	BH		316472.672	242741.244	61.674
CH 20	CH		316451.543	242843.195	61.823
CH 21	CH		316296.506	242826.386	62.475
CH 22	CH		316308.811	242798.593	62.422
CH 23	CH		316470.544	242789.449	61.489
CH 24	CH		316485.709	242757.139	61.185
CH 25	CH		316441.892	242728.103	61.489
CH 26	CH		316480.5	242724.966	61.247
CH 27	CH		316510.012	242678.521	61.023
AGL 01	MH		316504.703	242668.492	61.167
AGL 02	MH		316501.368	242692.041	0
AGL 03	MH		316489.149	242732.867	0
AGL 04	MH		316470.735	242764.435	61.77
AGL 05	MH		316464.087	242799.677	61.546
MH 47	MH		316431.313	242820.831	0
MH 48	MH		316429.581	242813.28	0
MH 49	MH		316464.362	242804.436	0
MH 50-SW	MH		316446.421	242796.099	61.603
MH 51-SW	MH		316423.425	242756.69	0
MH 52-SW	MH		316413.718	242736.158	0
MH 53-SW	MH		316484.937	242753.291	61.177
MH 54-SW	MH		316516.279	242760.908	61.205
MH 55-SW	MH		316526.921	242738.966	60.974
MH 56-SW	MH		316474.381	242733.98	0
MH 57-SW	MH		316461.123	242687.779	61.259
MH 58-SW	MH		316521.794	242685.009	60.925
MH 59-SW	MH		316484.438	242937.472	0
OP 08	MH		316350.5	242825.5	62.93

244 Airfield Survey

DRAWING No.:	Location Map 05
DATE:	October/November 2018
CLIENT:	DAA

ST25, ST26, ST28, ST29, ST30, ST31
TP24, TP25, TP2, TP27, TP28
BH15, BH16, BH17
CH20, CH21, CH22, CH23, CH24, CH25, CH26, CH27
AGL01,AGL02, AGL03, AGL04, AGL05
MH47,MH48, MH49, MH50-SW, MH51-SW, MH52-SW, MH53-SW, MH54-SW, MH55-SW, MH56-SW, MH57-SW, MH58-SW, MH59-SW
OP08

Version:	Date:	Drawn By:	Checked By:
Draft 4	07/01/2019	G.S.	S.K.

Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

Existing Services

- Existing Watermains
- Existing Surface Water
- Existing Foul Sewer
- Existing Comms
- Existing Gas
- Existing MV
- Existing LV
- Unidentified Services

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APPENDIX 2 – Trial Pit and Observation Pit Records

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Site	Trial Pit Number
244 Airfield Surveys Phase 2	OP01

Machine : 13.5T Excavator Method : Trial Pit	Dimensions	Ground Level (mOD)	Client	Job Number
		64.25		7926-07-18
	Location	**Dates**	**Project Contractor**	**Sheet**
	316445.8 E 243069.2 N	08/08/2018	Ground Investigations Ireland	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				63.95	0.30			
0.50	B				(0.60)	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles and fragments of red brick. Gravel is sub-angular to sub-rounded fine to coarse.		
				63.35	0.90			
1.00	B					Firm grey sandy gravelly silty CLAY with occasional sub-angular cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
					(1.30)			
2.00	B							
				62.05	2.20	Stiff black slightly sandy gravelly CLAY with occasional sub-rounded to rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
2.50	B				(0.80)			
3.00	B			61.25	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No Groundwater encountered.
Trial pit stable.
TRL probe carried out at 0.50m, 1.0m 2.0m and 2.50m BGL.
Plate test carried out at 1.0m BGL in trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.OP1

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** OP02
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 63.74	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316259.9 E 243240.2 N	**Dates** 17/10/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				63.54	0.20	MADE GROUND: Brown slightly sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick, concrete and ceramic		
0.50	B							
1.00	B				(1.70)			
				61.84	1.90	Firm to stiff grey slightly sandy gravelly CLAY with occasional rounded to sub angular cobbles. Gravel fine to coarse sub angular to sub rounded		
2.00	B							
					(1.10)			
				60.74	3.00	Trial pit completed at scheduled depth.		
3.00	B					Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.
Shear Vane tests attempted at 0.50m and 1.00m BGL but strata too granular to complete tests.
DCP completed at 0.50m, 1.00m, 2.00m, 2.50m BGL

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.OP02

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** OP03
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 64.17	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316307.2 E 243145.4 N	**Dates** 02/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				63.97	0.20	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded with fragments of wood, concrete, red brick and old plastic pipe.		
0.50	B							
					(1.10)			
1.00	B							
				62.87	1.30	Stiff grey sandy gravelly silty CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
2.00	B							
					(1.70)			
3.00	B			61.17	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
TRL Probe carried out at 0.50m, 1.00m 2.00m and 2.50m BGL.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.OP03

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** OP04
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 62.67	**Client**	**Job Number** 7926-07-18
	Location 316271.3 E 243036.1 N	**Dates** 08/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				62.37	0.30	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles and fragments of red brick. Gravel is sub-angular to sub-rounded fine to coarse.		
0.50	B							
					(1.20)			
1.00	B							
				61.17	1.50	Soft brown very sandy gravelly CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is sub-agnular to sub-rounded fine to coarse.		
					(0.60)			
2.00	B			60.57	2.10	Firm to stiff brown/grey sandy gravelly sitly CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
					(0.90)			
3.00	B			59.67	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No Groundwater encountered.
Trial pit stable.
TRL probe carried out at 0.50m, 1.0m 2.0m and 2.50m BGL.
Plate test carried out at 1.0m BGL in trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.OP04

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** OP05
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 63.50	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316348.3 E 243040.3 N	**Dates** 01/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				63.20	0.30			
0.50	B				(0.60)	MADE GROUND: Brown sandy gravelly CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of concrete and wood.		
				62.60	0.90			
1.00	B					MADE GROUND: Brown sandy gravelly CLAY with occasional sub-angular cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
					(1.30)			
2.00	B							
				61.30	2.20	Soft grey sandy gravelly silty CLAY with occasional sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
					(0.80)			
3.00	B			60.50	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
TRL Probe carried out at 0.50m, 1.00m 2.00m and 2.50m BGL.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.OP05

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** OP06
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 62.28	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316416.7 E 242905.3 N	**Dates** 18/10/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				62.08	0.20	MADE GROUND: Brown slightly sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick andc concrete		
0.50 0.50	B							
					(1.50)			
1.00 1.00	86.67kPa B		80, 92, 88/Av. 86.67					
				60.58	1.70	Firm to stiff grey slightly sandy gravelly CLAY with occasional rounded to sub angular cobbles. Gravel fine to coarse sub angular to sub rounded		
2.00	B							
					(1.30)			
3.00	B			59.28	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.
Shear Vane tests attempted at 0.50m BGL but strata too granular to complete tests.
DCP completed at 0.50m, 1.00m, 2.00m, 2.50m

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.OP06

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** OP07
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 62.01	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316350.5 E 242825.5 N	**Dates** 03/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				61.81	0.20	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles and fragments of red brick. Gravel is sub-angular to sub-rounded fine to coarse.		
0.50	B				(0.60)			
				61.21	0.80	Firm to stiff brown/grey sandy gravelly CLAY with occasional sub-angular to sub-rounded cobbles and boulders. Gravel is sub-angular to sub-rounded fine to coarse.		
1.00	B				(0.50)			
				60.71	1.30	Stiff grey sandy gravelly silty CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
2.00	B				(1.70)			
3.00	B			59.01	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
TRL Probe carried out at 0.50m, 1.00m 2.00m and 3.00m BGL.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.OP07

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** OP08
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 64.77	**Client**	**Job Number** 7926-07-18
	Location 316360.3 E 243222.3 N	**Dates** 13/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				64.47	0.30	MADE GROUND: Brown sandy gravelly CLAY with occasional sub-angular to sub-rounded cobbles and fragments of red brick. Gravel is sub-angular to sub-rounded fine to coarse.		
0.50	B				(0.50)			
				63.97	0.80	Firm to stiff brown/grey sandy gravelly CLAY with frequent sub-angular cobbles and some rounded boulders. Gravel is sub-angular to sub-rounded fine to coarse.		
1.00	B				(0.60)			
				63.37	1.40	Stiff grey sandy gravelly silty CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
					(0.50)			
				62.87	1.90	Stiff black sandy gravelly CLAY with occasional rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
2.00	B				(1.10)			
3.00	B			61.77	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
TRL Probe carried out at 0.50m, 1.00m 2.00m and 2.50m BGL.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.OP08

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP01
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 63.73	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316458.9 E 243014 N	**Dates** 07/11/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				63.53	0.20	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick and concrete		
0.50	B							
1.00	B				(1.70)			
				61.83	1.90	Firm to stiff grey sandy gravelly CLAY with occasional sub angular cobbles. Gravel fine to coarse sub angular to sub rounded		
2.00	B				(1.10)			
3.00	B			60.73	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.
Shear Vane tests attempted at 0.50 and 1.00m BGL - Too granular

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP01

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP02
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 64.74	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316056.5 E 243677.6 N	**Dates** 07/11/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				64.54	0.20	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick and concrete		
0.50	B							
1.00	B				(1.70)			
				62.84	1.90	Firm to stiff grey sandy gravelly CLAY with occasional sub angular cobbles. Gravel fine to coarse sub angular to sub rounded		
2.00	B				(0.50)			▽1
			Fast(1) at 2.20m.					
				62.34	2.40	Trial pit terminated at 2.40m due to fast ingress of water		
						Complete at 2.40m		

Plan

Remarks

Ground Water observed in TP at 2.20m BGL - Fast Flow
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.
Shear Vane tests attempted at 0.50 and 1.00m BGL - Too granular

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP02

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP03
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 64.65	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316076.9 E 243631.7 N	**Dates** 08/11/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				64.45	0.20	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick and concrete		
0.50	B							
1.00	B				(1.70)			
				62.75	1.90	Firm to stiff grey sandy gravelly CLAY with occasional sub angular cobbles. Gravel fine to coarse sub angular to sub rounded		
2.00	B							
					(1.10)			
3.00	B			61.65	3.00	Trial pit completed at 3.00m - Scheduled depth		
						Complete at 3.00m		

Plan

Remarks

No groundwater observed in TP
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.
Shear Vane tests attempted at 0.50 and 1.00m BGL - Too granular

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP03

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP04
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 64.85	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316093.8 E 243590.5 N	**Dates** 08/11/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				64.65	0.20	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of concrete		
0.50 0.50	97.33kPa B		80,100,112/Av. 97.33					
1.00	B				(1.60)			
				63.05	1.80	Stiff grey sandy gravelly CLAY with occasional sub angular cobbles. Gravel fine to coarse sub angular to sub rounded to sub angular		
2.00	B							
					(1.20)			
3.00	B			61.85	3.00	Trial pit completed at 3.00m - Scheduled depth		
						Complete at 3.00m		

Plan

Remarks

No groundwater observed in TP
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.
Shear Vane tests attempted at 1.00m BGL - Too granular

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP04

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP05
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 64.50	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316141.4 E 243451.8 N	**Dates** 19/11/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				64.30	0.20	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick and concrete		
0.50	B							
1.00	B				(1.60)			
				62.70	1.80	Firm to stiff grey sandy gravelly CLAY with occasional sub angular cobbles. Gravel fine to coarse sub angular to sub rounded to sub angular		
2.00	B							
					(1.20)			
3.00	B			61.50	3.00	Trial pit completed at 3.00m - Scheduled depth		
						Complete at 3.00m		

Plan

Remarks

No groundwater observed in TP
Trial pit stable.
Plate test carried out at 1.00m BGL in Trial pit.
Trial pit backfilled on completion.
Shear Vane tests attempted at 0.50m BGL and 1.00m BGL - Too granular

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP05

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP06
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 64.58	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316161.3 E 243425.8 N	**Dates** 08/11/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				64.38	0.20	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick and concrete		
0.50	B							
					(1.30)			
1.00	B							
				63.08	1.50	Stiff grey sandy gravelly CLAY with occasional sub angular cobbles. Gravel fine to coarse sub angular to sub rounded to sub angular		
2.00	B							
					(1.50)			
3.00	B			61.58	3.00	Trial pit completed at 3.00m - Scheduled depth		
						Complete at 3.00m		

Plan

Remarks

No groundwater observed in TP
Trial pit stable.
Plate test carried out at 1.00m BGL in Trial pit.
Trial pit backfilled on completion.
Shear Vane tests attempted at 0.50m BGL and 1.00m BGL - Too granular

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP06

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP07
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 64.16	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316170.3 E 243392.9 N	**Dates** 22/11/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				63.96	0.20	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick and concrete		
					(0.30)			
0.50	B			63.66	0.50	Trial pit terminated at 0.50m BGL - Service duct running diagonally through the trench		
						Complete at 0.50m		

Plan

Remarks

No groundwater observed in TP
Trial pit stable.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP07

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP08
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 63.64	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316212.7 E 243310.8 N	**Dates** 16/10/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				63.34	0.30	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick and concrete		
0.50 0.50	60.67kPa B		60, 64, 58/Av. 60.67					
1.00 1.00	80.67kPa B		80, 82, 80/Av. 80.67		(1.50)			
				61.84	1.80	Firm to stiff grey sandy gravelly CLAY with occasional sub angular cobbles. Gravel fine to coarse sub angular to sub rounded		
2.00	B				(1.20)			
3.00	B			60.64	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.
Shear Vane tests completed at 0.50m and 1.00m BGL

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP08

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP09
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 64.94	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316342 E 243277.5 N	**Dates** 16/10/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				64.64	0.30			
0.50 0.50	74.67kPa B		72, 76, 76/Av. 74.67			MADE GROUND: Brown slightly sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick and concrete		
					(1.30)			
1.00 1.00	101.33kPa B		100, 100, 104/Av. 101.33					
				63.34	1.60	Firm to stiff brown grey sandy gravelly CLAY with occasional sub angular cobbles. Gravel fine to coarse sub angular to sub rounded		
2.00	B							
					(1.40)			
3.00	B			61.94	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.
Shear Vane tests completed at 0.50m and 1.00m BGL

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP09

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP10
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 64.76	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316343.9 E 243239.1 N	**Dates** 17/10/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				64.46	0.30	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick.		
0.50	B							
1.00	B				(1.50)			
				62.96	1.80	Firm grey sandy gravelly CLAY with occasional sub angular cobbles. Gravel fine to coarse sub angular to sub rounded		
2.00	B							
					(1.20)			
3.00	B			61.76	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.
Shear Vane tests attempted at 0.50m and 1.00m BGL but strata too granular

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP10

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP11
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 64.62	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316373.2 E 243195.7 N	**Dates** 22/10/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				64.42	0.20	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick.		
0.50	B				(1.10)			
1.00	B							
				63.32	1.30	Stiff grey sandy gravelly CLAY with occasional sub angular cobbles and boulders. Gravel fine to coarse sub angular to sub rounded		
1.50	B				(0.70)			
				62.62	2.00	Firm to stiff becoming stiff brown with grey mottling slightly sandy gravelly CLAY with frequent sub-rounded cobbles		
2.50	B				(1.00)			
				61.62	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

Gorundwater encountered at 2.20m BGL as a slight to moderate ingress
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.
Material not suitable for shear vane

Scale (approx)	Logged By	Figure No.
1:25	S Kealy	7926-07-18.TP11

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Site	Trial Pit Number
244 Airfield Surveys Phase 2	TP12

Machine : 13.5T Excavator Method : Trial Pit	Dimensions	Ground Level (mOD)	Client	Job Number
		69.60		7926-07-18
	Location (dGPS) 316406.9 E 243160.8 N	Dates 29/07/2018	Project Contractor Ground Investigations Ireland	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				69.30	0.30			
					(0.30)	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick.		
0.50	B			69.00	0.60			
						Firm grey sandy gravelly silty CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
1.00	B							
					(1.60)			
2.00	B							
				67.40	2.20			
						Stiff to very stiff black slightly sandy gravelly CLAY with occasional rounded to sub-rounded boulders. Gravel is sub-angular to sub-rounded fine to coarse.		
					(0.80)			
3.00	B			66.60	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP12

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Site	Trial Pit Number
244 Airfield Surveys Phase 2	TP13

Machine : 13.5T Excavator Method : Trial Pit	Dimensions	Ground Level (mOD)	Client	Job Number
		63.70		7926-07-18
	Location (dGPS) 316260 E 243233.6 N	Dates 29/07/2018	Project Contractor Ground Investigations Ireland	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				63.40	0.30			
					(0.30)	MADE GROUND: Brown sandy gravelly CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick and concrete.		
0.50	B			63.10	0.60			
						Soft to firm brown sandy gravelly CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
1.00	B				(0.90)			
				62.20	1.50			
						Firm to stiff brown/grey sandy gravelly silty CLAY with occasional rounded to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
2.00	B				(1.50)			
3.00	B			60.70	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP13

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP14
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 64.50	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316288.5 E 243195.7 N	**Dates** 31/07/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				64.20	0.30			
					(0.20)	MADE GROUND: Brown sandy gravelly CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of plastic and wood.		
0.50	B			64.00	0.50			
					(0.90)	Firm brown sandy gravelly CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
1.00	B							
				63.10	1.40	Firm to stiff brown grey sandy gravelly CLAY with occasional sub-angular to sub-rounded cobbles and rare rounded boulders.. Gravel is sub-angular to sub-rounded fine to coarse.		
2.00	B							
					(1.60)			
3.00	B			61.50	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP14

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP15
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 64.40	**Client**	**Job Number** 7926-07-18
	Location 316328.7 E 243113.3 N	**Dates** 31/07/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				64.10	0.30	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular cobbles. Gravel is fine to coarse sub-angular to sub-rounded.		
0.50	B				(0.50)			
				63.60	0.80	MADE GROUND: Brown grey sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
1.00	B				(0.70)			
				62.90	1.50	MADE GROUND: Grey sandy gravelly Clay with pieces of red brick occasional sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
2.00	B				(1.10)			
				61.80	2.60	Stiff grey sandy gravelly CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
					(0.40)			
3.00	B			61.40	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP15

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP16
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 63.07	**Client**	**Job Number** 7926-07-18
	Location 316298.8 E 243074.5 N	**Dates** 14/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				62.87	0.20			
					(0.40)	MADE GROUND: Brown sandy gravelly CLAY with occasional sub-angular to sub-rounded cobbles and fragments of red brick. Gravel is sub-angular to subrounded fine to coarse.		
0.50	B			62.47	0.60			
1.00	B					Firm brown/grey sandy gravelly CLAY with occasional sub-angular cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
					(1.50)			
2.00	B			60.97	2.10			
						Stiff black slightly sandy gravelly CLAY with occasional rounded to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
					(0.90)			
3.00	B			60.07	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP16

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP17
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 62.79	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316236.1 E 243020.4 N	**Dates** 31/07/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				62.49	0.30	MADE GROUND: Brown sandy gravelly Clay with pieces of concrete and re-inforced steel occasional sub-angular to sub-rounded cobbles.		
0.50	B				(0.50)			
				61.99	0.80	Firm brown sandy gravelly CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded.		
1.00	B				(0.40)			
				61.59	1.20	Firm to stiff grey/brown sandy gravelly CLAY with occasional sub-angular cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
					(0.30)			
				61.29	1.50	Stiff grey sandy gravelly CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
2.00	B				(1.00)			
				60.29	2.50	Obstruction: Presumed boulders or rock.		
						Complete at 2.50m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP17

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP18
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 63.76	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316338 E 243072.3 N	**Dates** 15/10/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				63.46	0.30			
0.50 0.50	78.67kPa B		80, 72, 84/Av. 78.67			MADE GROUND: Brown slightly sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of concrete		
1.00 1.00	106.67kPa B		100, 110, 110/Av. 106.67		(1.50)			
				61.96	1.80			
2.00	B					Firm to stiff grey slightly sandy gravelly CLAY with occasional sub angular to sub rounded cobbles. Gravel fine to coarse sub angular to sub rounded		
					(1.20)			
				60.76	3.00			
3.00	B					Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.
Shear Vane tests completed at 0.50m and 1.00m BGL

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP18

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP19
Machine : 13.5T Excavator **Method :**	**Dimensions**	**Ground Level (mOD)** 63.84	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316365.1 E 243075.5 N	**Dates** 18/10/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				63.64	0.20	MADE GROUND: Brown slightly sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick, concrete, ceramic and glass		
0.50	B							
1.00	B				(1.60)			
				62.04	1.80	Firm grey sandy gravelly CLAY with sub angular cobbles. Gravel fine to coarse sub angular to sub rounded		
2.00	B							
					(1.20)			
3.00	B			60.84	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.
Shear Vane tests attempted at 0.50m and 1.00m BGL but strata too granular to complete tests.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP12

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP20
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 63.99	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316442.2 E 243031.6 N	**Dates** 15/10/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				63.69	0.30			
0.50 0.50	78.67kPa B		80, 72, 84/Av. 78.67			MADE GROUND: Brown slightly sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of concrete and red brick		
					(1.20)			
1.00 1.00	106.67kPa B		100, 110, 110/Av. 106.67					
				62.49	1.50	Firm to stiff grey slightly sandy gravelly CLAY with occasional sub angular to sub rounded cobbles. Gravel fine to coarse sub angular to sub rounded		
2.00	B							
					(1.50)			
3.00	B			60.99	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.
Shear Vane tests attempted at 0.50m and 1.00m BGL but strata too granular too complete test

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP20

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Site	Trial Pit Number
244 Airfield Surveys Phase 2	TP21

Machine : 13.5T Excavator Method : Trial Pit	Dimensions	Ground Level (mOD)	Client	Job Number
		63.40		7926-07-18
	Location (dGPS) 316490.4 E 242969.7 N	Dates 01/08/2018	Project Contractor Ground Investigations Ireland	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
0.30	B			63.10	0.30	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular cobbles. Gravel is fine to coarse sub-angular to sub-rounded with fragments of concrete.		
					(0.50)			
1.00	B			62.60	0.80	MADE GROUND: Grey sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of concrete.		
					(0.90)			
				61.70	1.70	CONCRETE Obstruction.		
				61.60	(0.10) 1.80	Complete at 1.80m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP21

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B

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP22
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 63.47	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316382.7 E 242984.4 N	**Dates** 23/10/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				63.27	0.20	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles and pieces of wire, glass and plastic. Gravel is sub-angular to sub-rounded fine to coarse.		
0.50	B				(0.80)			
1.00	B			62.47	1.00	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
					(0.80)			
1.80	B			61.67	1.80	Stiff grey sandy gravelly CLAY with occasional sub angular cobbles and boulders. Gravel fine to coarse sub angular to sub rounded.		
					(0.20)			
				61.47	2.00	Stiff grey/brown slightly sandy gravelly CLAY with frequent sub-rounded cobbles.		
					(1.00)			
				60.47	3.00	Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.
Material not suitable for shear vane

Scale (approx)	Logged By	Figure No.
1:25	S Kealy	7926-07-18.TP22

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP23
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 62.69	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316429.4 E 242916.3 N	**Dates** 02/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				62.39	0.30			
0.50	B				(0.50)	Firm brown sandy gravelly CLAY with occasional sub-angular cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
				61.89	0.80			
1.00	B				(0.40)	Stiff brown/grey sandy gravelly CLAY with sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
				61.49	1.20			
					(0.70)	Firm grey sandy gravelly silty CLAY with occasional sub-angular to sub-rounded cobbles and some rounded boulders. Gravel is sub-angular to sub-rounded fine to coarse.		
				60.79	1.90			
2.00	B				(1.10)	Stiff black slightly sandy gravelly CLAY with occasional rounded to sub-rounded cobbles and frequent rounded boulders. Gravel is sub-angular to sub-rounded fine to coarse.		
				59.69	3.00			
3.00	B					Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in Trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP23

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Site	Trial Pit Number
244 Airfield Surveys Phase 2	TP24

Machine : 13.5T Excavator Method : Trial Pit	Dimensions	Ground Level (mOD)	Client	Job Number
		62.15		7926-07-18
	Location (dGPS) 316409.9 E 242858.9 N	Dates 07/08/2018	Project Contractor Ground Investigations Ireland	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				61.85	0.30			
0.50	B				(0.60)	Firm brown sandy gravelly CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
				61.25	0.90			
1.00	B				(0.90)	Firm grey/brown sandy gravelly CLAY with occasional angular to sub-angular cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
				60.35	1.80			
2.00	B				(1.20)	Stiff black slightly sandy gravelly CLAY with rounded to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
				59.15	3.00			
3.00	B					Trial pit completed at scheduled depth.		
						Complete at 3.00m		

Plan

Remarks

No Groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP24

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP25
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 61.97	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316361.7 E 242845 N	**Dates** 13/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				61.67	0.30			
					(0.30)	MADE GROUND: Brown sandy gravelly Clay with occasional sub-anguolar to sub-rounded cobbles anf occasional fragments of red brick. Gravel is sub-angular to sub-rounded fine to coarse.		
0.50	B			61.37	0.60			
					(0.80)	Firm brown/grey sandy gravely CLAY with occasional sub-angular cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
1.00	B							
				60.57	1.40			
					(0.30)	Firm to stiff grey/brown sandy gravelly CLAY wwith occasional sub-angular to sub-rounded cobbles.Gravel is sub-angular to sub-rounded fine to coarse.		
				60.27	1.70			
						Stiff black sandy gravelly CLAY wwith occasional sub-angular to sub-rounded cobbles.Gravel is sub-angular to sub-rounded fine to coarse.		
2.00	B							
					(1.30)			
				58.97	3.00	Trial pit completed at scheduled depth.		
3.00	B					Complete at 3.00m		

Plan

Remarks

No Groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP25

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Site	Trial Pit Number
244 Airfield Surveys Phase 2	TP26

Machine : 13.5T Excavator Method : Trial Pit	Dimensions	Ground Level (mOD)	Client	Job Number
		62.10		7926-07-18
	Location	**Dates**	**Project Contractor**	**Sheet**
	316329.1 E 242811.7 N	13/08/2018	Ground Investigations Ireland	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				61.90	0.20			
					(0.50)	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles and fragments of red brick, concrete, rubber, aluminium and reinforced steel. Gravel is sub-angular to sub-rounded fine to coarse.		
0.50 0.50	SV 46.67kPa B		60,40,40/Av. 46.67					
				61.40	0.70			
					(0.80)	MADE GROUND: Brown grey sandy gravelly Clay with occasional sub-angular cobbles and fragments of red brick. Gravel is sub-anguloar to sub-rounded fine to coarse.		
1.00 1.00	SV 60kPa B		70,60,50/Av. 60.00					
				60.60	1.50			
					(0.80)	Firm to stiff grey/brown silty sandy gravelly CLAY with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
2.00	B							
				59.80	2.30			
					(0.70)	Stiff black slightly sandy gravelly CLAY with occasional sub-rounded to rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse.		
				59.10	3.00	Trial pit completed at scheduled depth.		
3.00	B					Complete at 3.00m		

Plan

Remarks

No Groundwater encountered.
Trial pit stable.
Plate test carried out at 1.0m BGL in trial pit.
Trial pit backfilled on completion.

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP26

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Site 244 Airfield Surveys Phase 2			**Trial Pit Number** TP27
Machine : 13.5T Excavator **Method :** Trial Pit	**Dimensions**	**Ground Level (mOD)** 61.92	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316462 E 242779.6 N	**Dates** 13/11/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20)	Brown slightly sandy slightly gravelly TOPSOIL with grass rootlets.		
				61.72	0.20	MADE GROUND: Brown sandy gravelly Clay with occasional sub-angular to sub-rounded cobbles. Gravel is sub-angular to sub-rounded fine to coarse with fragments of red brick and concrete		
0.50 0.50	24kPa B		24,28,20/Av. 24.00					
					(1.40)			
1.00 1.00	35.33kPa B		36,34,36/Av. 35.33					
				60.32	1.60	Firm to stiff grey sandy gravelly CLAY with occasional sub angular cobbles. Gravel fine to coarse sub angular to sub rounded to sub angular		
2.00	B							
					(1.40)			
3.00	B			58.92	3.00	Trial pit completed at 3.00m - Scheduled depth		
						Complete at 3.00m		

Plan

Remarks

No groundwater observed in TP
Trial pit stable.
Plate test carried out at 1.00m BGL in Trial pit.
Trial pit backfilled on completion.
Shear Vane tests completed at 0.50m BGL and 1.00m BGL

Scale (approx)	Logged By	Figure No.
1:25	ROT	7926-07-18.TP27

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244 Airfield Surveys Phase 2 – Observation Pit Photographs

OP01





OP02





OP03





OP04






CAT
2
KX788
KX 788

OP05





OP06







OP07 03/08/2018





OP08 13/08/18





OP08 13/08/18



Trial Pit Photographs - 244 Airfield Surveys Phase 2

TP01







TP02







TP03







TP04







TP05







TP06







TP07







TP08







TP09







TP10







TP11







TP12





TP12



TP13





TP13



TP14





TP15





TP16





TP16



TP17





TP17



TP18







TP19







TP20







TP21





TP22





TP23





TP24






2
KX788
KILWEX
KX 788

TP25





TP25



TP26





TP27





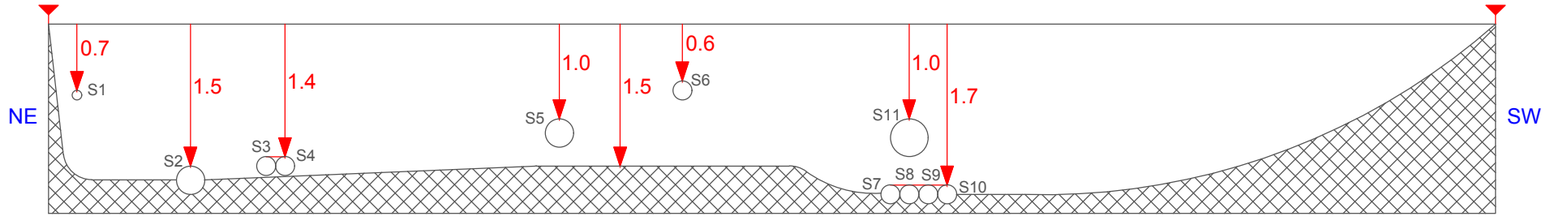

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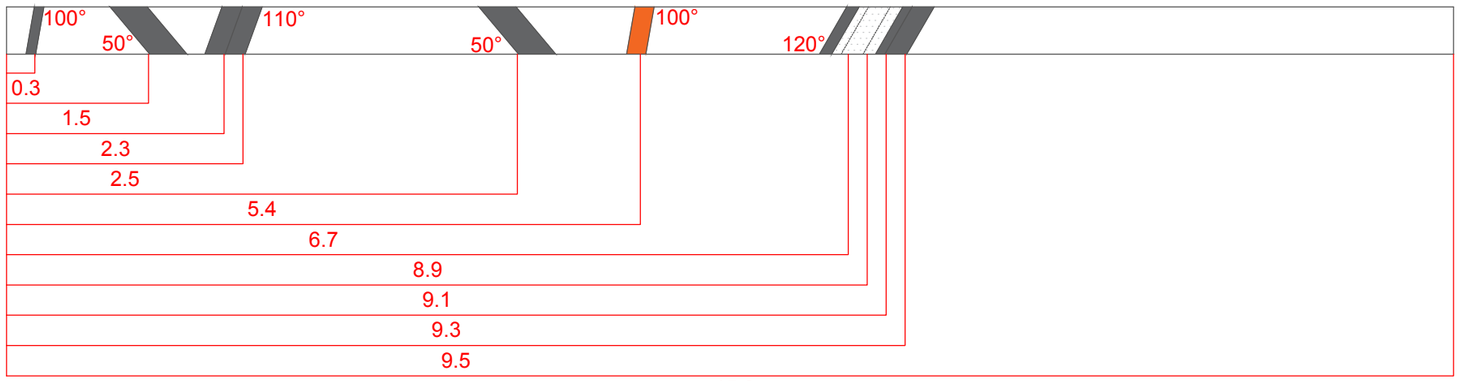
APPENDIX 3 – Slit Trench Records

ST 01

A
Easting: 316084.251
Northing: 243616.544
Elevation: 64.639

B
Easting: 316077.594
Northing: 243603.022
Elevation: 65.166





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.70	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.

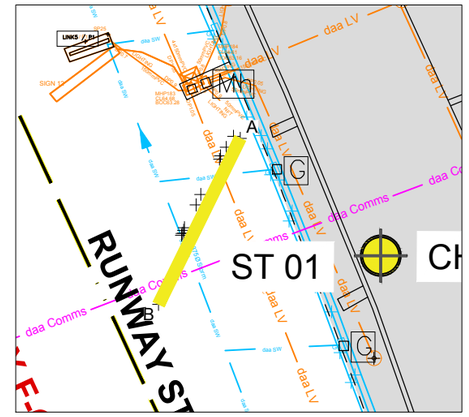
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1	0.100	Black - Plastic	Electic	100
2,5	0.300	Black - Plastic	Electic	50
3,4	0.200	Black - Plastic	Electic	110
6	0.200	Orange - Plastic	Drainage	100
7,8,9,10	0.200	Black - Plastic	Electic	120
11	0.400	Grey - Concrete	Water	120

Groundwater	Y/N	Depth
	Y	1.3

Surface from/to		Surface Type
0.00	15.30	Grass

Sample Depth	Sample Type

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 07/11/18

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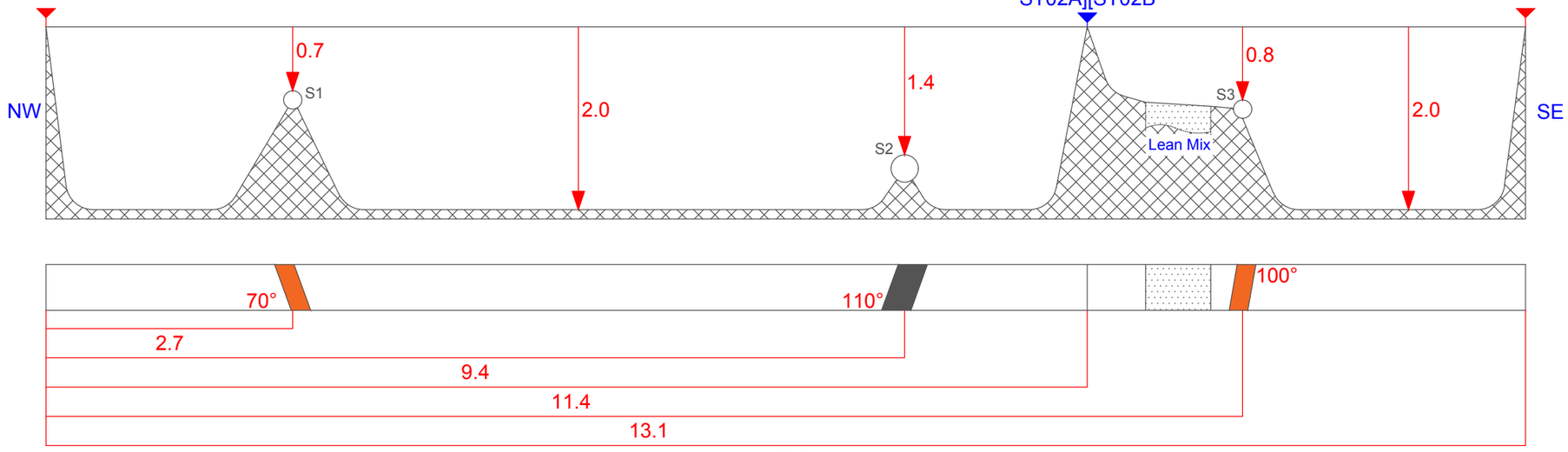
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DRAWING No.:	ST 01
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.015 @ A3

Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 02

A
Easting: 316124.117
Northing: 243462.559
Elevation: 64.327

B
Easting: 316138.141
Northing: 243456.403
Elevation: 64.542



From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.70	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.
1.70	2.00	Brown grey slightly sandy gravelly CLAY with occasional sub angular to sub rounded cobbles

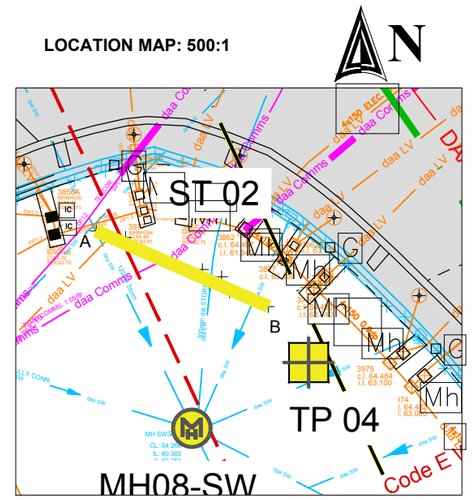
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1	0.200	Orange - Plastic	Drainage	70
2	0.300	Black - Plastic	Drainage	110
3	0.200	Orange - Plastic	Drainage	100

Groundwater	Y/N	Depth
	Y	2.0

Sample Depth	Sample Type

Surface from/to		Surface Type
0.00	16.20	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 19&20/11/18

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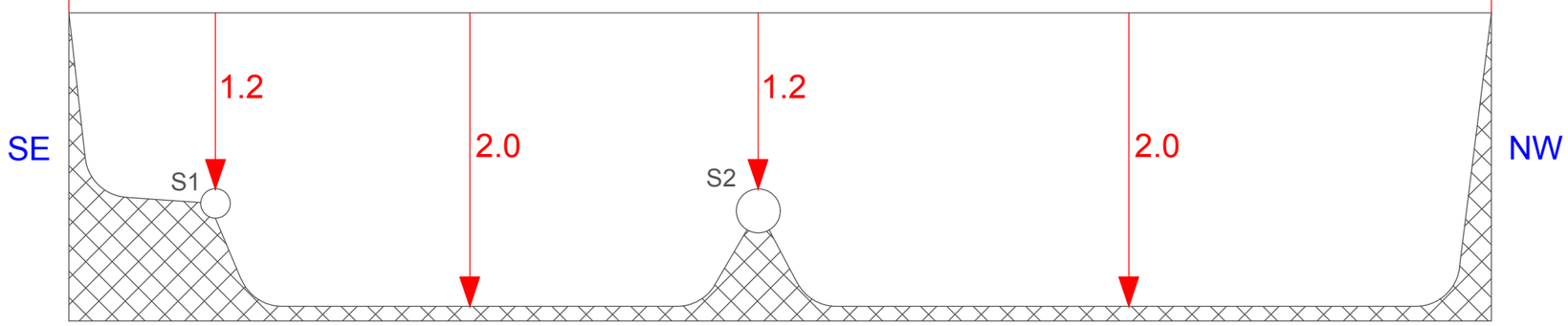
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DATE:	November 2018
CLIENT:	DAA
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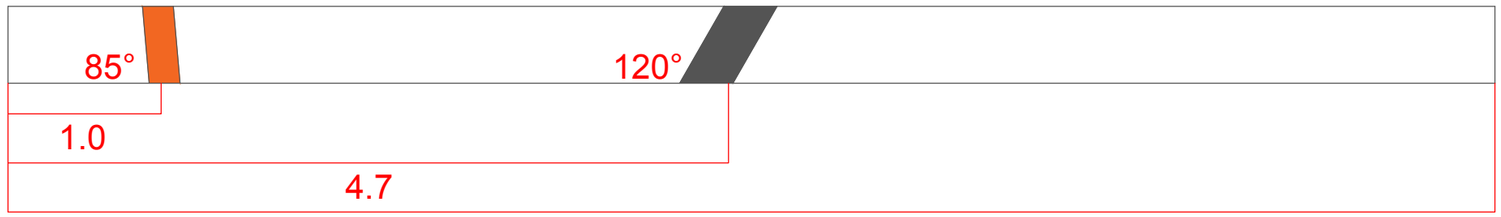
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 03

A
Easting: 316155.215
Northing: 243430.052
Elevation: 64.614

B
Easting: 316152.302
Northing: 243438.729
Elevation: 64.554





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.60	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.

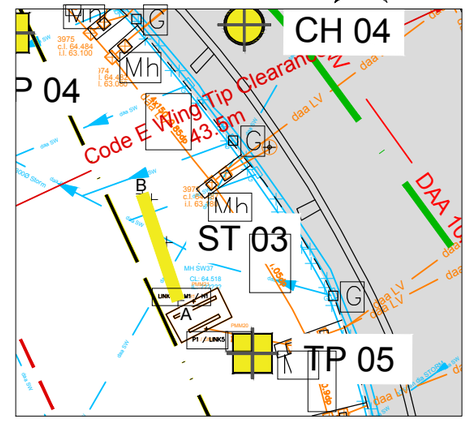
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1	0.200	Orange - Plastic	Drainage	85
2	0.300	Black - Plastic	Drainage	120

Groundwater	Y/N	Depth
	Y	2.0

Sample Depth	Sample Type

Surface from/to		Surface Type
0.00	9.70	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 20/11/18

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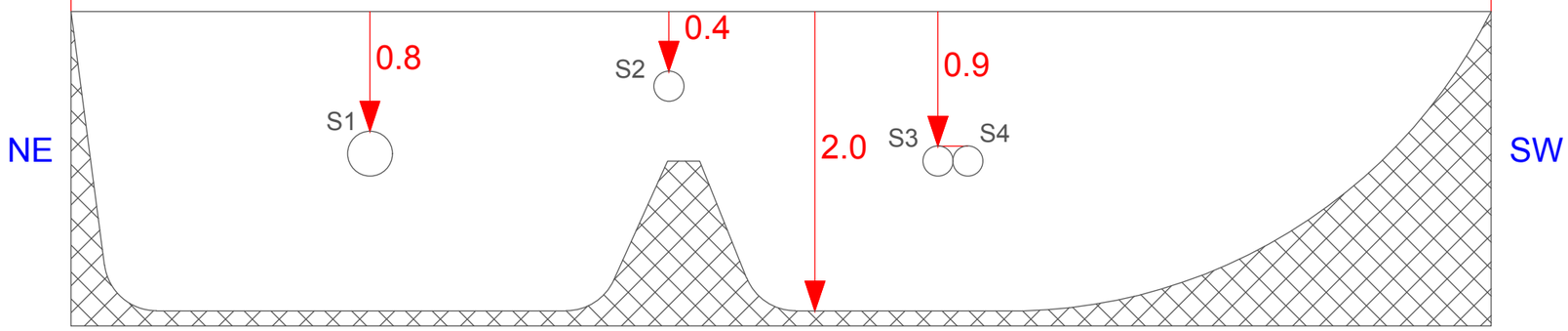
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DRAWING No.:	ST 03
DATE:	November 2018
CLIENT:	DAA
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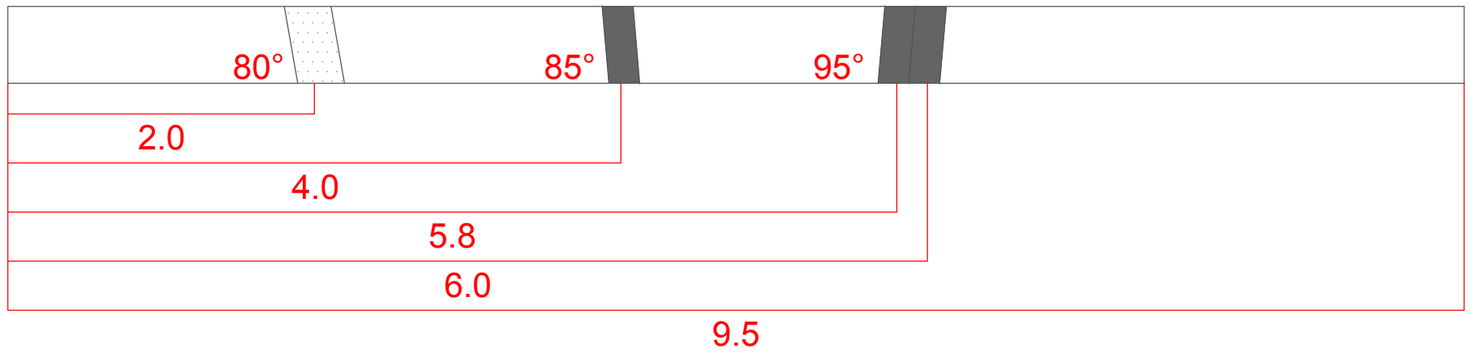
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 05

A
Easting: 316336.452
Northing: 243283.63
Elevation: 64.81

B
Easting: 316327.419
Northing: 243280.743
Elevation: 64.766





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	2.00	Brown grey sandy gravelly CLAY with occasional sub angular Cobbles

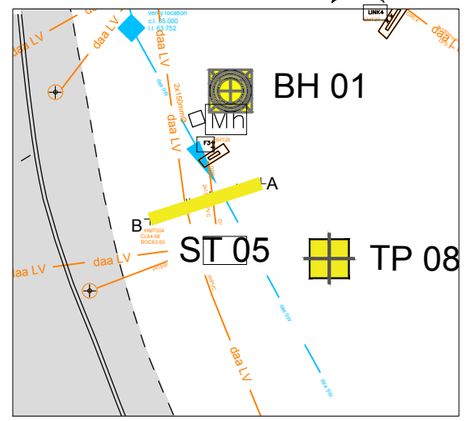
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1	0.300	Grey - Concrete	Electic	80
2	0.200	Black - Plastic	Electic	85
3, 4	0.200	Black - Plastic	Electic	95

Groundwater	Y/N	Depth
	Y	1.4

Surface from/to		Surface Type
0.00	9.50	Grass

Sample Depth	Sample Type

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 16/11/18

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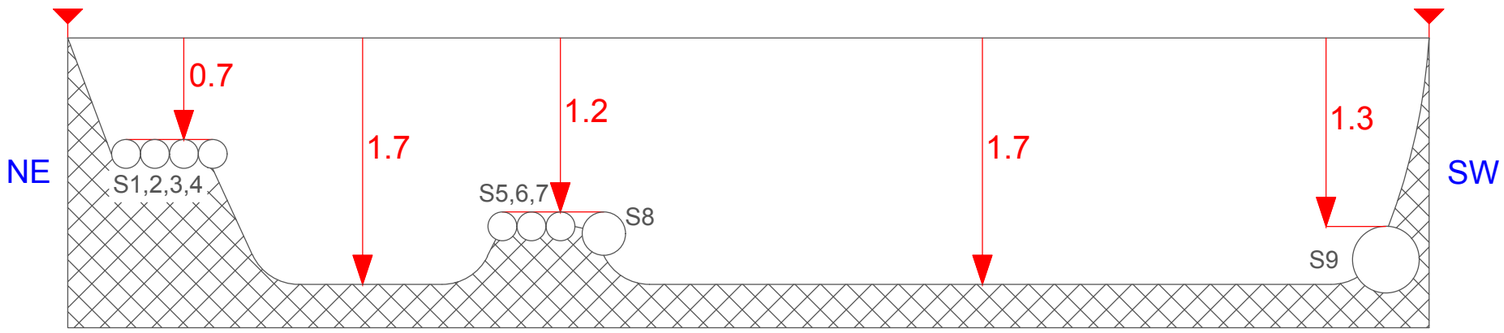
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DRAWING No.:	ST 05
DATE:	November 2018
CLIENT:	DAA
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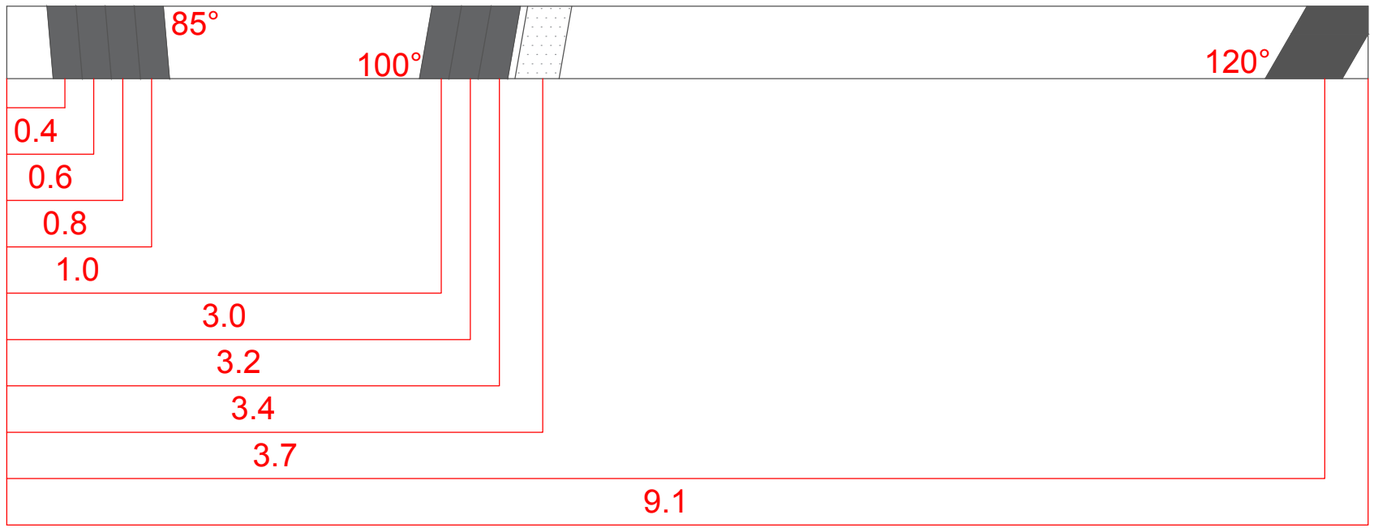
Version:	Date:	Drawn By:	Checked By:
Draft1	04/12/2018	G.S.	S.K.

ST 06

A
Easting: 316281.099
Northing: 243258.853
Elevation: 64.191

B
Easting: 316274.658
Northing: 243252.001
Elevation: 64.105





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.70	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.

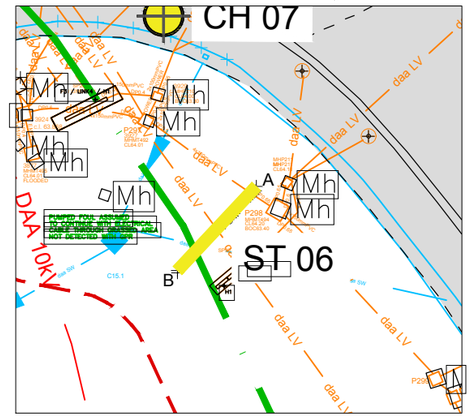
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1,2,3,4	0.200	Black - Plastic	Electic	85
5,6,7	0.200	Black - Plastic	Electic	100
8	0.300	Grey - Concrete	Water	100
9		Unknown	Comms	120

Groundwater	Y/N	Depth
	N	

Sample Depth	Sample Type

Surface from/to		Surface Type
0.00	9.40	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 25/11/18

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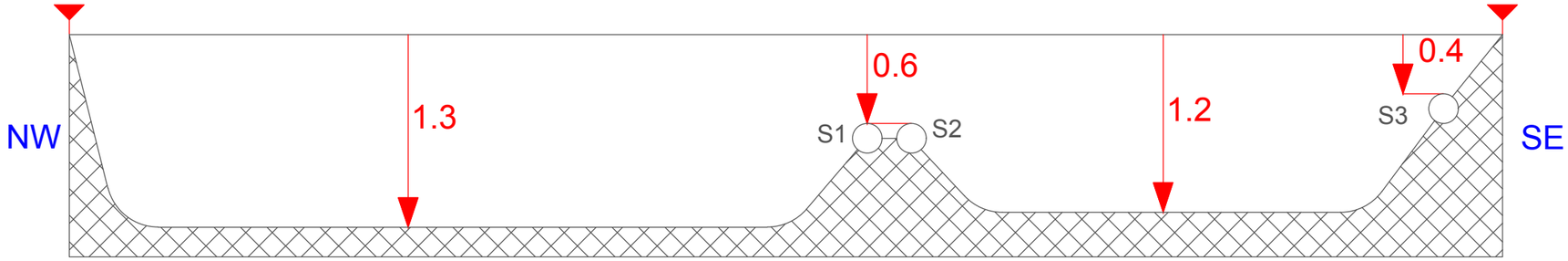
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DRAWING No.:	ST 06
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0236 @ A3

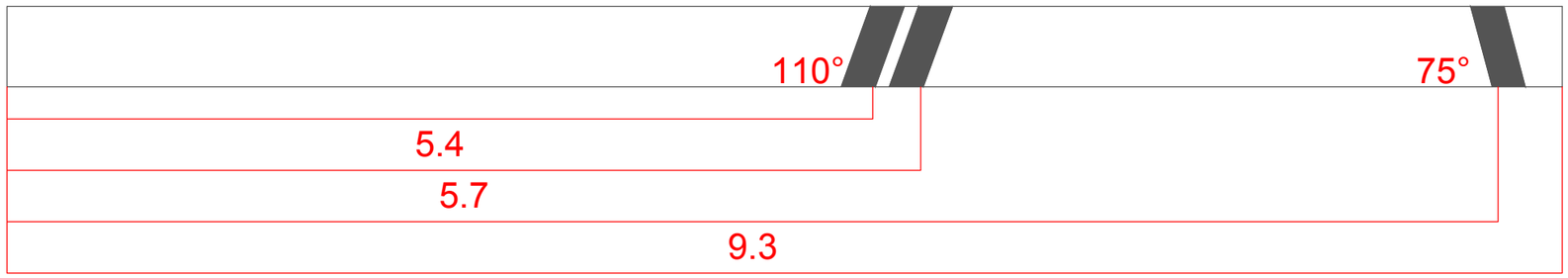
Version:	Date:	Drawn By:	Checked By:
Draft1	04/12/2018	G.S.	S.K.

ST 07

A
Easting: 316245.01
Northing: 243261.628
Elevation: 63.597

B
Easting: 316253.552
Northing: 243258.283
Elevation: 63.735





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.50	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.

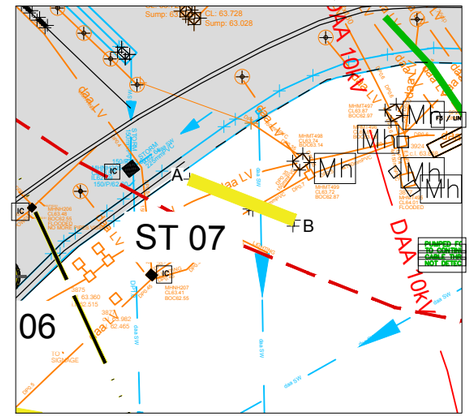
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1,2	0.200	Black - Plastic	Electric	110
3	0.200	Black - Plastic	Water	75

Groundwater	Y/N	Depth
	Y	1.5

Sample Depth	Sample Type

Surface from/to		Surface Type
0.00	9.70	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 22/11/18

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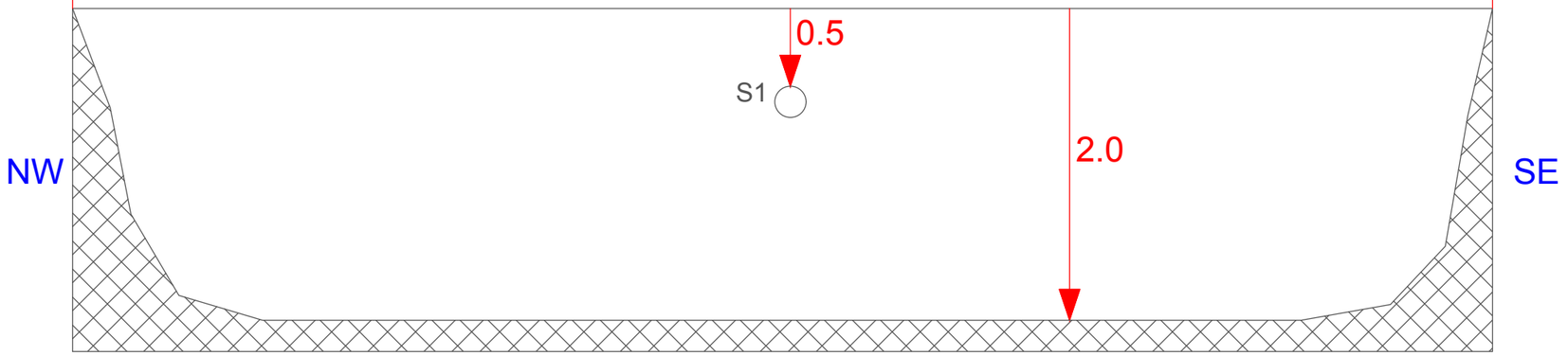
PROJECT:	Airfield Survey
DRAWING No.:	ST 07
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0264 @ A3

Version:	Date:	Drawn By:	Checked By:
Draft1	04/12/2018	G.S.	S.K.

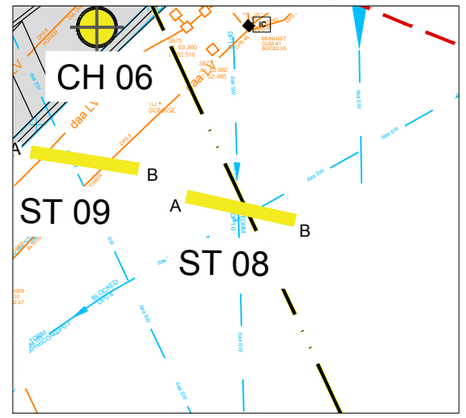
ST 08

A
Easting: 316236.861
Northing: 243239.92
Elevation: 63.4485

B
Easting: 316245.6959
Northing: 243237.96
Elevation: 63.4658



LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

From (m)	To (m)	Description
0.00	0.90	MADE GROUND: Brown sandy gravelly Clay with occasional sub rounded cobbles with fragments of red brick
0.90	2.00	Firm grey sandy gravelly silty CLAY with occasional sub angular to sub rounded cobbles. Gravel fine to coarse sub angular to sub rounded

Service No	ø (mm)	Colour- Material	Utility	Angle to trench
1	200	Grey - Concrete	Water	160

Groundwater	Y/N	Depth
	Y	0.60m

Sample Depth	Sample Type
1.00	Bulk
2.00	Bulk

Surface from/to		Surface Type
0.00	9.10	Grass

DATE OF EXCAVATION : 08/08/18

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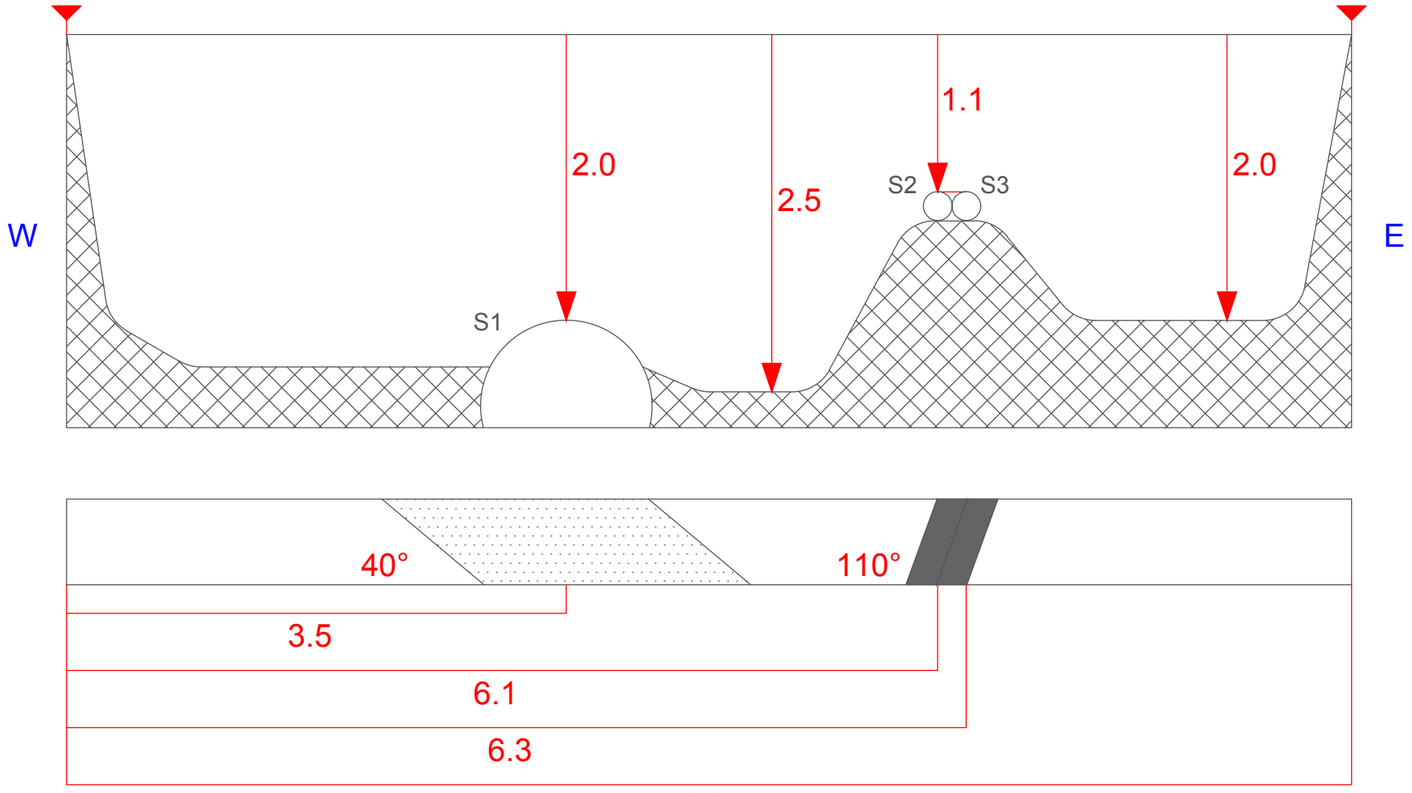
PROJECT:	Airfield Survey
DRAWING No.:	ST 08
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0268 @ A3

Version:	Date:	Drawn By:	Checked By:
Draft1	22/08/2018	G.S.	S.K.

ST 09

A
Easting: 316224.17
Northing: 243243.55
Elevation: 63.3847

B
Easting: 316232.9
Northing: 243242.15
Elevation: 63.4818



From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.20	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.
1.20	2.50	Brown grey sandy gravelly CLAY with occasional sub angular Cobbles

Service No	ø (m)	Colour- Material	Utility	Angle to trench	Coordinates	Elevation
1	1.200	Grey - Concrete	Water	40		
2,3	0.200	Black - Plastic	Electric	110		

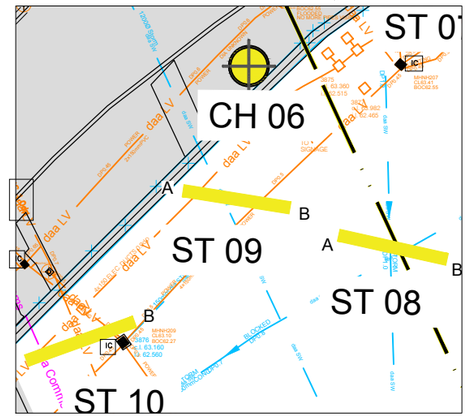
Groundwater	Y/N	Depth
	N	

Sample Depth	Sample Type
1.00	B
2.00	B

Surface from/to		Surface Type
0.00	9.00	Grass

LOCATION MAP: 500:1

N



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 23/08/18

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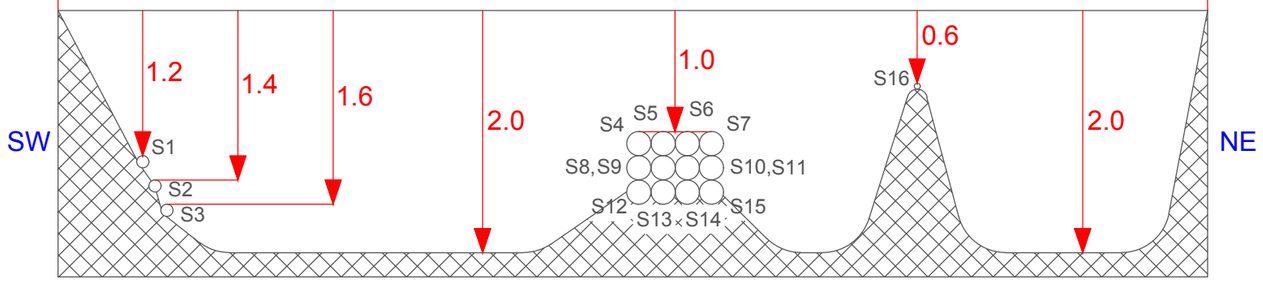
PROJECT:	Airfield Survey
DRAWING No.:	ST 09
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0264 @ A3

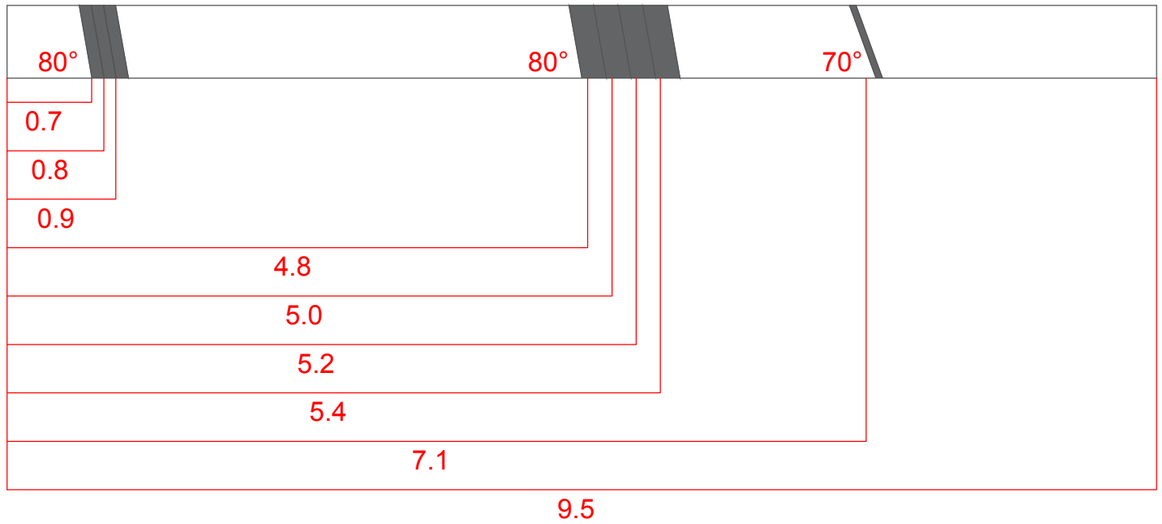
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 10

A
Easting: 316211.4
Northing: 243229.71
Elevation: 63.2125

B
Easting: 316220.22
Northing: 243232.88
Elevation: 63.2726





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.70	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.
1.70	2.00	Brown grey sandy gravelly CLAY with occasional sub angular Cobbles

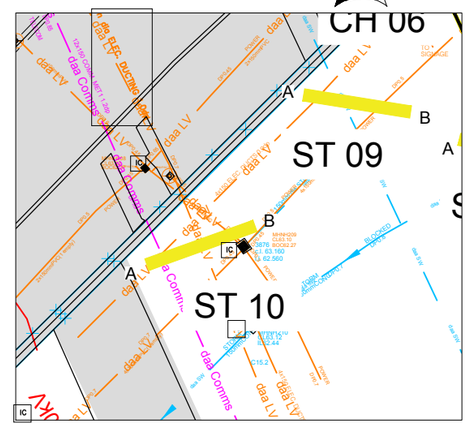
Service No	ø (m)	Colour- Material	Utility	Angle to trench	Coordinates	Elevation
1,2,3	0.100	Black - Plastic	Electric	80		
4,5,6,7,8,9, 10,11,12,13, 14,15	0.200	Black - Plastic	Electric	80		
16	0.050	Black - Plastic	Electric	70		

Groundwater	Y/N	Depth
	N	

Sample Depth	Sample Type
1.00	B
2.00	B

Surface from/to		Surface Type
0.00	9.50	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 24/08/18

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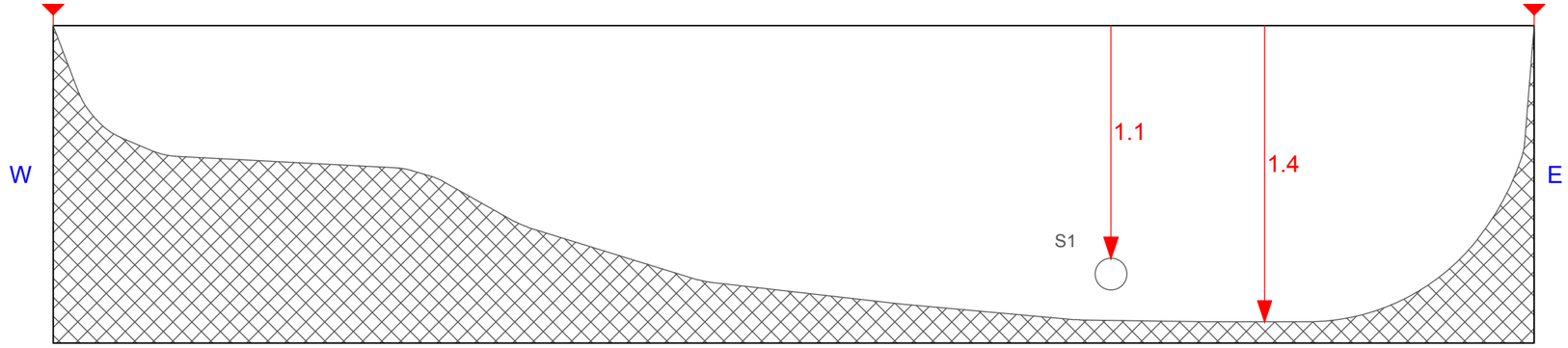
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DRAWING No.:	ST 10
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0197 @ A3

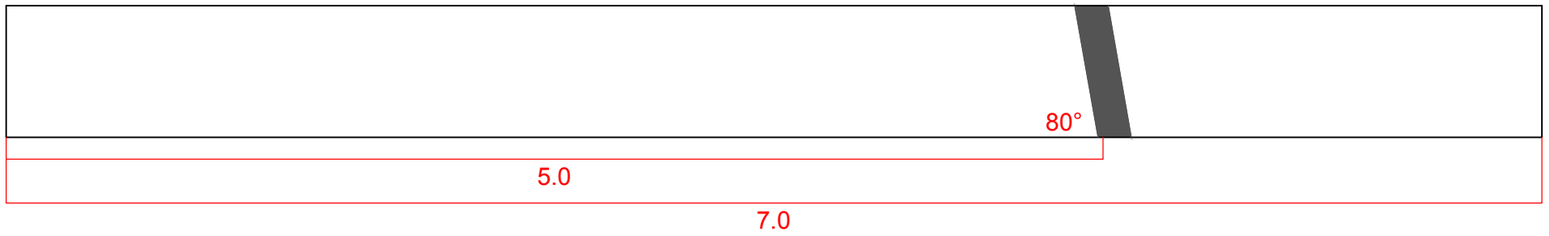
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

A
Easting: 316258.7323
Northing: 243203.43
Elevation: 63.6391

ST 11

B
Easting: 316265.1481
Northing: 243206.13
Elevation: 63.7622





From (m)	To (m)	Description
0.00	0.30	TOPSOIL
0.90	2.00	MADE GROUND: Brown sandy gravelly Clay with occasional sub rounded cobbles with fragments of red brick
0.90	2.00	Soft grey sandy gravelly CLAY with occasional sub angular to sub rounded cobbles. Gravel fine to coarse sub angular to sub rounded

Service No	ø (mm)	Colour- Material	Utility	Angle to trench
1	150	Black - Plastic	Electric	80

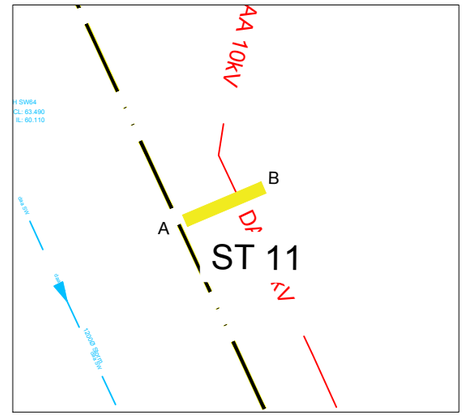
Groundwater	Y/N	Depth
	Y	1.2

Sample Depth	Sample Type
1.00	Bulk
2.00	Bulk

Surface from/to		Surface Type
0.00	7.00	Grass

LOCATION MAP: 500:1

N



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 09/08/18

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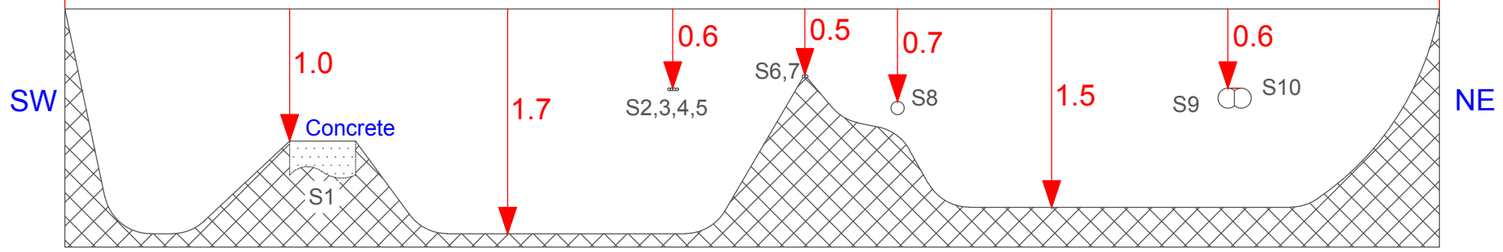
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DRAWING No.:	ST 11
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0358 @ A3

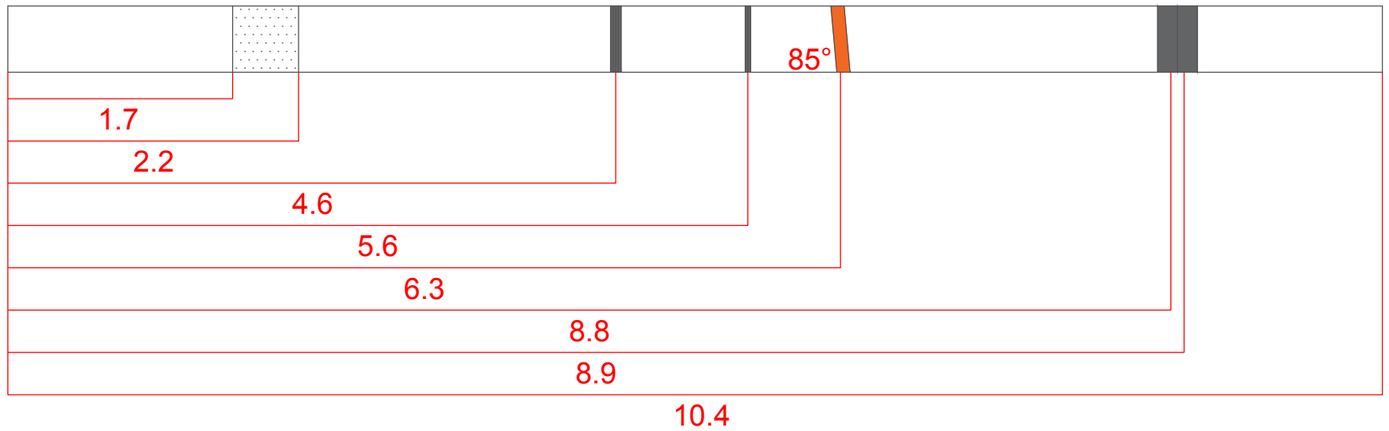
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 12

A
Easting: 316210.322
Northing: 243024.058
Elevation: 62.798

B
Easting: 316219.616
Northing: 243028.677
Elevation: 62.703





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.70	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.

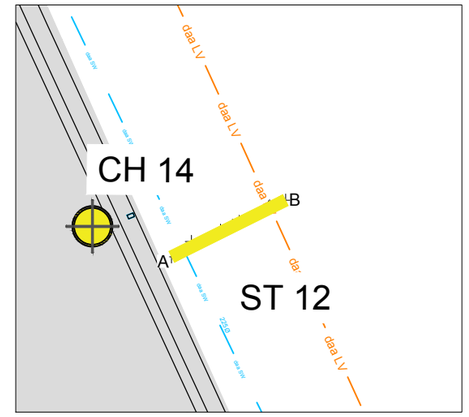
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1		Grey - Concrete	Water	
2,3,4,5,6, 7	0.020	Black - Plastic	Electic	90
8	0.100	Orange - Plastic	Drainage	85
9,10	0.150	Black - Plastic	Electic	90

Groundwater	Y/N	Depth
	N	

Sample Depth	Sample Type

Surface from/to		Surface Type
0.00	10.40	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 01/11/18

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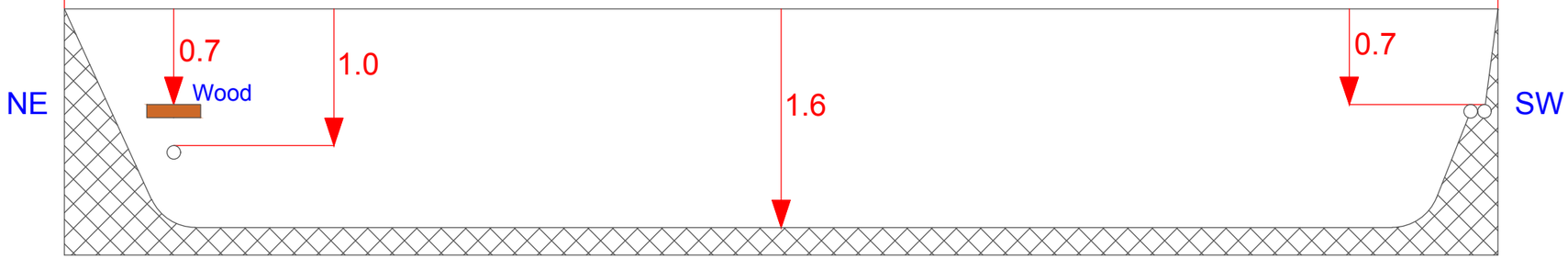
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DRAWING No.:	ST 12
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0216 @ A3

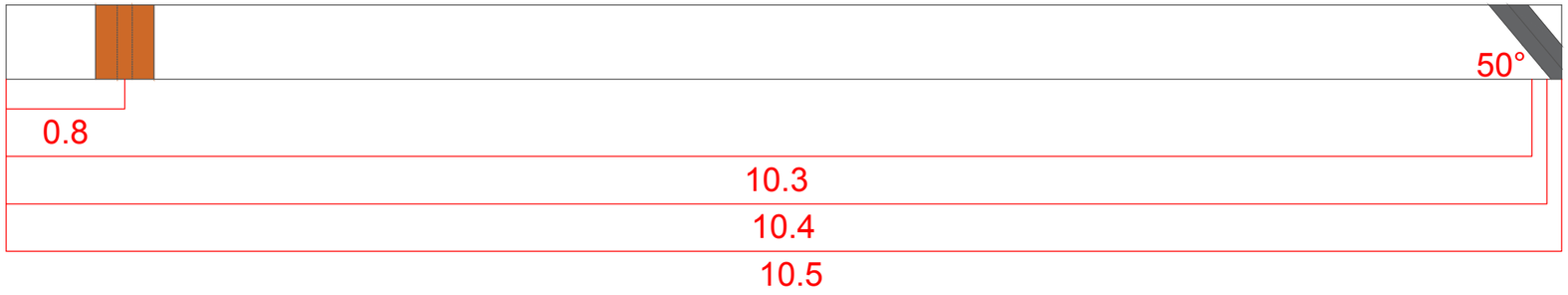
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 13

A
Easting: 316276.51
Northing: 243067.099
Elevation: 62.803

B
Easting: 316267.199
Northing: 243062.374
Elevation: 62.816





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.60	Made Ground: Brown sandy gravelly Clay with rare cobbles

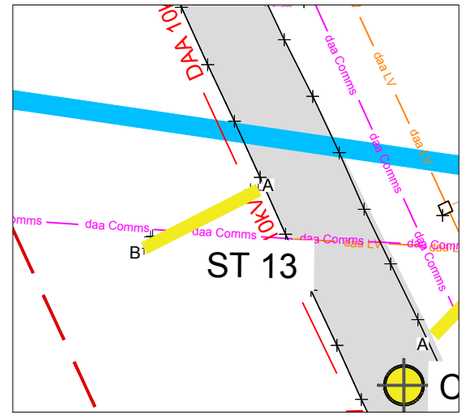
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1	0.100	Black - Plastic	Electic	90
2,3	0.100	Black - Plastic	Electic	50

Groundwater	Y/N	Depth
	N	

Sample Depth	Sample Type

Surface from/to		Surface Type
0.00	10.50	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 09/11/18

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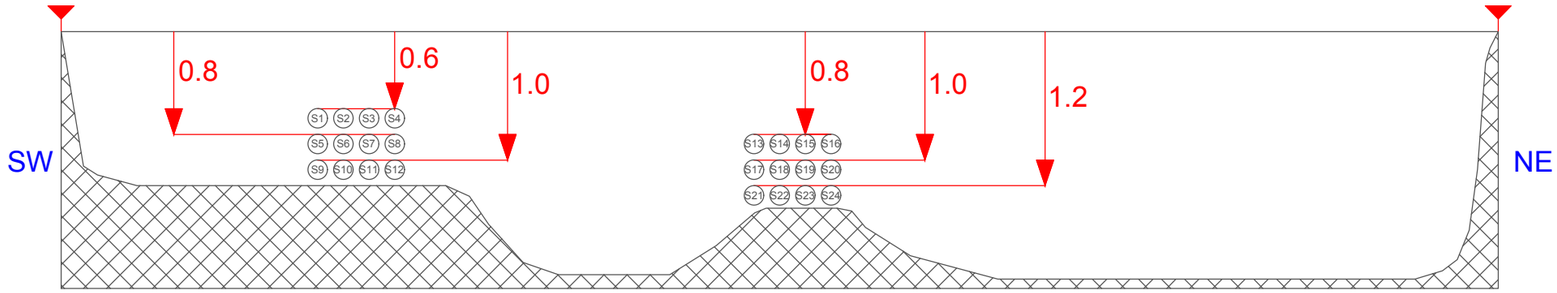
PROJECT:	Airfield Survey
DRAWING No.:	ST 13
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0242 @ A3

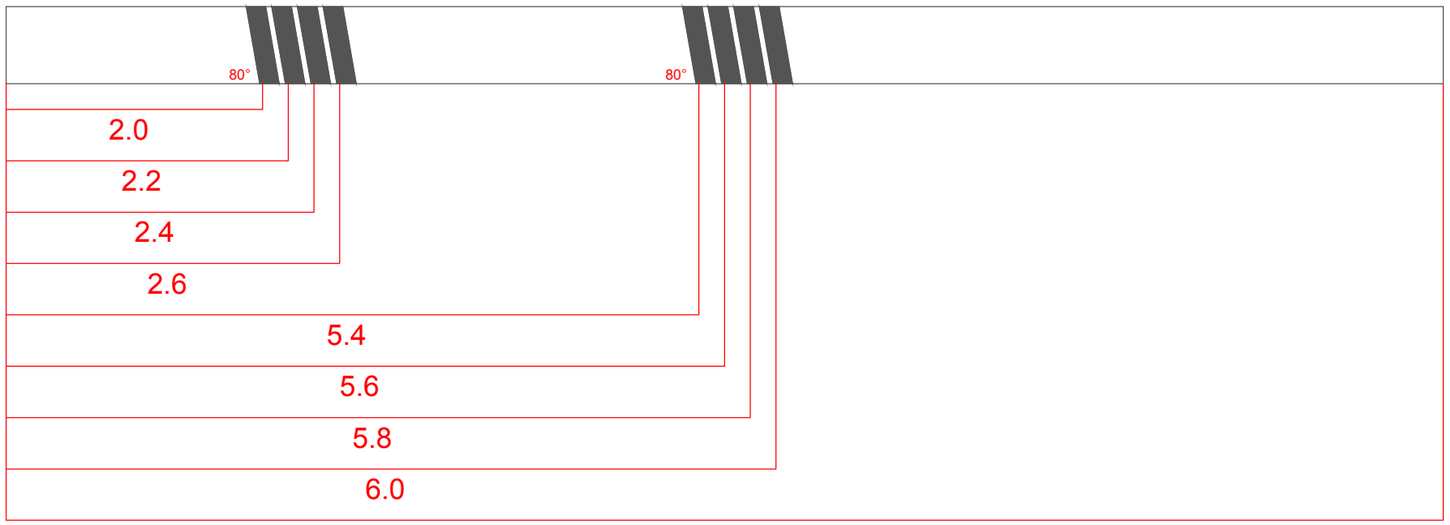
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 14

A
Easting: 316290.824
Northing: 243055.29
Elevation: 62.8646

B
Easting: 316300.376
Northing: 243060.1632
Elevation: 62.9949





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.70	MADE GROUND: Brown sandy gravelly Clay with occasional sub rounded cobbles with fragments of red brick
1.70	2.00	Firm grey brown sandy gravelly CLAY with occasional sub angular to sub rounded cobbles. Gravel fine to coarse sub angular to sub rounded

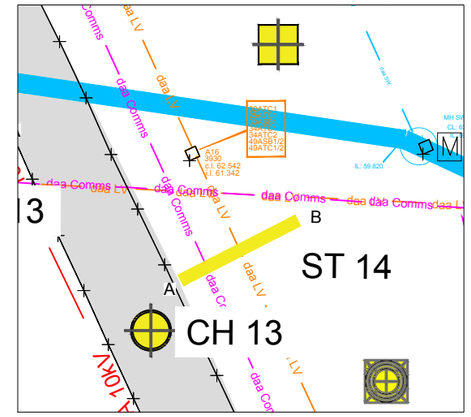
Service No	ø (mm)	Colour- Material	Utility	Angle to trench
1,2,3,4,5,6 7,8,9,10, 11,12	150	Black - Plastic	Electric	80
13,14,15,16, 17,18,19,20 21,22,23,24	150	Black - Plastic	Electric	80

Groundwater	Y/N	Depth
	Y	1.2

Surface from/to		Surface Type
0.00	7.00	Grass

Sample Depth	Sample Type
1.00	Bulk
2.00	Bulk

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 02/08/18

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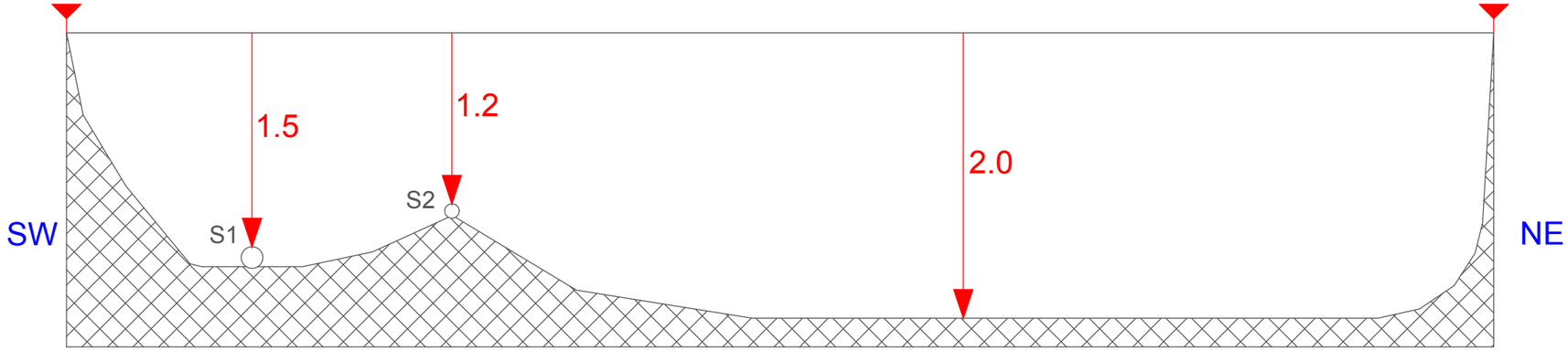
PROJECT:	Airfield Survey
DRAWING No.:	ST 14
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0209 @ A3

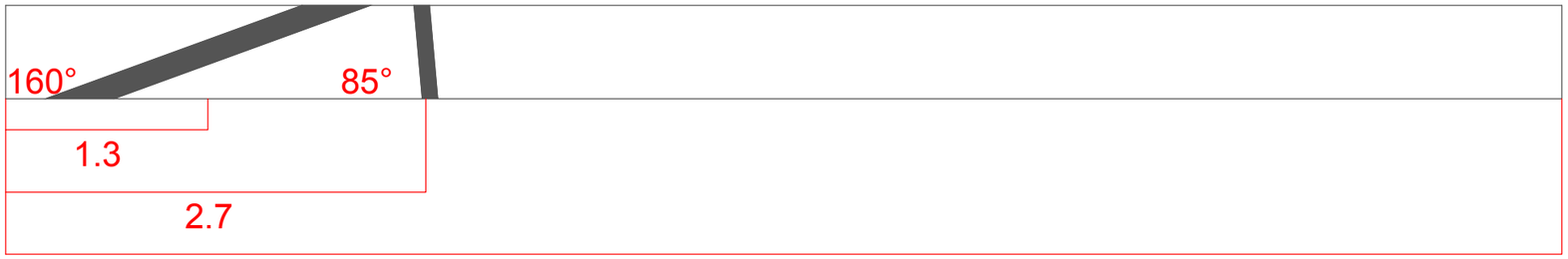
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 15

A
Easting: 316332.9406
Northing: 243052.07
Elevation: 63.1876

B
Easting: 316338.1678
Northing: 243061.67
Elevation: 63.5722





From (m)	To (m)	Description
0.00	0.30	TOPSOIL
0.90	2.00	MADE GROUND: Brown sandy gravelly Clay with occasional sub rounded cobbles with fragments of red brick and concrete
0.90	2.00	Soft brown sandy gravelly CLAY with occasional sub angular to sub rounded cobbles. Gravel fine to coarse sub angular to sub rounded

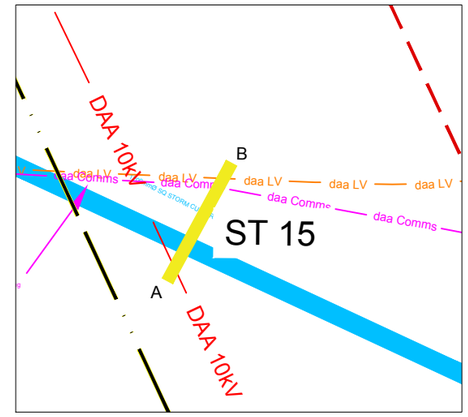
Service No	ø (mm)	Colour- Material	Utility	Angle to trench
1	150	Black - Plastic	Electric	110
2	100	Black - Plastic	Electric	85

Groundwater	Y/N	Depth
	N	

Sample Depth	Sample Type
1.00	Bulk

Surface from/to		Surface Type
0.00	10.00	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 10/08/18

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Web: www.gii.ie

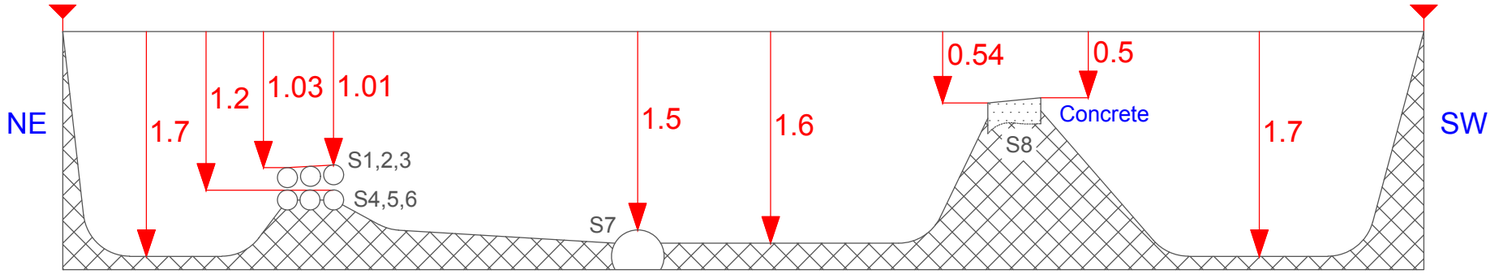
PROJECT:	Airfield Survey
DRAWING No.:	ST 15
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0254 @ A3

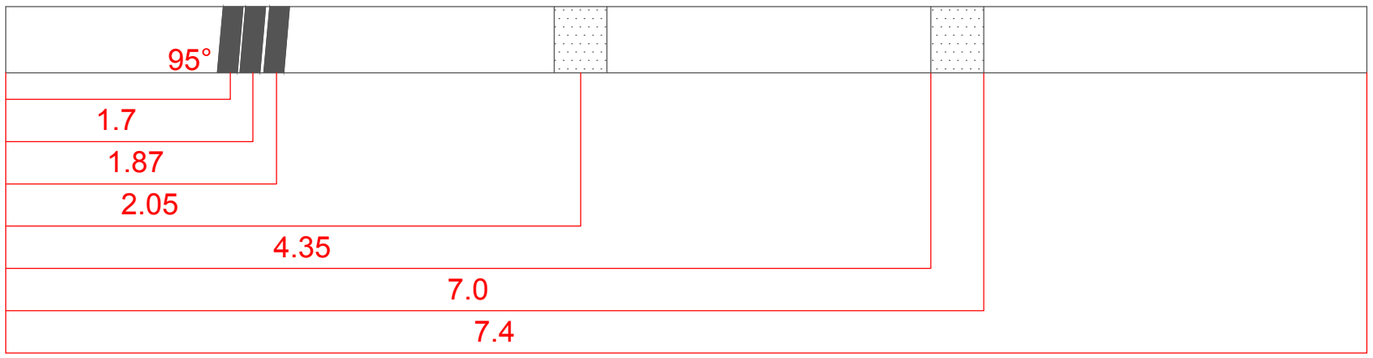
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 16A

A
Easting: 316384.563
Northing: 243058.63
Elevation: 63.756

B
Easting: 316374.743
Northing: 243054.773
Elevation: 63.756





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.50	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.
1.50	1.70	Brown grey sandy gravelly CLAY with occasional sub angular Cobbles

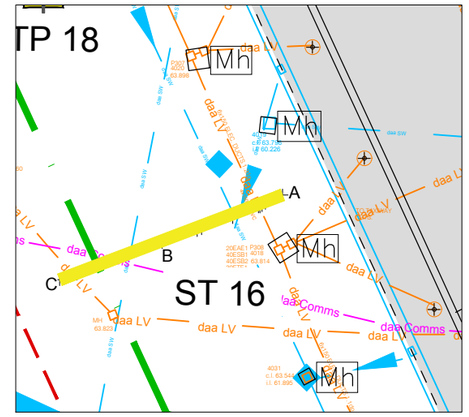
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1,2,3,4,5, 6	0.150	Black - Plastic	Electic	95
7	0.400	Grey - Concrete	Water	90
8	0.400	Grey - Concrete	Water	90
9	0.200	Black - Plastic	Electic	80

Groundwater	Y/N	Depth
	N	

Sample Depth	Sample Type
0.2 - 1.00	b

Surface from/to		Surface Type
0.00	19.60	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 24/10/18

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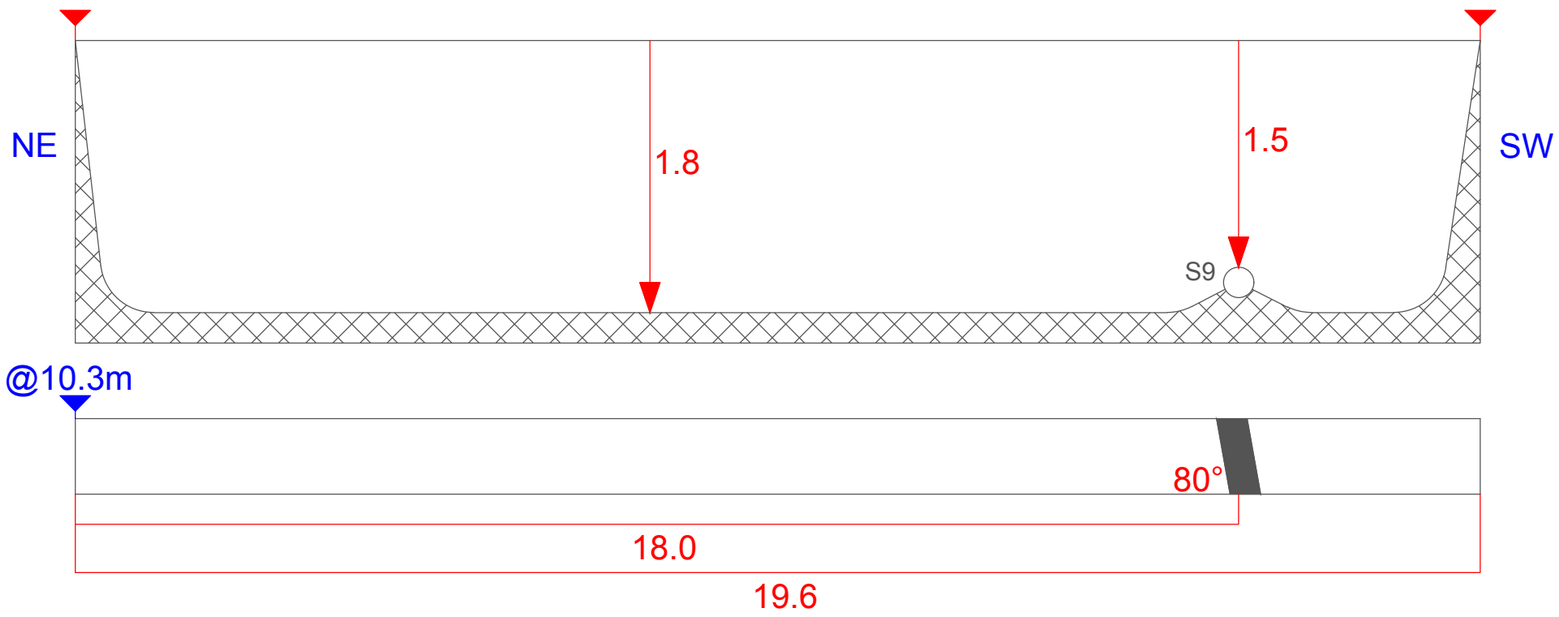
PROJECT:	Airfield Survey
DRAWING No.:	ST 16A
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0215 @ A3

Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 16B

B
Easting: 316374.743
Northing: 243054.773
Elevation: 63.756

C
Easting: 316366.395
Northing: 243051.748
Elevation: 63.819



From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.50	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.
1.50	1.70	Brown grey sandy gravelly CLAY with occasional sub angular Cobbles

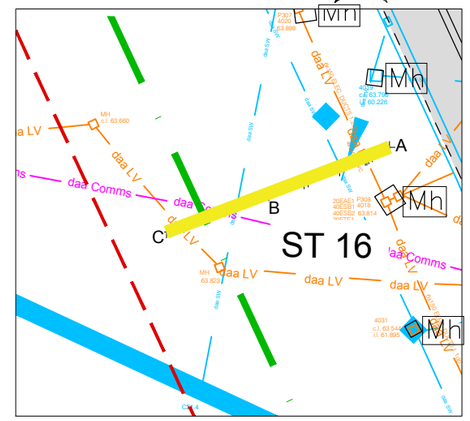
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1,2,3,4,5, 6	0.150	Black - Plastic	Electic	95
7	0.400	Grey - Concrete	Water	90
8	0.400	Grey - Concrete	Water	90
9	0.200	Black - Plastic	Electic	80

Groundwater	Y/N	Depth
	N	

Sample Depth	Sample Type
0.2 - 1.00	b

Surface from/to		Surface Type
0.00	19.60	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 02/11/18

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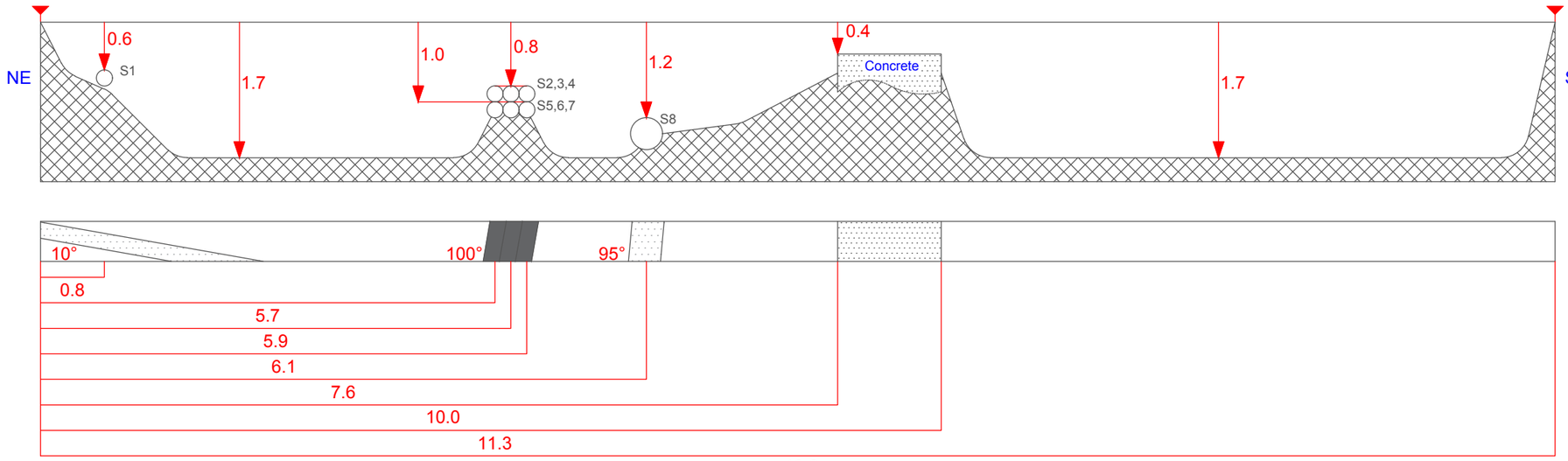
PROJECT:	Airfield Survey
DRAWING No.:	ST 16B
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0246 @ A3

Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 17

A
Easting: 316352.224
Northing: 243135.884
Elevation: 64.105

B
Easting: 316335.699
Northing: 243124.802
Elevation: 64.283



From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.70	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.

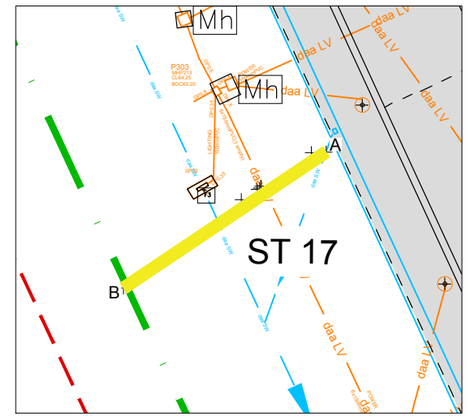
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1	0.200	Grey - Concrete	Water	10
2,3,4,5,6, 7	0.200	Black - Plastic	Electic	100
8	0.400	Grey - Concrete	Water	95

Surface from/to		Surface Type
0.00	19.00	Grass

Groundwater	Y/N	Depth
	N	

Sample Depth	Sample Type

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 24/10/18

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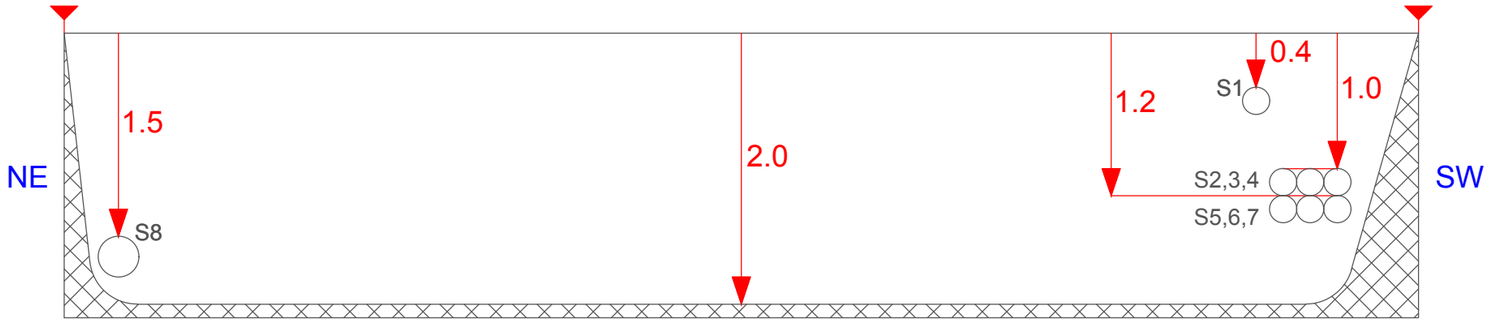
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DRAWING No.:	ST 17
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0149 @ A3

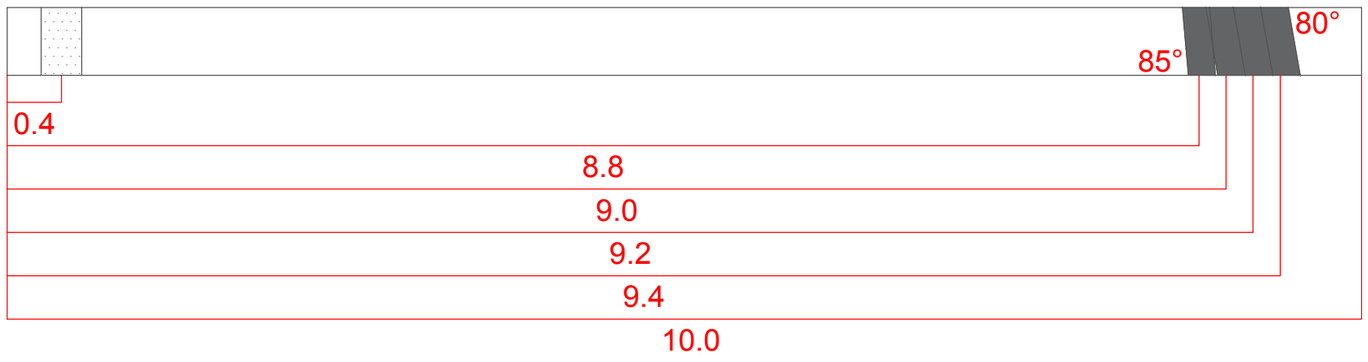
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 18

A
Easting: 316398.778
Northing: 243167.358
Elevation: 64.533

B
Easting: 316388.949
Northing: 243162.336
Elevation: 64.53





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.70	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.
1.60	2.00	Grey sandy gravelly CLAY with occasional sub angular Cobbles

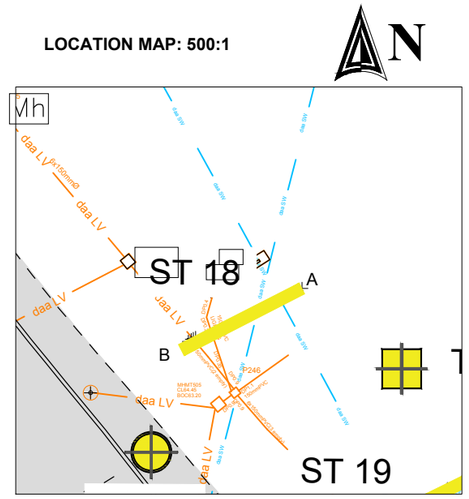
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1	0.200	Black - Plastic	Storm	85
2,3,4	0.200	Black - Plastic	Electic	80
5,6,7	0.200	Black - Plastic	Electic	80
8	0.300	Grey - Concrete	Water	90

Groundwater	Y/N	Depth
	N	

Sample Depth	Sample Type

Surface from/to		Surface Type
0.00	10.00	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Core Hole
- Trial Pit
- Manhole w/ Unknown Service
- Borehole
- Manhole w/ Comms
- Observation Pit
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 17/10/18

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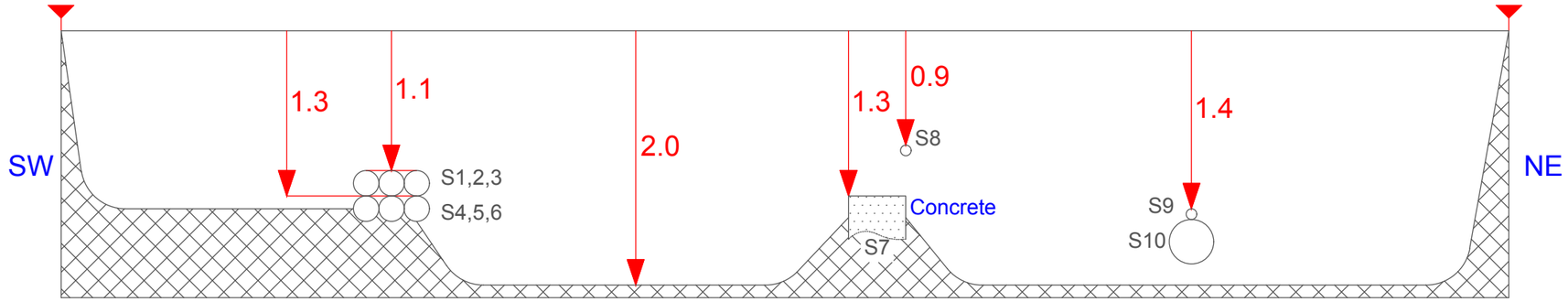
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DRAWING No.:	ST 18
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.022 @ A3

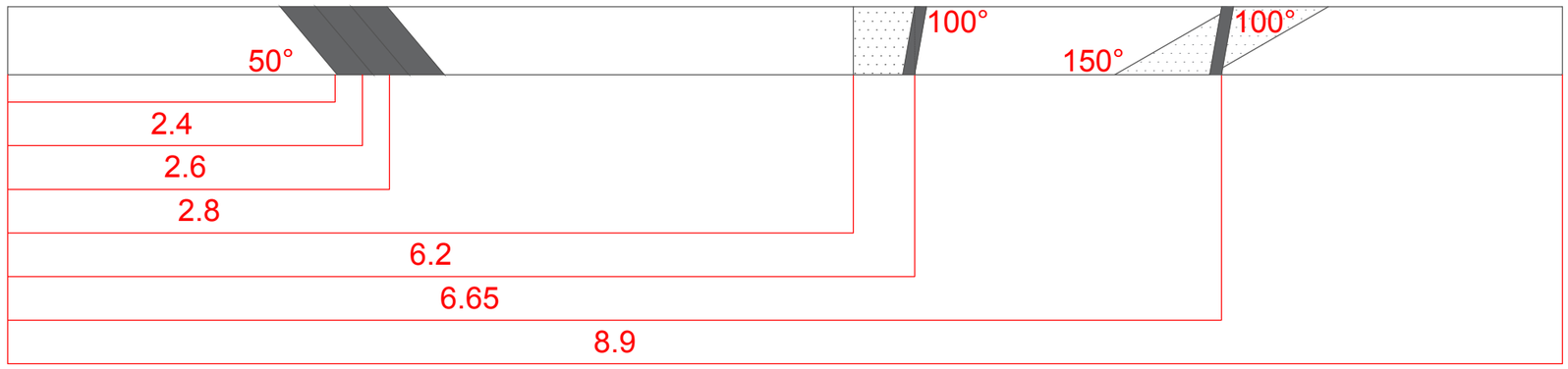
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 19

A
Easting: 316402.348
Northing: 243146.826
Elevation: 64.565

B
Easting: 316412.451
Northing: 243151.833
Elevation: 64.682





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.50	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.
1.50	2.00	Grey brown sandy gravelly CLAY with occasional sub angular Cobbles

Service No	ø (m)	Colour- Material	Utility	Angle to trench
1,2,3,4,5, 6	0.200	Black - Plastic	Electic	50
7	0.450	Grey - Concrete	Water	90
8,9		Black - Plastic	Electic	100
10	0.350	Grey - Concrete	Water	150

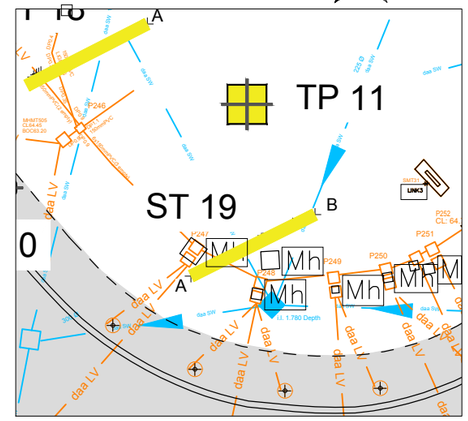
Groundwater	Y/N	Depth
	Y	1.8

Surface from/to		Surface Type
0.00	11.40	Grass

Sample Depth	Sample Type
0.1 -1.0	B
1.50	B

LOCATION MAP: 500:1

N



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 17/10/18

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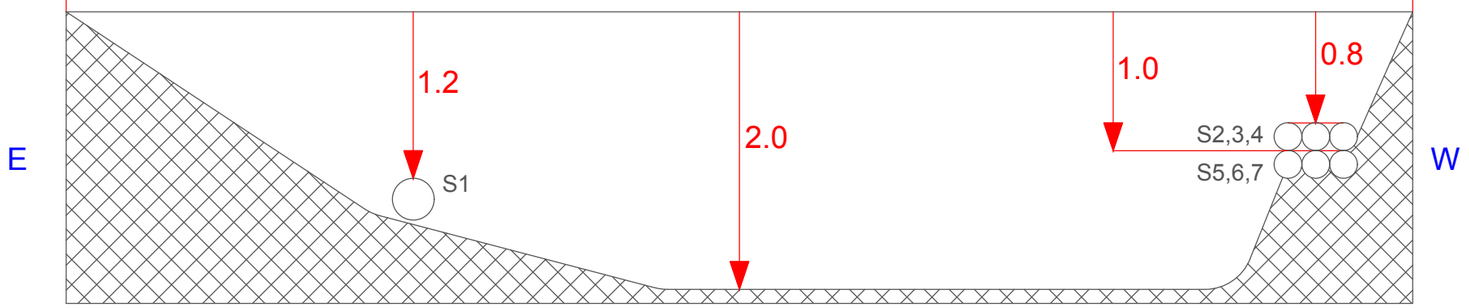
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DRAWING No.:	ST 19
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0226 @ A3

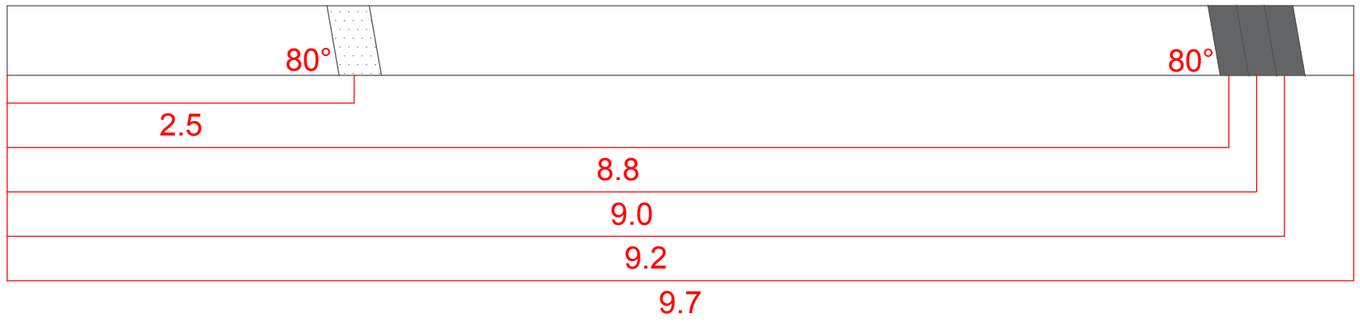
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 20

A
Easting: 316450.543
Northing: 243049.741
Elevation: 64.055

B
Easting: 316441.238
Northing: 243049.296
Elevation: 0





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.60	Made Ground: Brown slightly sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.
1.60	2.00	Brown grey sandy gravelly CLAY with occasional sub angular Cobbles

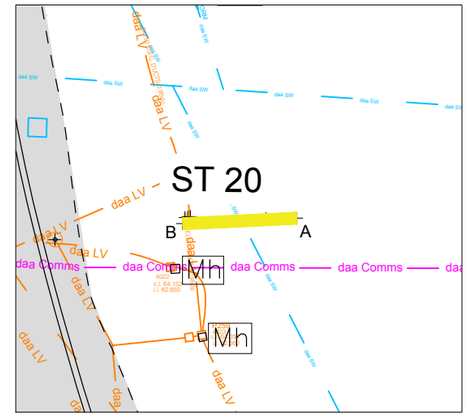
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1	0.300	Grey - Concrete	Water	80
2,3,4	0.200	Black - Plastic	Electic	80
5,6,7	0.200	Black - Plastic	Electic	80

Groundwater	Y/N	Depth
	N	

Sample Depth	Sample Type

Surface from/to		Surface Type
0.00	9.70	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 18/10/18

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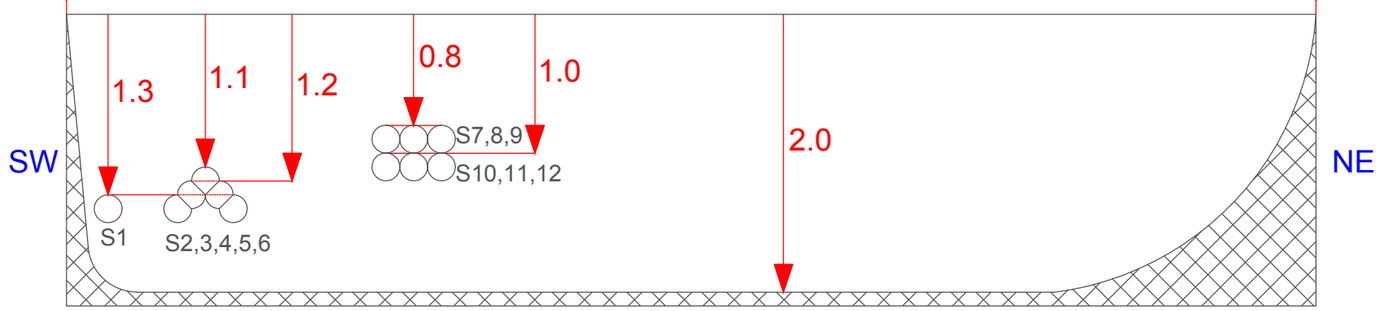
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DRAWING No.:	ST 20
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0226 @ A3

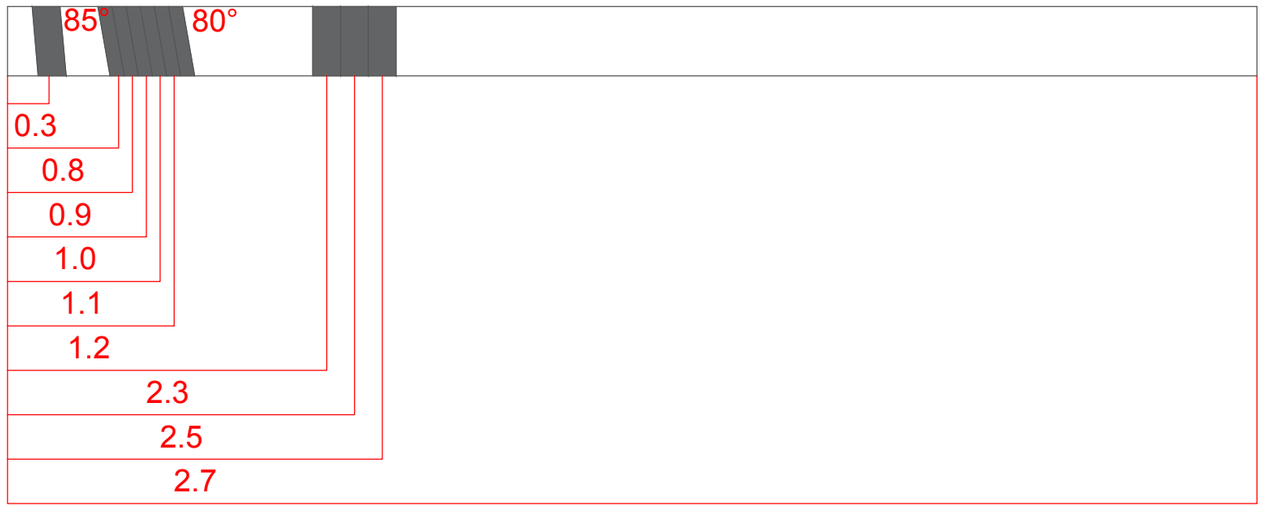
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 21

A
Easting: 316460.789
Northing: 242996.08
Elevation: 63.6

B
Easting: 316471.539
Northing: 243002.002
Elevation: 63.586





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.70	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.
1.60	2.00	Grey sandy gravelly CLAY with occasional sub angular Cobbles

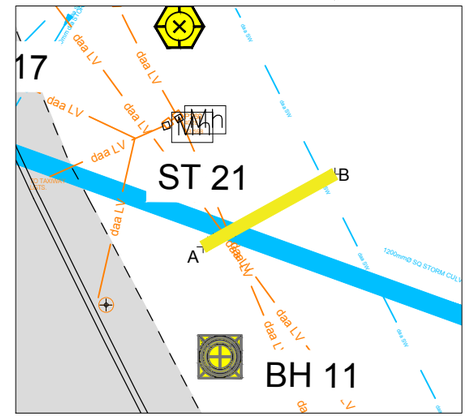
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1	0.200	Black - Plastic	Electic	85
2,3,4,5,6	0.200	Black - Plastic	Electic	80
7,8,9,10, 11, 12	0.200	Black - Plastic	Electic	90

Groundwater	Y/N	Depth
	N	

Surface from/to		Surface Type
0.00	9.00	Grass

Sample Depth	Sample Type

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 18/10/18

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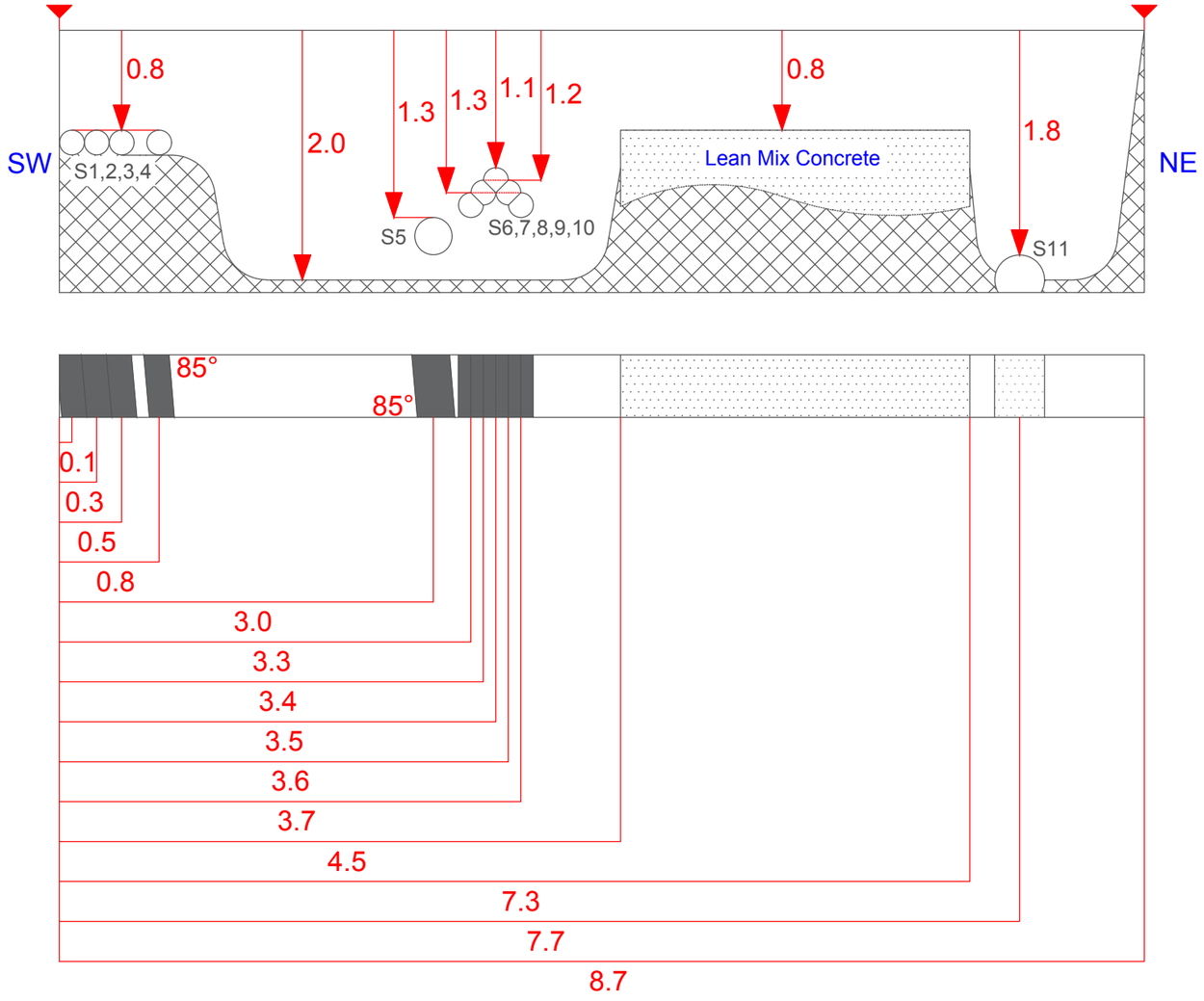
PROJECT:	Airfield Survey
DRAWING No.:	ST 21
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0226 @ A3

Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 22

A
Easting: 316483.725
Northing: 242959.299
Elevation: 63.356

B
Easting: 316491.548
Northing: 242962.923
Elevation: 63.36



From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.50	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.
1.50	2.00	Grey sandy gravelly CLAY with occasional sub angular Cobbles

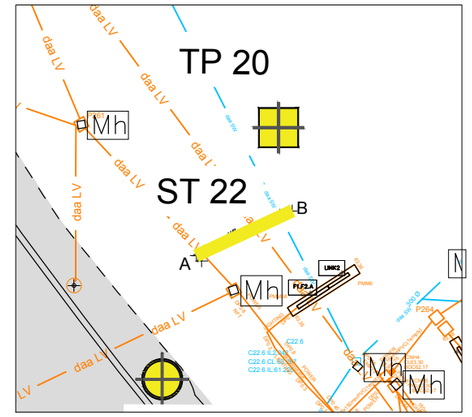
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1,2,3,4	0.200	Black - Plastic	Electic	85
5	0.300	Black - Plastic	Electic	85
6,7,8,9 ,10	0.200	Black - Plastic	Electic	90
11	0.400	Grey - Concrete	Water	90

Groundwater	Y/N	Depth
	N	

Sample Depth	Sample Type

Surface from/to		Surface Type
0.00	8.70	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 19/10/18

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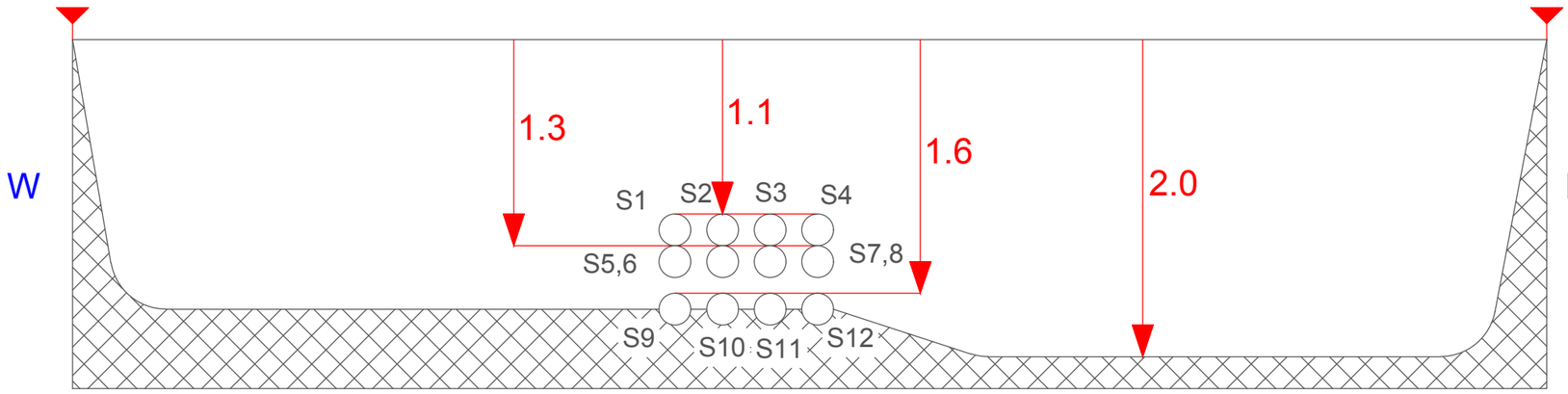
PROJECT:	Airfield Survey
DRAWING No.:	ST 22
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0211 @ A3

Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

A
Easting: 316430.1283
Northing: 242839.8064
Elevation: 61.8991

ST 25

B
Easting: 316439.423
Northing: 242839.1748
Elevation: 61.8587



From (m)	To (m)	Description
0.00	0.30	TOPSOIL
0.30	1.70	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick.
1.7	2.00	Brown sandy gravelly CLAY with occasional sub-angular cobbles

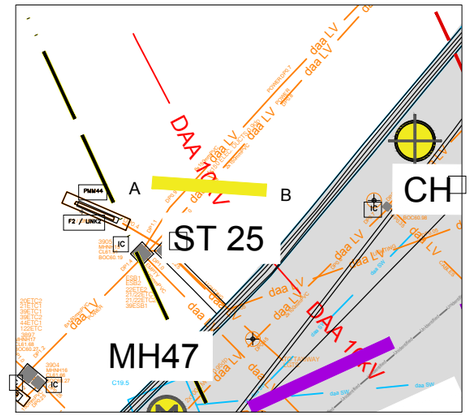
Service No	ø (m)	Colour- Material	Utility	Angle to trench	Coordinates	Elevation
1-12	0.200	Black - Plastic	Electric	120		

Sample Depth	Sample Type
1.00	B
2.00	B

Surface from/to		Surface Type
0.00	9.30	Grass

Groundwater	Y/N	Depth
	N	

LOCATION MAP: 500:1



Legend

- Slit Trench
- Core Hole
- Trial Pit
- Manhole w/ Unknown Service
- Borehole
- Manhole w/ Comms
- Observation Pit
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 16/08/18

Ground Investigations Ireland Ltd.
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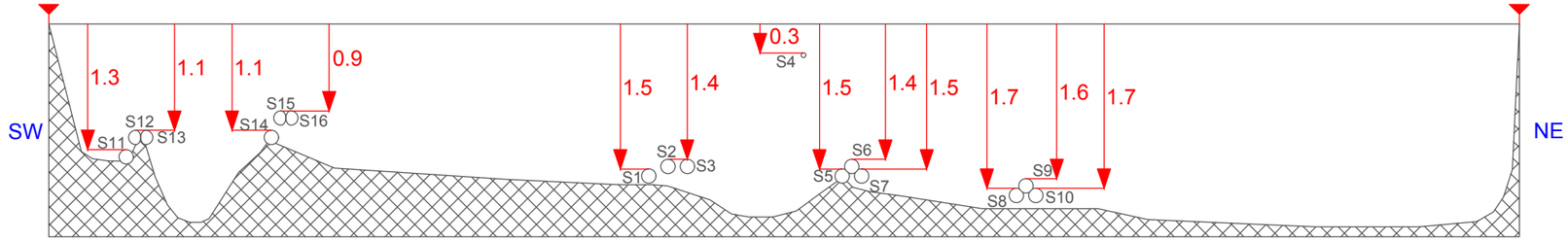
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DRAWING No.:	ST 25
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0268 @ A3

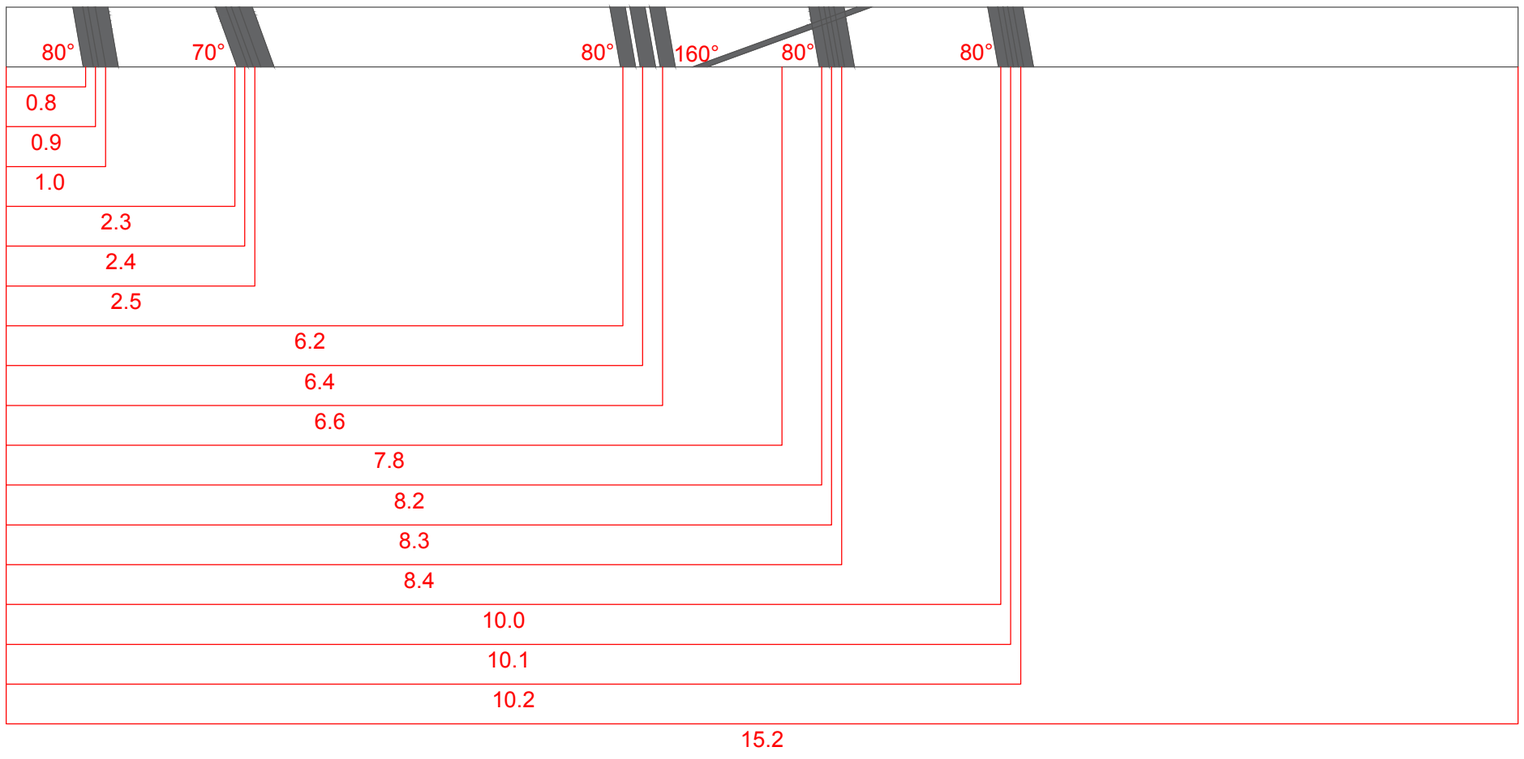
Version:	Date:	Drawn By:	Checked By:
Draft 1	07/01/2019	G.S.	S.K.

ST 26

A
Easting: 316410.4984
Northing: 242827.52
Elevation: 61.6602

B
Easting: 316410.4984
Northing: 242834.61
Elevation: 61.7594





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.70	MADE GROUND: Brown sandy gravelly Clay with occasional sub rounded cobbles with fragments of red brick
1.70	2.50	Firm grey brown sandy gravelly CLAY with occasional sub angular to sub rounded cobbles. Gravel fine to coarse sub angular to sub rounded

Service No	ø (mm)	Colour- Material	Utility	Angle to trench
1,2,3	150	Black - Plastic	Electric	80
4	150	Black - Plastic	Electric	160
5,6,7	150	Black - Plastic	Electric	80
8,9,10	150	Black - Plastic	Electric	80
11,12,13	150	Black - Plastic	Electric	80
14,15,16	150	Black - Plastic	Electric	70

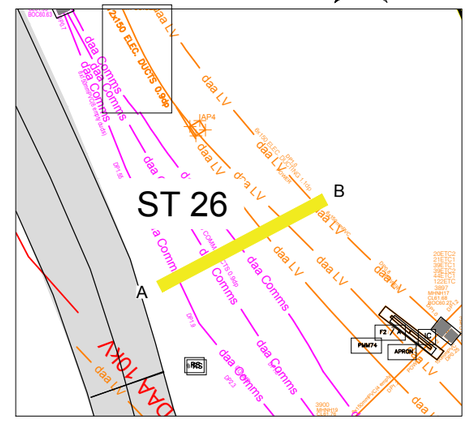
Groundwater	Y/N	Depth
	Y	1.2

Surface from/to		Surface Type
0.00	15.20	Grass

Sample Depth	Sample Type
1.00	Bulk
2.00	Bulk

LOCATION MAP: 500:1

N



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 03&07/08/18

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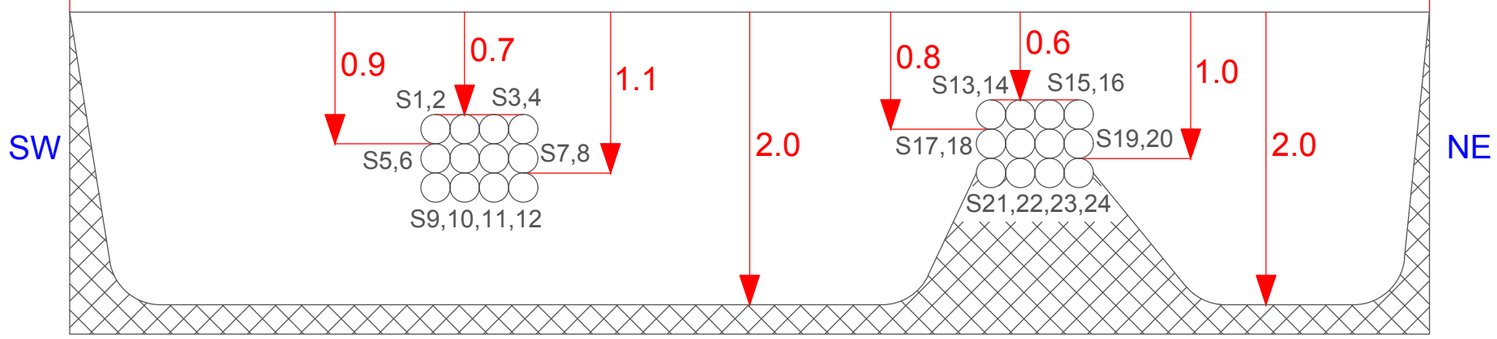
PROJECT:	Airfield Survey
DRAWING No.:	ST 26
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0162 @ A3

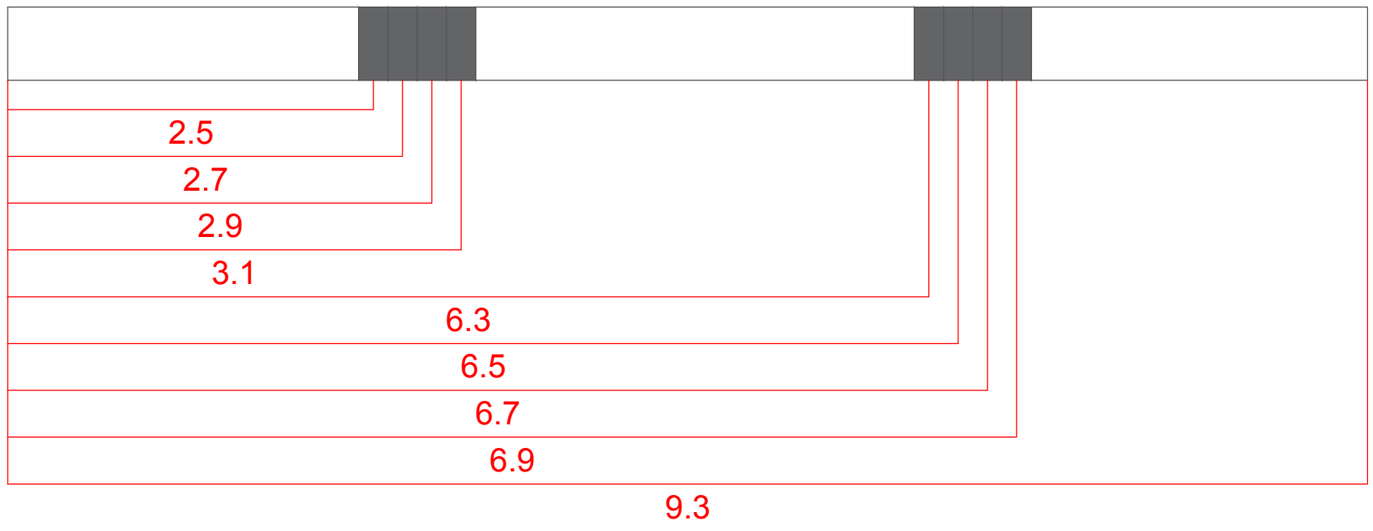
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 27

A
Easting: 316383.2562
Northing: 242855.9646
Elevation: 62.013

B
Easting: 316391.7372
Northing: 242859.6058
Elevation: 62.0251





From (m)	To (m)	Description
0.00	0.30	TOPSOIL
0.30	1.30	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick.
1.3	2.00	Brown sandy gravelly CLAY with occasional sub-angular cobbles

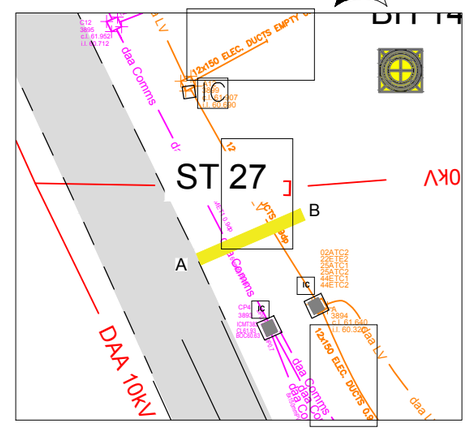
Service No	ø (m)	Colour- Material	Utility	Angle to trench	Coordinates	Elevation
1-12	0.200	Black - Plastic	Comms	90		
13-24	0.200	Black - Plastic	Comms	90		

Sample Depth	Sample Type
1.00	B
2.00	B

Surface from/to		Surface Type
0.00	9.30	Grass

Groundwater	Y/N	Depth
	N	

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 17/08/18

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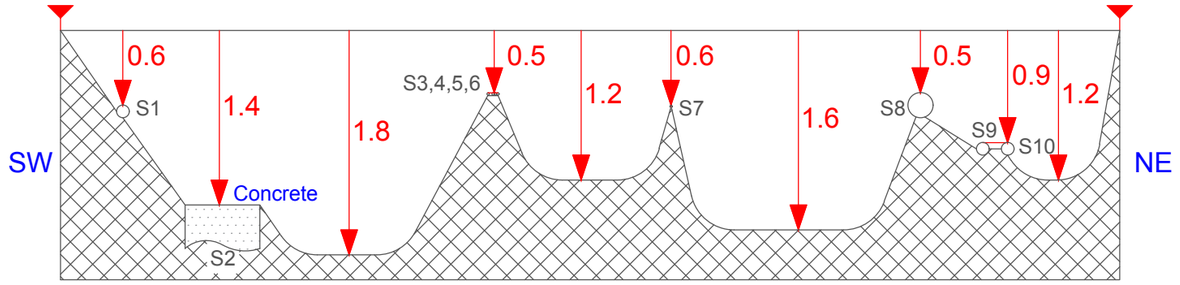
PROJECT:	Airfield Survey
DRAWING No.:	ST 27
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0238 @ A3

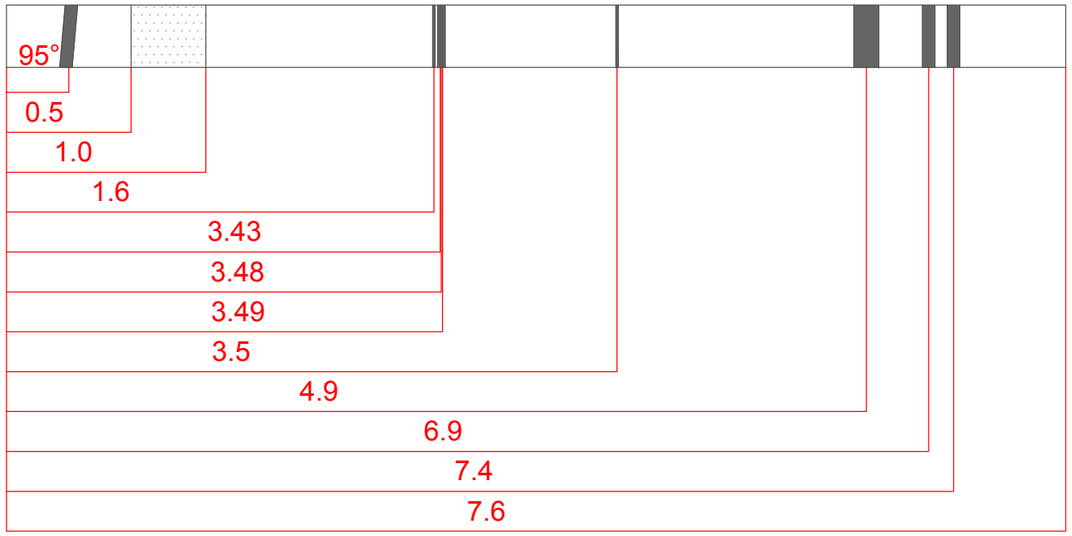
Version:	Date:	Drawn By:	Checked By:
Draft 1	07/01/2019	G.S.	S.K.

ST 28

A
Easting: 316304.083
Northing: 242823.068
Elevation: 62.382

B
Easting: 316312.179
Northing: 242827.413
Elevation: 62.258





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.80	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.

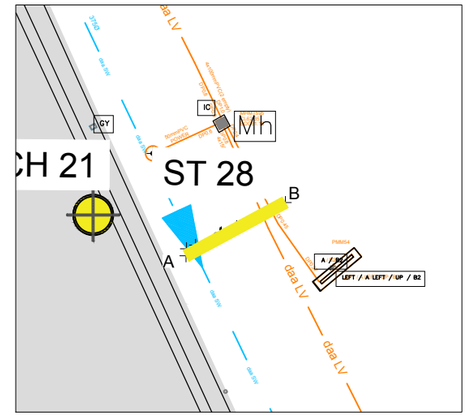
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1	0.100	Black - Plastic	Electic	95
2		Grey - Concrete	Water	
3,4,5,6,7	0.020	Black - Plastic	Electic	90
8	0.200	Black - Plastic	Electic	90
9,10	0.100	Black - Plastic	Electic	90

Sample Depth	Sample Type

Surface from/to		Surface Type
0.00	8.50	Grass

Groundwater	Y/N	Depth
	N	

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 30/10/18

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Web: www.gii.ie

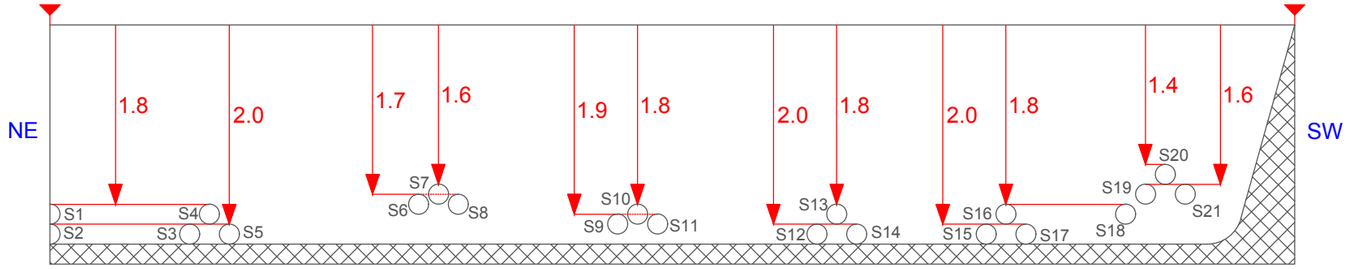
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DRAWING No.:	ST 28
DATE:	November 2018
CLIENT:	DAA
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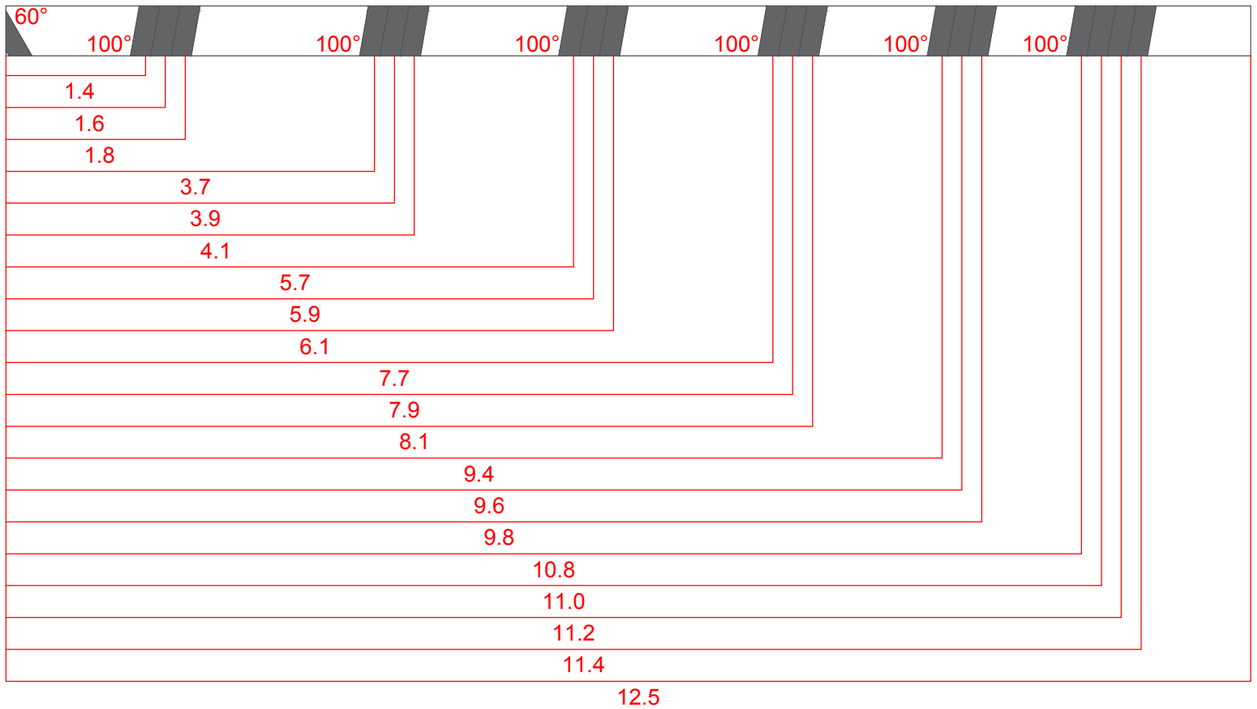
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 29

A
Easting: 316465.492
Northing: 242771.058
Elevation: 61.54

B
Easting: 316457.653
Northing: 242761.376
Elevation: 61.603





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	2.00	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.

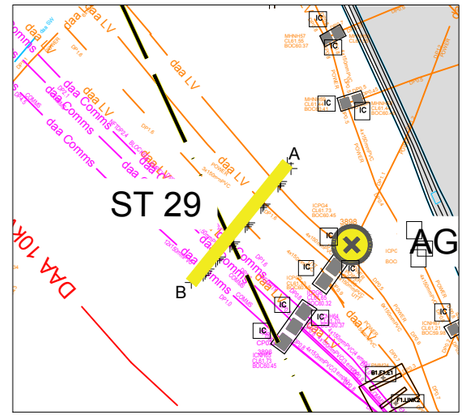
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1,2	0.200	Black - Plastic	Electic	60
3,4,5,6,7,8,9,10,11	0.020	Black - Plastic	Electic	100
12,13,14,15,16,17,18,19,20,21	0.200	Black - Plastic	Comms	100

Groundwater	Y/N	Depth
	Y	2.0

Sample Depth	Sample Type

Surface from/to		Surface Type
0.00	12.50	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 15/11/18

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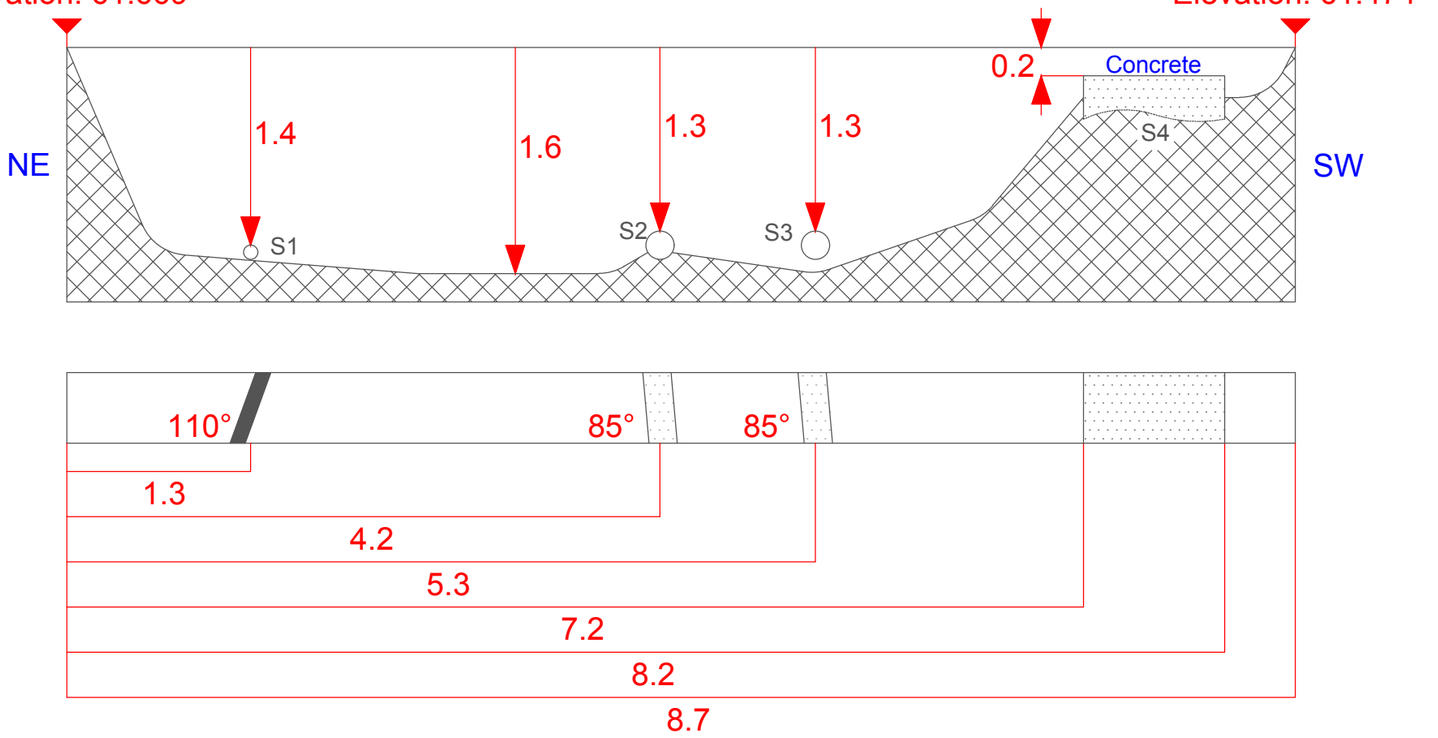
PROJECT:	Airfield Survey
DRAWING No.:	ST 29
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0162 @ A3

Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 30

A
Easting: 316466.34
Northing: 242742.065
Elevation: 61.669

B
Easting: 316463.873
Northing: 242733.289
Elevation: 61.474



From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.60	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.

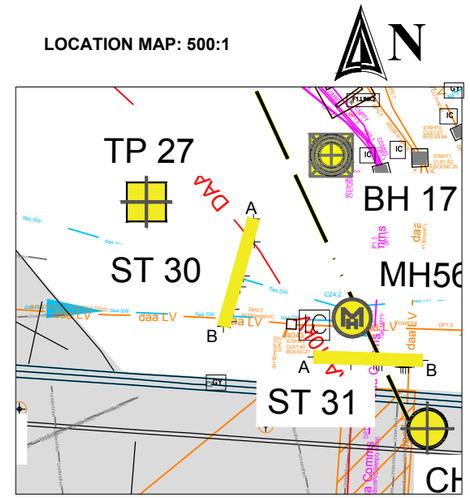
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1	0.100	Black - Plastic	Electic	110
2,3	0.200	Grey - Concrete	Water	85
4		Concrete Slab	Comm	

Groundwater	Y/N	Depth
	Y	1.5

Sample Depth	Sample Type

Surface from/to		Surface Type
0.00	8.70	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 13/11/18

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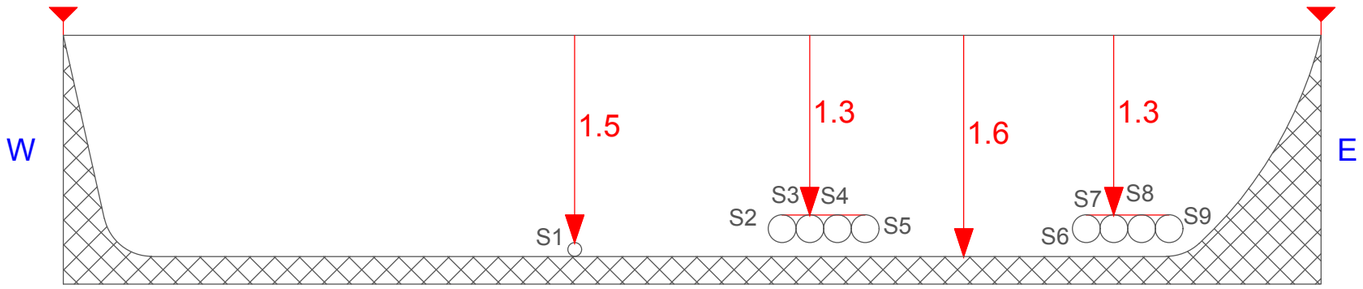
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DRAWING No.:	ST 30
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.023 @ A3

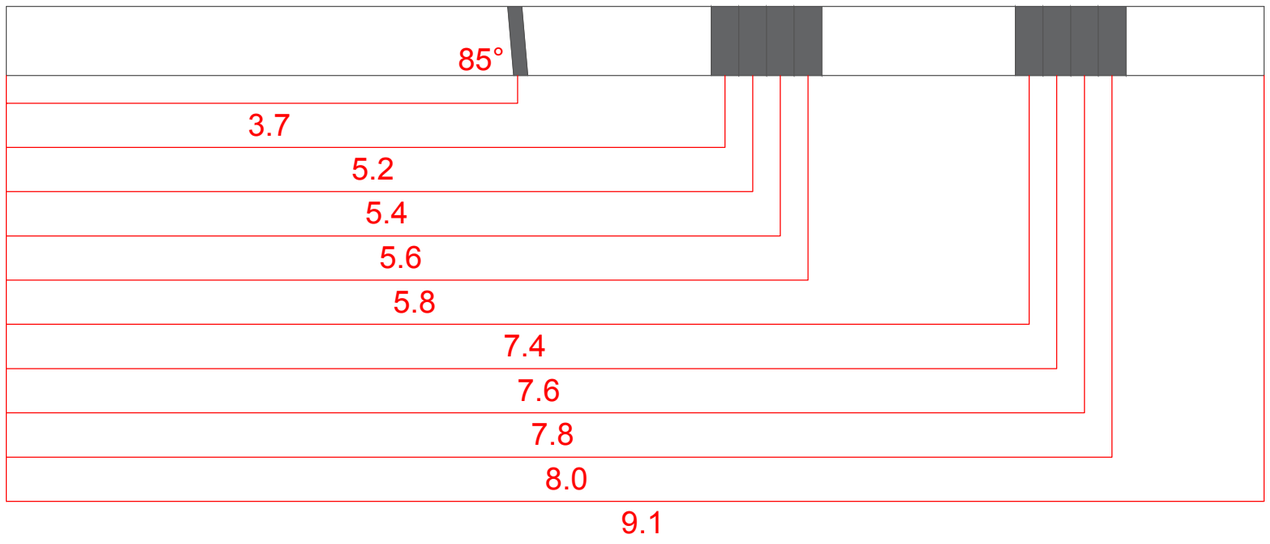
Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

ST 31

A
Easting: 316471.251
Northing: 242730.803
Elevation: 61.389

B
Easting: 316480.102
Northing: 242730.518
Elevation: 61.302





From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.60	Made Ground: Brown sandy gravelly Clay with rare cobbles and contained frequent fragments of red brick and concrete.

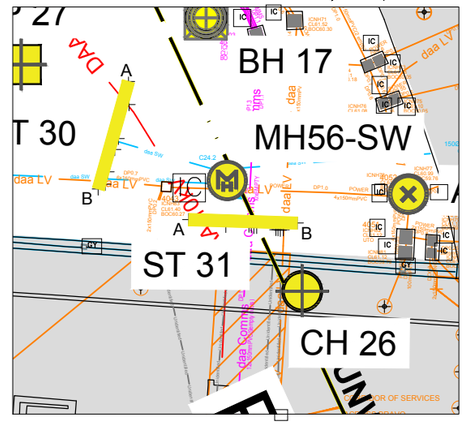
Service No	ø (m)	Colour- Material	Utility	Angle to trench
1	0.100	Black - Plastic	Electic	85
2,3,4,5,6, 7,8,9	0.200	Black - Plastic	Electic	90

Groundwater	Y/N	Depth
	Y	1.5

Sample Depth	Sample Type

Surface from/to		Surface Type
0.00	9.10	Grass

LOCATION MAP: 500:1



Legend

- Slit Trench
- Trial Pit
- Borehole
- Observation Pit
- Core Hole
- Manhole w/ Unknown Service
- Manhole w/ Comms
- Manhole w/SW = Surface water Present

NB: ALL m OD LEVELS ARE TO GROUND LEVEL ABOVE SERVICES

DATE OF EXCAVATION : 13/11/18

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PROJECT:	Airfield Survey
DRAWING No.:	ST 31
DATE:	November 2018
CLIENT:	DAA
SCALE:	0.0225 @ A3

Version:	Date:	Drawn By:	Checked By:
Final	14/12/2018	G.S.	S.K.

Slit Trench Photographs – 244 Airfield Surveys Phase 2

ST01











ST02









ST05









ST06







ST07









ST09





ST10









ST11





ST12











ST13









ST14







ST15







ST16A









ST16B





ST17











ST19











ST20







ST21



ST22











ST25







ST26









ST27







ST28

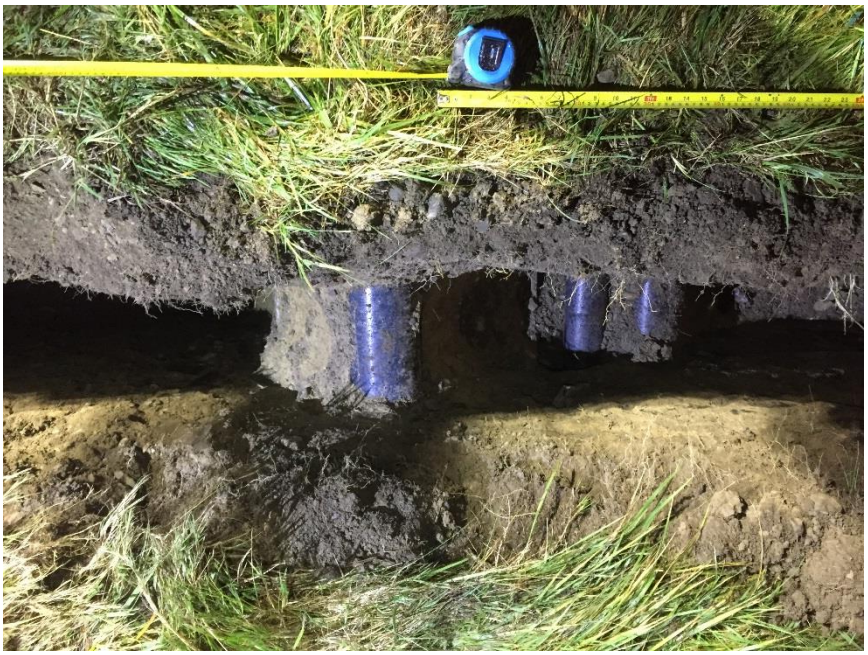












ST29

















ST30







APPENDIX 4 – Cable Percussion Borehole Records

Ground Investigations Ireland Ltd
www.gii.ie

Site	Borehole Number
244 Airfield Surveys Phase 2	BH01

Machine : Dando 2000 Method : Cable Percussion	Casing Diameter 200mm cased to 6.00m	Ground Level (mOD) 64.79	Client	Job Number 7926-07-18
	Location 316334 E 243291.2 N	Dates 16/10/2018	Project Contractor Ground Investigations Ireland	Sheet 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					64.59	(0.20) 0.20	TOPSOIL: Brown slightly sandy gravelly clay		
0.50-0.50	B						MADE GROUND: Reworked brown sandy gravelly Clay with occasional cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
						(1.30)			
1.00-1.45 1.00-1.00	SPT(C) N=6 B			3,2/2,1,2,1					
					63.29	1.50			
1.50-1.50	B						Firm brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
						(0.60)			
2.00-2.45 2.00-2.00	SPT(C) N=19 B			1,3/3,5,5,6	62.69	2.10			▼1
							Stiff dark grey/brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		▽1
				Water strike(1) at 2.70m, rose to 2.10m in 20 mins. Water strike(2) at 3.00m.					▽2
3.00-3.00	B					(1.90)			
3.00-3.45	SPT(C) N=30			4,4/6,6,9,9					
					60.79	4.00			
4.00-4.45 4.00-4.00	SPT(C) N=40 B			8,7/7,8,13,12			Very stiff dark brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angulat to sub-rounded		
						(1.00)			
					59.79	5.00			
5.00-5.45 5.00-5.00	SPT(C) N=52 B			8,8/11,12,12,17			Very stiff dark grey/brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angulat to sub-rounded		
						(1.00)			
					58.79	6.00	Borehole Terminated at Scheduled Depth		
							Complete at 6.00m		

Remarks
Borehole terminated at scheduled depth
Borehole backfilled upon completion
Chiselling from 3.50m to 3.90m for 0.6 hours.

Scale (approx)	Logged By
1:50	S Kealy

Figure No.
7926-07-18.BH01

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Ground Investigations Ireland Ltd
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Site	Borehole Number
244 Airfield Surveys Phase 2	BH02

Machine : Dando 2000 Method : Cable Percussion	Casing Diameter 200mm cased to 4.50m	Ground Level (mOD) 64.21	Client	Job Number 7926-07-18
	Location 316274.5 E 243210.9 N	Dates 08/08/2018	Project Contractor Ground Investigations Ireland	Sheet 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.50)	TOPSOIL: Brown slightly sandy gravelly clay		
					63.71	0.50			
						(0.50)	MADE GROUND: Reworked brown sandy gravelly Clay with occasional cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
1.00-1.45 1.00-1.00	SPT(C) N=14 B			3,3/4,3,3,4	63.21	1.00			
						(0.60)	Firm grey/brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
					62.61	1.60			
1.80-1.80	B					(0.40)	Firm to stiff grey/brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
2.00-2.45	SPT(C) N=33			4,5/6,7,8,12	62.21	2.00			
						(2.40)	Very stiff grey/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angulat to sub-rounded		
3.00-3.38 3.00-3.00	SPT(C) 50/225 B			5,7/10,13,13,14					
4.00-4.00	B			Water strike(1) at 4.00m, rose to 3.85m in 20 mins.					▼1 ▽1 ▼*
4.00-4.35	SPT(C) 50/200			7,9/10,18,22 Water strike(2) at 4.20m, no rise after 20 mins.	59.81 59.71	4.40 4.50	OBSTRUCTION - Probable Boulder Complete at 4.55m		

Remarks
Borehole terminated at 4.50m BGL due to an Obsrtuction - Probable Boulder
Borehole backfilled upon completion
Chiselling from 4.50m to 4.55m for 1 hour.

Scale (approx)	Logged By
1:50	S Kealy

Figure No.
7926-07-18.BH02

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Ground Investigations Ireland Ltd
www.gii.ie

Site	Borehole Number
244 Airfield Surveys Phase 2	BH03

Machine :	Casing Diameter	Ground Level (mOD)	Client	Job Number
Dando 2000	200mm cased to 6.00m	64.68		7926-07-18
Method : Cable Percussion	**Location** 316367.3 E 243208.2 N	**Dates** 15/10/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					64.48	(0.20) 0.20	TOPSOIL: Brwon slightly sandy gravelly clay		
0.50-0.50	B						MADE GROUND: Reworked brown sandy gravelly Clay with occasional cobbles with rootlets and decomposed grass. Gravel is fine to coarse sub-angular to sub-rounded		
						(1.30)			
1.00-1.45 1.00-1.00	SPT(C) N=16 B			2,3/3,4,4,5					
					63.18	1.50			
1.50-1.50	B					(0.50)	Stiff brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
					62.68	2.00			
2.00-2.45 2.00-2.00	SPT(C) N=19 B			3,3/3,4,6,6			Stiff grey/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angular to sub-rounded		
						(1.00)			▼1 ▽1
				Water strike(1) at 2.80m, rose to 2.60m in 20 mins.	61.68	3.00			
3.00-3.00 3.00-3.45	B SPT(C) N=42			3,5/8,8,11,15 Water strike(2) at 3.20m.			Very stiff grey/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angulat to sub-rounded		▽2
4.00-4.30 4.00-4.00	SPT(C) 50/150 B			7,9/12,17,21					
						(3.00)			
5.00-5.15 5.00-5.00	SPT(C) 50/0 B			5,11/50					
					58.68	6.00	Complete at 6.00m		

Remarks
Borehole terminated at scheduled depth
Borehole backfilled upon completion
Chiselling from 3.50m to 3.90m for 0.6 hours.

Scale (approx)	Logged By
1:50	S Kealy

Figure No. 7926-07-18.BH03

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Site 244 Airfield Surveys Phase 2			**Borehole Number** BH04
Machine : Dando 2000 **Method :** Cable Percussion	**Casing Diameter** 200mm cased to 6.00m	**Ground Level (mOD)** 64.19	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316289.8 E 243168.9 N	**Dates** 09/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.50)	TOPSOIL: Brown slightly sandy gravelly clay		
0.50-0.50	B				63.69	0.50	MADE GROUND: Reworked brown sandy gravelly Clay with occasional cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
1.00-1.45	SPT(C) N=25			3,4/4,6,8,7		(0.70)			
1.20-1.20	B				62.99	1.20	Stiff grey/brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
2.00-2.45	SPT(C) N=36			4,6/6,9,10,11		(0.90)			
2.10-2.10	B				62.09	2.10	Very stiff grey/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angulat to sub-rounded		
3.00-3.45	SPT(C) N=43			6,8/9,9,12,13					
3.00-3.00	B								
4.00-4.44	SPT(C) 50/290			7,8/10,11,14,15 Water strike(1) at 4.10m, rose to 4.05m in 20 mins.		(3.90)			▼1
4.00-4.00	B								
5.00-5.24	SPT(C) 50/85			16,17/20,30					
5.00-5.00	B								▽2
				Water strike(2) at 5.95m.	58.19	6.00	Complete at 6.00m		

Remarks
Inspection Pit to carried out to 1.20m BGL
Borehole terminated at scheduled depth
Borehole backfilled upon completion
Chiselling from 4.50m to 4.55m for 1 hour.

Scale (approx)	Logged By
1:50	S Kealy

Figure No. 7926-07-18.BH02

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Site 244 Airfield Surveys Phase 2			**Borehole Number** BH05
Machine : Dando 2000 **Method :** Cable Percussion	**Casing Diameter** 200mm cased to 6.00m	**Ground Level (mOD)** 63.87	**Client**	**Job Number** 7926-07-18
	Location 316307.2 E 243122.6 N	**Dates** 09/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.40)	TOPSOIL: Brown slightly sandy gravelly clay		
0.50-0.50	B				63.47	0.40	MADE GROUND consisting of reworked brown sandy gravelly Clay with occasional cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
1.00-1.45 1.00-1.00	SPT(C) N=15 B			1,2/3,3,4,5		(1.00)			
1.50-1.50	B				62.47	1.40	Firm to stiff grey/brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
2.00-2.45 2.00-2.00	SPT(C) N=16 B			2,2/2,3,5,6		(0.80)			
3.00-3.45 3.00-3.00	SPT(C) N=35 B			1,4/6,6,8,15	61.67	2.20	Stiff brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
4.00-4.45 4.00-4.00	SPT(C) N=64 B			5,7/13,14,16,21		(0.90)			
5.00-5.30 5.00-5.00	SPT(C) 50/150 B			5,11/15,23,12	60.77	3.10	Very stiff grey/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angular to sub-rounded		
						(2.90)			
					57.87	6.00	Complete at 6.00m		

Remarks
Inspection Pit to carried out to 1.20m BGL
No groundwater encountered
Borehole terminated at scheduled depth
Borehole backfilled upon completion
Chiselling from 5.40m to 6.00m for 1.5 hours.

Scale (approx)	Logged By
1:50	S Kealy

Figure No. 7926-07-18.BH05

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Site	Borehole Number
244 Airfield Surveys Phase 2	BH06

Machine : Dando 2000 Method : Cable Percussion	Casing Diameter 200mm cased to 6.00m	Ground Level (mOD) 64.03	Client	Job Number 7926-07-18
	Location 316339 E 243089.3 N	Dates 21/08/2018	Project Contractor Ground Investigations Ireland	Sheet 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.40)	TOPSOIL: Brown slightly sandy gravelly clay		
					63.63	0.40			
0.50-0.50	B						MADE GROUND consisting of reworked brown sandy gravelly Clay with occasional cobbles and pieces of concrete. Gravel is fine to coarse sub-angular to sub-rounded		
1.00-1.38 1.00-1.00	SPT(C) 50/225 B			2,3/3,7,19,21		(1.30)			
							.....Concrete encountered between 1.30m - 1.450m BGL		
1.50-1.50	B								
					62.33	1.70	Firm grey/brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
2.00-2.45 2.00-2.00	SPT(C) N=11 B			1,1/3,2,3,3					
						(1.50)			
3.00-3.45 3.00-3.00	SPT(C) N=15 B			2,3/3,3,3,6 Water strike(1) at 3.20m, rose to 2.80m in 20 mins. Water strike(2) at 3.40m.	60.83	3.20	Firm to stiff brown/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
						(0.80)			
4.00-4.38 4.00-4.00	SPT(C) 50/225 B			5,11/12,12,17,9	60.03	4.00	Very stiff brown/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
						(1.50)			
5.00-5.15 5.00-5.00	SPT(C) 50/0 B			25,25/50					
					58.53	5.50	OBSTRUCTION - Probable Boulder		
					58.43	5.60	Complete at 5.60m		

Remarks
Inspection Pit to carried out to 1.20m BGL
No groundwater encountered
Borehole terminated due to an obstruction - Probable Boulder
Borehole backfilled upon completion
Chiselling from 5.10m to 5.60m for 1.5 hours.

Scale (approx)	Logged By
1:50	S Kealy

Figure No.
7926-07-18.BH06

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Site 244 Airfield Surveys Phase 2			**Borehole Number** BH07
Machine : Dando 2000 **Method :** Cable Percussion	**Casing Diameter** 200mm cased to 6.00m	**Ground Level (mOD)** 64.20	**Client**	**Job Number** 7926-07-18
	Location 316445.9 E 243068.8 N	**Dates** 17/10/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					64.00	(0.20) 0.20	TOPSOIL: Brwon slightly sandy gravelly clay		
0.50-0.50	B						MADE GROUND: Reworked brown sandy gravelly Clay with occasional cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
1.00-1.45 1.00-1.00	SPT(C) N=37 B			5,7/8,11,9,9		(1.30)			
1.50-1.50	B				62.70	1.50	Firm brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles and lenses of Sand. Gravel is fine to coarse sub-angular to sub-rounded		
2.00-2.45 2.00-2.00	SPT(C) N=14 B			2,2/4,5,3,2		(0.90)			
					61.80	2.40	Stiff brown/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angulat to sub-rounded		
3.00-3.45 3.00-3.00	SPT(C) N=22 B			1,3/4,3,7,8					▼1
						(2.60)			
4.00-4.45 4.00-4.00	SPT(C) N=29 B			3,4/5,7,8,9 Water strike(1) at 4.10m, rose to 3.60m in 20 mins.					▽1
					59.20	5.00	Very stiff brown/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angulat to sub-rounded		▽2
5.00-5.30 5.00-5.00	SPT(C) 50/150 B			9,15/8,7,35 Water strike(2) at 5.30m.		(1.00)			
					58.20	6.00	Complete at 6.00m		

Remarks
Borehole terminated at scheduled depth
Borehole backfilled upon completion
Chiselling from 1.40m to 1.70m for 0.75 hours.

Scale (approx)	Logged By
1:50	S Kealy

Figure No. 7926-07-18.BH07

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Site 244 Airfield Surveys Phase 2			**Borehole Number** BH08
Machine : Dando 2000 **Method :** Cable Percussion	**Casing Diameter** 200mm cased to 6.00m	**Ground Level (mOD)** 63.60	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316371.3 E 243005.1 N	**Dates** 16/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.40)	TOPSOIL: Brown slightly sandy gravelly clay		
					63.20	0.40			
0.50-0.50	B						MADE GROUND: Reworked brown sandy gravelly Clay with occasional cobbles and grass. Gravel is fine to coarse sub-angular to sub-rounded		
						(1.10)			
1.00-1.45 1.00-1.00	SPT(C) N=28 B			2,4/5,5,7,11					
					62.10	1.50			
1.50-1.50	B						Stiff brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
2.00-2.45 2.00-2.00	SPT(C) N=17 B			1,3/3,5,4,5		(1.20)			
					60.90	2.70			
						(0.30)	Stiff grey/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
3.00-3.45 3.00-3.00	SPT(C) N=11 B			1,2/2,3,3,3	60.60	3.00			
						(1.00)	Firm grey/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
					59.60	4.00			
4.00-4.45 4.00-4.00	SPT(C) N=21 B			2,4/4,4,6,7			Stiff black slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angular to sub-rounded		
						(1.00)			
					58.60	5.00			
5.00-5.45 5.00-5.00	SPT(C) N=42 B			5,7/8,8,11,15			Very stiff black slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angular to sub-rounded		
						(1.00)			
					57.60	6.00			
							Complete at 6.00m		

Remarks
Inspection Pit to carried out to 1.20m BGL
No Groundwater encountered
Borehole terminated at scheduled depth
Borehole backfilled upon completion
Chiselling from 1.60m to 1.80m for 0.58 hours.

Scale (approx)	Logged By
1:50	S Kealy

Figure No. 7926-07-18.BH08

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Site	Borehole Number
244 Airfield Surveys Phase 2	BH09

Machine : Dando 2000 Method : Cable Percussion	Casing Diameter 200mm cased to 6.00m	Ground Level (mOD) 63.07	Client	Job Number 7926-07-18
	Location (dGPS) 316307.6 E 243047.1 N	Dates 15/08/2018-16/08/2018	Project Contractor Ground Investigations Ireland	Sheet 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.40)	TOPSOIL: Brown slightly sandy gravelly clay		
0.50-0.50	B				62.67	0.40	MADE GROUND: Reworked brown sandy gravelly CLAY with occasional cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
1.00-1.38 1.00-1.00	SPT(C) 50/225 B			3,7/8,13,18,11		(0.60)			
1.50-1.50	B				62.07	1.00	Stiff brown sandy gravelly CLAY with occasional cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
2.00-2.45 2.00-2.00	SPT(C) N=13 B			1,2/2,3,4,4		(0.70)			
					61.37	1.70	Firm brown/grey slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
3.00-3.45 3.00-3.00	SPT(C) N=30 B			2,3/3,6,10,11		(1.30)			
					60.07	3.00	Stiff grey/brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
4.00-4.45 4.00-4.00	SPT(C) N=58 B			4,5/9,14,17,18		(0.90)			
					59.17	3.90	Very stiff black slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angular to sub-rounded		
5.00-5.30 5.00-5.00	SPT(C) 50/150 B			9,16/22,28		(2.10)			
					57.07	6.00	Complete at 6.00m		

Remarks
Inspection Pit to carried out to 1.20m BGL
No groundwater encountered
Borehole terminated at scheduled depth
Borehole backfilled upon completion
Chiselling from 1.40m to 1.70m for 0.66 hours. Chiselling from 5.30m to 5.90m for 0.75 hours.

Scale (approx)	Logged By
1:50	S Kealy

Figure No.
7926-07-18.BH08

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Site 244 Airfield Surveys Phase 2			**Borehole Number** BH10
Machine : Dando 2000 **Method :** Cable Percussion	**Casing Diameter** 200mm cased to 6.00m	**Ground Level (mOD)** 62.75	**Client**	**Job Number** 7926-07-18
	Location (dGPS) 316244.7 E 243040.8 N	**Dates** 14/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.40)	TOPSOIL: Brown slightly sandy gravelly clay		
0.50-0.50	B				62.35	0.40	MADE GROUND: Reworked brown sandy gravelly Clay with occasional cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
1.00-1.45 1.00-1.00	SPT(C) N=16 B			2,3/4,4,4,4		(1.10)			
1.50-1.50	B				61.25	1.50	Firm to stiff brown sandy gravelly CLAY with occasional cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
2.00-2.45 2.00-2.00	SPT(C) N=9 B			1,2/4,2,2,1	60.75	(0.50) 2.00	Firm brown sandy gravelly CLAY with occasional cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
						(1.00)			▼1
3.00-3.45 3.00-3.00	SPT(C) N=23 B			3,4/4,5,7,7 Water strike(1) at 3.20m, rose to 2.70m in 20 mins.	59.75	3.00	Stiff black slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		▽1
						(1.00)			▽2
4.00-4.00 4.00-9.30	B SPT(C) 50/150			Water strike(2) at 3.90m. 9,11/17,23,10	58.75	4.00	Very stiff grey/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angular to sub-rounded		
5.00-5.15 5.00-5.00	SPT(C) 50/0 B			13,21/50		(2.00)			
					56.75	6.00	Complete at 6.00m		

Remarks
Inspection Pit to carried out to 1.20m BGL
Borehole terminated at scheduled depth
Borehole backfilled upon completion
Chiselling from 3.60m to 3.90m for 0.90 hours.

Scale (approx)	Logged By
1:50	S Kealy

Figure No. 7926-07-18.BH10

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Site 244 Airfield Surveys Phase 2			**Borehole Number** BH11
Machine : Dando 2000 **Method :** Cable Percussion	**Casing Diameter** 200mm cased to 6.00m	**Ground Level (mOD)** 63.58	**Client**	**Job Number** 7926-07-18
	Location 316462.2 E 242987.1 N	**Dates** 18/10/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					63.38	(0.20) 0.20	TOPSOIL: Brwon slightly sandy gravelly clay		
0.50-0.50	B						MADE GROUND: Reworked brown sandy gravelly Clay with occasional cobbles, concrete and steel. Gravel is fine to coarse sub-angular to sub-rounded		
1.00-1.23 1.00-1.00	SPT(C) 50/75 B			1,16/24,26		(2.20)			
1.50-1.50	B								
2.00-2.30 2.00-2.00	SPT(C) 50/150 B			3,5/8,19,23					
					61.18	2.40	Firm brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles and lenses of Sand. Gravel is fine to coarse sub-angular to sub-rounded		
3.00-3.15 3.00-3.00	SPT(C) 50/0 B			25,25/50		(0.90)			
					60.28	3.30	Very stiff dark brown/grey slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angulat to sub-rounded		
						(0.70)			
4.00-4.45 4.00-4.00	SPT(C) N=16 B			1,2/2,2,5,7	59.58	4.00	Stiff dark brown/grey slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angulat to sub-rounded		
						(1.00)			
5.00-5.45 5.00-5.00	SPT(C) N=25 B			4,7/6,6,7,6	58.58	5.00	Very stiff dark brown/grey slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angulat to sub-rounded		
						(1.00)			
					57.58	6.00	Complete at 6.00m		

Remarks
Borehole terminated at scheduled depth
Borehole backfilled upon completion
Chiselling from 2.50m to 3.20m for 1.20 hours.

Scale (approx)	Logged By
1:50	S Kealy

Figure No. 7926-07-18.BH11

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Site 244 Airfield Surveys Phase 2			**Borehole Number** BH12
Machine : Dando 200 **Method :**	**Casing Diameter** 200mm cased to 6.00m	**Ground Level (mOD)** 63.11	**Client**	**Job Number** 7926-07-18
	Location 316395.3 E 242948.5 N	**Dates** 22/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.40)	TOPSOIL: Brown slightly sandy gravelly clay		
					62.71	0.40	MADE GROUND consisting of reworked brown sandy gravelly Clay with occasional cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
0.50-0.50	B								
						(1.10)			
1.00-1.45 1.00-1.00	SPT(C) N=36 B			1,5/6,8,11,11					
					61.61	1.50	Firm grey/brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
1.50-1.50	B								
2.00-2.45 2.00-2.00	SPT(C) N=16 B			2,1/3,4,4,5					
						(1.50)			
					60.11	3.00	Very stiff grey/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
3.00-3.15 3.00-3.00	SPT(C) 50/0 B			25,25/50					
4.00-4.23 4.00-4.00	SPT(C) 50/75 B			6,14/23,27					
						(3.00)			
5.00-5.15 5.00-5.00	SPT(C) 50/0 B			16,25/50					
					57.11	6.00	Complete at 6.00m		

Remarks
Inspection Pit to carried out to 1.20m BGL
No groundwater encountered
Borehole terminated at scheduled depth
Borehole backfilled upon completion
Chiselling from 3.15m to 3.50m for 0.75 hours. Chiselling from 5.40m to 6.00m for 1 hour.

Scale (approx)	Logged By
1:50	

Figure No. 7926-07-18.BH12

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Site 244 Airfield Surveys Phase 2			**Borehole Number** BH13
Machine : Dando 200 **Method :**	**Casing Diameter** 200mm cased to 6.00m	**Ground Level (mOD)** 62.33	**Client**	**Job Number** 7926-07-18
	Location 316434.1 E 242877.7 N	**Dates** 22/08/2018-23/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.40)	TOPSOIL: Brown slightly sandy gravelly clay		
0.50-0.50	B				61.93	0.40	MADE GROUND: Reworked brown sandy gravelly Clay with occasional cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
1.00-1.45 1.00-1.00	SPT(C) N=36 B			3,6/7,10,8,11		(1.10)			
1.50-1.50	B				60.83	1.50	Firm grey/brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
2.00-2.45 2.00-2.00	SPT(C) N=15 B			1,3/3,3,5,4		(1.20)			
					59.63	2.70	Firm grey/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
						(0.30)			
3.00-3.23 3.00-3.00	SPT(C) 50/75 B			6,19/22,28	59.33	3.00	Very stiff grey/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
4.00-4.30 4.00-4.00	SPT(C) 50/150 B			2,12/15,19,16		(3.00)			
5.00-5.15 5.00-5.00	SPT(C) 50/0 B			25,25/50					
					56.33	6.00	Complete at 6.00m		

Remarks
Inspection Pit to carried out to 1.20m BGL
No groundwater encountered
Borehole terminated at scheduled depth
Borehole backfilled upon completion
Chiselling from 4.80m to 5.20m for 0.75 hours. Chiselling from 5.60m to 6.00m for 0.60 hours.

Scale (approx)	Logged By
1:50	S Kealy

Figure No. 7926-07-18.BH13

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Site	Borehole Number
244 Airfield Surveys Phase 2	BH14

Machine : Dando 200 Method :	Casing Diameter 200mm cased to 3.90m	Ground Level (mOD) 62.25	Client	Job Number 7926-07-18
	Location 316399.7 E 242871.3 N	Dates 22/08/2018-23/08/2018	Project Contractor Ground Investigations Ireland	Sheet 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.40)	TOPSOIL: Brown slightly sandy gravelly clay		
					61.85	0.40			
0.50-0.50	B						MADE GROUND consisting of reworked brown sandy gravelly Clay with occasional cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
						(1.10)			
1.00-1.15 1.00-1.00	SPT(C) 50/0 B			9,21/50					
					60.75	1.50			
1.50-1.50	B					(0.40)	Stiff grey/brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
					60.35	1.90			
2.00-2.00	B						Very stiff grey/black slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
2.30-2.45	SPT(C) 50/0			25,25/50					
						(1.90)			
3.00-3.30 3.00-3.00	SPT(C) 50/150 B			5,7/11,17,22					
					58.45	3.80			
3.90-4.05	SPT(C) 50/0			25,25/50	58.35	3.90	OBSTRUCTION - Probable Boulder		
							Complete at 3.90m		

Remarks
Inspection Pit to carried out to 1.20m BGL
No groundwater encountered
Borehole terminated due to an OBSTRUCTION possible boulder
Borehole backfilled upon completion
Chiselling from 1.90m to 2.30m for 0.83 hours. Chiselling from 3.70m to 3.90m for 1 hour.

Scale (approx)	Logged By
1:50	S Kealy

Figure No.
7926-07-18.BH14

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Site	Borehole Number
244 Airfield Surveys Phase 2	BH15

Machine :	Casing Diameter	Ground Level (mOD)	Client	Job Number
Dando 2000	200mm cased to 5.00m	61.91		7926-07-18
Method : Cable Percussion	**Location** 316376.4 E 242831.6 N	**Dates** 07/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.35)	TOPSOIL: Brown slightly sandy gravelly clay		
					61.56	0.35			
0.50-0.50	B					(0.55)	Probable MADE GROUND: Reworked brown sandy gravelly Clay with occasional cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
					61.01	0.90			
1.00-1.45	SPT(C) N=15			4,3/3,4,3,5			Firm brown with grey mottling slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
1.20-1.20	B					(0.85)			
					60.16	1.75			
						(0.25)	Firm dark brown/grey slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
					59.91	2.00			
2.00-2.45	SPT(C) N=44			5,6/9,10,12,13			Very stiff dark brown/grey slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
2.10-2.10	B								
3.00-3.45	SPT(C) N=49			4,7/10,10,14,15					
3.00-3.00	B					(2.90)			
4.00-4.43	SPT(C) 50/280			5,7/10,10,14,16					
4.00-4.00	B			Water strike(1) at 4.30m, rose to 4.20m in 20 mins.					
					57.01	4.90			
5.00-5.31	SPT(C) 50/160			14,15/16,24,10	56.91	5.00	OBSTRUCTION - Probable Boulder		
							Complete at 6.00m		

Remarks
Inspection Pit to carried out to 1.20m BGL
Cable Percussion borehole terminated at 5.0m BGL due to an obstruction - Probable Boulder
Borehole backfilled upon completion
Chiselling from 4.50m to 4.55m for 1 hour.

Scale (approx)	Logged By
1:50	S Kealy

Figure No. 7926-07-18.BH02

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Site 244 Airfield Surveys Phase 2			**Borehole Number** BH16
Machine : Dando 2000 **Method :** Cable Percussion	**Casing Diameter** 200mm cased to 6.00m	**Ground Level (mOD)** 62.05	**Client**	**Job Number** 7926-07-18
	Location 316324.7 E 242832 N	**Dates** 16/08/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.40)	TOPSOIL: Brown slightly sandy gravelly clay		
					61.65	0.40			
0.50-0.50	B					(0.60)	MADE GROUND: Reworked brown sandy gravelly CLAY with occasional cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
1.00-1.45 1.00-1.00	SPT(C) N=12 B			4,4/3,3,3,3	61.05	1.00			
1.50-1.50	B					(1.00)	Firm dark brown/grey slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
2.00-2.45 2.00-2.00	SPT(C) N=26 B			1,2/5,5,5,11	60.05	2.00			
						(1.00)	Stiff dark brown/grey slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
3.00-3.45 3.00-3.00	SPT(C) N=34 B			4,6/6,6,10,12	59.05	3.00			
4.00-4.38 4.00-4.00	SPT(C) 50/225 B			7,8/11,13,17,9		(3.00)	Very stiff dark brown/grey slightly sandy gravelly CLAY with occasional sub-rounded cobbles and boulders. Gravel is fine to coarse sub-angular to sub-rounded		
5.00-5.15 5.00-5.00	SPT(C) 50/0 B			25,25/50					
					56.05	6.00	Complete at 6.00m		

Remarks
Inspection Pit to carried out to 1.20m BGL
No Groundwater encountered
Borehole terminated at scheduled depth
Borehole backfilled upon completion
Chiselling from 5.90m to 6.00m for 1 hour.

Scale (approx)	Logged By
1:50	S Kealy

Figure No. 7926-07-18.BH16

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Site 244 Airfield Surveys Phase 2			**Borehole Number** BH17
Machine : Dando 2000 **Method :** Cable Percussion	**Casing Diameter** 200mm cased to 6.00m	**Ground Level (mOD)** 61.67	**Client**	**Job Number** 7926-07-18
	Location 316472.7 E 242747.3 N	**Dates** 18/11/2018	**Project Contractor** Ground Investigations Ireland	**Sheet** 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					61.47	(0.20) 0.20	TOPSOIL: Brwon slightly sandy gravelly clay		
0.50-0.50	B						MADE GROUND: Reworked brown sandy gravelly Clay with occasional cobbles and occasional pieces of red brick and concrete. Gravel is fine to coarse sub-angular to sub-rounded		
1.00-1.45 1.00-1.00	SPT(C) N=11 B			1,2/2,2,4,3		(1.50)			
1.50-1.50	B				59.97	1.70			
					59.67	(0.30) 2.00	Firm brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
2.00-2.45 2.00-2.00	SPT(C) N=16 B			2,2/3,4,4,5		(1.00)	Stiff brown slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
3.00-3.45 3.00-3.00	SPT(C) N=37 B			1,3/7,7,9,14	58.67	3.00	Very stiff brown/grey slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
4.00-4.30 4.00-4.00	SPT(C) 50/150 B			4,8/17,23,10		(3.00)			
5.00-5.23 5.00-5.00	SPT(C) 50/75 B			1,6/13,37					
					55.67	6.00	Complete at 6.00m		

Remarks
Borehole terminated at scheduled depth
Borehole backfilled upon completion

Scale (approx)	Logged By
1:50	S Kealy

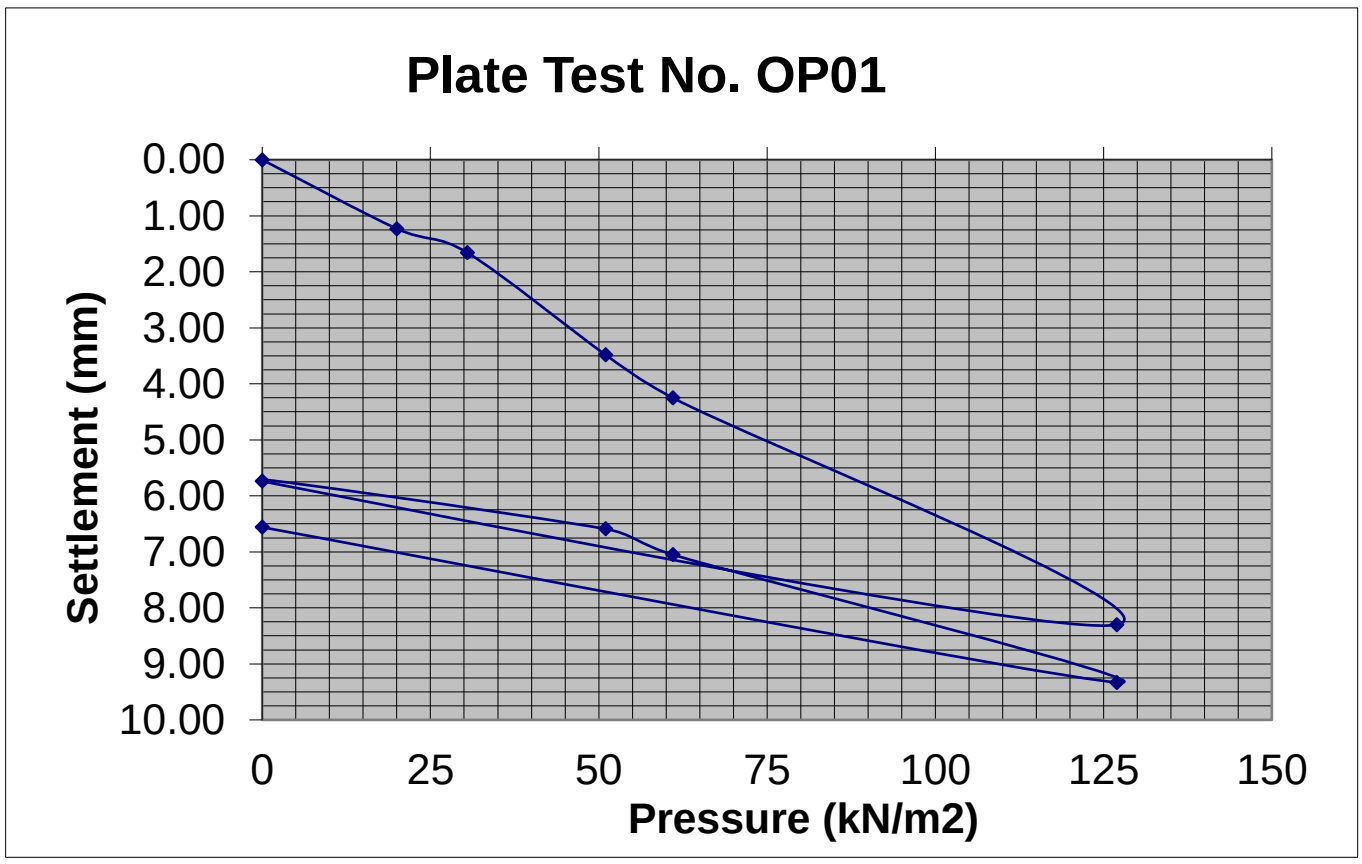
Figure No. 7926-07-18.BH17

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APPENDIX 5 - Plate Test Records

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	1.23
30.5	8.48	1.66
51	14.1	3.48
61	17	4.25
127	36	8.30
0	0	5.74
51	14.1	6.59
61	17	7.05
127	36	9.33
0	0	6.56

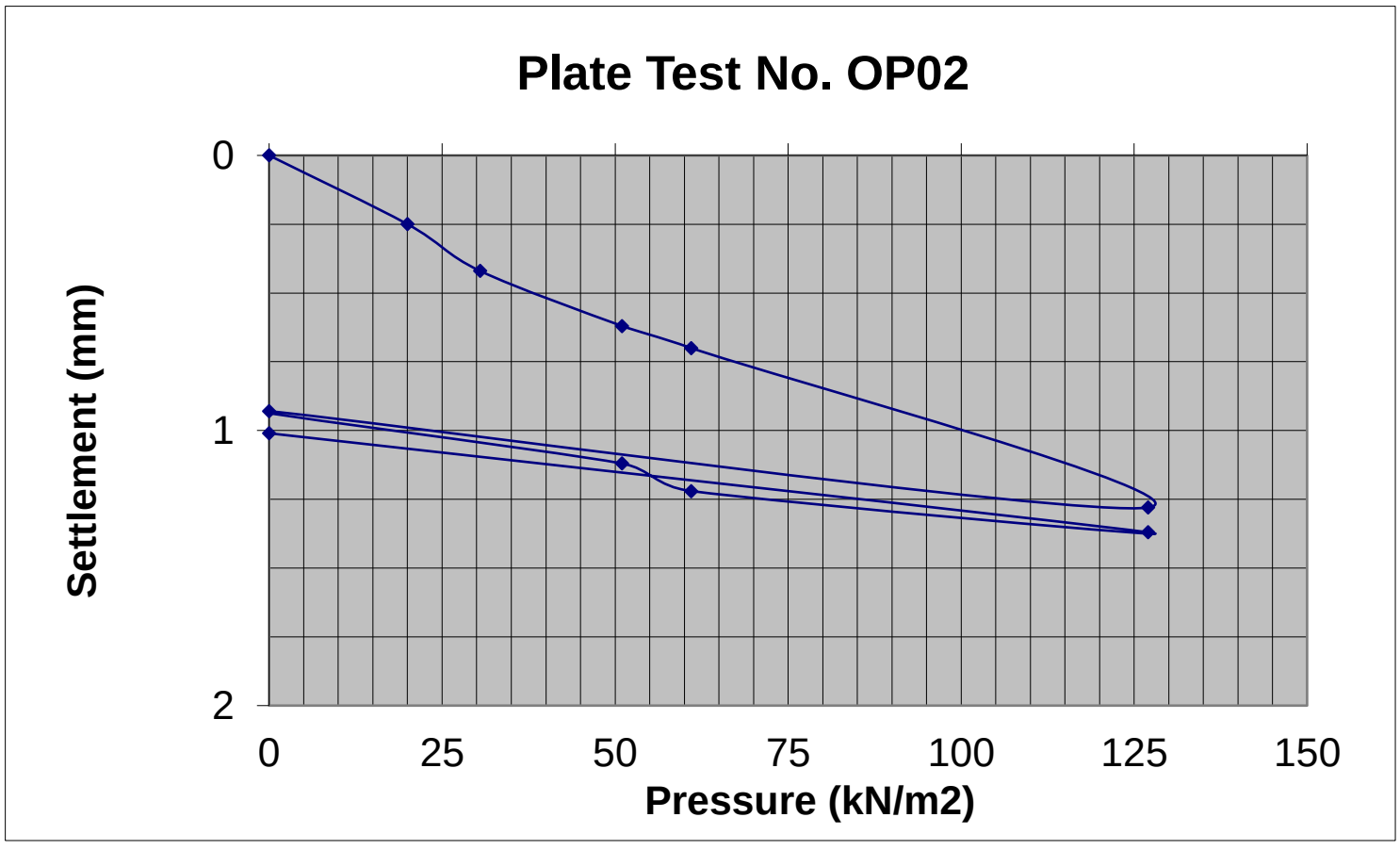
LOCATION	244 Airfield Survey Phase 2	**MATERIAL**	Brown sandy gravelly CLAY
CONTRACT NO.	7926-07-18		
DATE	08/08/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in OP01
TEST NO.		**SAMPLES**	See TP log



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00**	**kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved		
Modulus of Subgrade Reaction (initial)	**11.70**	**MN/m2/m**
Modulus of Subgrade Reaction (reload)	**37.95**	**MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**0.68**	**%**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**5.26**	**%**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.25
30.5	8.48	0.42
51	14.1	0.62
61	17	0.70
127	36	1.28
0	0	0.93
51	14.1	1.12
61	17	1.22
127	36	1.37
0	0	1.01

LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	17/10/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in OP02
TEST NO.	OP02		

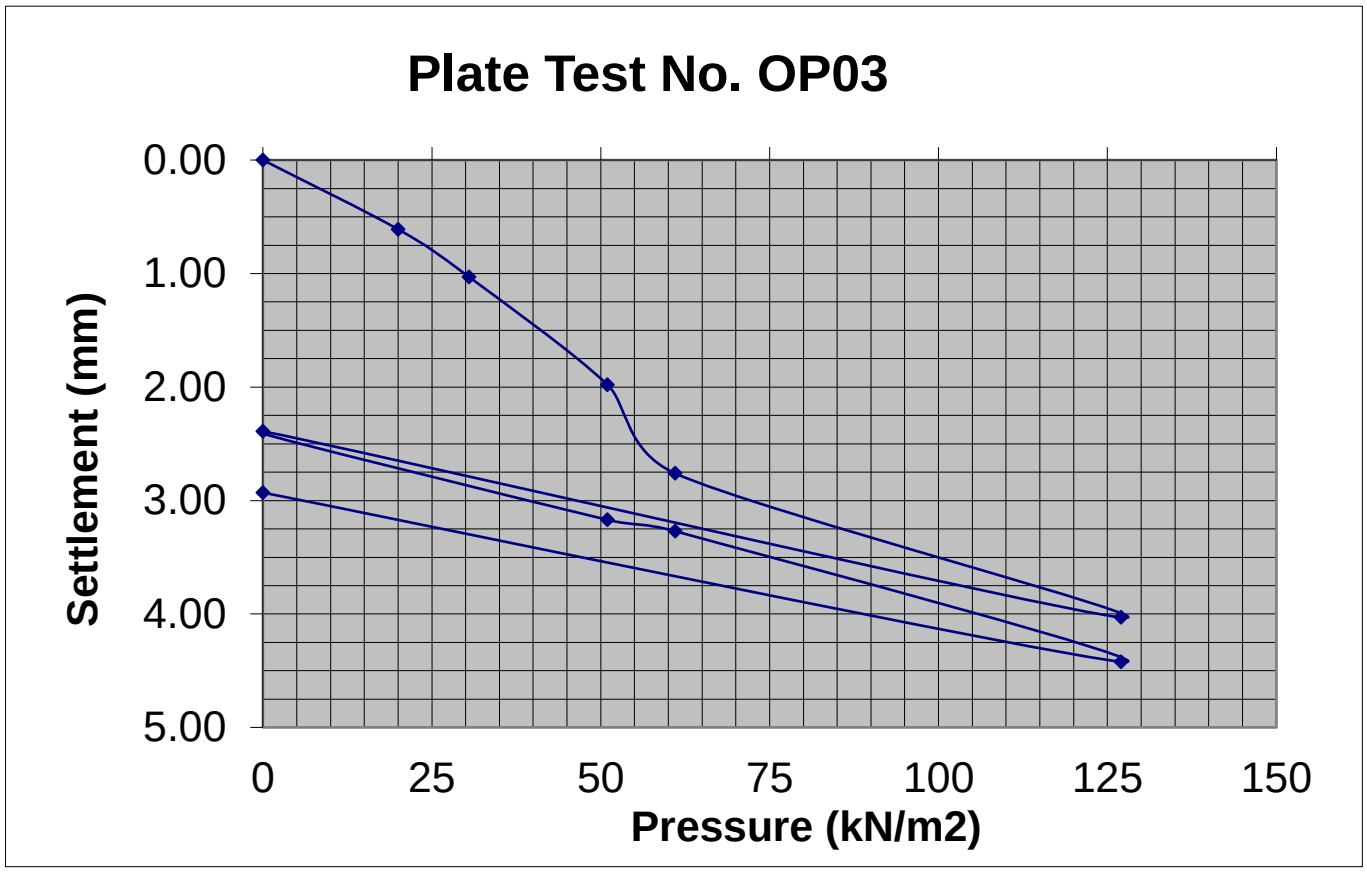


Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**71.02 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**171.43 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**15.59 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**71.78 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.61
30.5	8.48	1.03
51	14.1	1.98
61	17	2.76
127	36	4.03
0	0	2.39
51	14.1	3.17
61	17	3.27
127	36	4.42
0	0	2.93

LOCATION 244 Airfield Survey Phase 2
CONTRACT NO. 7926-07-18
DATE 02/08/2018
CLIENT Kilwex / DAA
PLATE DIAMETER 600mm
TEST NO.

MATERIAL Brown sandy gravelly CLAY
DEPTH 1.00 m BGL
NOTES Completed in OP03
SAMPLES See TP log



Maxium Load Applied (BS1377 P9 4.1.7.1) **125.00 kN/m2**

Note: Failure not evident - 15% plate diameter deflection not achieved

Modulus of Subgrade Reaction (initial) **18.01 MN/m2/m**

Modulus of Subgrade Reaction (reload) **56.49 MN/m2/m**

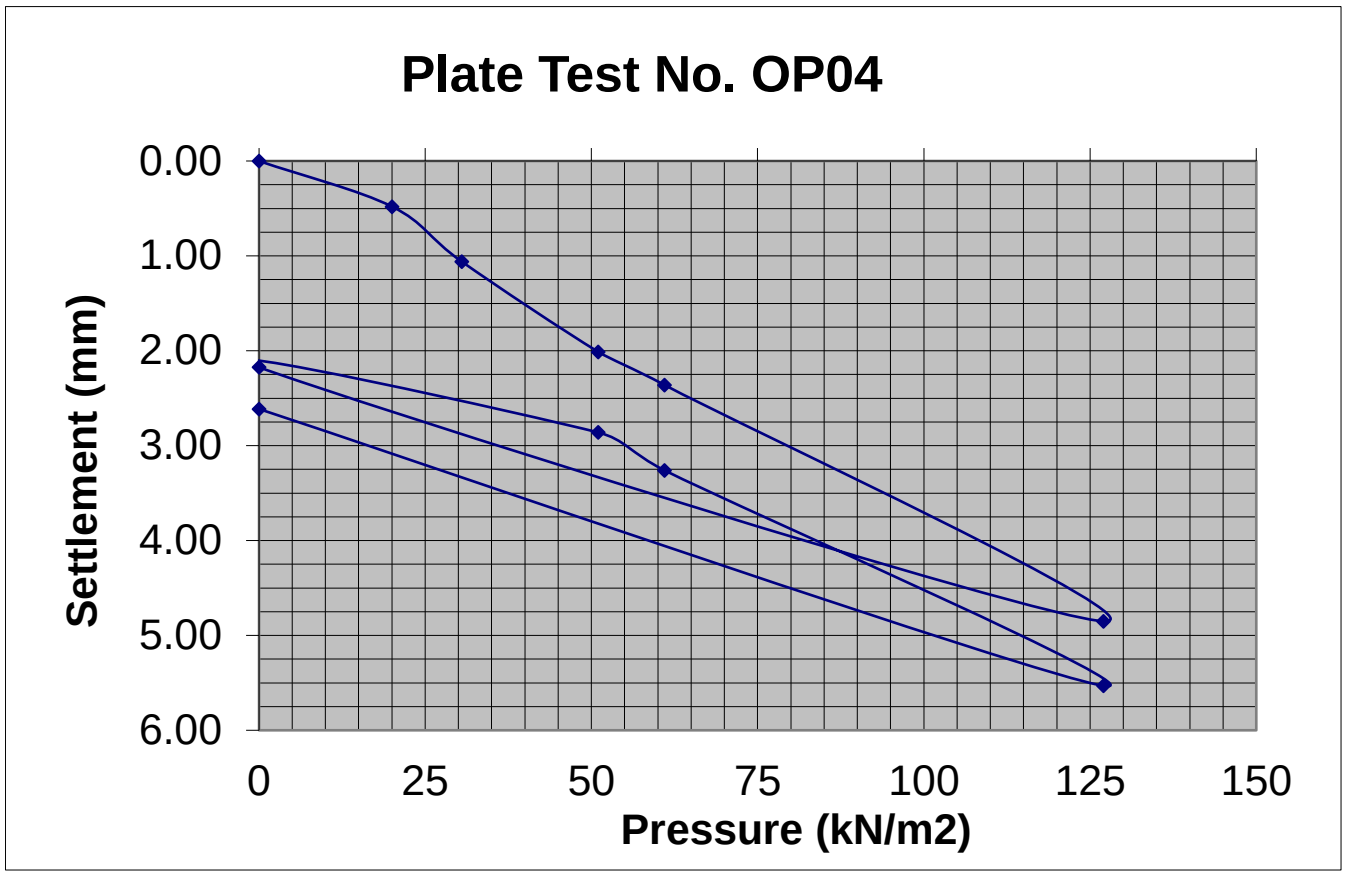
Equivalent CBR(initial)in accordance with HD25/94 volume7 = **1.45 %**

Equivalent CBR(reload)in accordance with HD25/94 volume7 = **10.48 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.48
30.5	8.48	1.06
51	14.1	2.01
61	17	2.36
127	36	4.85
0	0	2.17
51	14.1	2.86
61	17	3.26
127	36	5.53
0	0	2.61

LOCATION 244 Airfield Survey Phase 2
CONTRACT NO. 7926-07-18
DATE 08/08/2018
CLIENT Kilwex / DAA
PLATE DIAMETER 600mm
TEST NO.

MATERIAL MADE GROUND: Brown sandy gravelly Clay with pieces of redbrick
DEPTH 1.00 m BGL
NOTES Completed in OP04
SAMPLES See TP log



Maxium Load Applied (BS1377 P9 4.1.7.1) **125.00 kN/m2**

Note: Failure not evident - 15% plate diameter deflection not achieved

Modulus of Subgrade Reaction (initial) **21.07 MN/m2/m**

Modulus of Subgrade Reaction (reload) **45.74 MN/m2/m**

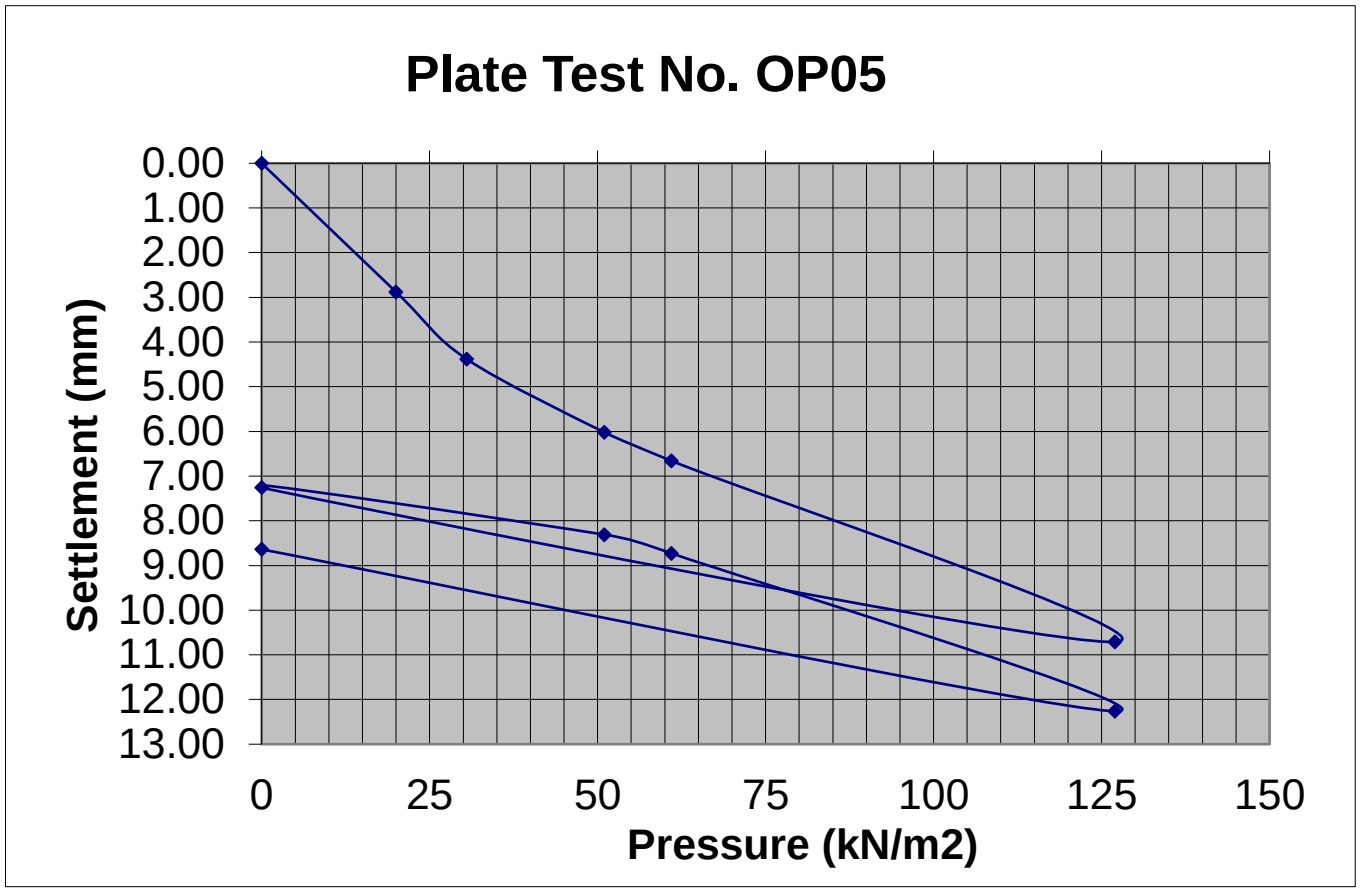
Equivalent CBR(initial)in accordance with HD25/94 volume7 = **1.90 %**

Equivalent CBR(reload)in accordance with HD25/94 volume7 = **7.27 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	2.88
30.5	8.48	4.38
51	14.1	6.02
61	17	6.66
127	36	10.71
0	0	7.26
51	14.1	8.31
61	17	8.73
127	36	12.26
0	0	8.64

LOCATION 244 Airfield Survey Phase 2
CONTRACT NO. 7926-07-18
DATE 01/08/2018
CLIENT Kilwex / DAA
PLATE DIAMETER 600mm
TEST NO.

MATERIAL MADE GROUND: Brown sandy gravelly Clay
DEPTH 1.00 m BGL
NOTES Completed in OP05
SAMPLES See TP log



Maxium Load Applied (BS1377 P9 4.1.7.1) **125.00 kN/m2**

Note: Failure not evident - 15% plate diameter deflection not achieved

Modulus of Subgrade Reaction (initial) **7.46 MN/m2/m**

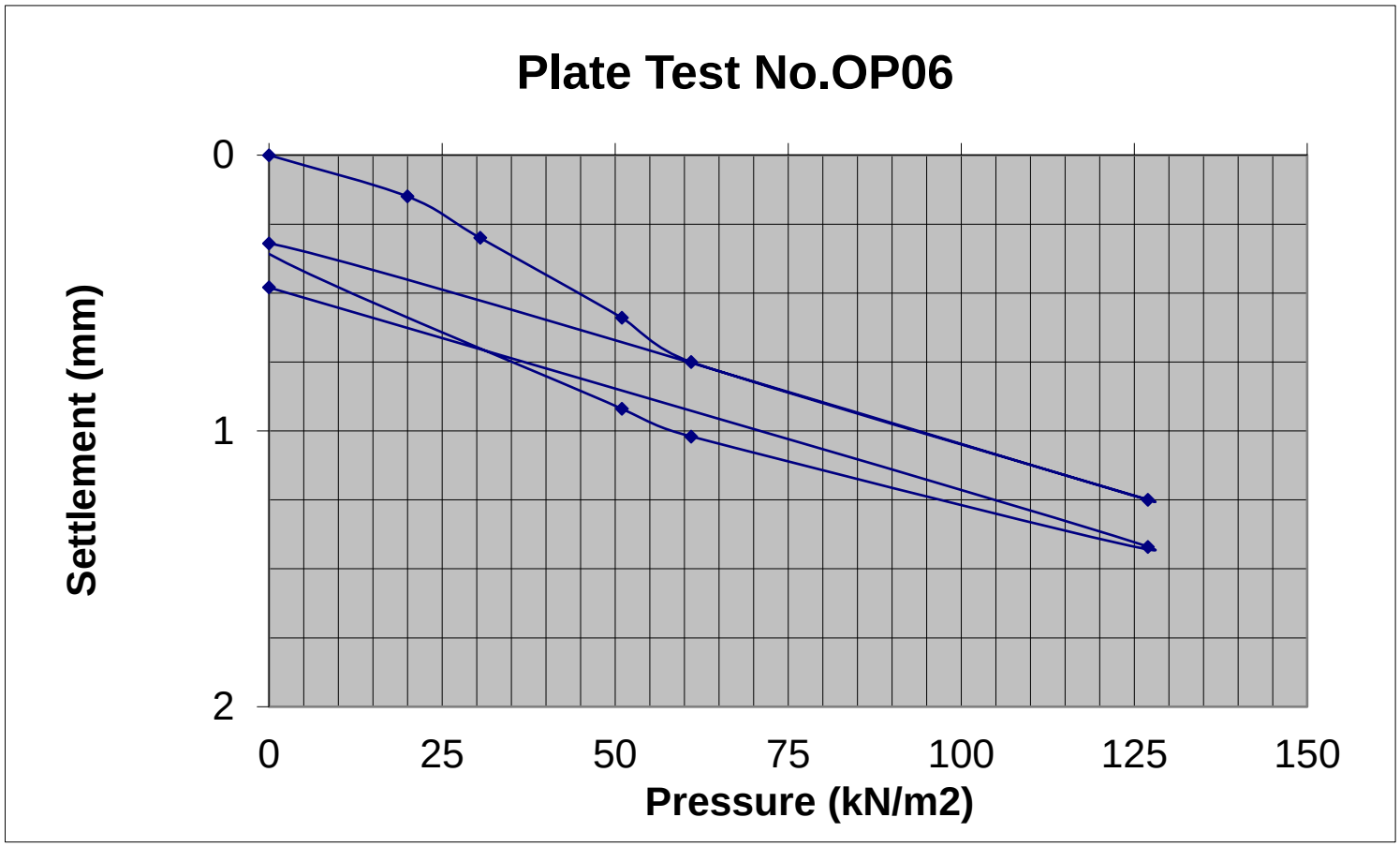
Modulus of Subgrade Reaction (reload) **33.82 MN/m2/m**

Equivalent CBR(initial)in accordance with HD25/94 volume7 = **0.31 %**

Equivalent CBR(reload)in accordance with HD25/94 volume7 = **4.31 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.15
30.5	8.48	0.30
51	14.1	0.59
61	17	0.75
127	36	1.25
0	0	0.32
51	14.1	0.92
61	17	1.02
127	36	1.42
0	0	0.48

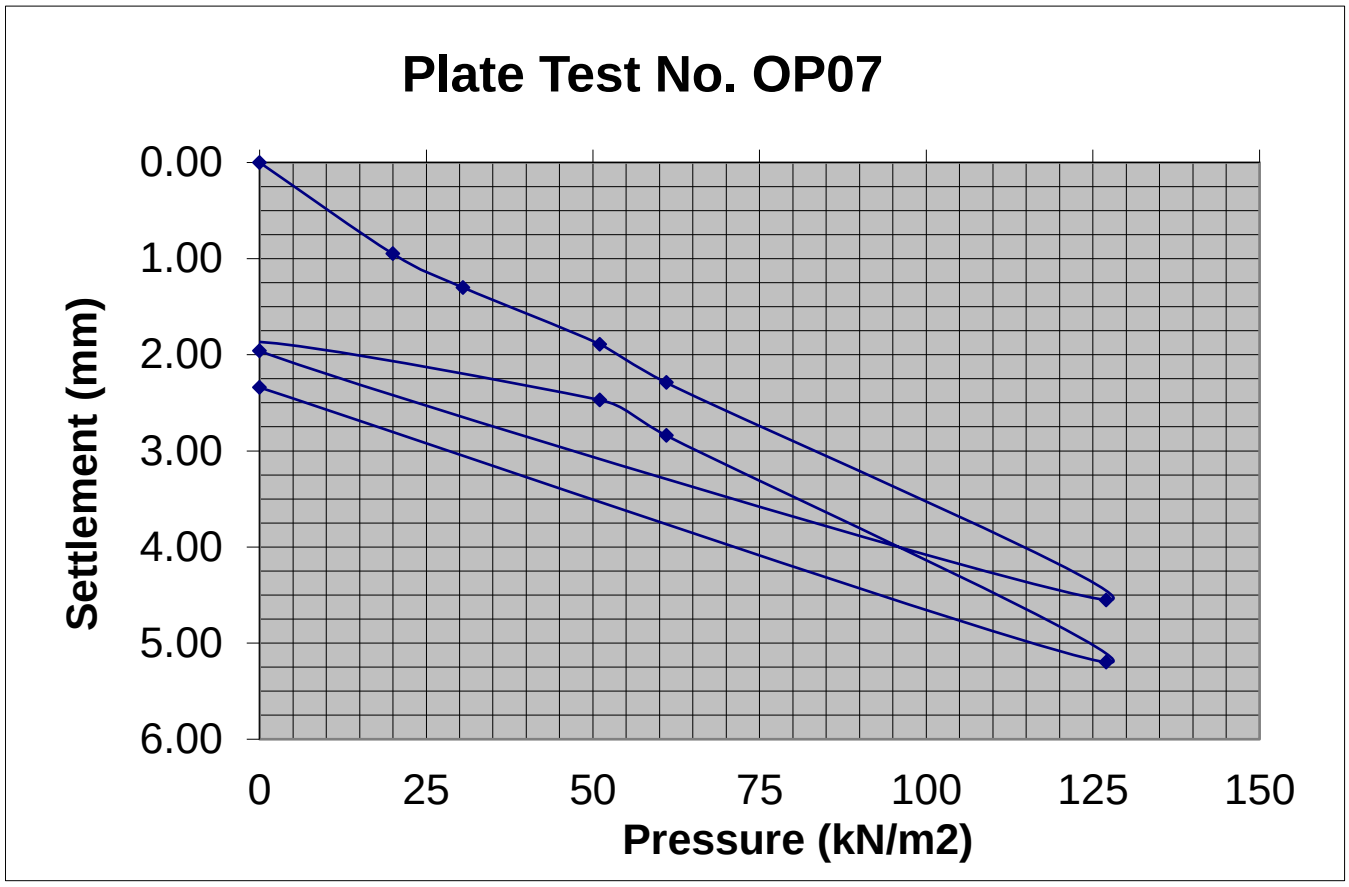
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	18/10/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in OP06
TEST NO.	OP06		



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**66.29 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**71.02 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**13.83 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**15.59 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.95
30.5	8.48	1.30
51	14.1	1.89
61	17	2.29
127	36	4.55
0	0	1.96
51	14.1	2.47
61	17	2.84
127	36	5.20
0	0	2.34

LOCATION	244 Airfield Survey Phase 2	**MATERIAL**	Brown sandy gravelly CLAY
CONTRACT NO.	7926-07-18		
DATE	03/08/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in OP07
TEST NO.		**SAMPLES**	See TP log



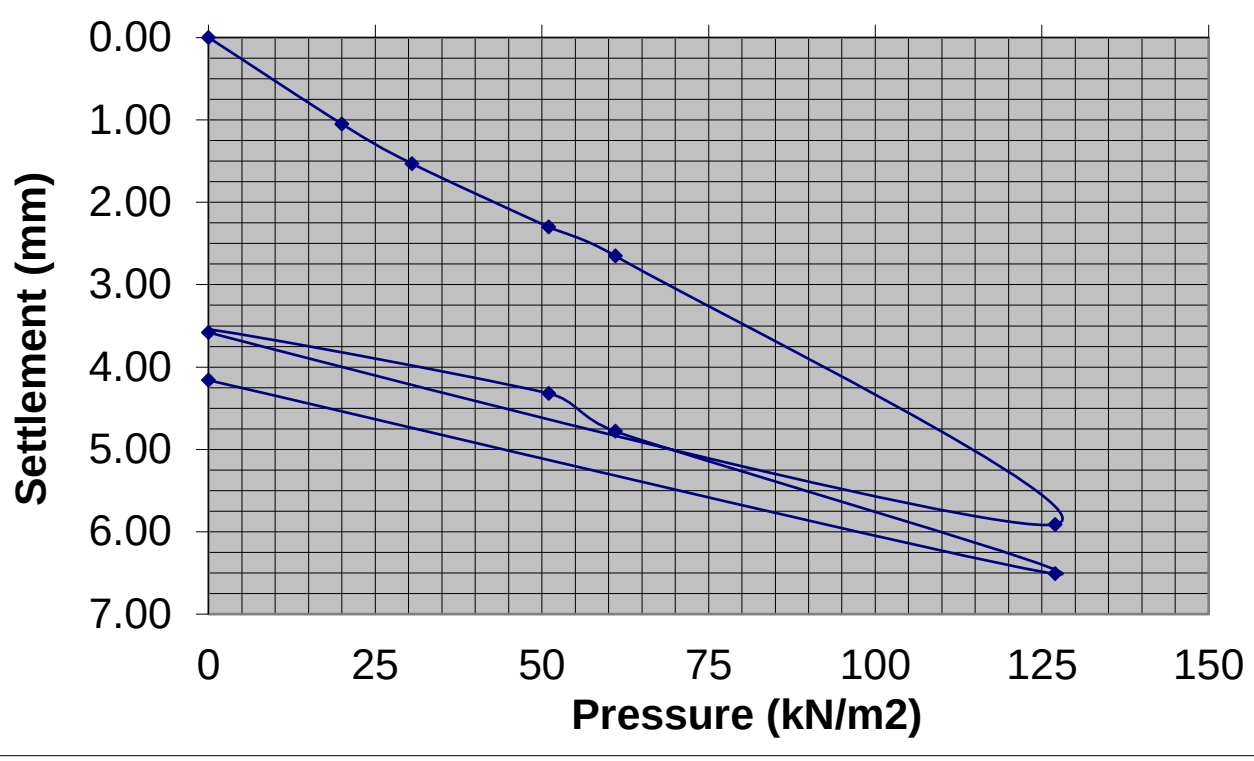
Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**21.71 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**56.49 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**2.00 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**10.48 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	1.05
30.5	8.48	1.53
51	14.1	2.30
61	17	2.65
127	36	5.91
0	0	3.58
51	14.1	4.32
61	17	4.78
127	36	6.51
0	0	4.16

LOCATION 244 Airfield Survey Phase 2
CONTRACT NO. 7926-07-18
DATE 13/08/2018
CLIENT Kilwex / DAA
PLATE DIAMETER 600mm
TEST NO.

MATERIAL Brown sandy gravelly CLAY
DEPTH 1.00 m BGL
NOTES Completed in OP08
SAMPLES See TP log

Plate Test No. OP08



Maxium Load Applied (BS1377 P9 4.1.7.1) **125.00 kN/m2**

Note: Failure not evident - 15% plate diameter deflection not achieved

Modulus of Subgrade Reaction (initial) **18.76 MN/m2/m**

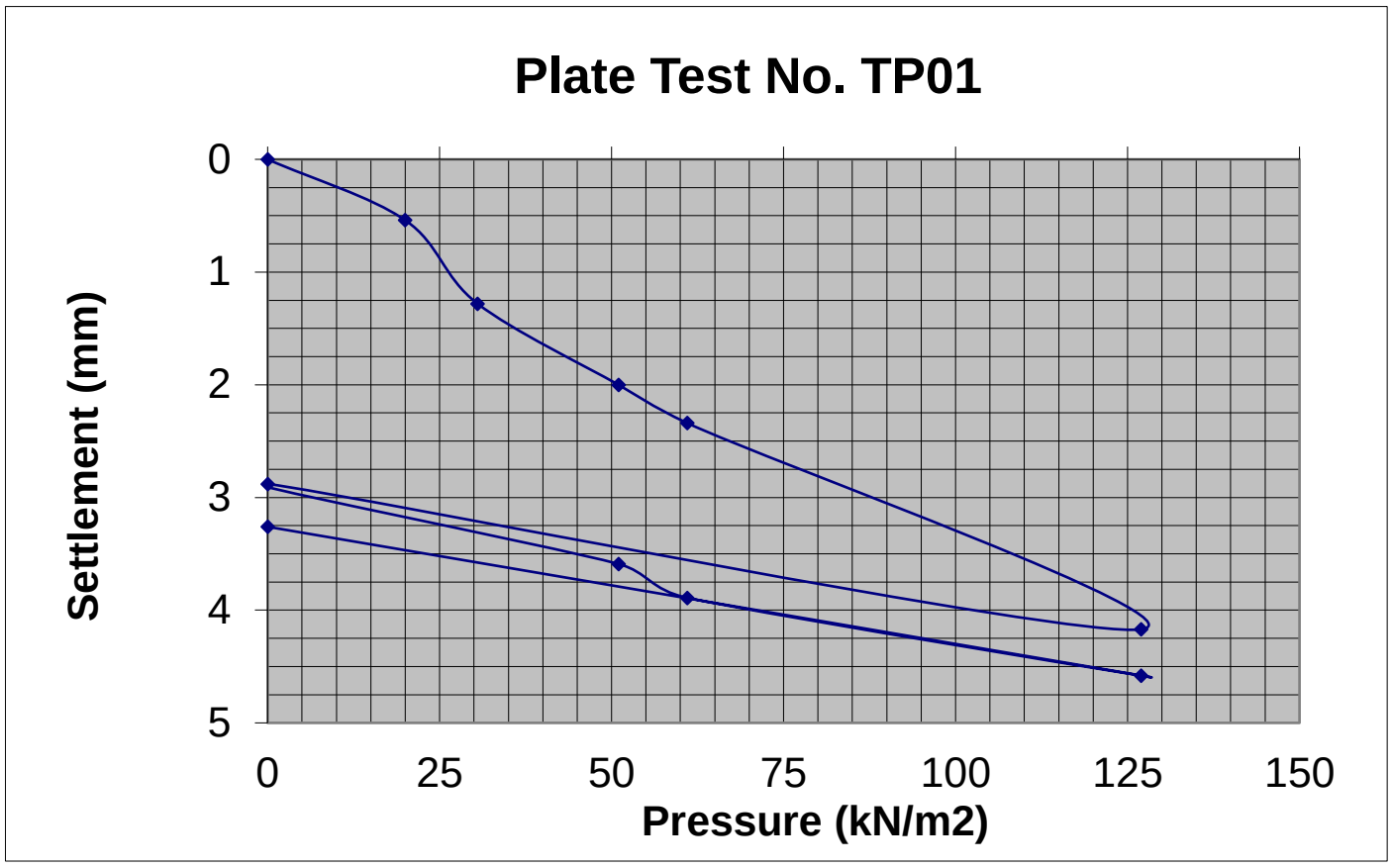
Modulus of Subgrade Reaction (reload) **41.43 MN/m2/m**

Equivalent CBR(initial)in accordance with HD25/94 volume7 = **1.55 %**

Equivalent CBR(reload)in accordance with HD25/94 volume7 = **6.13 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.54
30.5	8.48	1.28
51	14.1	2.00
61	17	2.34
127	36	4.17
0	0	2.88
51	14.1	3.59
61	17	3.89
127	36	4.58
0	0	3.26

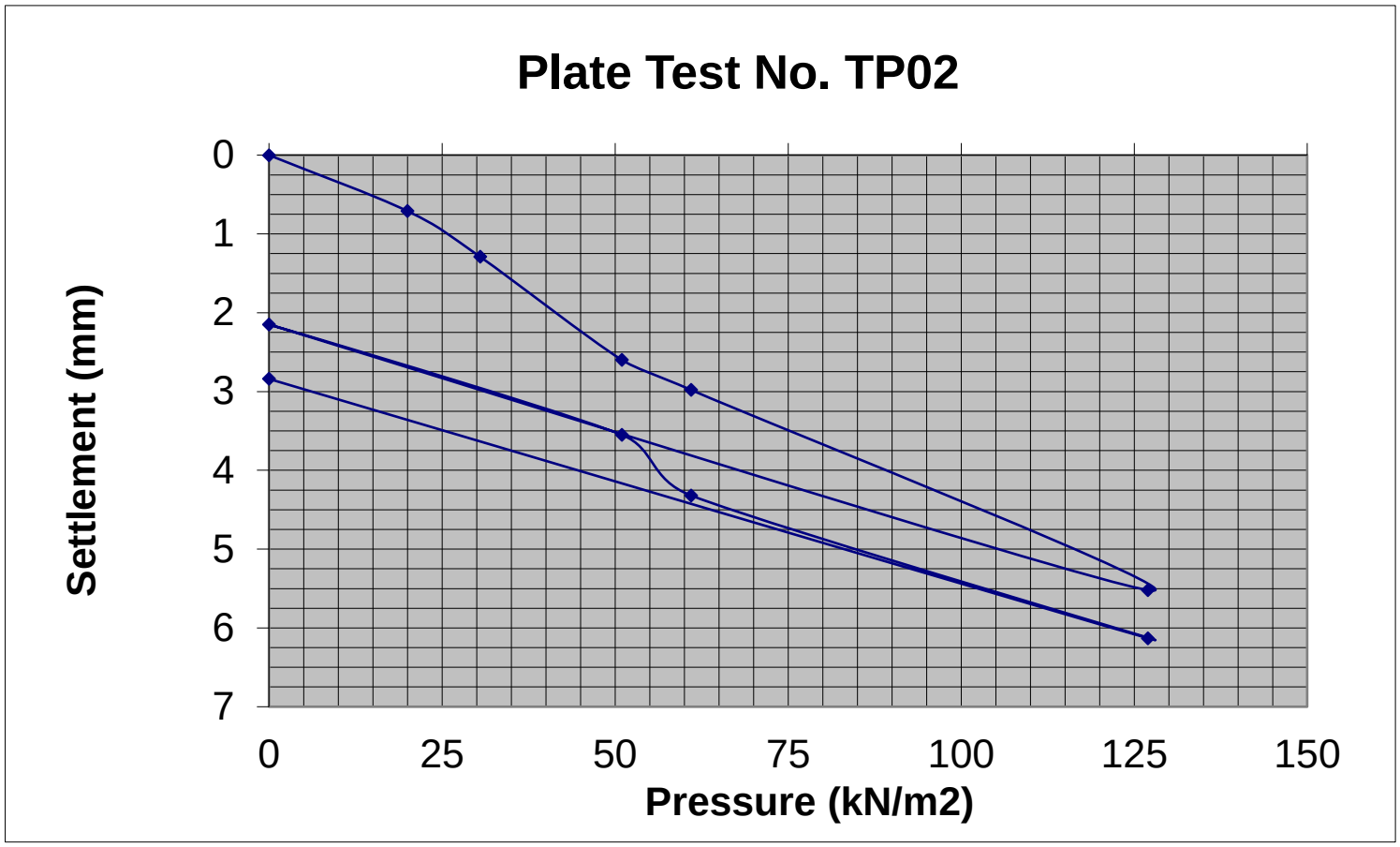
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	07/11/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP01
TEST NO.	TP01		



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**21.25 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**49.22 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**1.93 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**8.26 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.71
30.5	8.48	1.29
51	14.1	2.60
61	17	2.98
127	36	5.52
0	0	2.15
51	14.1	3.55
61	17	4.32
127	36	6.13
0	0	2.84

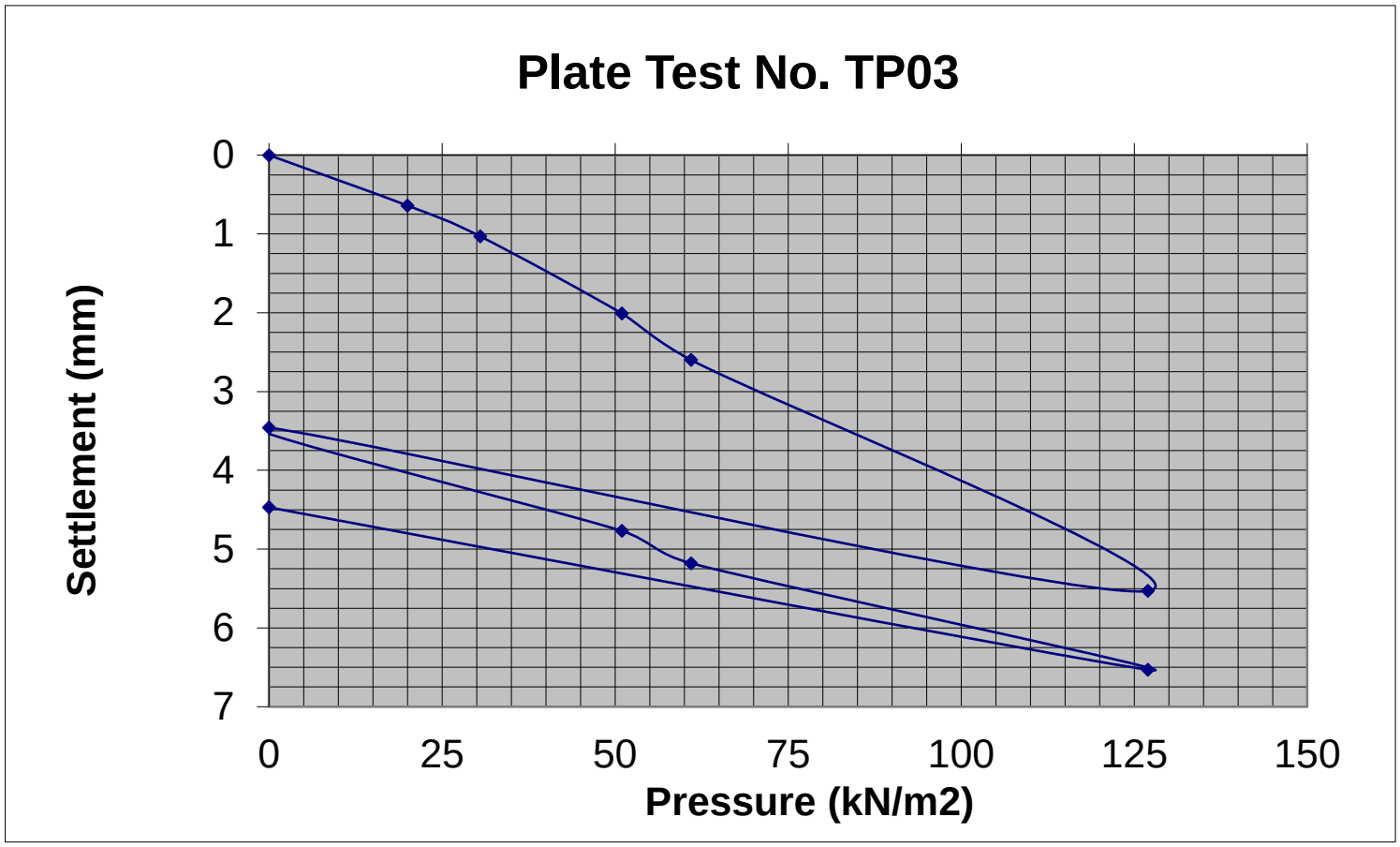
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	07/11/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP02
TEST NO.	TP02		



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**16.68 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**22.91 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**1.27 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**2.19 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.64
30.5	8.48	1.03
51	14.1	2.01
61	17	2.60
127	36	5.53
0	0	3.46
51	14.1	4.77
61	17	5.18
127	36	6.53
0	0	4.47

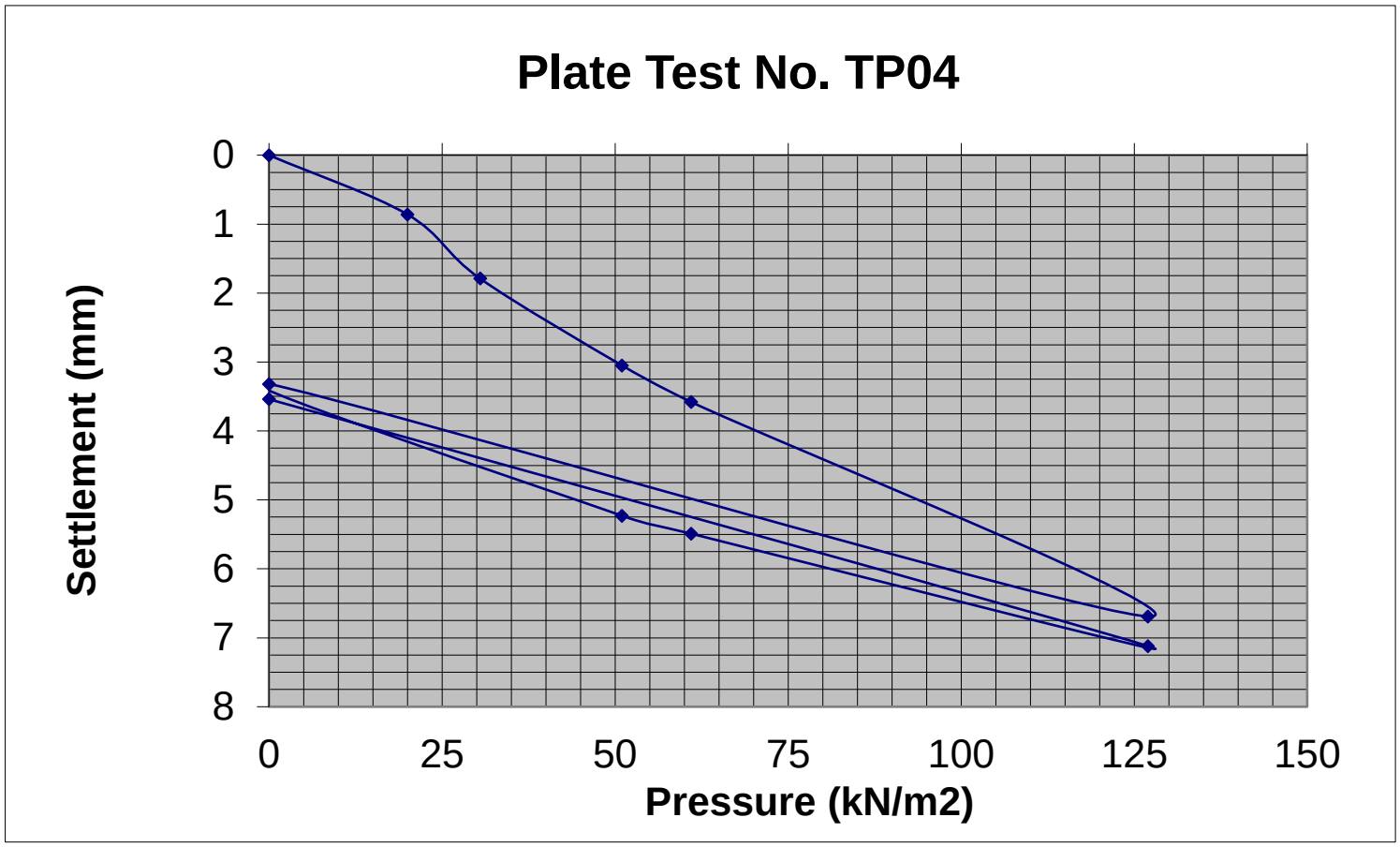
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	08/11/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP03
TEST NO.	TP03		



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**19.12 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**28.90 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**1.60 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**3.28 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.86
30.5	8.48	1.79
51	14.1	3.05
61	17	3.58
127	36	6.69
0	0	3.32
51	14.1	5.23
61	17	5.49
127	36	7.12
0	0	3.54

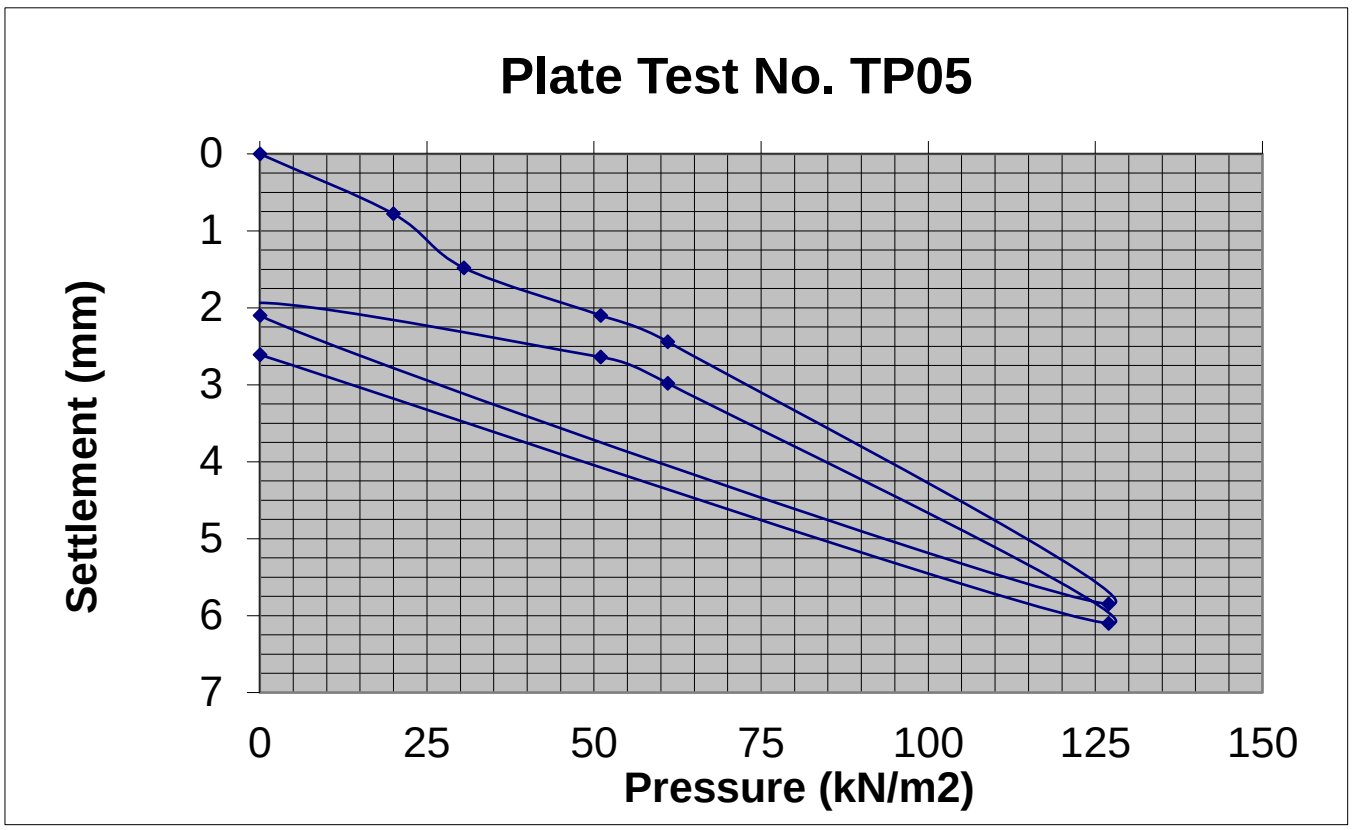
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	21/11/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP04
TEST NO.	TP04		



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00**	**kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved		
Modulus of Subgrade Reaction (initial)	**13.89**	**MN/m2/m**
Modulus of Subgrade Reaction (reload)	**22.91**	**MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**0.92**	**%**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**2.19**	**%**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.78
30.5	8.48	1.48
51	14.1	2.10
61	17	2.44
127	36	5.85
0	0	2.10
51	14.1	2.64
61	17	2.98
127	36	6.10
0	0	2.61

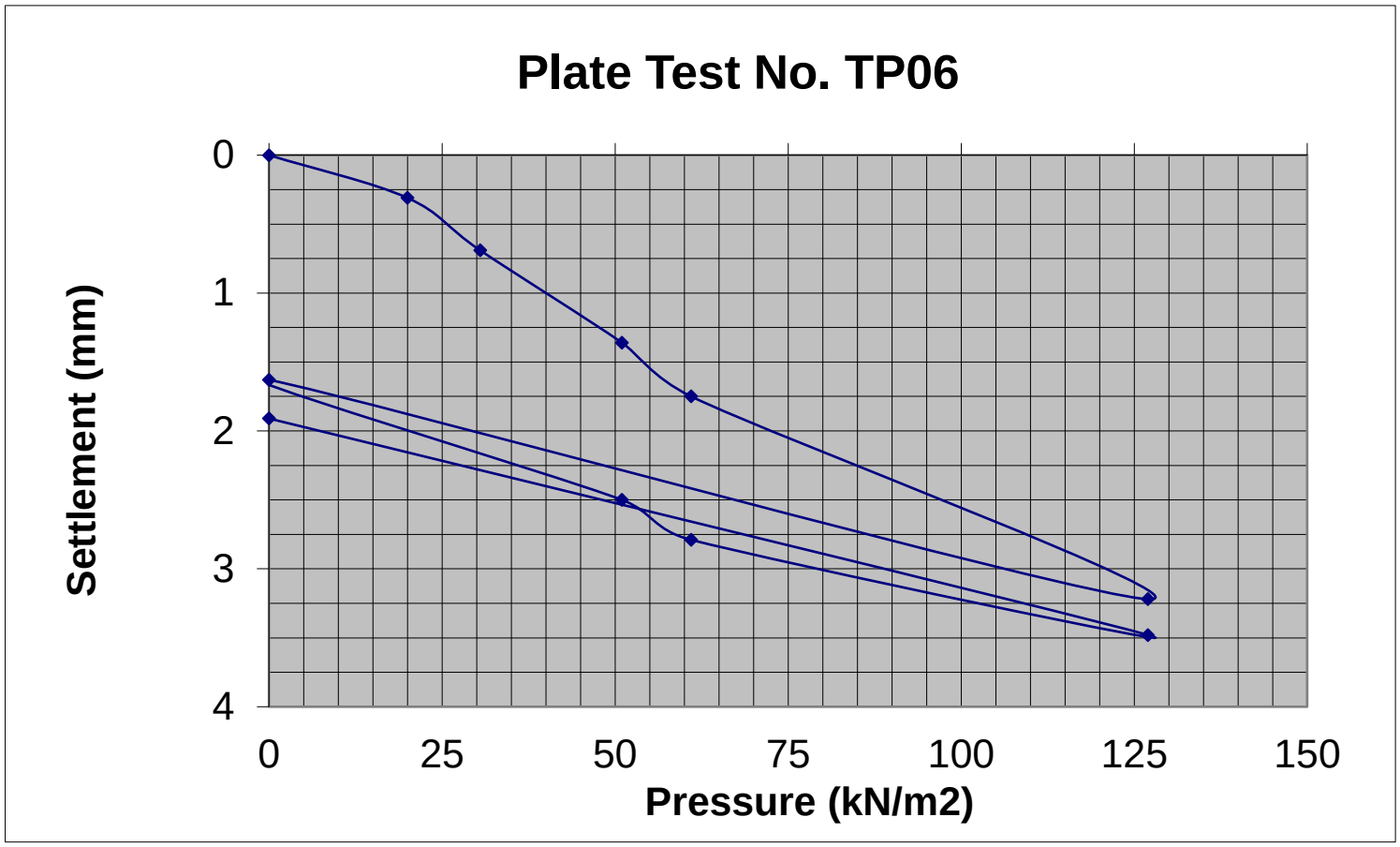
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	12/11/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP05
TEST NO.	TP05		



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00**	**kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved		
Modulus of Subgrade Reaction (initial)	**20.38**	**MN/m2/m**
Modulus of Subgrade Reaction (reload)	**56.49**	**MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**1.79**	**%**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**10.48**	**%**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.31
30.5	8.48	0.69
51	14.1	1.36
61	17	1.75
127	36	3.22
0	0	1.63
51	14.1	2.50
61	17	2.79
127	36	3.48
0	0	1.91

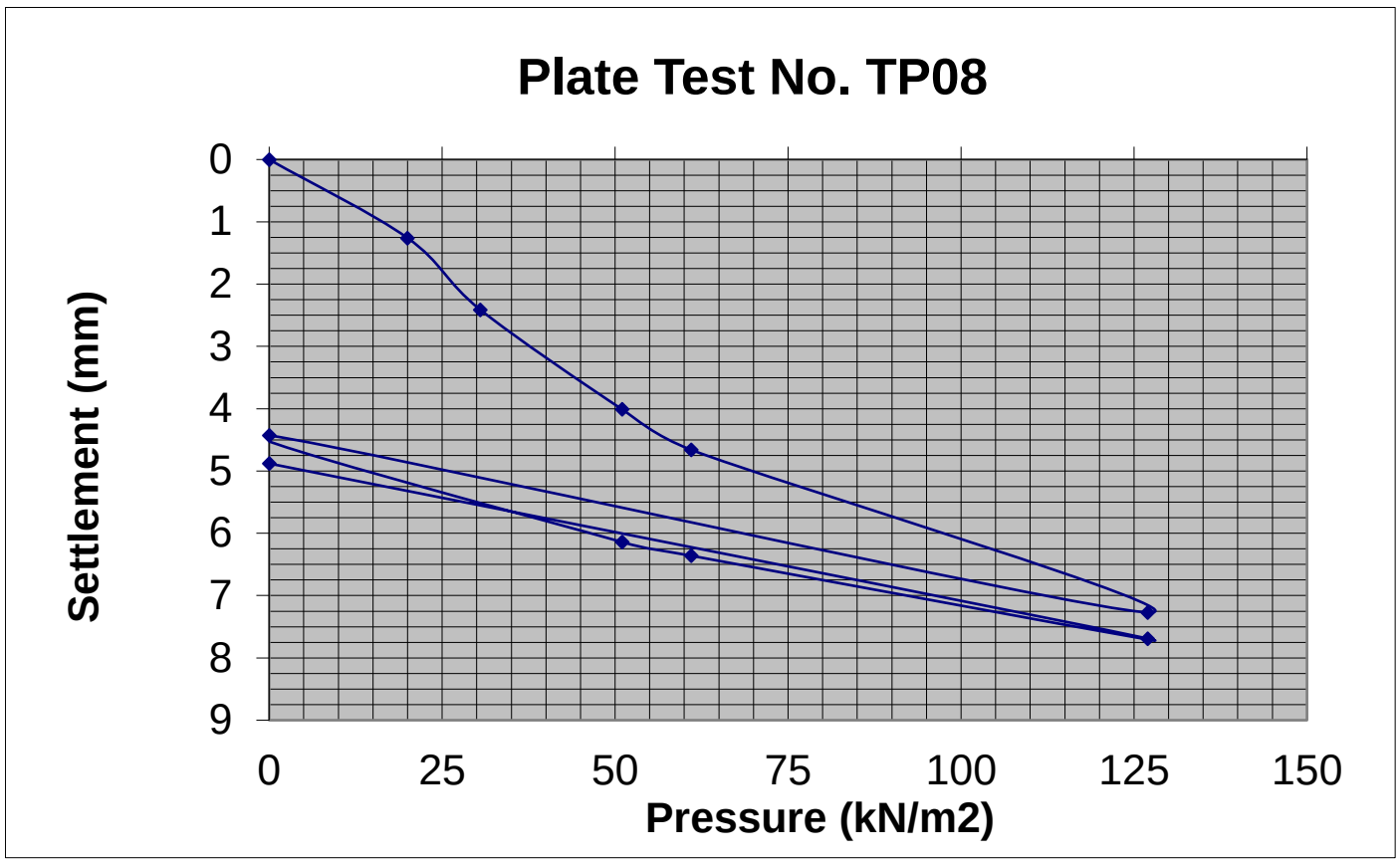
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	20/11/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP06
TEST NO.	TP05		



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00**	**kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved		
Modulus of Subgrade Reaction (initial)	**28.41**	**MN/m2/m**
Modulus of Subgrade Reaction (reload)	**42.86**	**MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**3.19**	**%**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**6.50**	**%**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	1.26
30.5	8.48	2.41
51	14.1	4.01
61	17	4.66
127	36	7.27
0	0	4.43
51	14.1	6.14
61	17	6.36
127	36	7.69
0	0	4.88

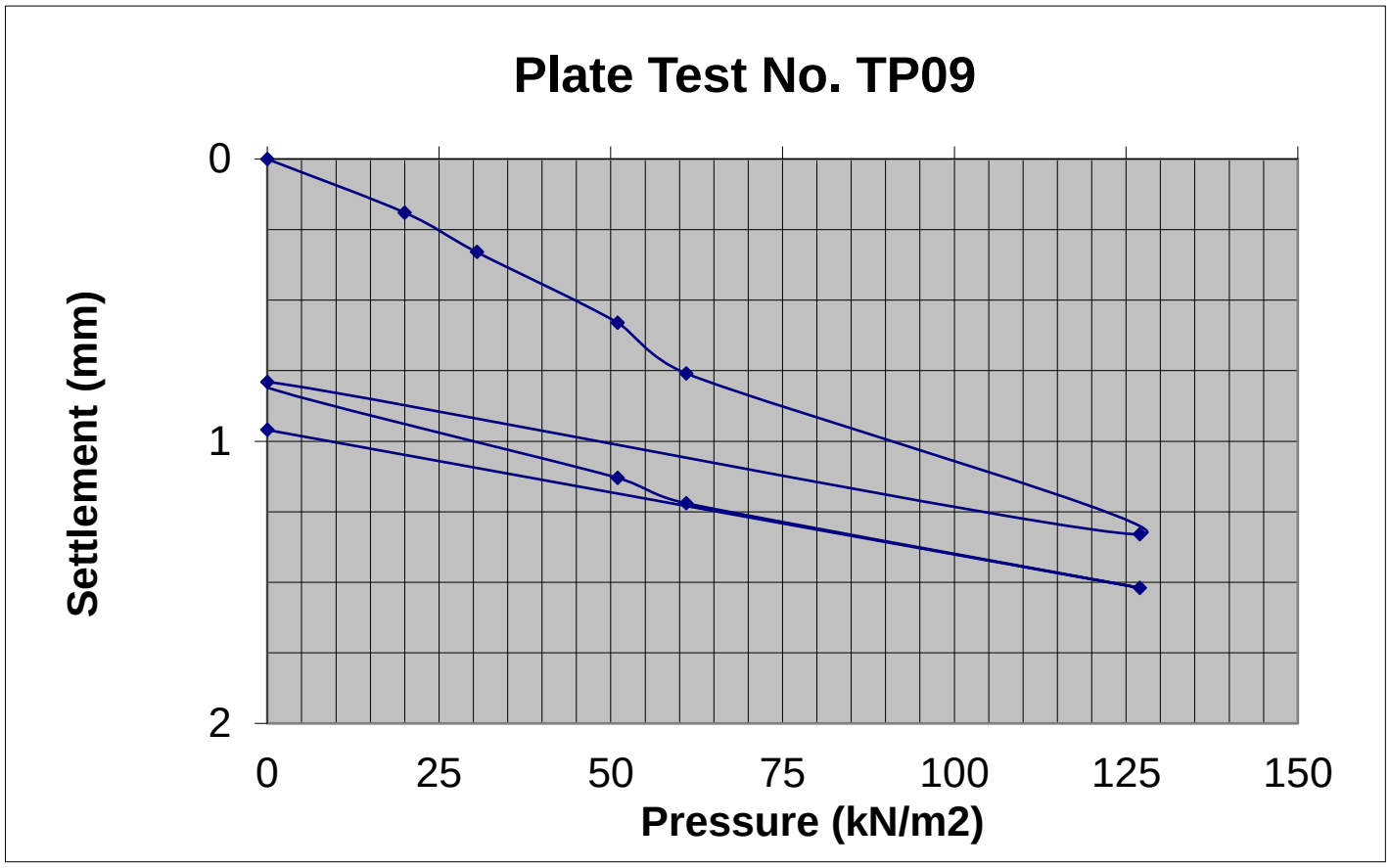
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	16/10/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP08
TEST NO.	TP08		



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00**	**kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved		
Modulus of Subgrade Reaction (initial)	**10.67**	**MN/m2/m**
Modulus of Subgrade Reaction (reload)	**25.76**	**MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**0.58**	**%**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**2.69**	**%**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.19
30.5	8.48	0.33
51	14.1	0.58
61	17	0.76
127	36	1.33
0	0	0.79
51	14.1	1.13
61	17	1.22
127	36	1.52
0	0	0.96

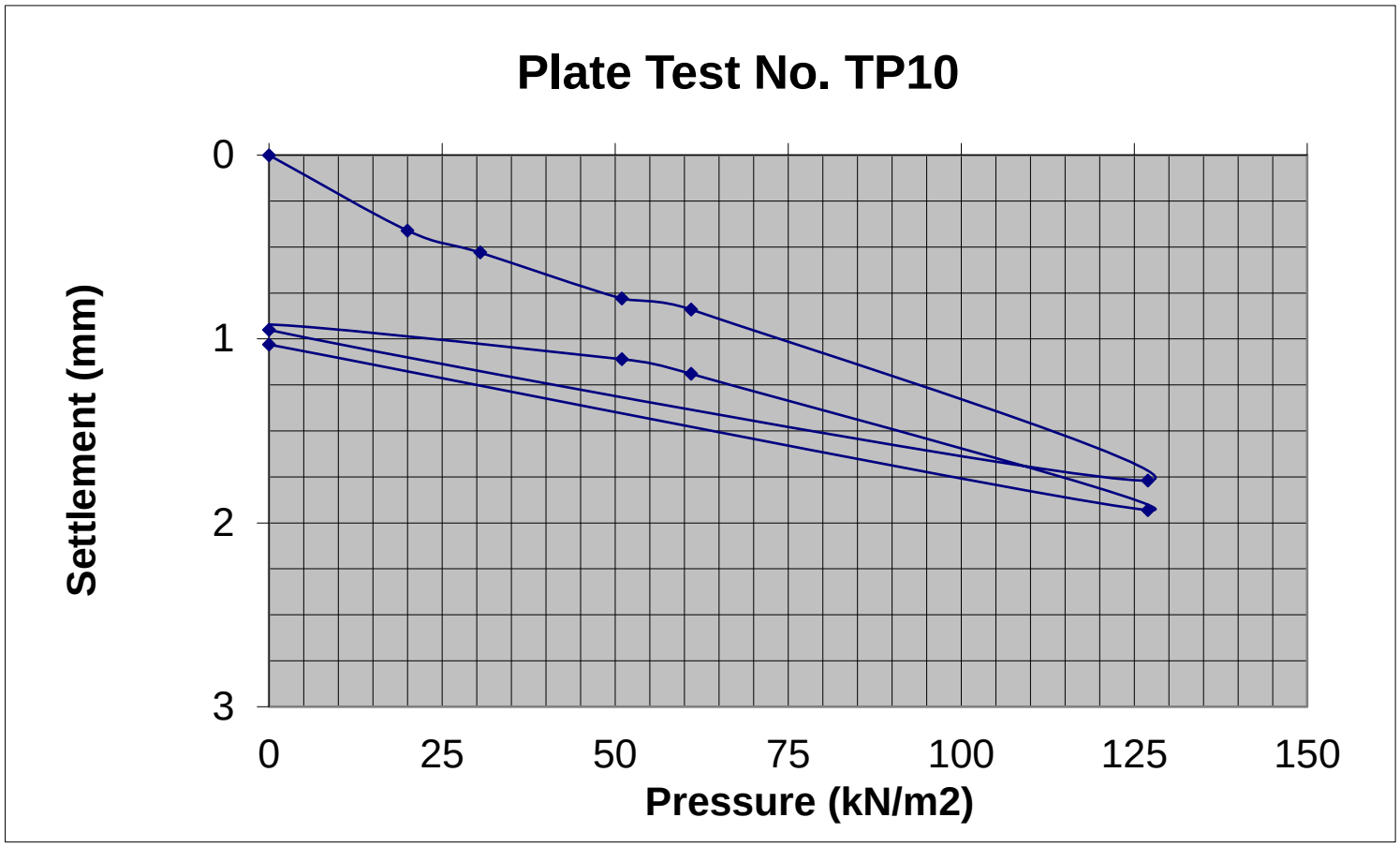
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	16/10/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP09
TEST NO.	TP09		



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**65.41 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**115.62 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**13.52 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**36.27 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.41
30.5	8.48	0.53
51	14.1	0.78
61	17	0.84
127	36	1.77
0	0	0.95
51	14.1	1.11
61	17	1.19
127	36	1.93
0	0	1.03

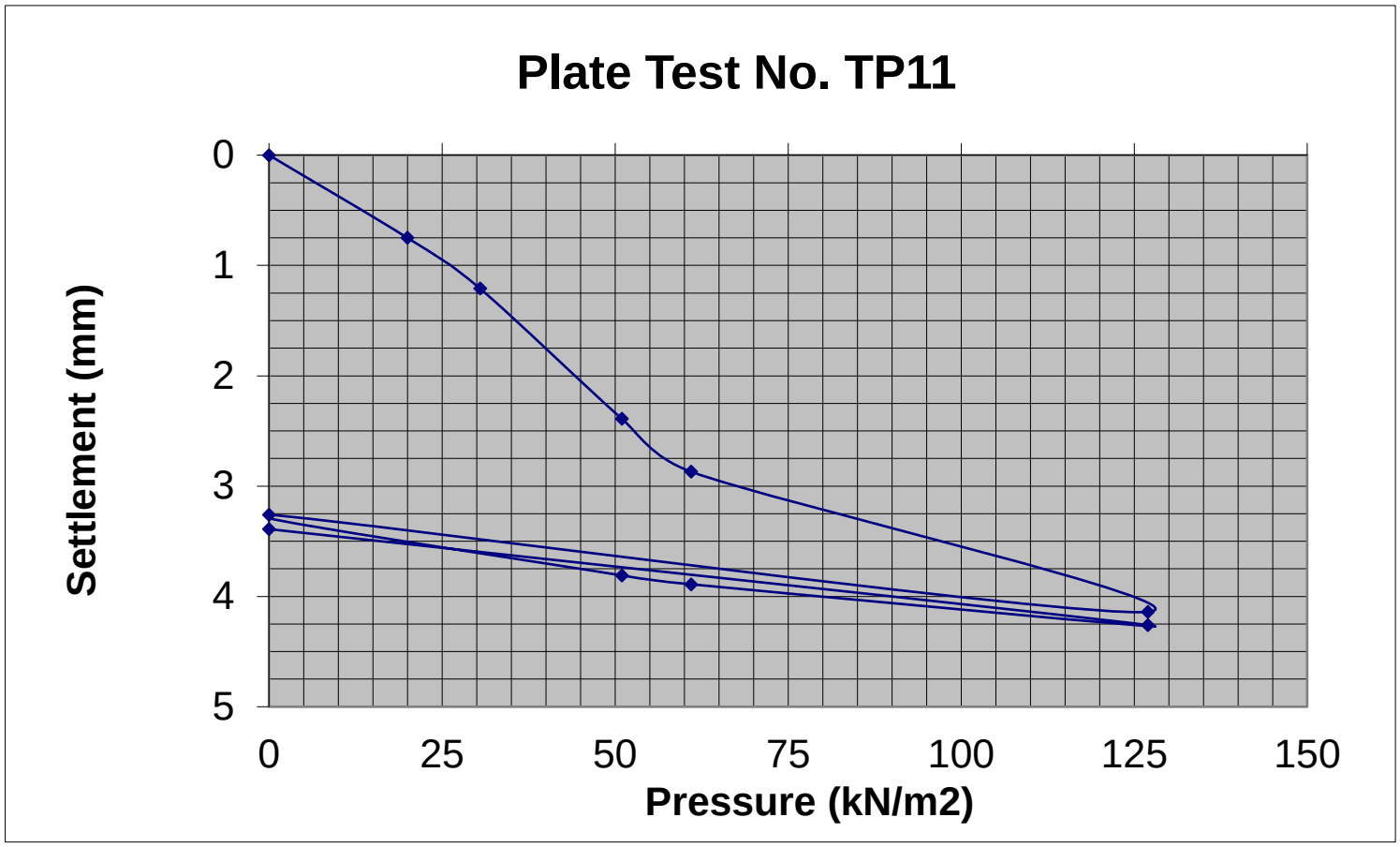
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	17/10/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP10
TEST NO.	TP10		



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**59.18 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**207.15 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**11.36 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**99.64 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.75
30.5	8.48	1.21
51	14.1	2.39
61	17	2.87
127	36	4.14
0	0	3.26
51	14.1	3.81
61	17	3.89
127	36	4.26
0	0	3.39

LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	22/10/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP11
TEST NO.	TP11		

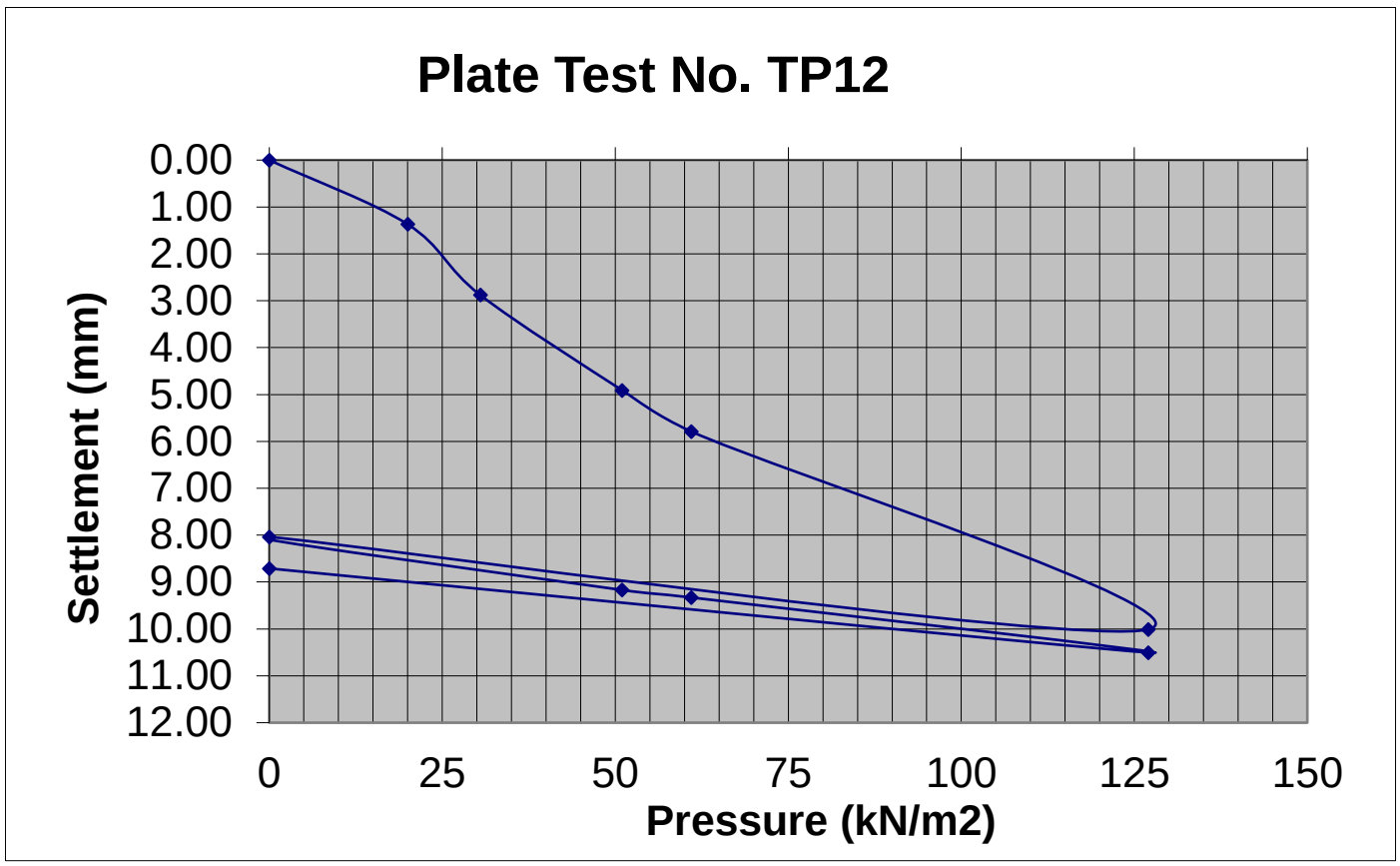


Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00**	**kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved		
Modulus of Subgrade Reaction (initial)	**17.32**	**MN/m2/m**
Modulus of Subgrade Reaction (reload)	**78.91**	**MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**1.35**	**%**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**18.71**	**%**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	1.37
30.5	8.48	2.88
51	14.1	4.91
61	17	5.79
127	36	10.01
0	0	8.04
51	14.1	9.17
61	17	9.33
127	36	10.50
0	0	8.71

LOCATION 244 Airfield Survey Phase 2
CONTRACT NO. 7926-07-18
DATE 29/07/2018
CLIENT Kilwex / DAA
PLATE DIAMETER 600mm
TEST NO.

MATERIAL Brown sandy gravelly CLAY
DEPTH 1.00 m BGL
NOTES Completed in TP12
SAMPLES See TP log



Maxium Load Applied (BS1377 P9 4.1.7.1) **125.00 kN/m2**

Note: Failure not evident - 15% plate diameter deflection not achieved

Modulus of Subgrade Reaction (initial) **8.59 MN/m2/m**

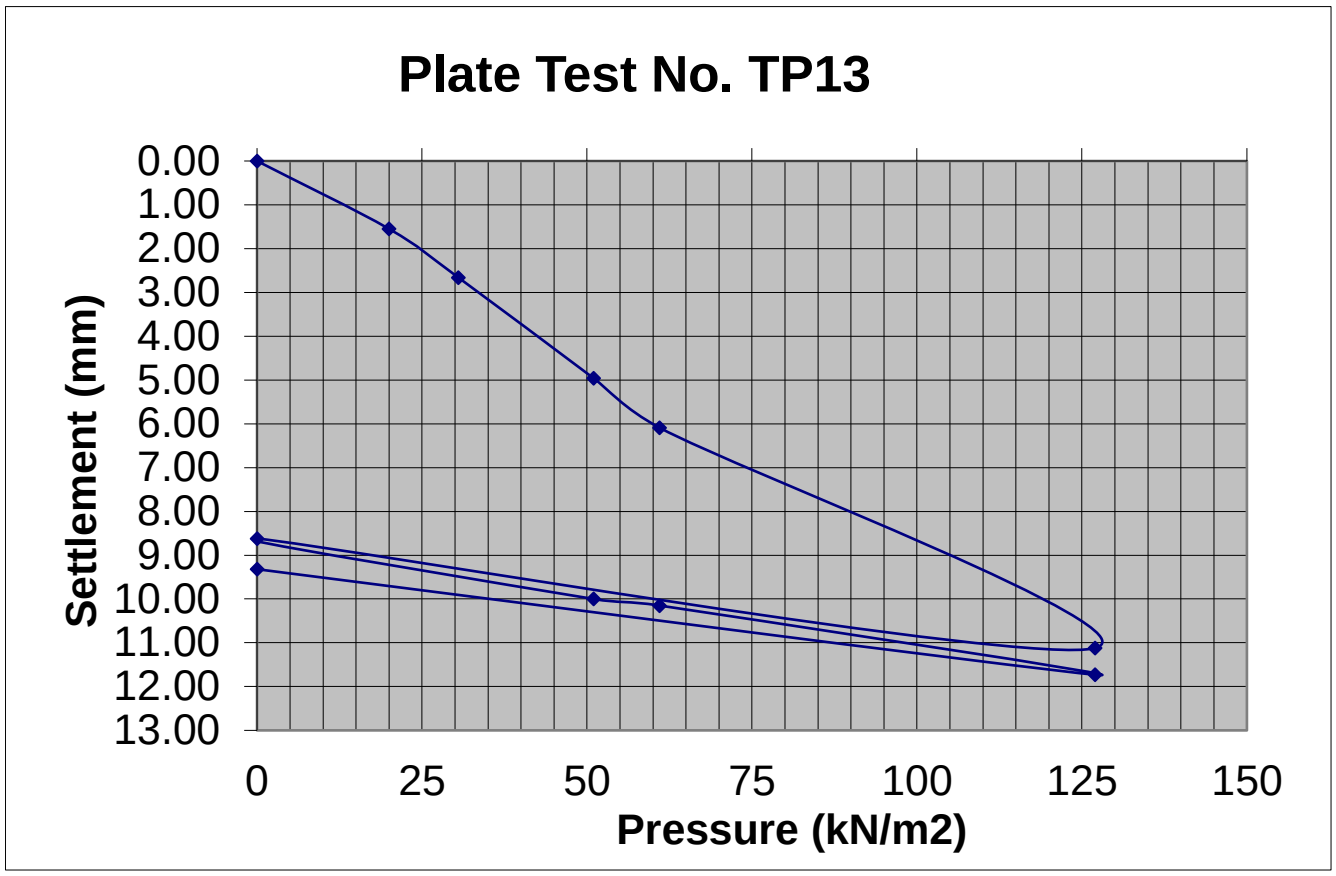
Modulus of Subgrade Reaction (reload) **38.54 MN/m2/m**

Equivalent CBR(initial)in accordance with HD25/94 volume7 = **0.40 %**

Equivalent CBR(reload)in accordance with HD25/94 volume7 = **5.40 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	1.55
30.5	8.48	2.66
51	14.1	4.96
61	17	6.09
127	36	11.12
0	0	8.62
51	14.1	10.00
61	17	10.15
127	36	11.73
0	0	9.32

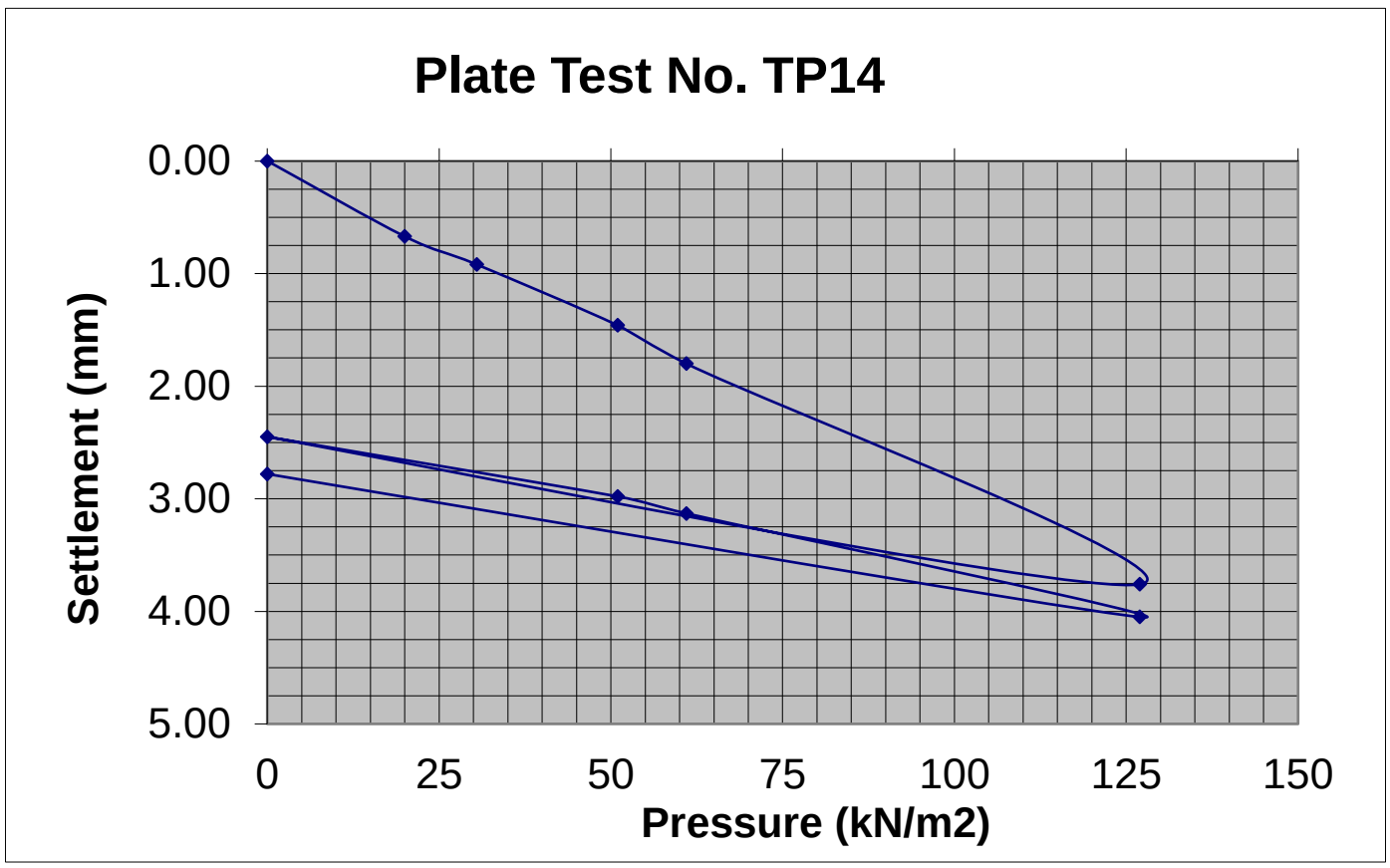
LOCATION	244 Airfield Survey Phase 2	**MATERIAL**	Brown sandy gravelly CLAY
CONTRACT NO.	7926-07-18		
DATE	29/07/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP13
TEST NO.		**SAMPLES**	See TP log



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**8.16 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**32.49 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**0.37 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**4.02 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.67
30.5	8.48	0.92
51	14.1	1.46
61	17	1.80
127	36	3.76
0	0	2.45
51	14.1	2.98
61	17	3.13
127	36	4.05
0	0	2.78

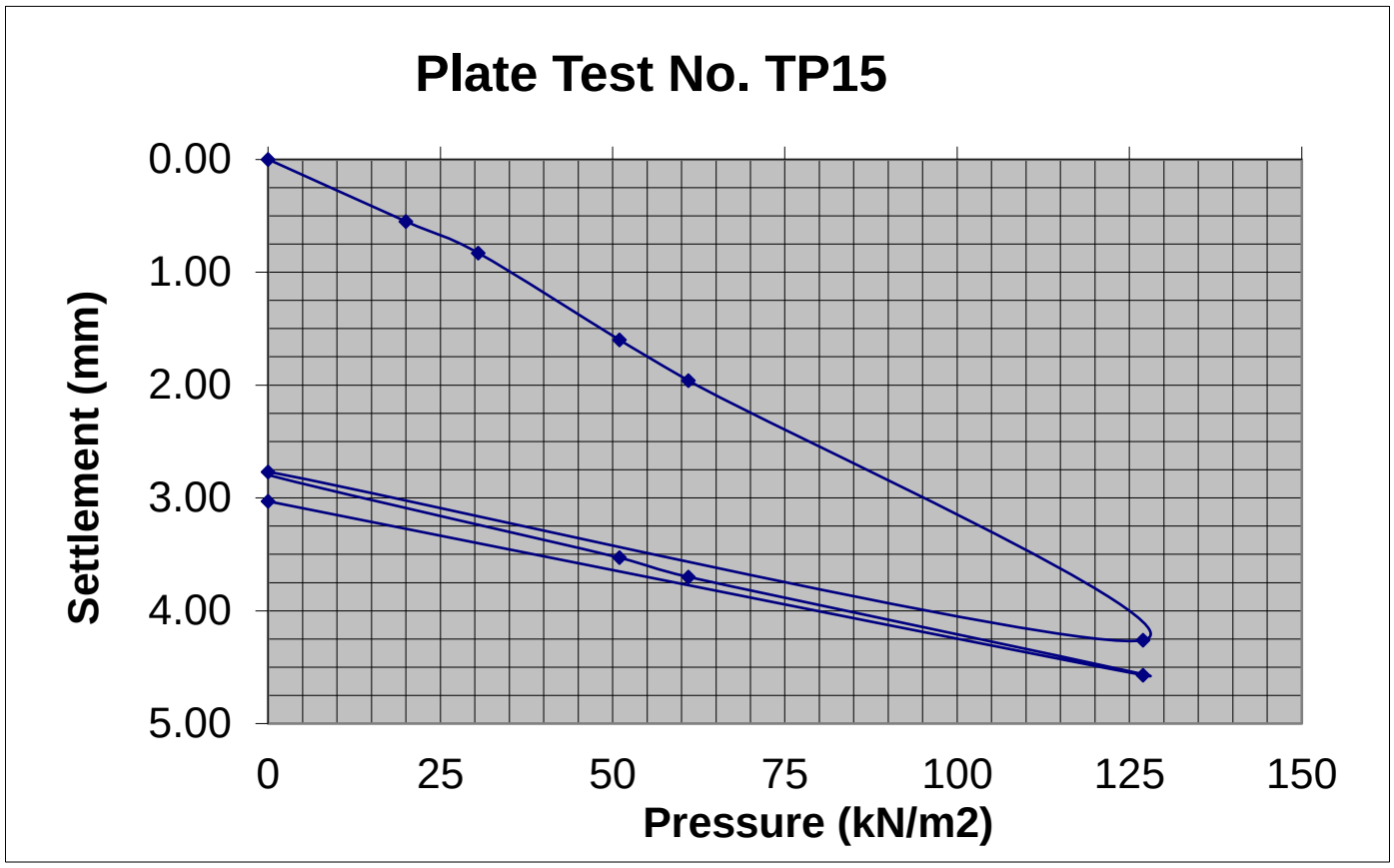
LOCATION	244 Airfield Survey Phase 2	**MATERIAL**	Brown sandy gravelly CLAY
CONTRACT NO.	7926-07-18		
DATE	31/07/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP14
TEST NO.		**SAMPLES**	See TP log



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00**	**kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved		
Modulus of Subgrade Reaction (initial)	**27.62**	**MN/m2/m**
Modulus of Subgrade Reaction (reload)	**73.11**	**MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**3.03**	**%**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**16.39**	**%**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.55
30.5	8.48	0.83
51	14.1	1.60
61	17	1.96
127	36	4.26
0	0	2.77
51	14.1	3.53
61	17	3.70
127	36	4.57
0	0	3.03

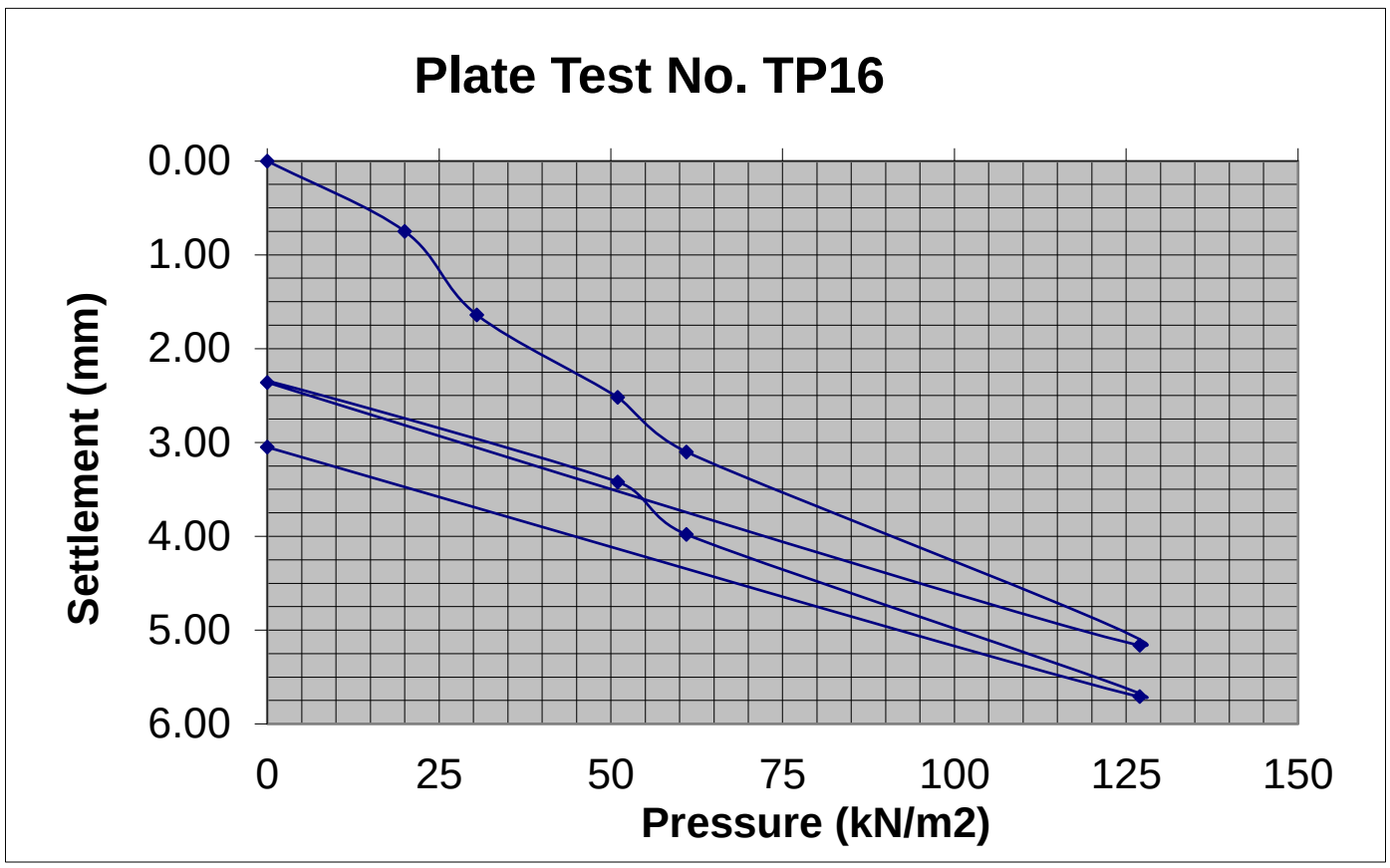
LOCATION	244 Airfield Survey Phase 2	**MATERIAL**	Brown sandy gravelly CLAY
CONTRACT NO.	7926-07-18		
DATE	31/07/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP14
TEST NO.		**SAMPLES**	See TP log



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00**	**kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved		
Modulus of Subgrade Reaction (initial)	**25.36**	**MN/m2/m**
Modulus of Subgrade Reaction (reload)	**53.46**	**MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**2.62**	**%**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**9.53**	**%**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.75
30.5	8.48	1.64
51	14.1	2.52
61	17	3.10
127	36	5.16
0	0	2.36
51	14.1	3.42
61	17	3.98
127	36	5.71
0	0	3.05

LOCATION	244 Airfield Survey Phase 2	**MATERIAL**	Brown sandy gravelly CLAY
CONTRACT NO.	7926-07-18		
DATE	14/08/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP16
TEST NO.		**SAMPLES**	See TP log

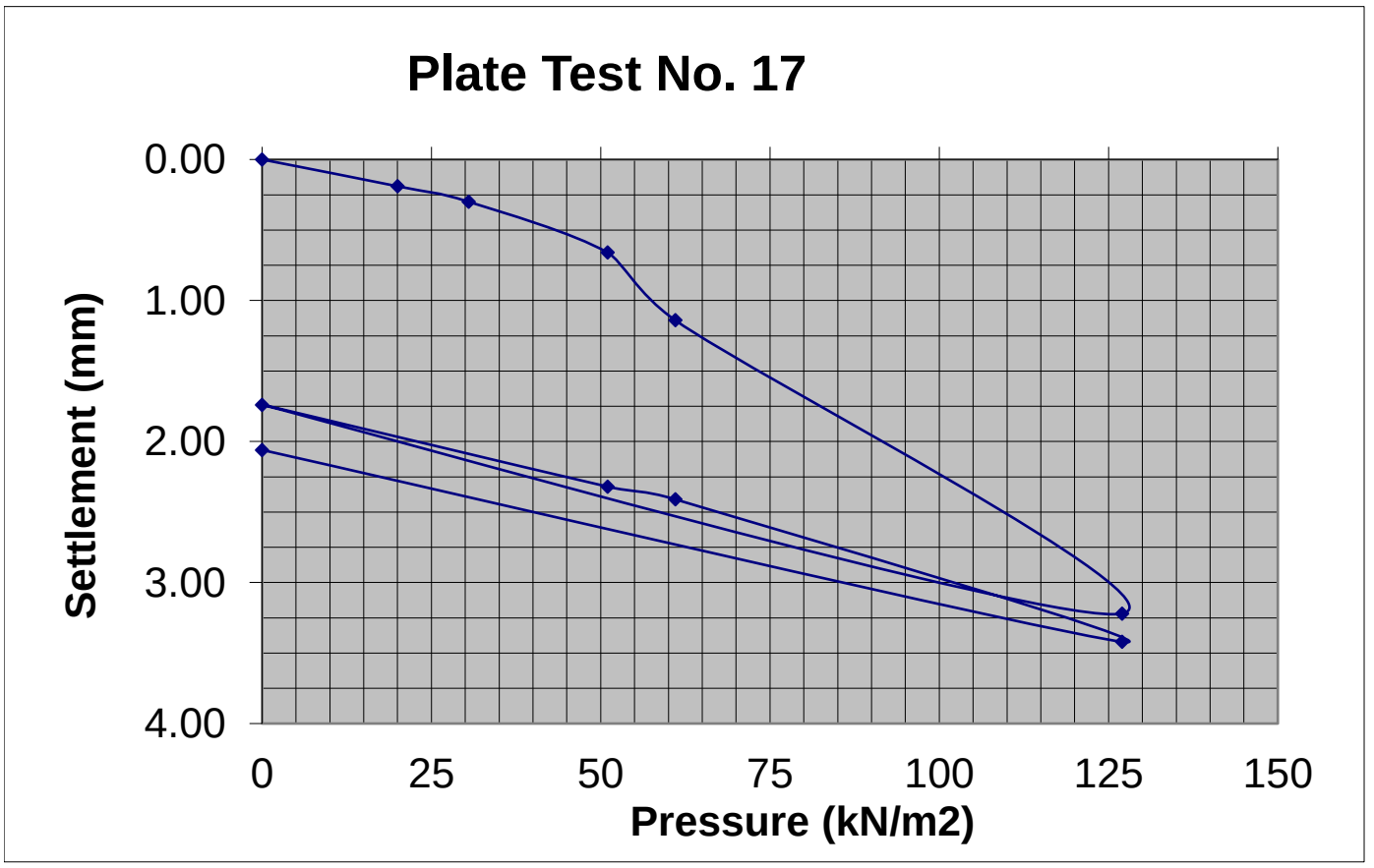


Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**16.04 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**30.69 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**1.18 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**3.64 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.19
30.5	8.48	0.30
51	14.1	0.66
61	17	1.14
127	36	3.22
0	0	1.74
51	14.1	2.32
61	17	2.41
127	36	3.42
0	0	2.06

LOCATION 244 Airfield Survey Phase 2
CONTRACT NO. 7926-07-18
DATE 31/07/2018
CLIENT Kilwex / DAA
PLATE DIAMETER 600mm
TEST NO.

MATERIAL Brown sandy gravelly CLAY
DEPTH 1.00 m BGL
NOTES Completed in TP17
SAMPLES See TP log



Maxium Load Applied (BS1377 P9 4.1.7.1) **125.00 kN/m2**

Note: Failure not evident - 15% plate diameter deflection not achieved

Modulus of Subgrade Reaction (initial) **43.61 MN/m2/m**

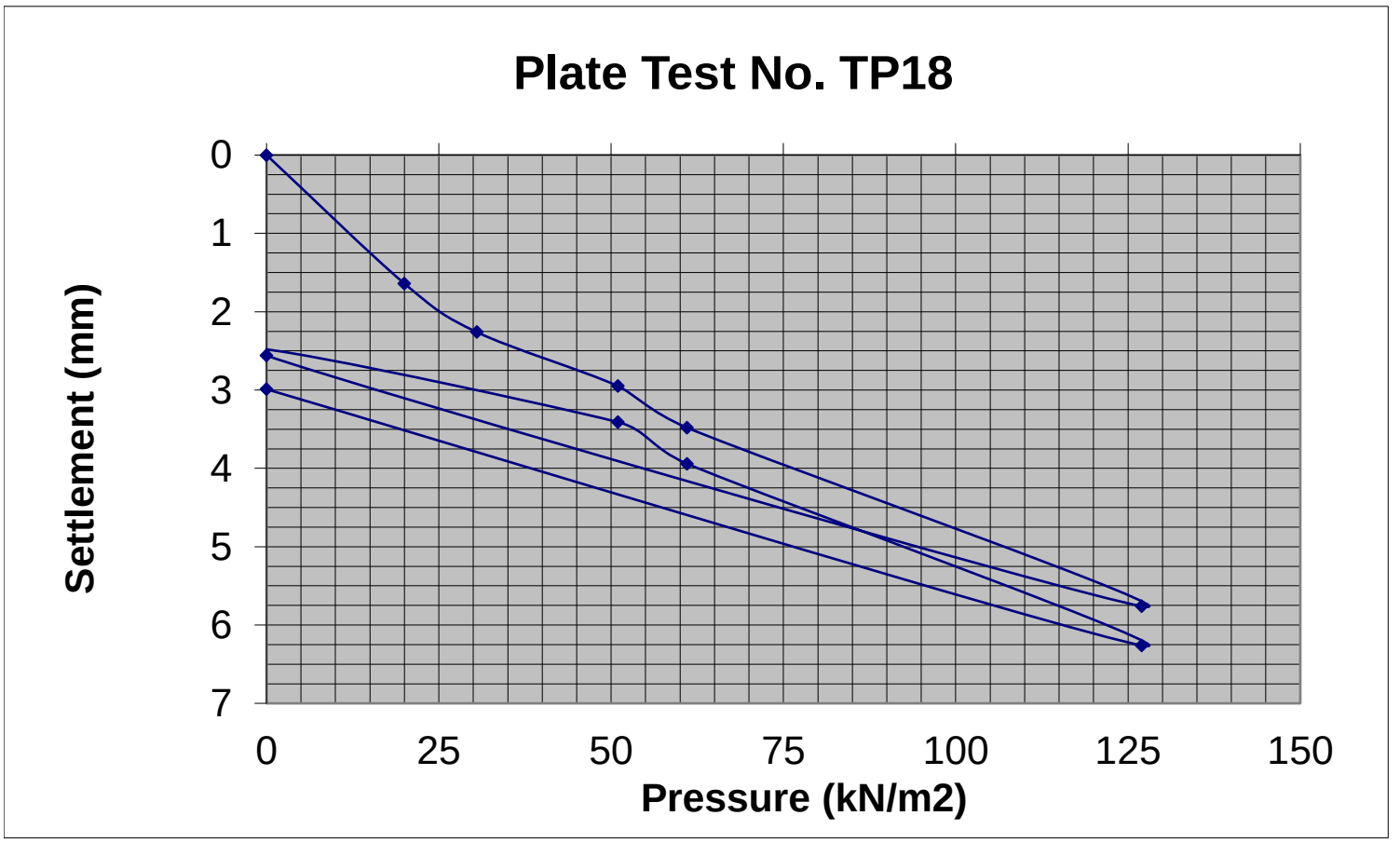
Modulus of Subgrade Reaction (reload) **74.20 MN/m2/m**

Equivalent CBR(initial)in accordance with HD25/94 volume7 = **6.69 %**

Equivalent CBR(reload)in accordance with HD25/94 volume7 = **16.82 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	1.64
30.5	8.48	2.26
51	14.1	2.95
61	17	3.48
127	36	5.76
0	0	2.56
51	14.1	3.41
61	17	3.94
127	36	6.26
0	0	2.99

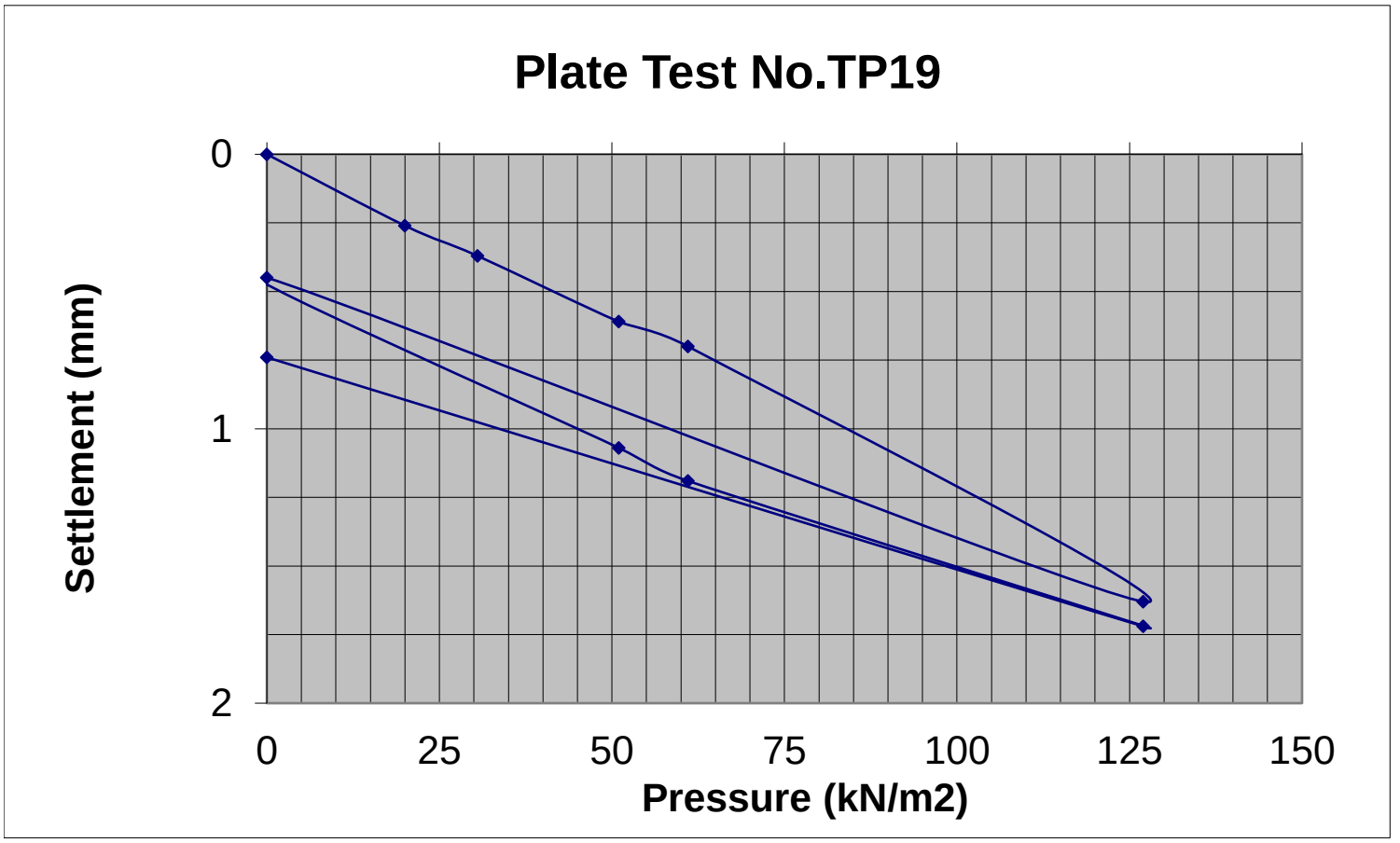
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	16/10/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP18
TEST NO.	TP18		



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**14.29 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**36.03 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**0.97 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**4.81 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.26
30.5	8.48	0.37
51	14.1	0.61
61	17	0.70
127	36	1.63
0	0	0.45
51	14.1	1.07
61	17	1.19
127	36	1.72
0	0	0.74

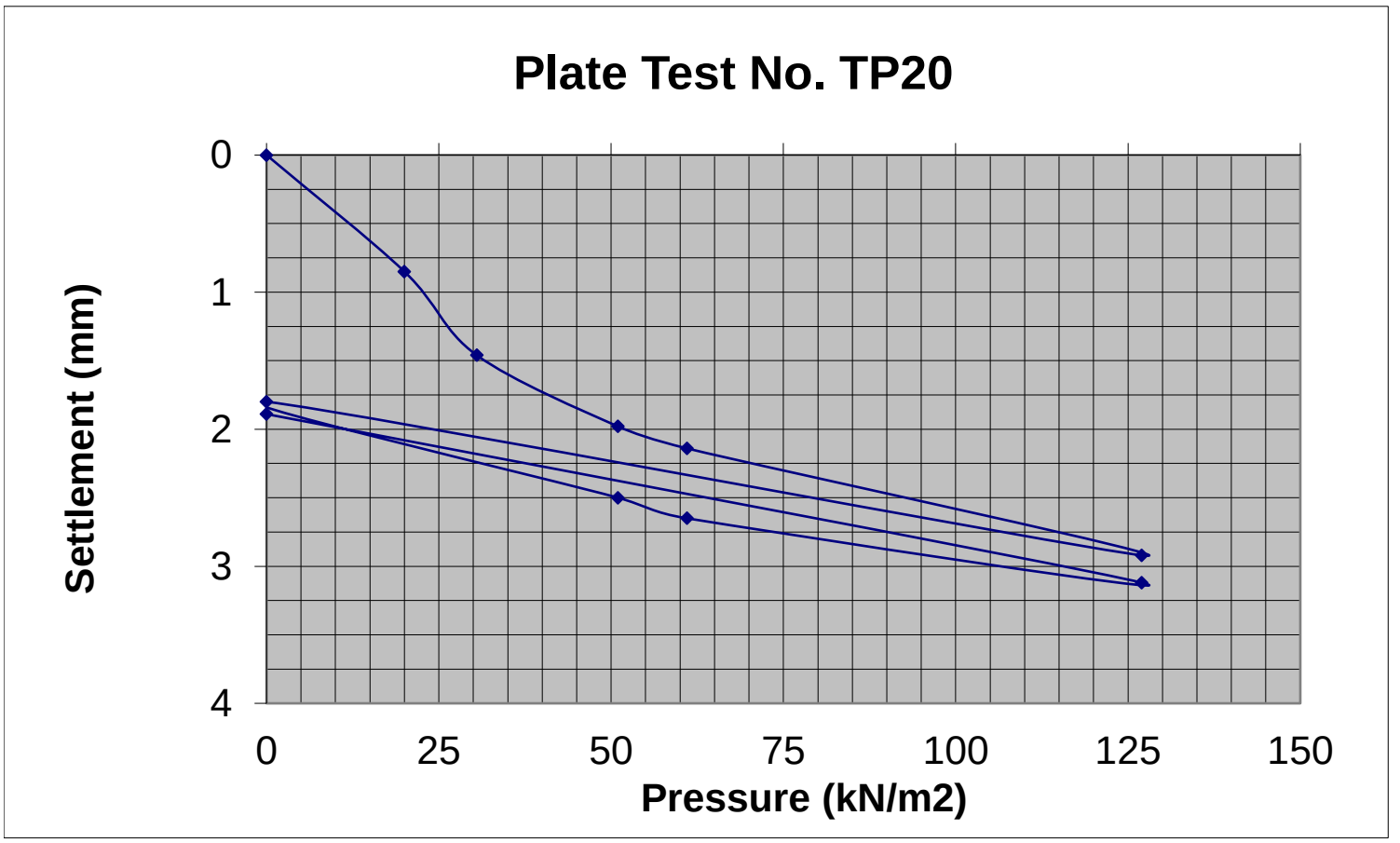
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	18/10/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP19
TEST NO.	TP19		



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**71.02 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**67.18 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**15.59 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**14.16 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.85
30.5	8.48	1.46
51	14.1	1.98
61	17	2.14
127	36	2.92
0	0	1.80
51	14.1	2.50
61	17	2.65
127	36	3.12
0	0	1.89

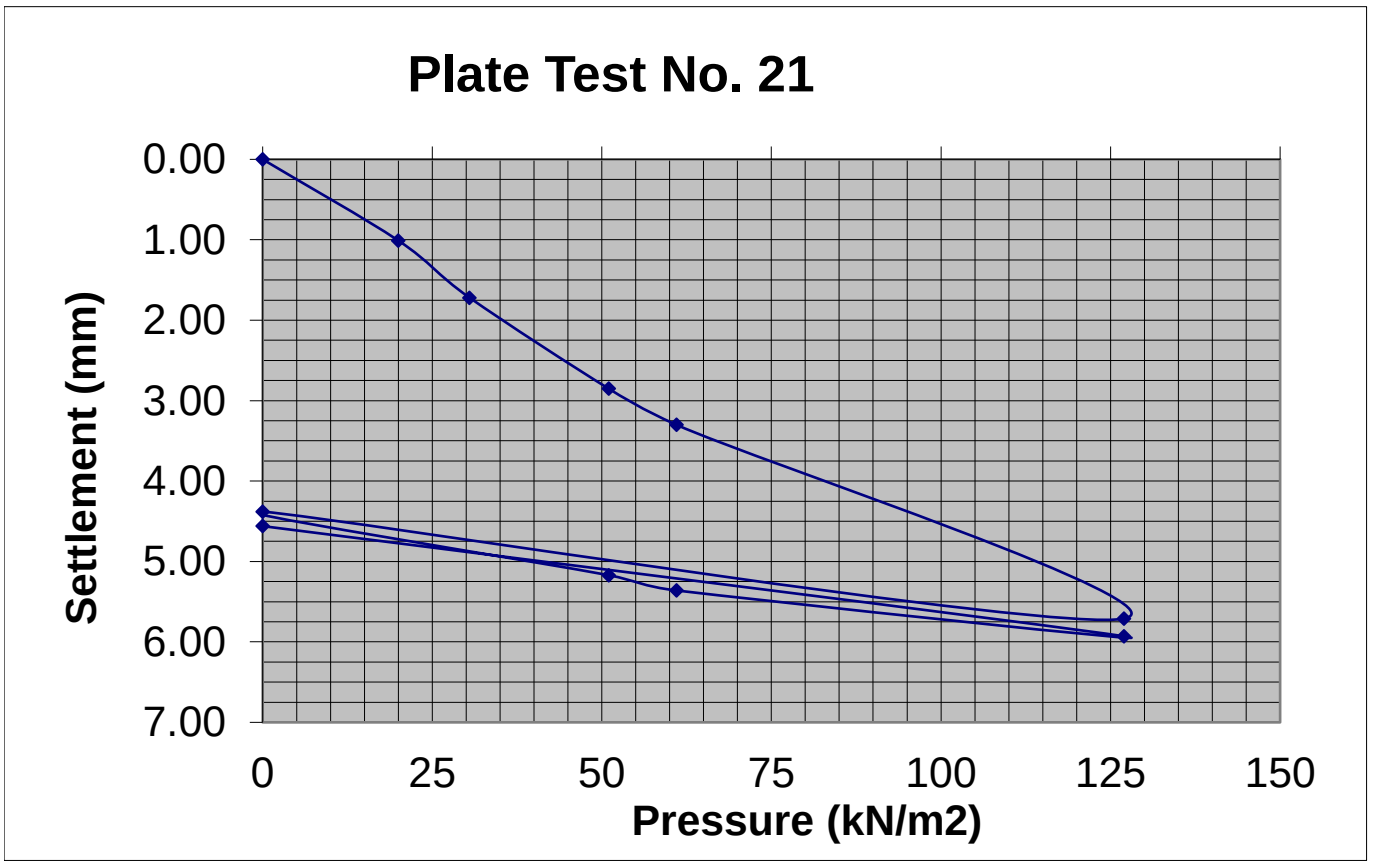
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	16/10/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP20
TEST NO.	TP20		



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**23.23 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**58.49 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**2.25 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**11.13 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	1.01
30.5	8.48	1.72
51	14.1	2.85
61	17	3.30
127	36	5.71
0	0	4.38
51	14.1	5.17
61	17	5.36
127	36	5.93
0	0	4.56

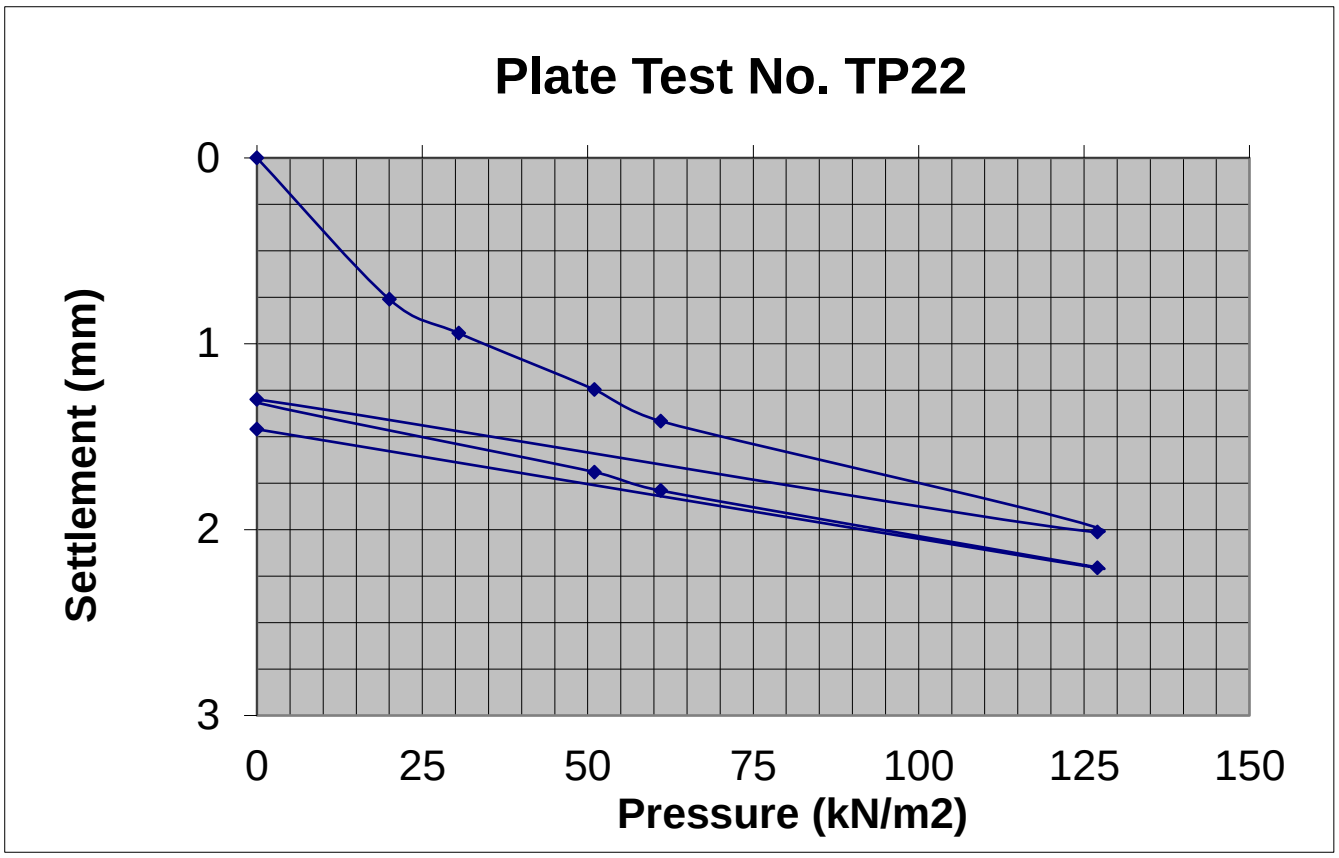
LOCATION	244 Airfield Survey Phase 2	**MATERIAL**	MADE GROUND: Brown sandy gravelly Clay
CONTRACT NO.	7926-07-18		
DATE	01/08/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP21
TEST NO.		**SAMPLES**	See TP log



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**15.07 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**50.73 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**1.06 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**8.70 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.76
30.5	8.48	0.94
51	14.1	1.25
61	17	1.42
127	36	2.01
0	0	1.30
51	14.1	1.69
61	17	1.79
127	36	2.21
0	0	1.46

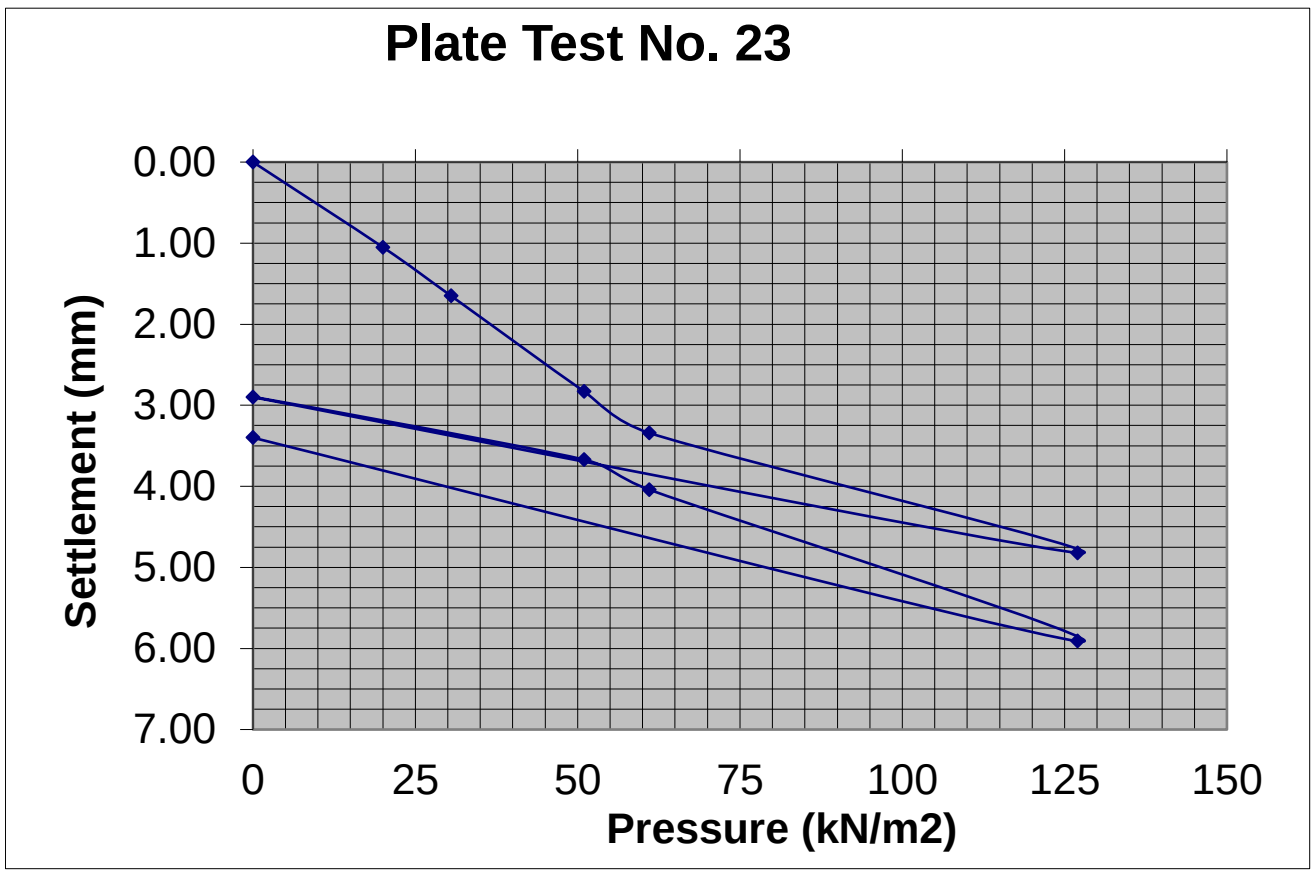
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	13/10/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP22
TEST NO.	TP22		



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00**	**kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved		
Modulus of Subgrade Reaction (initial)	**35.11**	**MN/m2/m**
Modulus of Subgrade Reaction (reload)	**101.46**	**MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**4.60**	**%**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**28.92**	**%**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	1.05
30.5	8.48	1.65
51	14.1	2.83
61	17	3.34
127	36	4.82
0	0	2.90
51	14.1	3.67
61	17	4.04
127	36	5.91
0	0	3.40

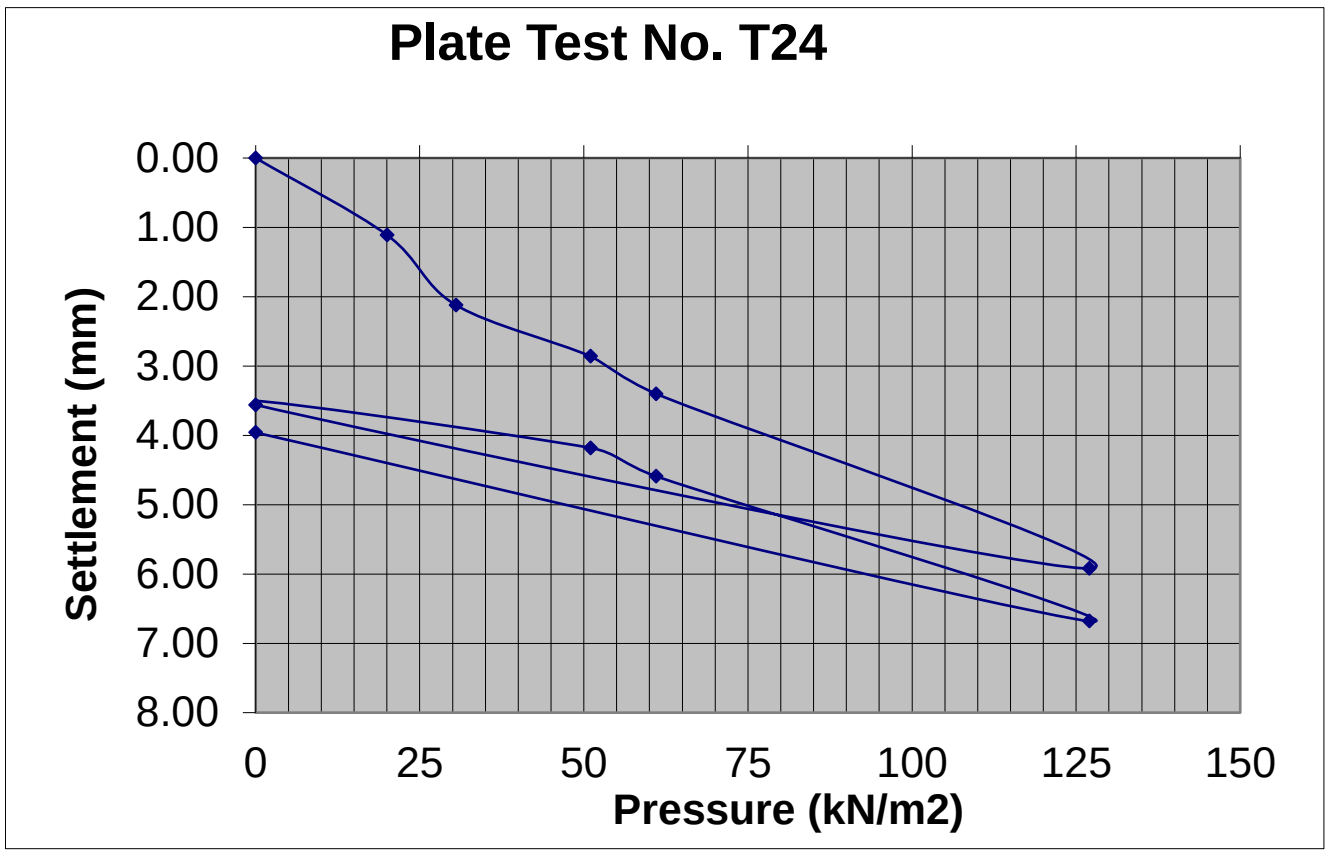
LOCATION	244 Airfield Survey Phase 2	**MATERIAL**	Brown sandy gravelly CLAY
CONTRACT NO.	7926-07-18		
DATE	02/08/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP23
TEST NO.		**SAMPLES**	See TP log



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**14.88 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**43.61 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**1.04 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**6.69 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	1.11
30.5	8.48	2.12
51	14.1	2.86
61	17	3.40
127	36	5.92
0	0	3.56
51	14.1	4.18
61	17	4.59
127	36	6.68
0	0	3.96

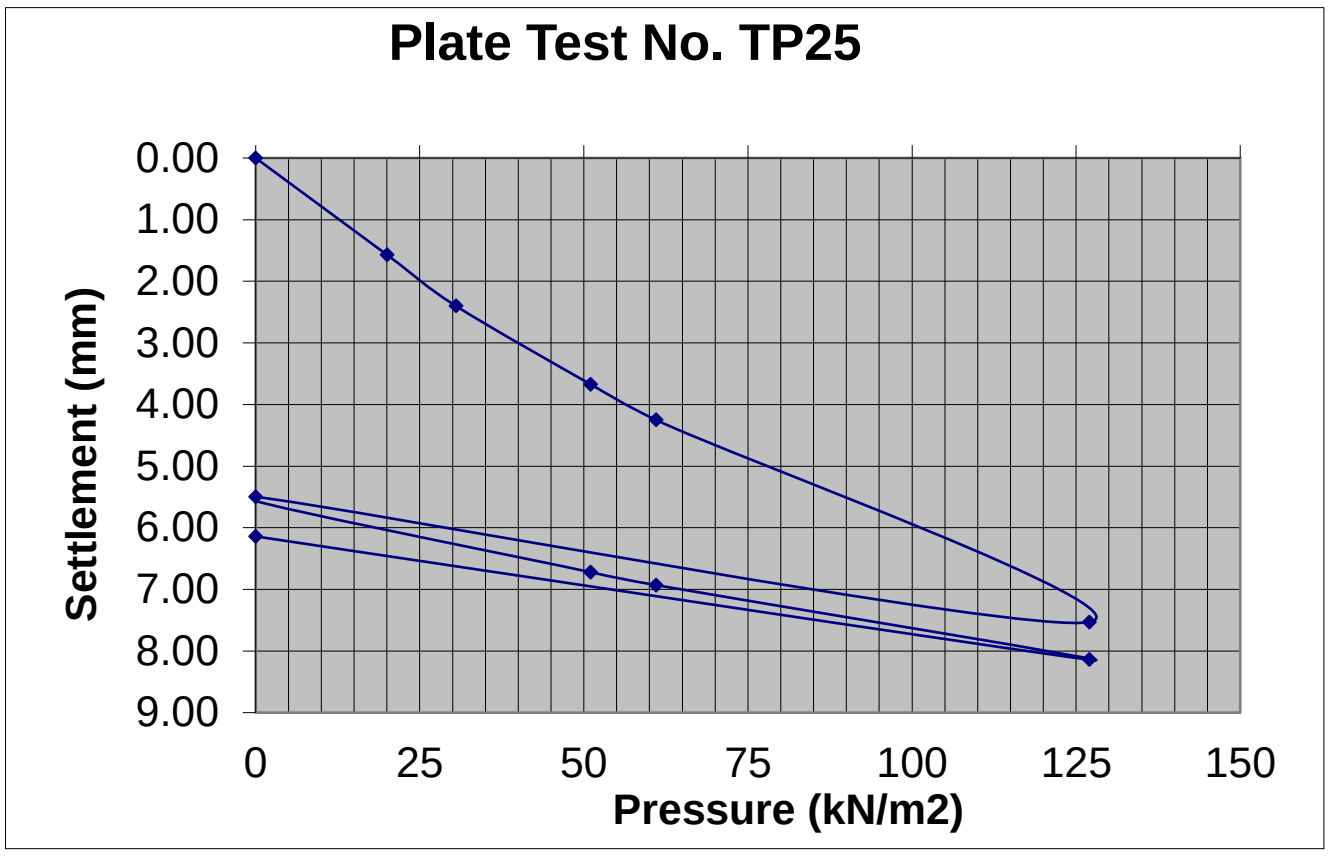
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Grey slightly sandy slightly gravelly CLAY
CONTRACT NO.	7520-03-18		
DATE	27/03/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP24
TEST NO.		**SAMPLES**	See TP log



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**14.62 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**48.27 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**1.01 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**7.98 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	1.57
30.5	8.48	2.40
51	14.1	3.67
61	17	4.25
127	36	7.53
0	0	5.50
51	14.1	6.72
61	17	6.93
127	36	8.14
0	0	6.14

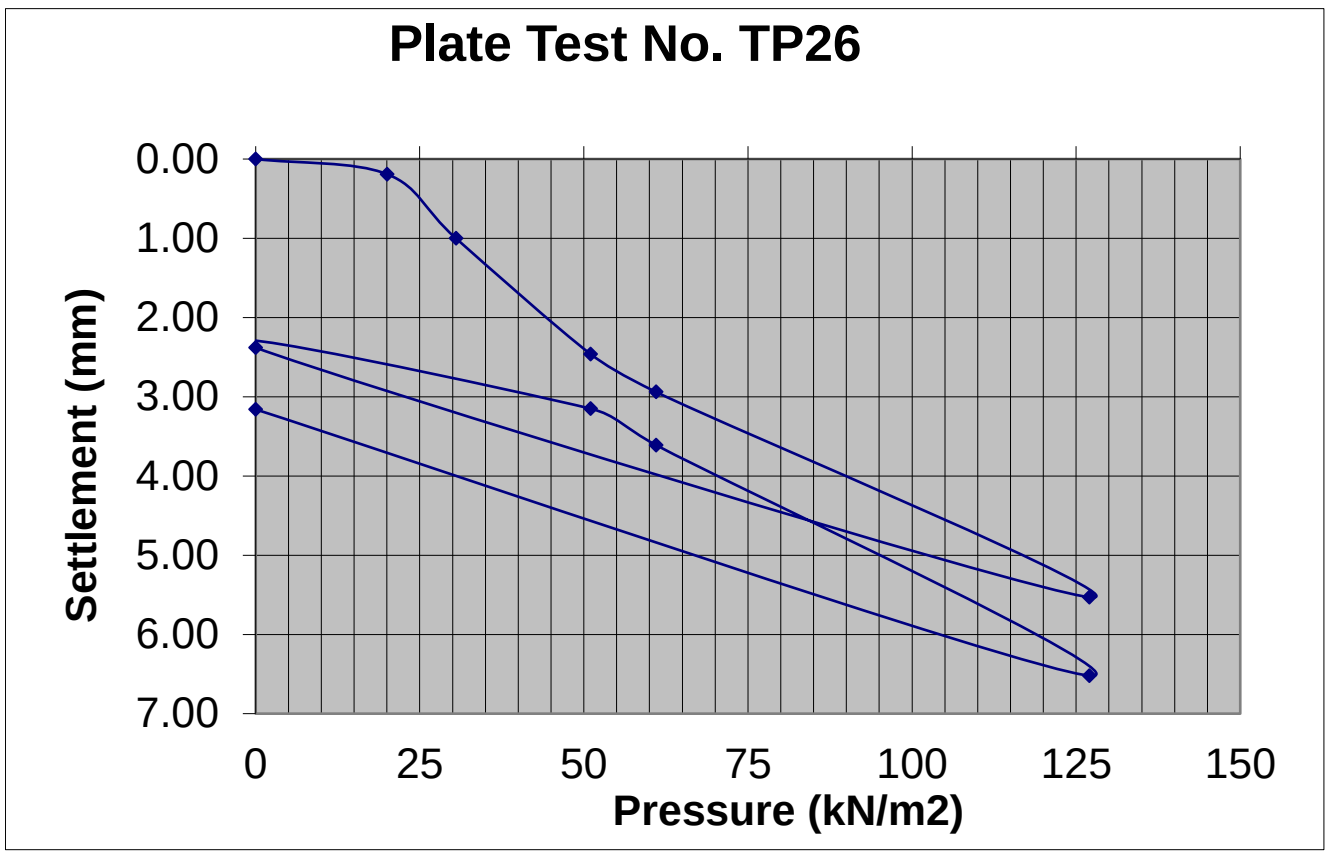
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Grey slightly sandy slightly gravelly CLAY
CONTRACT NO.	7520-03-18		
DATE	13/08/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP25
TEST NO.		**SAMPLES**	See TP log



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00**	**kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved		
Modulus of Subgrade Reaction (initial)	**11.70**	**MN/m2/m**
Modulus of Subgrade Reaction (reload)	**34.77**	**MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**0.68**	**%**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**4.52**	**%**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.19
30.5	8.48	1.00
51	14.1	2.46
61	17	2.94
127	36	5.53
0	0	2.38
51	14.1	3.15
61	17	3.61
127	36	6.52
0	0	3.16

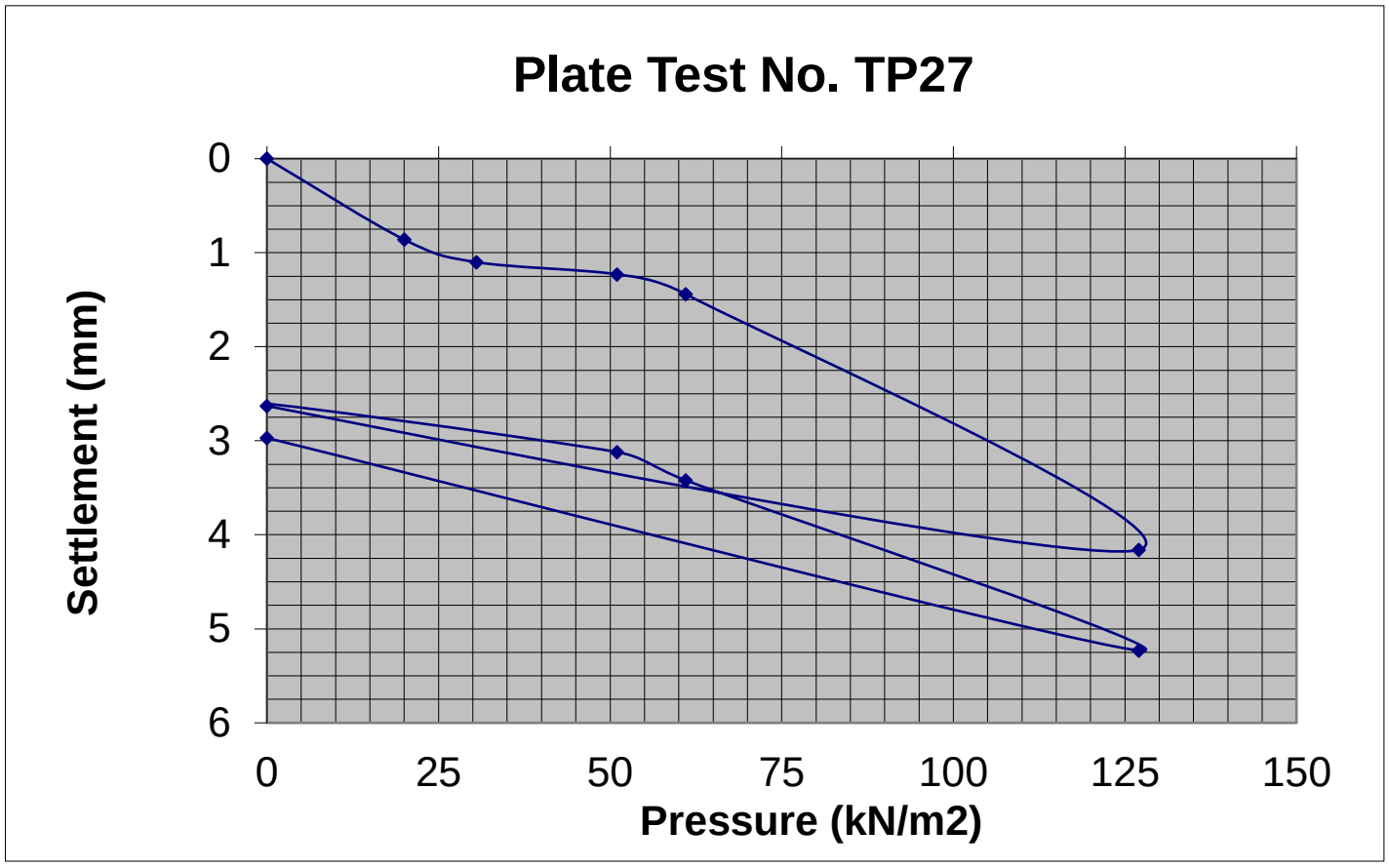
LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Grey slightly sandy slightly gravelly CLAY
CONTRACT NO.	7520-03-18		
DATE	15/08/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP26
TEST NO.		**SAMPLES**	See TP log



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00 kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved	
Modulus of Subgrade Reaction (initial)	**16.91 MN/m2/m**
Modulus of Subgrade Reaction (reload)	**40.42 MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**1.30 %**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**5.87 %**

Applied Pressure	Applied Load	Gauge settlement
kN/m2	kN	mm
0	0	0.00
20	5.65	0.86
30.5	8.48	1.10
51	14.1	1.23
61	17	1.44
127	36	4.16
0	0	2.63
51	14.1	3.12
61	17	3.42
127	36	5.23
0	0	2.97

LOCATION	Dublin Airport 244 Apron Survey	**MATERIAL**	Brown sandy gravelly CLAY with rare cobble.
CONTRACT NO.	7926-07-18		
DATE	13/11/2018		
CLIENT	Kilwex / DAA	**DEPTH**	1.00 m BGL
PLATE DIAMETER	600mm	**NOTES**	Completed in TP27
TEST NO.	TP27		



Maxium Load Applied (BS1377 P9 4.1.7.1)	**125.00**	**kN/m2**
Note: Failure not evident - 15% plate diameter deflection not achieved		
Modulus of Subgrade Reaction (initial)	**34.52**	**MN/m2/m**
Modulus of Subgrade Reaction (reload)	**62.93**	**MN/m2/m**
Equivalent CBR(initial)in accordance with HD25/94 volume7 =	**4.47**	**%**
Equivalent CBR(reload)in accordance with HD25/94 volume7 =	**12.64**	**%**

APPENDIX 6 – TRL Probe Records – Observation Pit

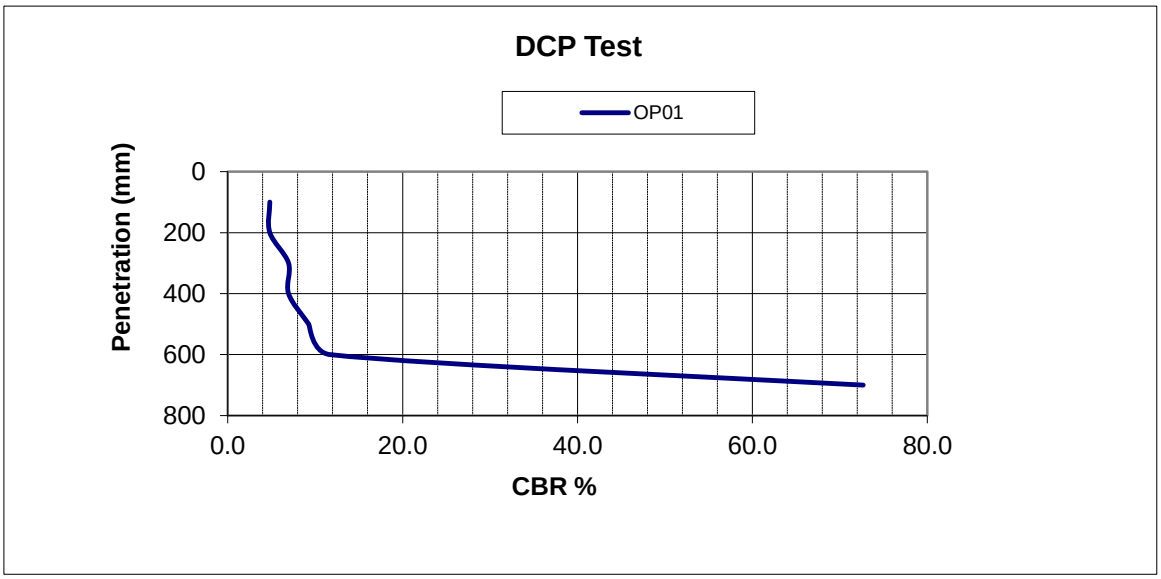
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP01
Client	DAA	**By**	Ryan O' Toole
		Date	08/08/2018

Initial Depth (mBGL) 0.500m BGL MADE GROUND Brown slightly sandy slightly gravelly Clay to 0.90m BGl
Finish Depth (mBGL) 1.10m Natural Ground from 0.90m BGL - See associated log

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	3	33.3	4.8
200	3	33.3	4.8
300	4	25.0	7.0
400	4	25.0	7.0
500	5	20.0	9.3
600	6	16.7	11.7
700	25	4.0	72.7

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



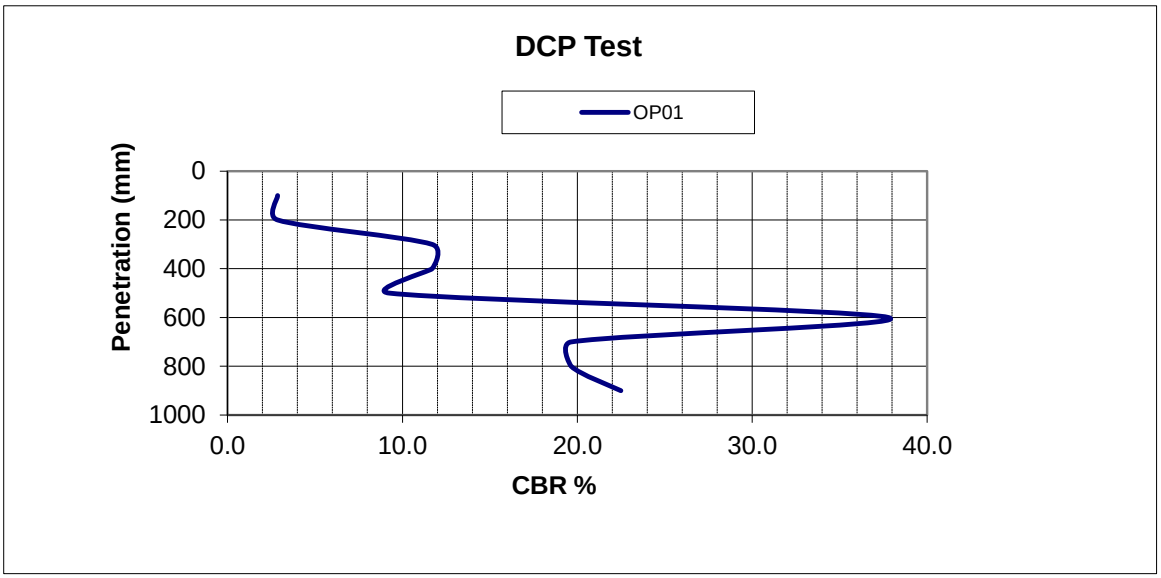
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP01
Client	DAA	**By**	Ryan O' Toole
		Date	08/08/2018

Initial Depth (mBGL) 1.00m BGL
Finish Depth (mBGL) 1.90m Natural Ground from 0.90m BGL - See associated log

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	2	50.0	2.9
200	2	50.0	2.9
300	6	16.7	11.7
400	6	16.7	11.7
500	5	20.0	9.3
600	15	6.7	37.8
700	9	11.1	19.7
800	9	11.1	19.7
900	10	10.0	22.5

Reference **Kleyn and Van Heerden (60° Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



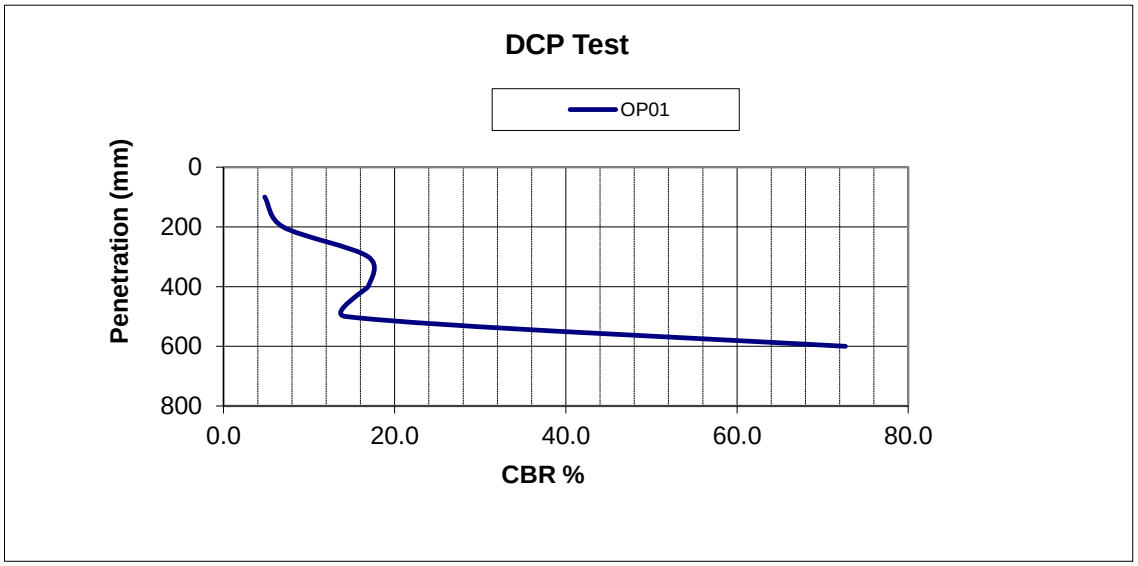
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP01
Client	DAA	**By**	Ryan O' Toole
		Date	08/08/2018

Initial Depth (mBGL) 2.00m BGL
Finish Depth (mBGL) 2.60m Natural Ground - See associated log

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	3	33.3	4.8
200	4	25.0	7.0
300	8	12.5	16.9
400	8	12.5	16.9
500	7	14.3	14.2
600	25	4.0	72.7

Reference **Kleyn and Van Heerden (60° Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



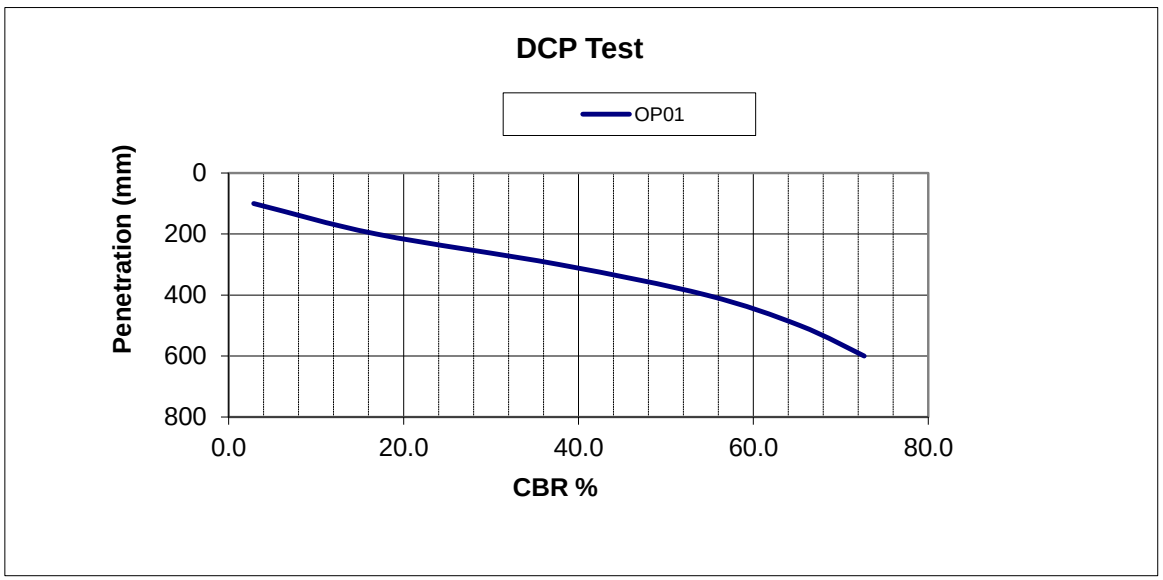
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP01
Client	DAA	**By**	Ryan O' Toole
		Date	08/08/2018

Initial Depth (mBGL) 2.50m BGL
Finish Depth (mBGL) 3.10m Natural Ground - See associated log

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	2	50.0	2.9
200	8	12.5	16.9
300	15	6.7	37.8
400	20	5.0	54.6
500	23	4.3	65.3
600	25	4.0	72.7

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



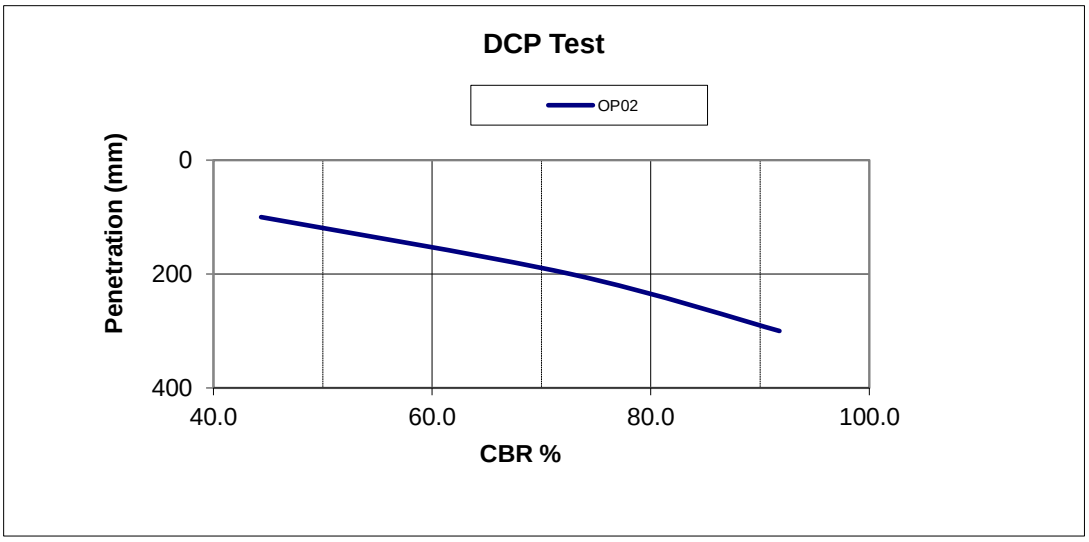
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	Dublin Airport - 244 Apron Survey	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP02
Client	Kilwex	**By**	Ryan O'Toole
		Date	17/10/2018

Initial Depth 0.50m BGL Made Ground: Brown sandy gravelly Clay to 1.90m BGL
Finish Depth 0.80m BGL Natural Ground from 1.90m BGL - See assocaiated Log

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)	
	-	-		Open Pit
100	17	5.9	44.4	
200	25	4.0	72.7	
300	30	3.3	91.8	

Reference **Kleyn and Van Heerden (60° Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



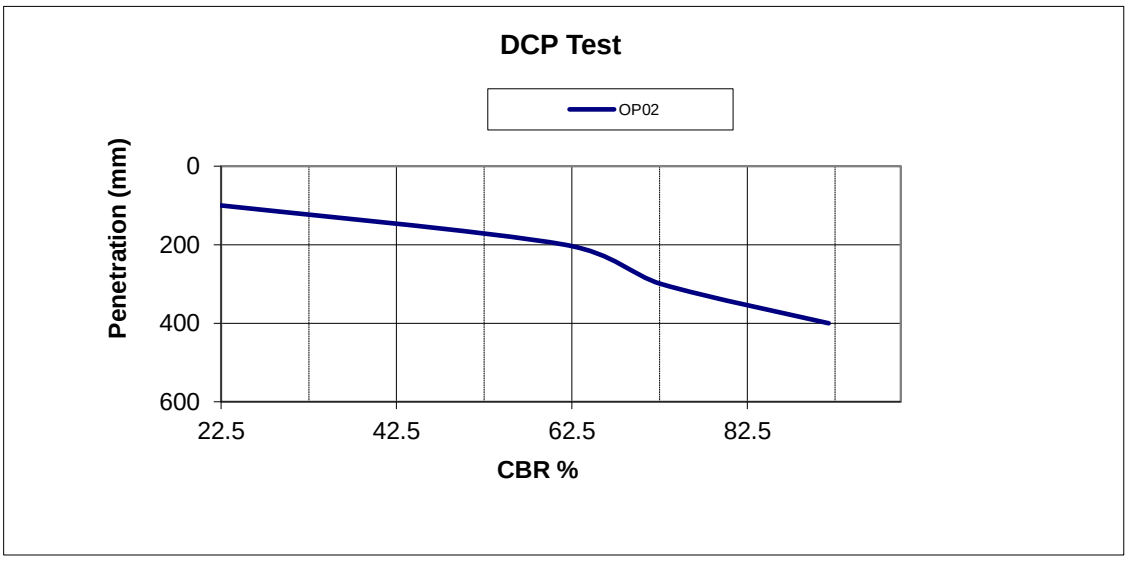
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	Dublin Airport - 244 Apron Survey	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP02
Client	Kilwex	**By**	Ryan O'Toole
		Date	17/10/2018

Initial Depth 1.00m BGL Made Ground: Brown sandy gravelly Clay to 1.90m BGL
Finish Depth 1.40m BGL Natural Ground from 1.90m BGL - See assocaiated log

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)	
0	-	-		Open Pit
100	10	10.0	22.5	
200	22	4.5	61.7	
300	25	4.0	72.7	
400	30	3.3	91.8	

Reference **Kleyn and Van Heerden (60° Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



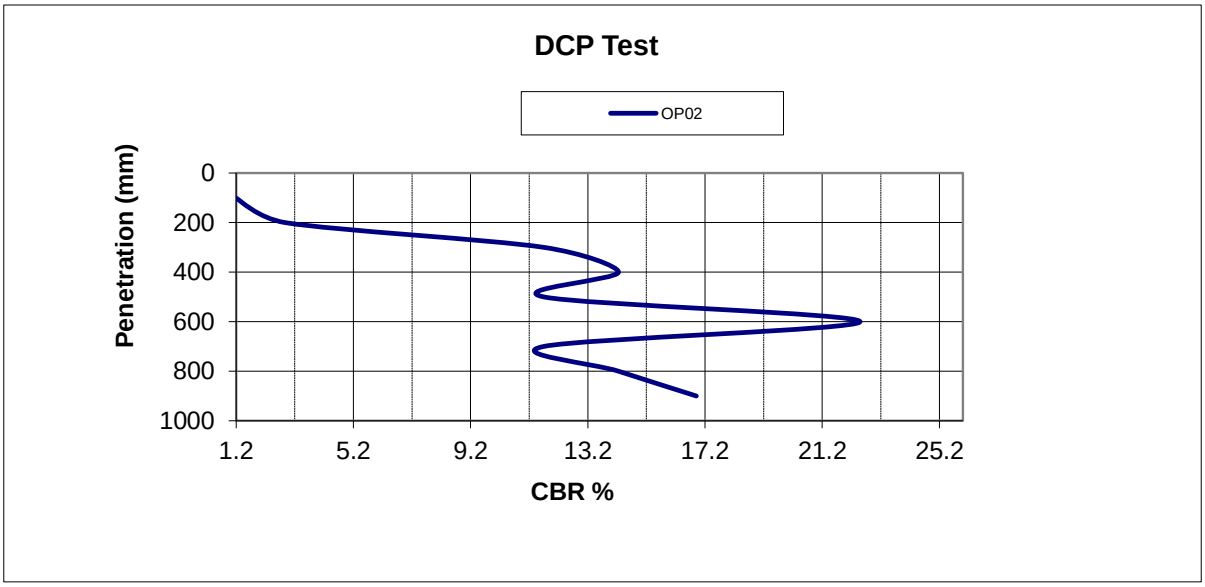
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	Dublin Airport - 244 Apron Survey	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP02
Client	Kilwex	**By**	Ryan O'Toole
		Date	17/10/2018

Initial Depth 2.00m BGL Natural Ground - See associated log
Finish Depth 2.90m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
	-	-	
100	1	100.0	1.2
200	2	50.0	2.9
300	6	16.7	11.7
400	7	14.3	14.2
500	6	16.7	11.7
600	10	10.0	22.5
700	6	16.7	11.7
800	7	14.3	14.2
900	8	12.5	16.9

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

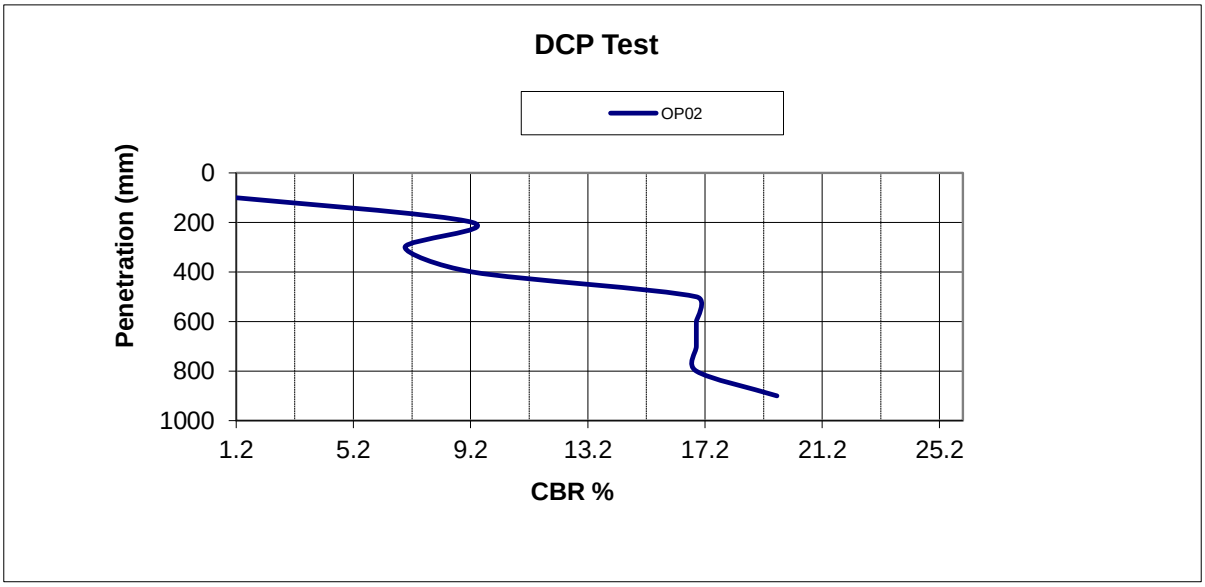


Job Name	Dublin Airport - 244 Apron Survey	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP02
Client	Kilwex	**By**	Ryan O'Toole
		Date	17/10/2018

Initial Depth 2.50m BGL Natural Ground - See associated log
Finish Depth 3.40m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
	-	-	
100	1	100.0	1.2
200	5	20.0	9.3
300	4	25.0	7.0
400	5	20.0	9.3
500	8	12.5	16.9
600	8	12.5	16.9
700	8	12.5	16.9
800	8	12.5	16.9
900	9	11.1	19.7

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



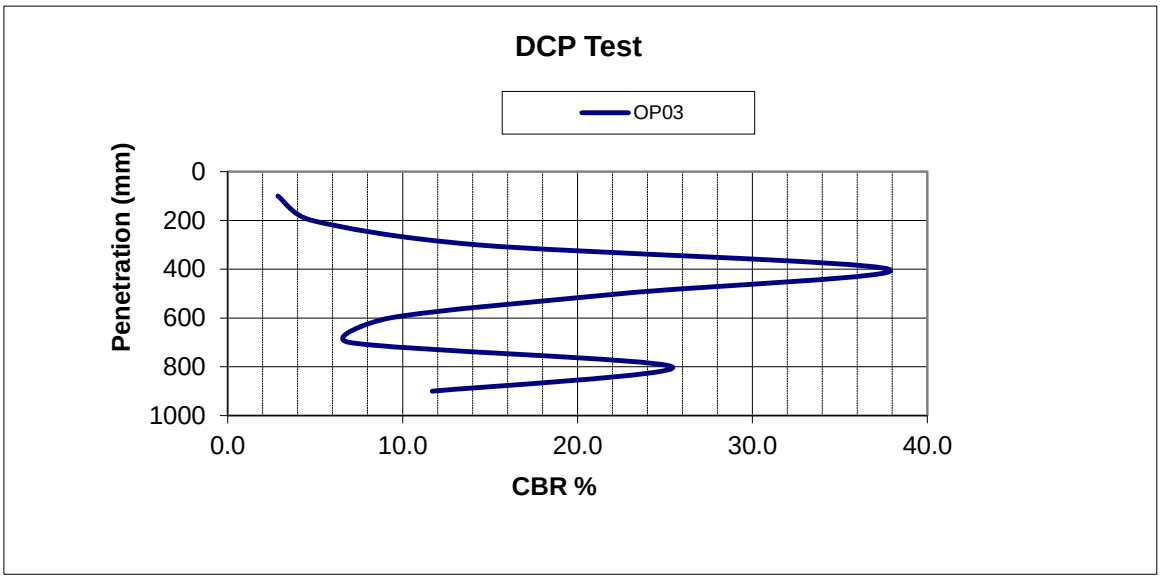
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP03
Client	DAA	**By**	Ryan O' Toole
		Date	02/08/2018

Initial Depth (mBGL) 0.500m BGL MG Brown slightly sandy slightly gravelly Clay to 1.30m BGL
Finish Depth (mBGL) 1.30m Natural Ground from 1.30 - See associated log

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	2	50.0	2.9
200	3	33.3	4.8
300	7	14.3	14.2
400	15	6.7	37.8
500	10	10.0	22.5
600	5	20.0	9.3
700	4	25.0	7.0
800	11	9.1	25.4
900	6	16.7	11.7

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



TRL DCP Test Report - 244 Airfield Surveys Phase 2

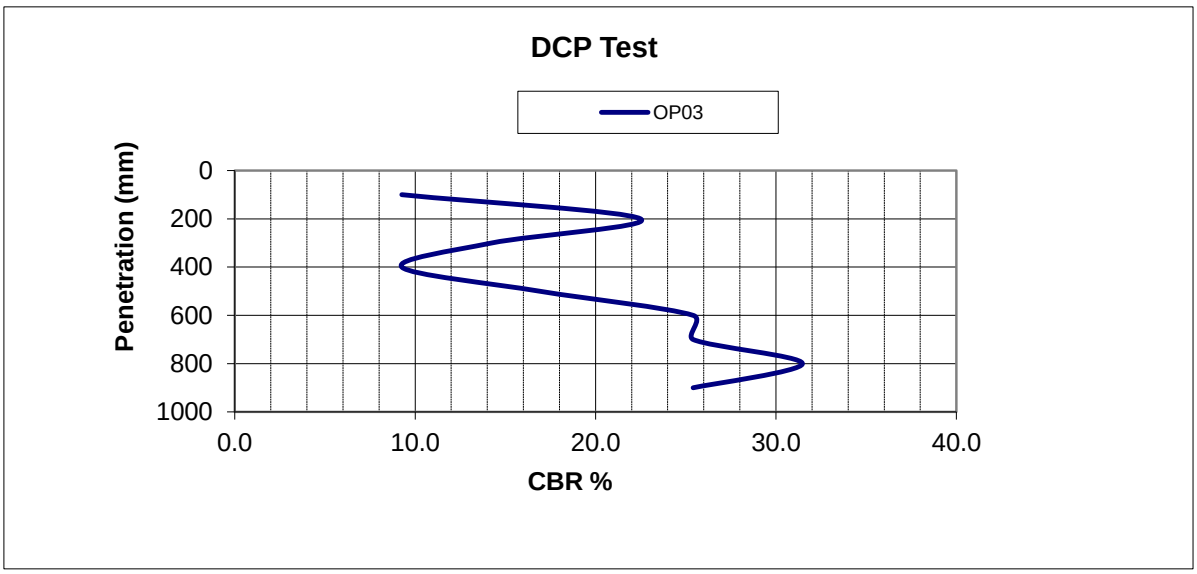
Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP03
Client	DAA	**By**	Ryan O' Toole
		Date	02/08/2018

Initial Depth (mBGL) 1.0m BGL
Finish Depth (mBGL) 1.90m

MG Brown slightly sandy slightly gravelly Clay to 1.30m BGL
Natural Ground from 1.30 - See associated log

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	5	20.0	9.3
200	10	10.0	22.5
300	7	14.3	14.2
400	5	20.0	9.3
500	8	12.5	16.9
600	11	9.1	25.4
700	11	9.1	25.4
800	13	7.7	31.5
900	11	9.1	25.4

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



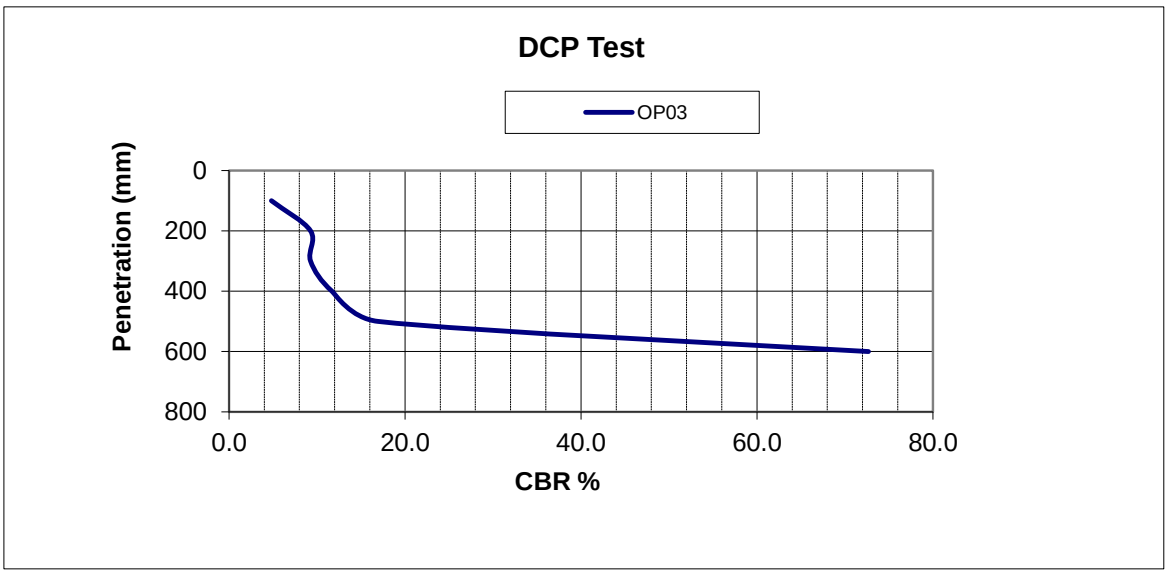
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP03
Client	DAA	**By**	Ryan O' Toole
		Date	02/08/2018

Initial Depth (mBGL) 2.0m BGL
Finish Depth (mBGL) 2.60m Natural Ground - See associated log

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	3	33.3	4.8
200	5	20.0	9.3
300	5	20.0	9.3
400	6	16.7	11.7
500	8	12.5	16.9
600	25	4.0	72.7

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



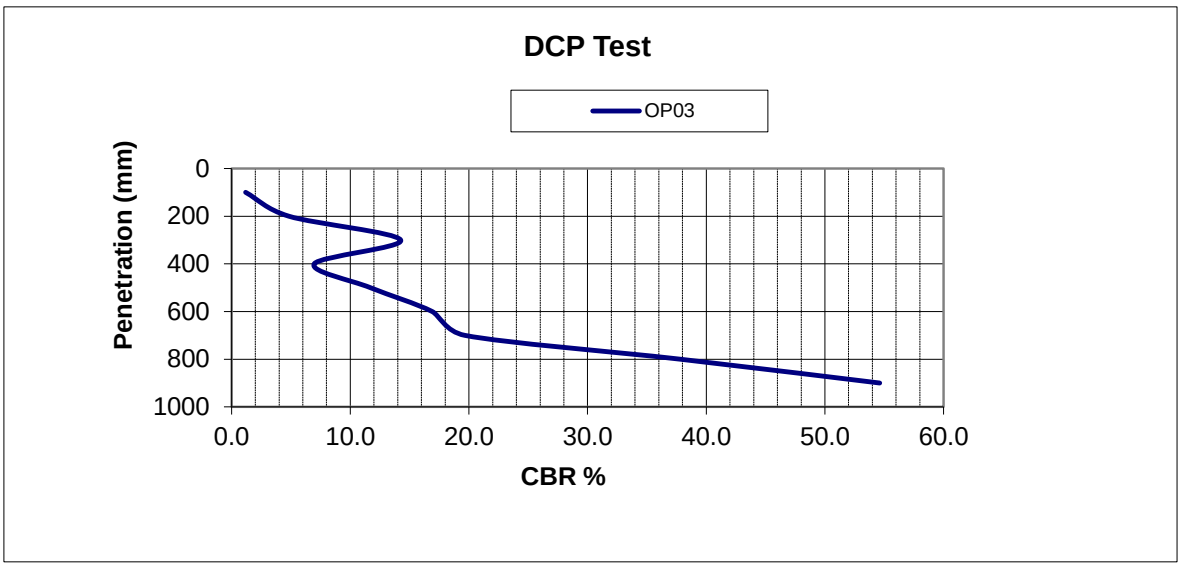
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP03
Client	DAA	**By**	Ryan O' Toole
		Date	02/08/2018

Initial Depth (mBGL) 2.50m BGL Natural Ground - See associated log
Finish Depth (mBGL) 3.40m

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	1	100.0	1.2
200	3	33.3	4.8
300	7	14.3	14.2
400	4	25.0	7.0
500	6	16.7	11.7
600	8	12.5	16.9
700	9	11.1	19.7
800	15	6.7	37.8
900	20	5.0	54.6

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



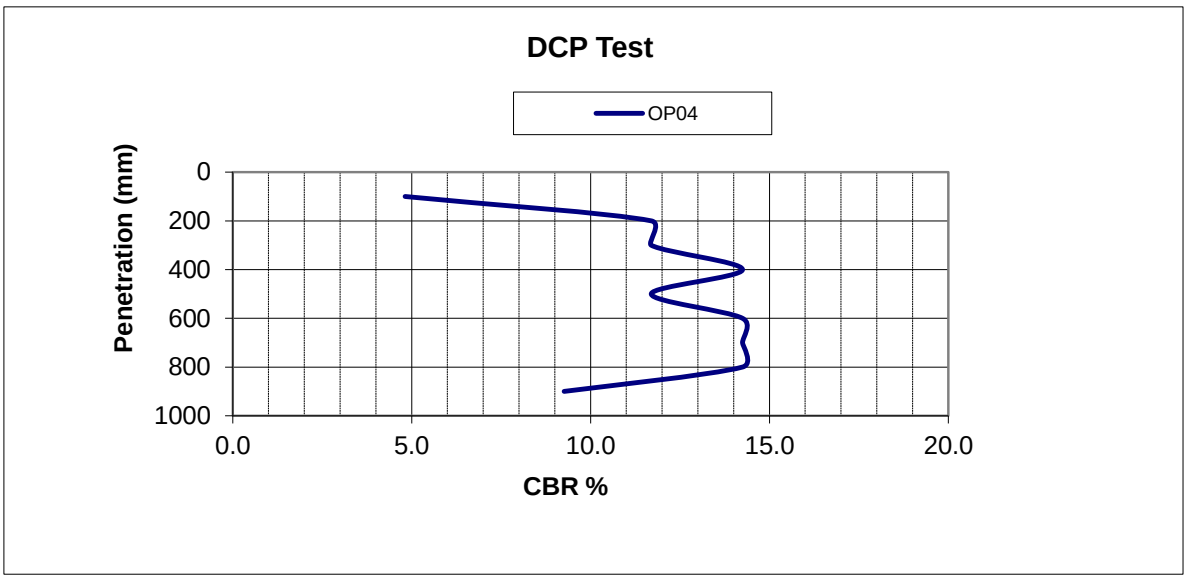
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP04
Client	DAA	**By**	Ryan O' Toole
		Date	08/08/2018

Initial Depth (mBGL) 0.50m BGL MADE GROUND: Brown sandy gravelly Clay to 1.50m BGL
Finish Depth (mBGL) 1.40m BGL Natural Ground from 1.50m BGL - See associated log

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	3	33.3	4.8
200	6	16.7	11.7
300	6	16.7	11.7
400	7	14.3	14.2
500	6	16.7	11.7
600	7	14.3	14.2
700	7	14.3	14.2
800	7	14.3	14.2
900	5	20.0	9.3

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



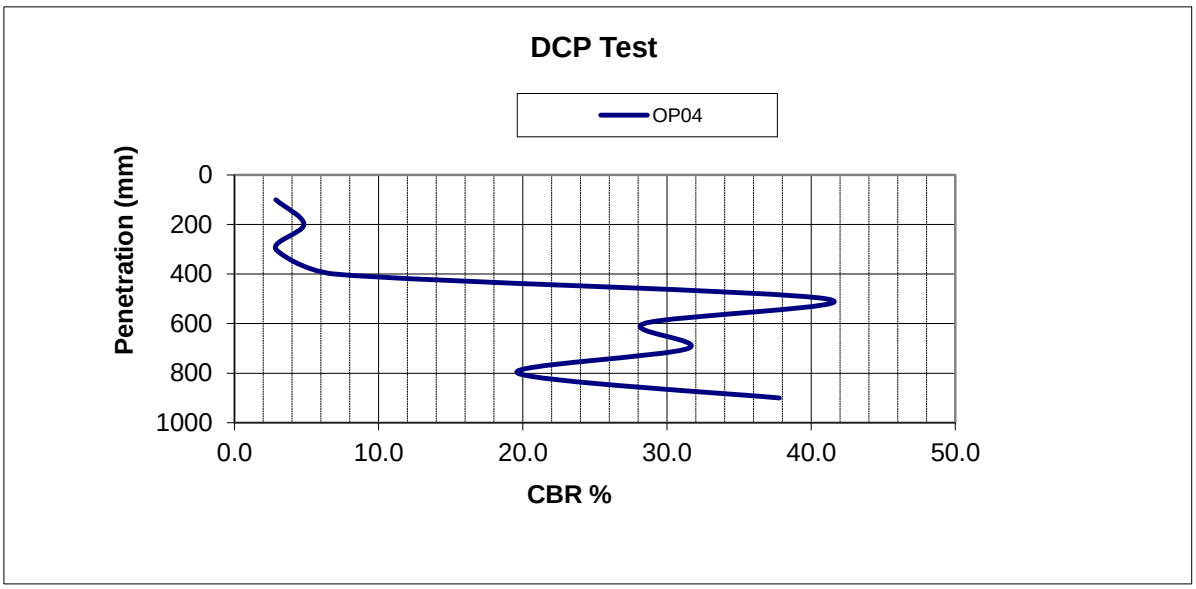
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP04
Client	DAA	**By**	Ryan O' Toole
		Date	08/08/2018

Initial Depth (mBGL) 1.0m BGL — MADE GROUND: Brown sandy gravelly Clay to 1.50m BGL
Finish Depth (mBGL) 1.90m BGL — Natural Ground from 1.50m BGL - See associated log

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	2	50.0	2.9
200	3	33.3	4.8
300	2	50.0	2.9
400	4	25.0	7.0
500	16	6.3	41.0
600	12	8.3	28.4
700	13	7.7	31.5
800	9	11.1	19.7
900	15	6.7	37.8

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



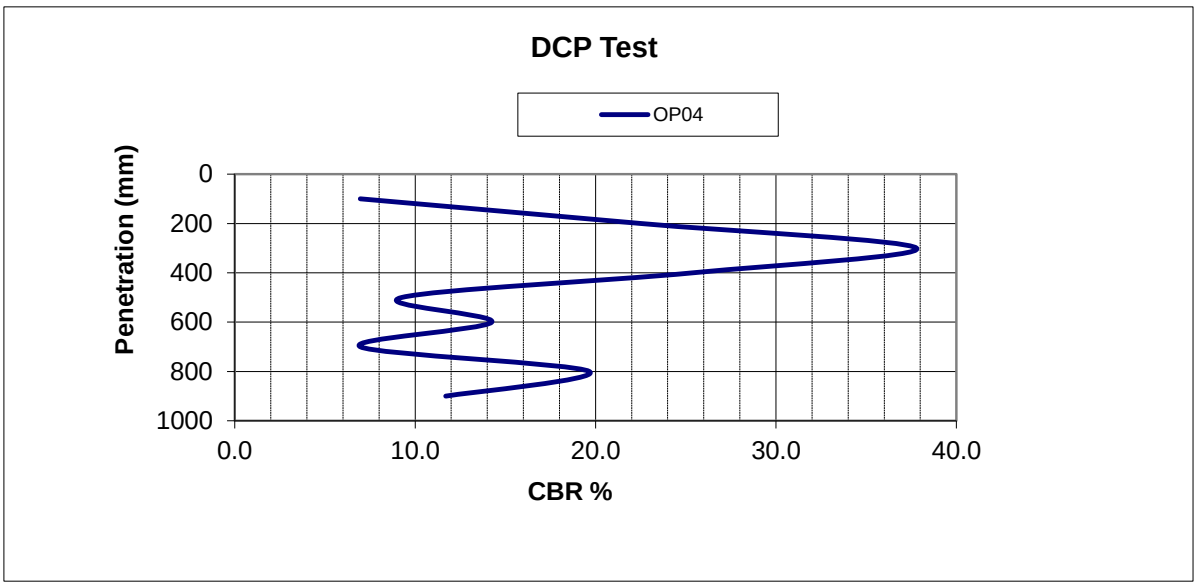
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP04
Client	DAA	**By**	Ryan O' Toole
		Date	08/08/2018

Initial Depth (mBGL) 2.00m BGL Natural Ground - See associated log
Finish Depth (mBGL) 2.90m BGL

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	4	25.0	7.0
200	10	10.0	22.5
300	15	6.7	37.8
400	11	9.1	25.4
500	5	20.0	9.3
600	7	14.3	14.2
700	4	25.0	7.0
800	9	11.1	19.7
900	6	16.7	11.7

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



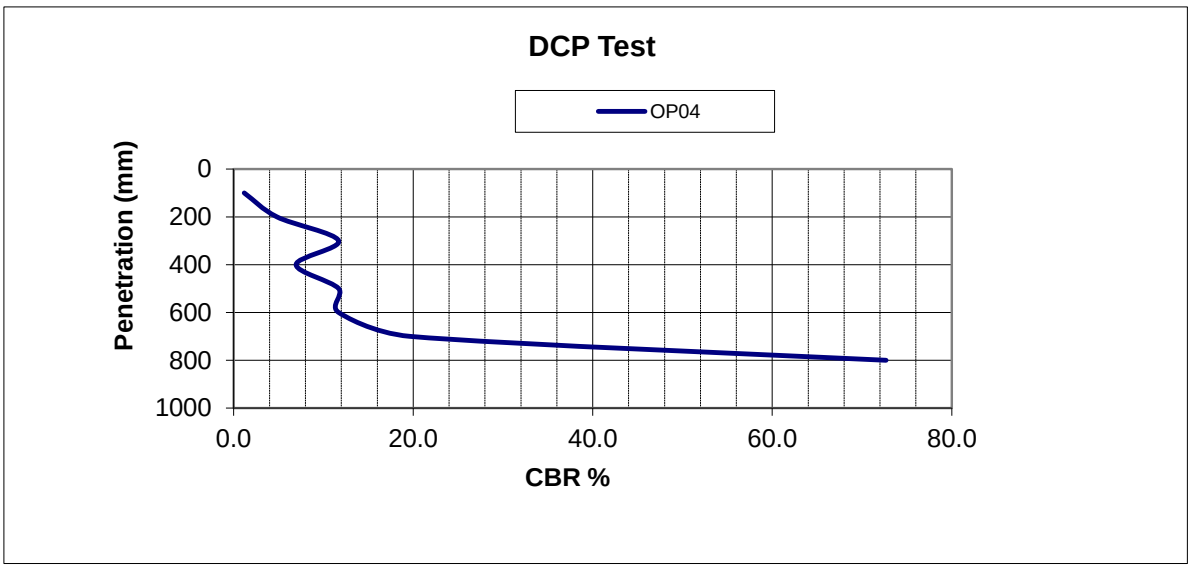
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP04
Client	DAA	**By**	Ryan O' Toole
		Date	08/08/2018

Initial Depth (mBGL) 2.500m BGL Natural Ground - See associated log
Finish Depth (mBGL) 3.30m

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	1	100.0	1.2
200	3	33.3	4.8
300	6	16.7	11.7
400	4	25.0	7.0
500	6	16.7	11.7
600	6	16.7	11.7
700	9	11.1	19.7
800	25	4.0	72.7

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

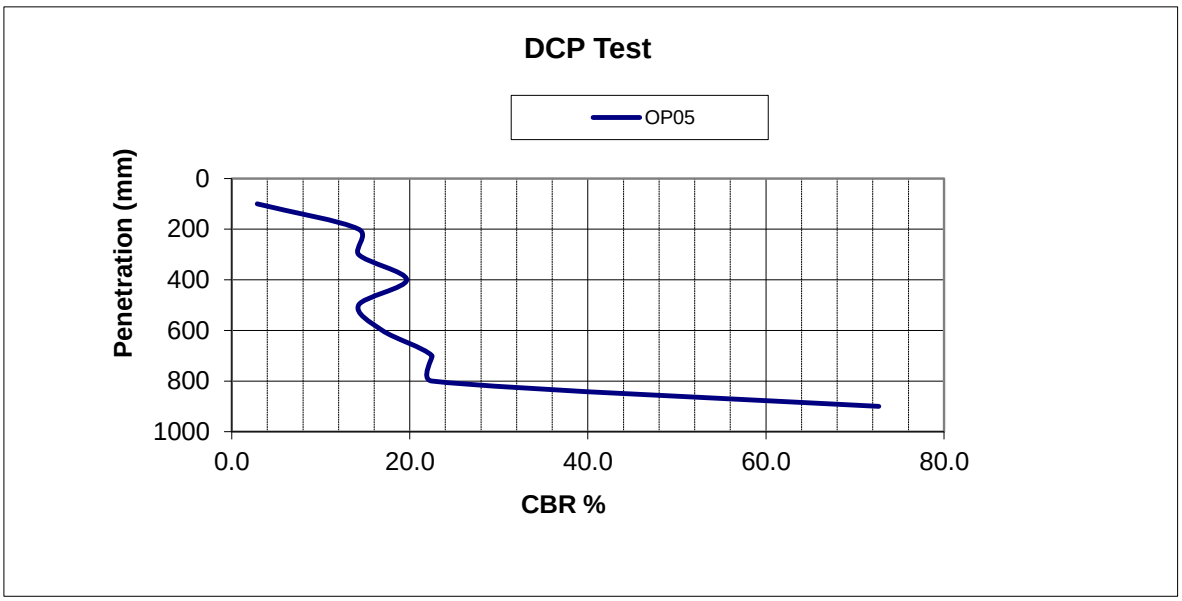


TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP05
Client	DAA	**By**	Ryan O' Toole
		Date	01/08/2018
Initial Depth	0.500m BGL	MADE GROUND: Brown slightly sandy slightly gravelly Clay to 2.20m BGL	
Finish Depth	1.40m BGL	Natural Ground from 2.20m BGL - See associated log	

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	2	50.0	2.9
200	7	14.3	14.2
300	7	14.3	14.2
400	9	11.1	19.7
500	7	14.3	14.2
600	8	12.5	16.9
700	10	10.0	22.5
800	10	10.0	22.5
900	25	4.0	72.7

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

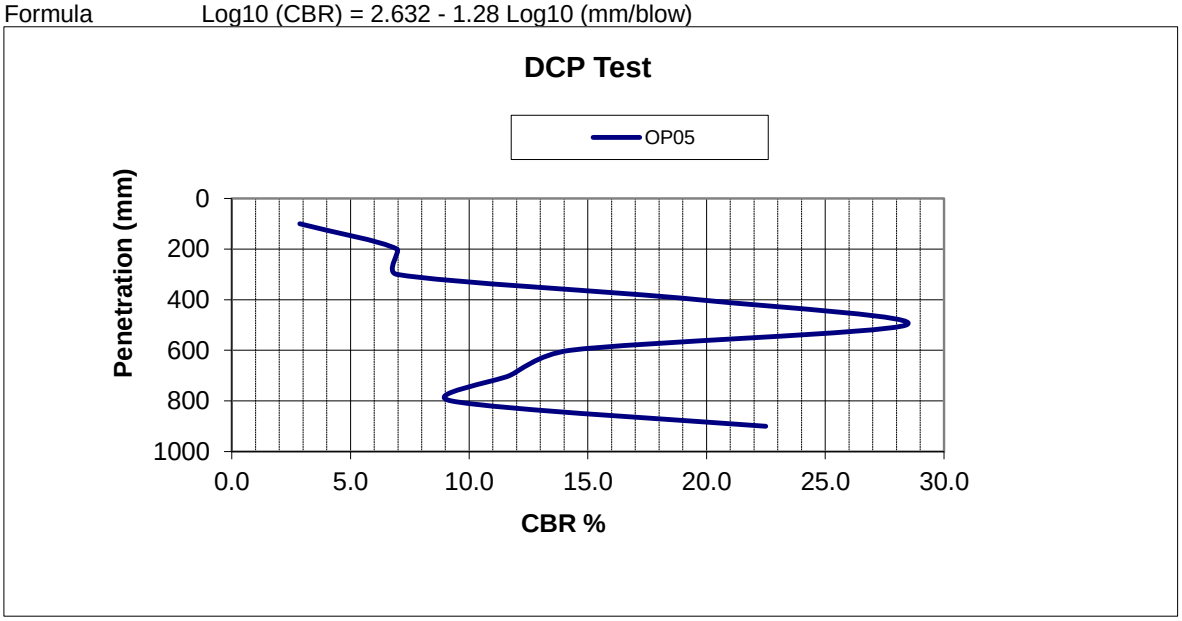


TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP05
Client	DAA	**By**	Ryan O' Toole
		Date	02/07/2018
Initial Depth	1.00m BGL	MADE GROUND: Brown slightly sandy slightly gravelly Clay to 2.20m BGL	
Finish Depth	1.80m BGL	Natural Ground from 2.20m BGL - See associated log	

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	2	50.0	2.9
200	4	25.0	7.0
300	4	25.0	7.0
400	9	11.1	19.7
500	12	8.3	28.4
600	7	14.3	14.2
700	6	16.7	11.7
800	5	20.0	9.3
900	10	10.0	22.5

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



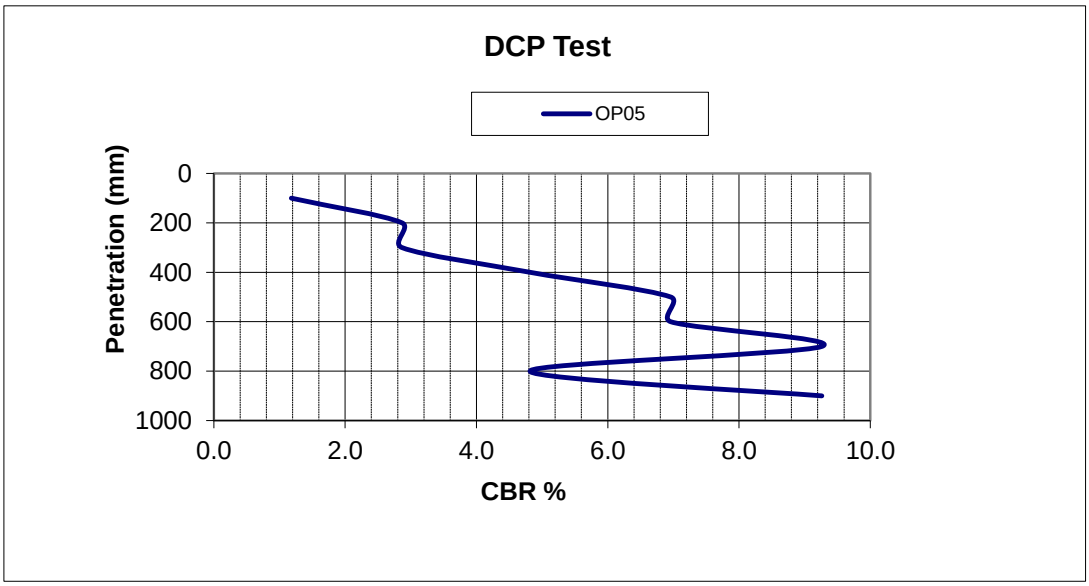
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP05
Client	DAA	**By**	Ryan O' Toole
		Date	01/08/2018

Initial Depth 2.0m BGL MADE GROUND: Brown slightly sandy slightly gravelly Clay to 2.20m BGL
Finish Depth 2.90m BGL Natural Ground from 2.20m BGL - See associated log

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	1	100.0	1.2
200	2	50.0	2.9
300	2	50.0	2.9
400	3	33.3	4.8
500	4	25.0	7.0
600	4	25.0	7.0
700	5	20.0	9.3
800	3	33.3	4.8
900	5	20.0	9.3

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

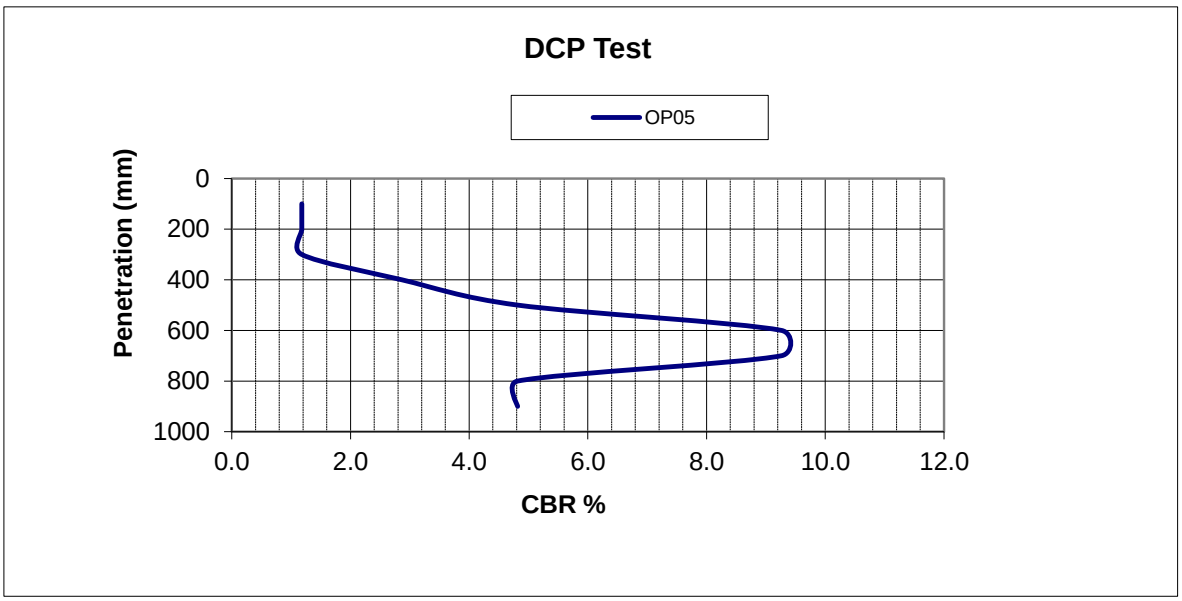


TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP05
Client	DAA	**By**	Ryan O' Toole
		Date	01/08/2018
Initial Depth	2.50m BGL	Natural Ground - See associated log	
Finish Depth	3.40m BGL		

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	1	100.0	1.2
200	1	100.0	1.2
300	1	100.0	1.2
400	2	50.0	2.9
500	3	33.3	4.8
600	5	20.0	9.3
700	5	20.0	9.3
800	3	33.3	4.8
900	3	33.3	4.8

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

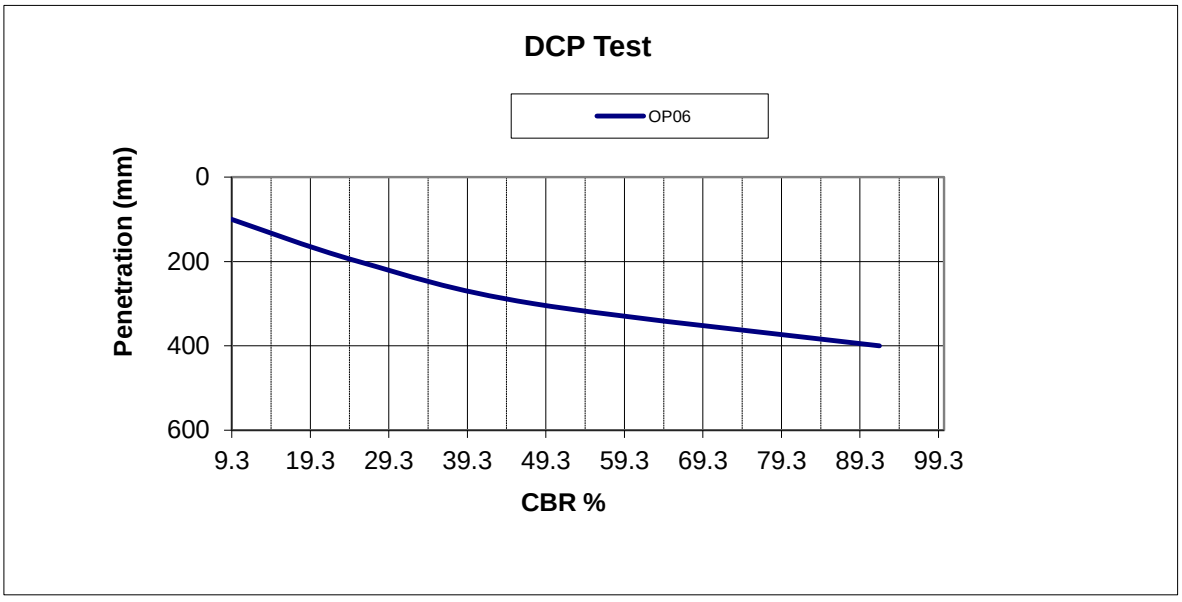


TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	Dublin Airport - 244 Apron Survey	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP06
Client	Kilwex	**By**	Ryan O'Toole
		Date	18/10/2018
Initial Depth	0.50m BGL	MADE GROUND: Brown slightly sandy slightly gravelly Clay to 1.70m BGL	
Finish Depth		Natural Ground from 1.70m BGL - See associated log	

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
	-	-	
100	5	20.0	9.3
200	11	9.1	25.4
300	18	5.6	47.7
400	30	3.3	91.8

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

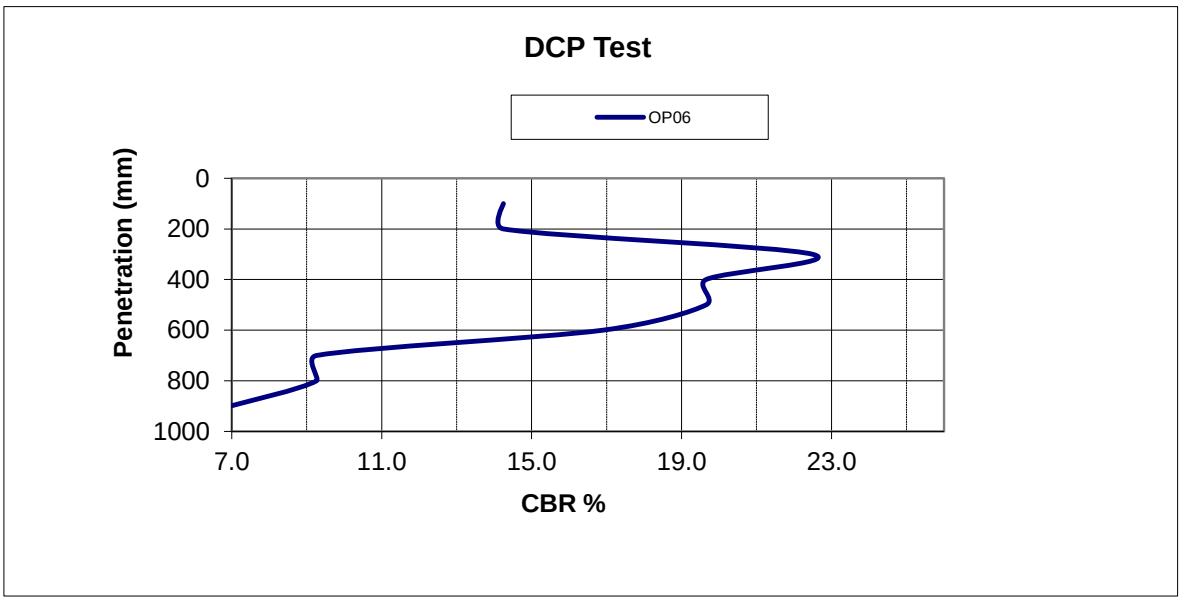


TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	Dublin Airport - 244 Apron Survey	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP06
Client	Kilwex	**By**	Ryan O'Toole
		Date	18/10/2018
Initial Depth	1.00m BGL	MADE GROUND: Brown slightly sandy slightly gravelly Clay to 1.70m BGL	
Finish Depth	1.90m BGL	Natural Ground from 1.70m BGL - See associated log	

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
	-	-	
100	7	14.3	14.2
200	7	14.3	14.2
300	10	10.0	22.5
400	9	11.1	19.7
500	9	11.1	19.7
600	8	12.5	16.9
700	5	20.0	9.3
800	5	20.0	9.3
900	4	25.0	7.0

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



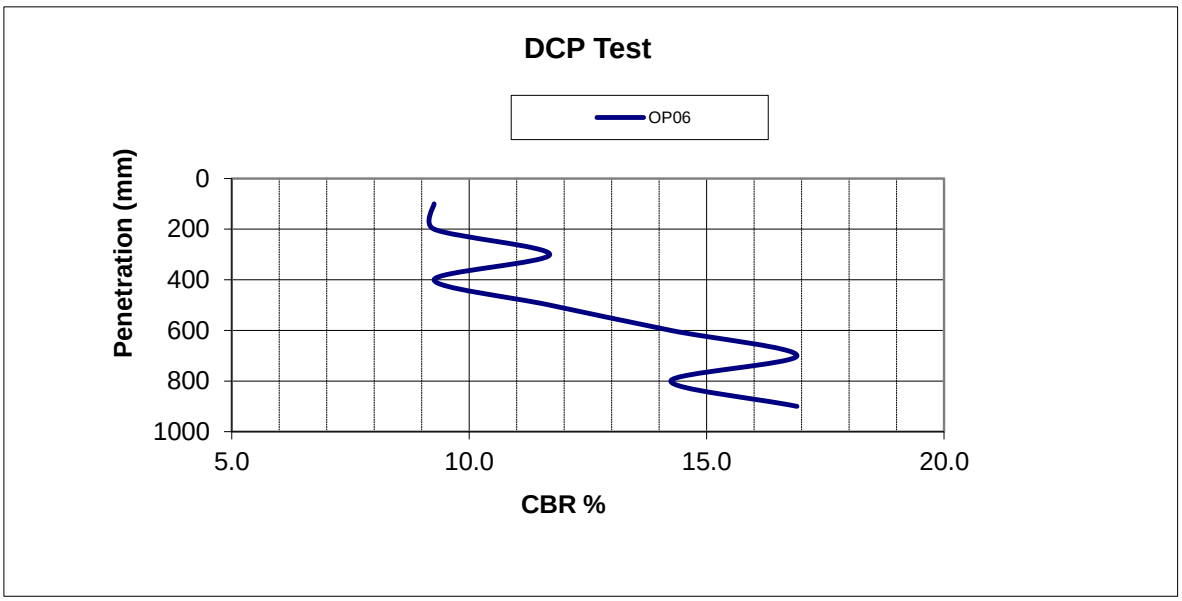
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	Dublin Airport - 244 Apron Survey	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP06
Client	Kilwex	**By**	Ryan O'Toole
		Date	17/10/2018

Initial Depth 2.00m BGL
Finish Depth 2.90m BGL Natural Ground - See associated log

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
	-	-	
100	5	20.0	9.3
200	5	20.0	9.3
300	6	16.7	11.7
400	5	20.0	9.3
500	6	16.7	11.7
600	7	14.3	14.2
700	8	12.5	16.9
800	7	14.3	14.2
900	8	12.5	16.9

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



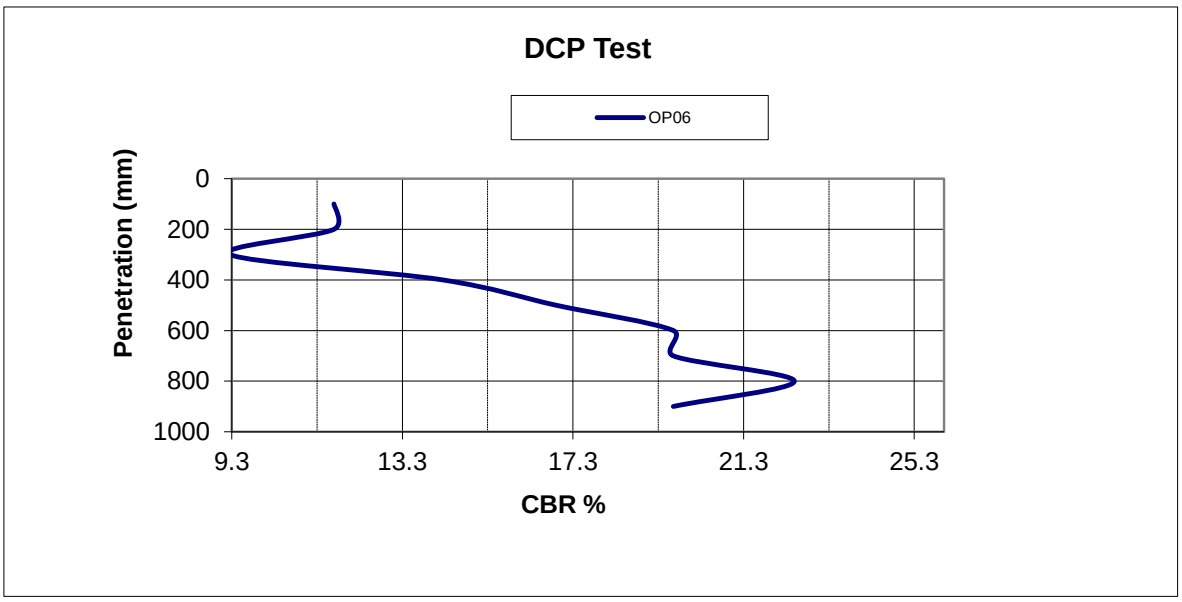
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	Dublin Airport - 244 Apron Survey	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP06
Client	Kilwex	**By**	Ryan O'Toole
		Date	17/10/2018

Initial Depth 2.50m BGL Natural Ground - See associated log
Finish Depth 3.40m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
	-	-	
100	6	16.7	11.7
200	6	16.7	11.7
300	5	20.0	9.3
400	7	14.3	14.2
500	8	12.5	16.9
600	9	11.1	19.7
700	9	11.1	19.7
800	10	10.0	22.5
900	9	11.1	19.7

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



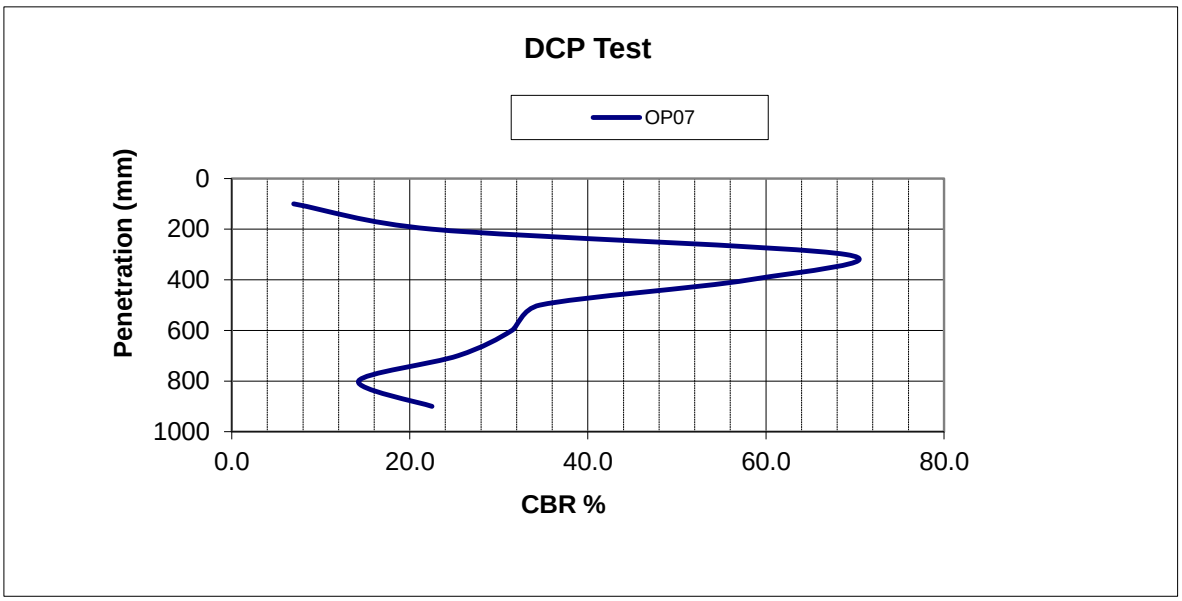
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP07
Client	DAA	**By**	Ryan O' Toole
		Date	02/08/2018

Initial Depth 0.50m BGL MADE GROUND:Brown sandy gravelly Clay to 0.80m BGL
Finish Depth 1.40m BGL Natural Ground from 0.80m BGL- See associated log

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	4	25.0	7.0
200	10	10.0	22.5
300	24	4.2	69.0
400	21	4.8	58.1
500	14	7.1	34.6
600	13	7.7	31.5
700	11	9.1	25.4
800	7	14.3	14.2
900	10	10.0	22.5

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



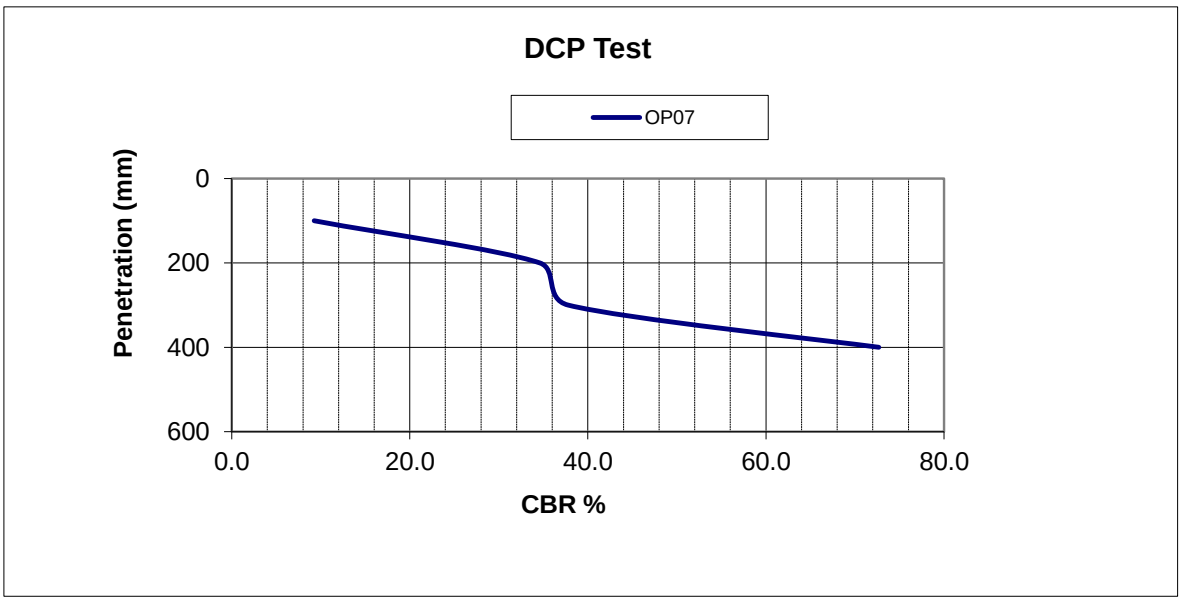
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP07
Client	DAA	**By**	Ryan O' Toole
		Date	02/08/2018

Initial Depth 1.0m BGL Natural Ground - See associated log
Finish Depth 1.40m BGL

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	5	20.0	9.3
200	14	7.1	34.6
300	15	6.7	37.8
400	25	4.0	72.7

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



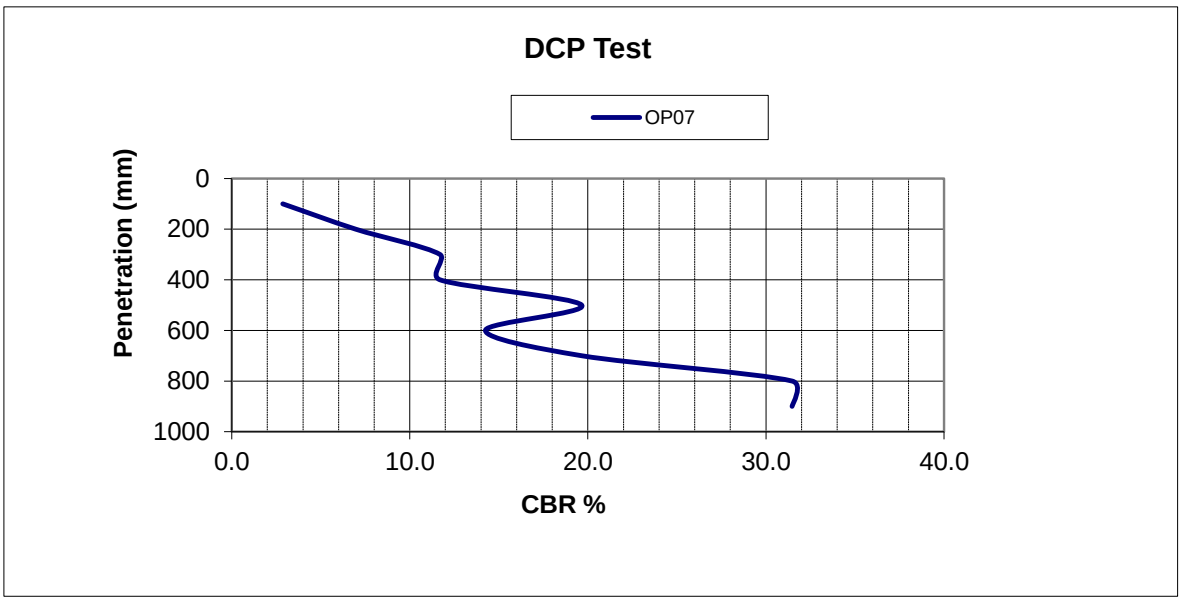
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP07
Client	DAA	**By**	Ryan O' Toole
		Date	02/08/2018

Initial Depth 2.0m BGL Natural Ground - See associated log
Finish Depth 2.90m BGL

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	2	50.0	2.9
200	4	25.0	7.0
300	6	16.7	11.7
400	6	16.7	11.7
500	9	11.1	19.7
600	7	14.3	14.2
700	9	11.1	19.7
800	13	7.7	31.5
900	13	7.7	31.5

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



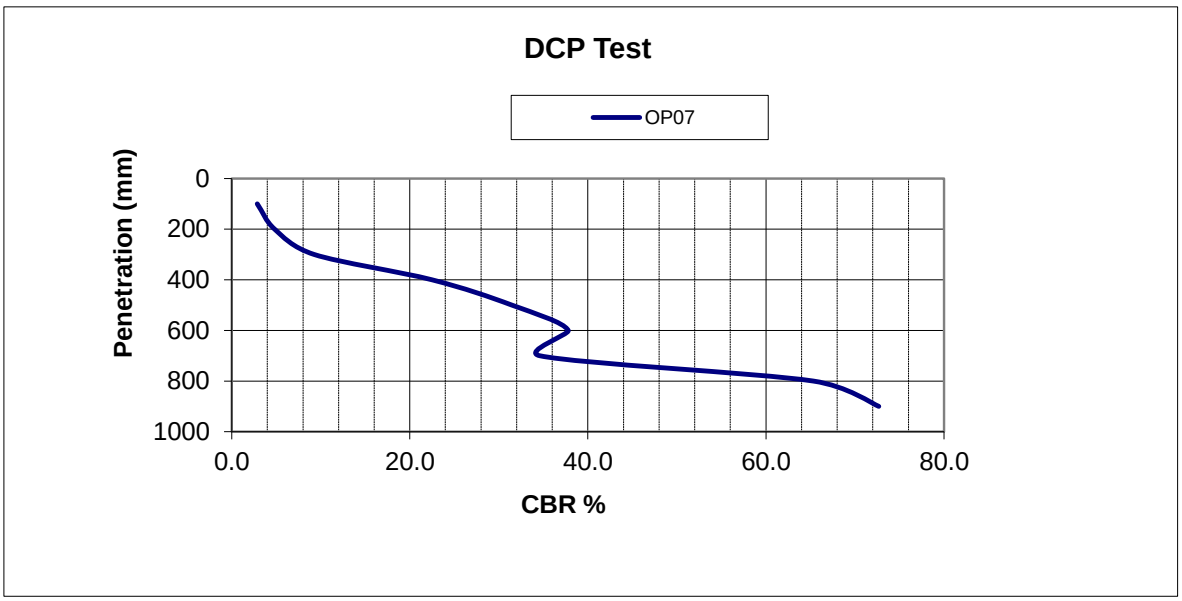
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP07
Client	DAA	**By**	Ryan O' Toole
		Date	02/08/2018

Initial Depth 2.50m BGL Natural Ground - See associated log
Finish Depth 3.40m BGL

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	2	50.0	2.9
200	3	33.3	4.8
300	5	20.0	9.3
400	10	10.0	22.5
500	13	7.7	31.5
600	15	6.7	37.8
700	14	7.1	34.6
800	23	4.3	65.3
900	25	4.0	72.7

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



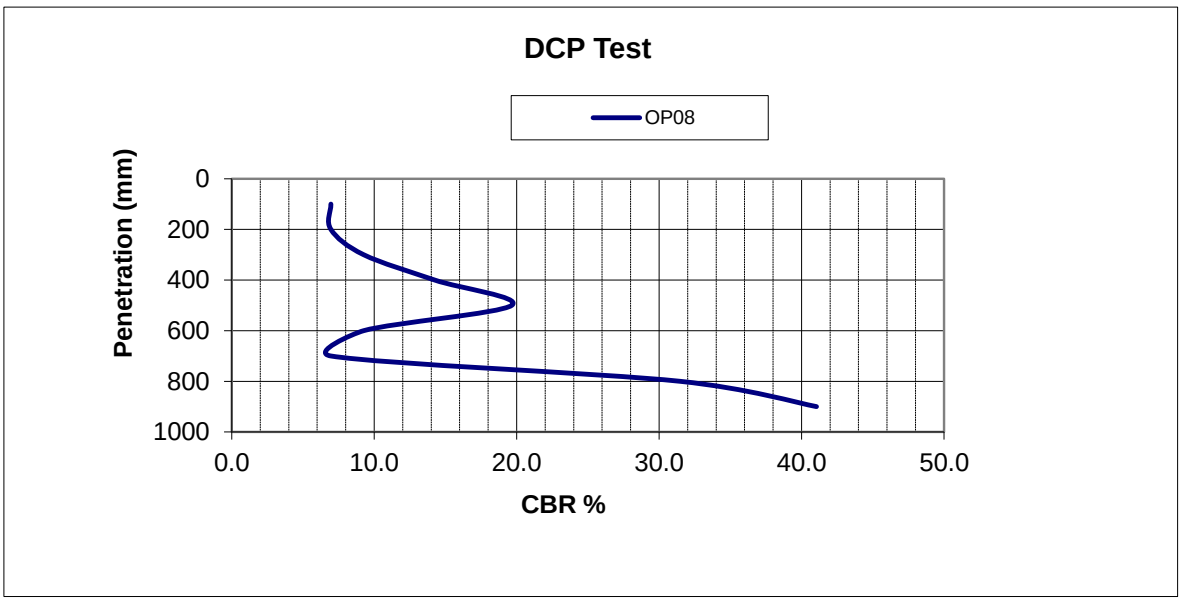
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP08
Client	DAA	**By**	Ryan O' Toole
		Date	18/08/2108

Initial Depth	0.50m BGL	MADE GROUND:Brown sandy gravelly Clay to 0.80m BGL
Finish Depth	1.40m BGL	Natural Ground from 0.80m BGL- See associated log

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	4	25.0	7.0
200	4	25.0	7.0
300	5	20.0	9.3
400	7	14.3	14.2
500	9	11.1	19.7
600	5	20.0	9.3
700	4	25.0	7.0
800	13	7.7	31.5
900	16	6.3	41.0

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



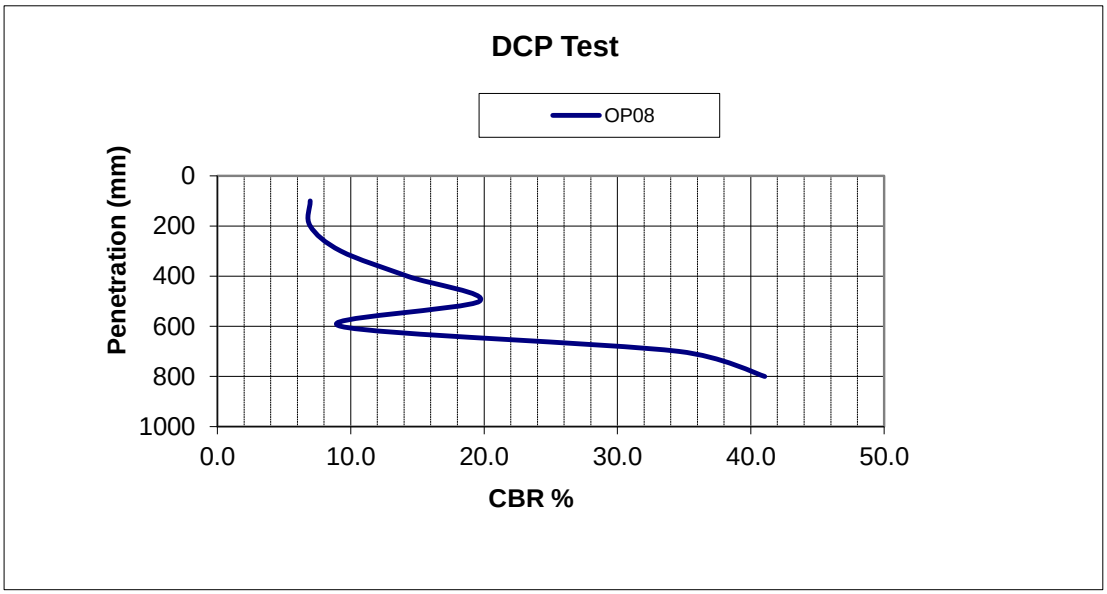
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP08
Client	DAA	**By**	Ryan O' Toole
		Date	18/08/2018

Initial Depth 1.0m BGL Natural Ground - See associated log
Finish Depth 1.80m BGL

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	4	25.0	7.0
200	4	25.0	7.0
300	5	20.0	9.3
400	7	14.3	14.2
500	9	11.1	19.7
600	5	20.0	9.3
700	14	7.1	34.6
800	16	6.3	41.0

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



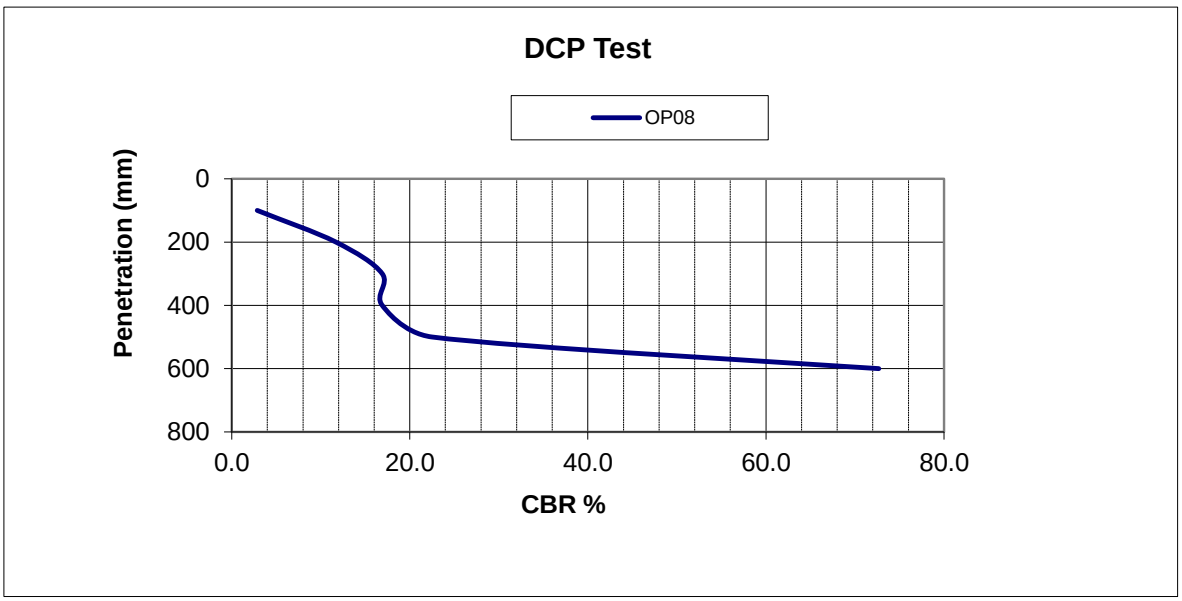
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP08
Client	DAA	**By**	Ryan O' Toole
		Date	18/08/2018

Initial Depth 2.0m BGL Natural Ground - See associated log
Finish Depth 2.60m BGL

Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	2	50.0	2.9
200	6	16.7	11.7
300	8	12.5	16.9
400	8	12.5	16.9
500	10	10.0	22.5
600	25	4.0	72.7

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



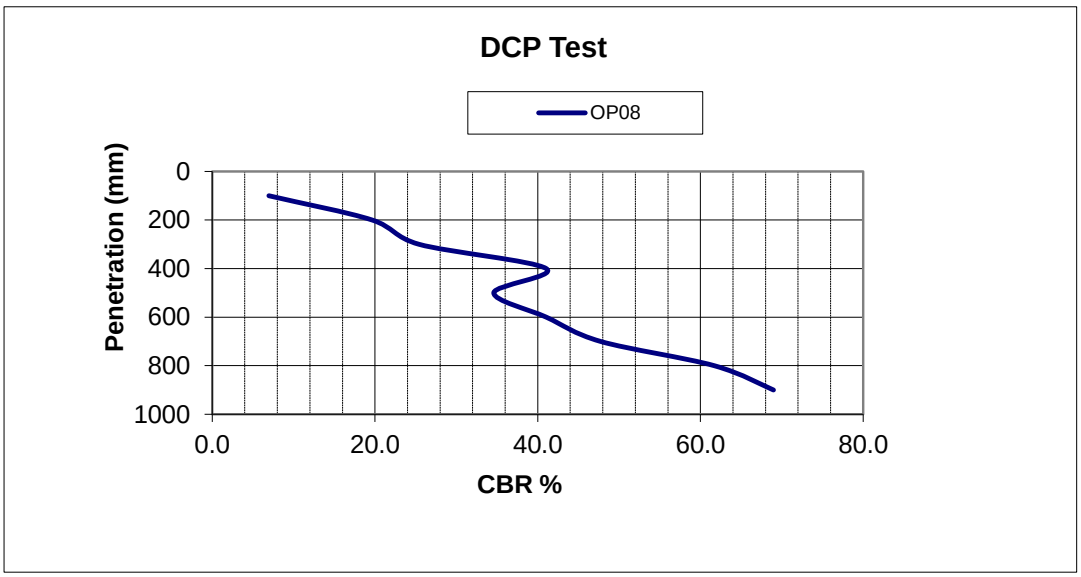
TRL DCP Test Report - 244 Airfield Surveys Phase 2

Job Name	244 Airfield Surveys Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	OP08
Client	DAA	**By**	Ryan O' Toole
		Date	18/08/2018

Initial Depth 2.50m BGL Natural Ground - See associated log
Finish Depth 3.40m BGL

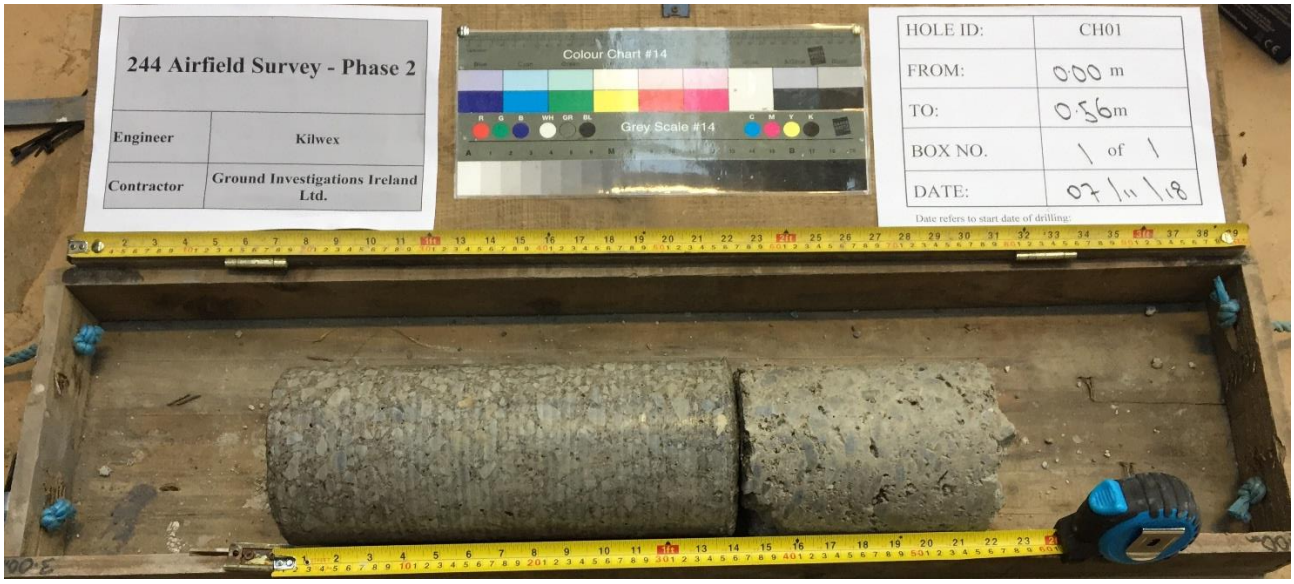
Depth (mm)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	4	25.0	7.0
200	9	11.1	19.7
300	11	9.1	25.4
400	16	6.3	41.0
500	14	7.1	34.6
600	16	6.3	41.0
700	18	5.6	47.7
800	22	4.5	61.7
900	24	4.2	69.0

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



APPENDIX 7 – Corehole and TRL Probe Records

Vertical Core: CH01



Easting	316074.829
Northing	243657.150
Elevation	64.625

Layer	From (m)	To	Thickness	Material
1	0.000	0.360	0.360	Concrete
2	0.360	0.560	0.200	Concrete Base
3	0.560	0.600	0.040	804 Hardcore Fill

- Core recovered 0.560m
- Diameter of core 140mm
- Separation of core at 0.36m caused during core extraction

- 0.000 - 0.360 - Strong grey CONCRETE. 70% to 80% aggregate, angular to sub angular fine to coarse limestone gravels with 5 – 10% small voids.
- 0.360 - 0.560 -Strong light grey CONCRETE. 80% to 90% aggregate, sub rounded to sub angular fine to coarse limestone gravels with 5 – 10% small voids.

  0.560 - 0.600 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Concrete

Vertical Core: CH02



Easting	316095.701
Northing	243606.981
Elevation	64.816

Layer	From (m)	To	Thickness	Material
1	0.000	0.500	0.500	Concrete
2	0.500	0.600	0.100	804 Hardcore Fill

- Core recovered 0.500m
- Diameter of core 140mm

- 0.000 - 0.500 - Strong grey CONCRETE. 60% to 70% aggregate, angular to sub angular fine to coarse limestone gravels with 5% small voids.
- 0.500 - 0.600 - Crushed Rock Fill

- Core completely non intact – Operator broke out the core to get it out of the hole.
- No reinforcement in Concrete

Vertical Core: CH03



Easting	316113.933
Northing	243535.884
Elevation	64.863

Layer	From (m)	To	Thickness	Material
1	0.000	0.350	0.350	Concrete
2	0.350	0.400	0.050	Concrete Base
3	0.400	0.500	0.100	804 Hardcore Fill

- Core recovered 0.400m
- Diameter of core 140mm
- Separation of core at 0.35m caused during core extraction

- 0.000 - 0.350 - Strong grey CONCRETE. 80% to 90% aggregate, angular to sub angular fine to coarse limestone gravels with 20% small voids.
- 0.350 - 0.400 - Strong light grey CONCRETE. 80% to 90% aggregate, sub rounded to sub angular fine to coarse limestone gravels with 5 – 10% small voids.
- 0.560 - 0.600 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Concrete

Vertical Core: CH04



Easting	316160.612
Northing	243452.501
Elevation	64.486

Layer	From (m)	To	Thickness	Material
1	0.000	0.380	0.380	Tarmac
2	0.380	0.500	0.120	Concrete Base
3	0.500	0.600	0.100	804 Hardcore Fill

- Core recovered 0.500m
- Diameter of core 170mm
- Separation of core at 0.36m and 0.38m caused during core extraction

- 0.000 - 0.380 - Strong grey CONCRETE. 80% to 90% aggregate, angular to sub angular fine to coarse limestone gravels with 5 – 10% small voids.
- 0.380 - 0.500 - Strong light grey CONCRETE. 70% to 80% aggregate, sub rounded to sub angular fine to coarse limestone gravels with 5 – 10% small voids.

  0.500 - 0.600 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Concrete

Vertical Core: CH05



Easting	316179.572
Northing	243407.736
Elevation	64.305

Layer	From (m)	To	Thickness	Material
1	0.000	0.360	0.360	Concrete
2	0.360	0.600	0.240	Concrete
3	0.600	0.700	0.100	804 Hardcore Fill

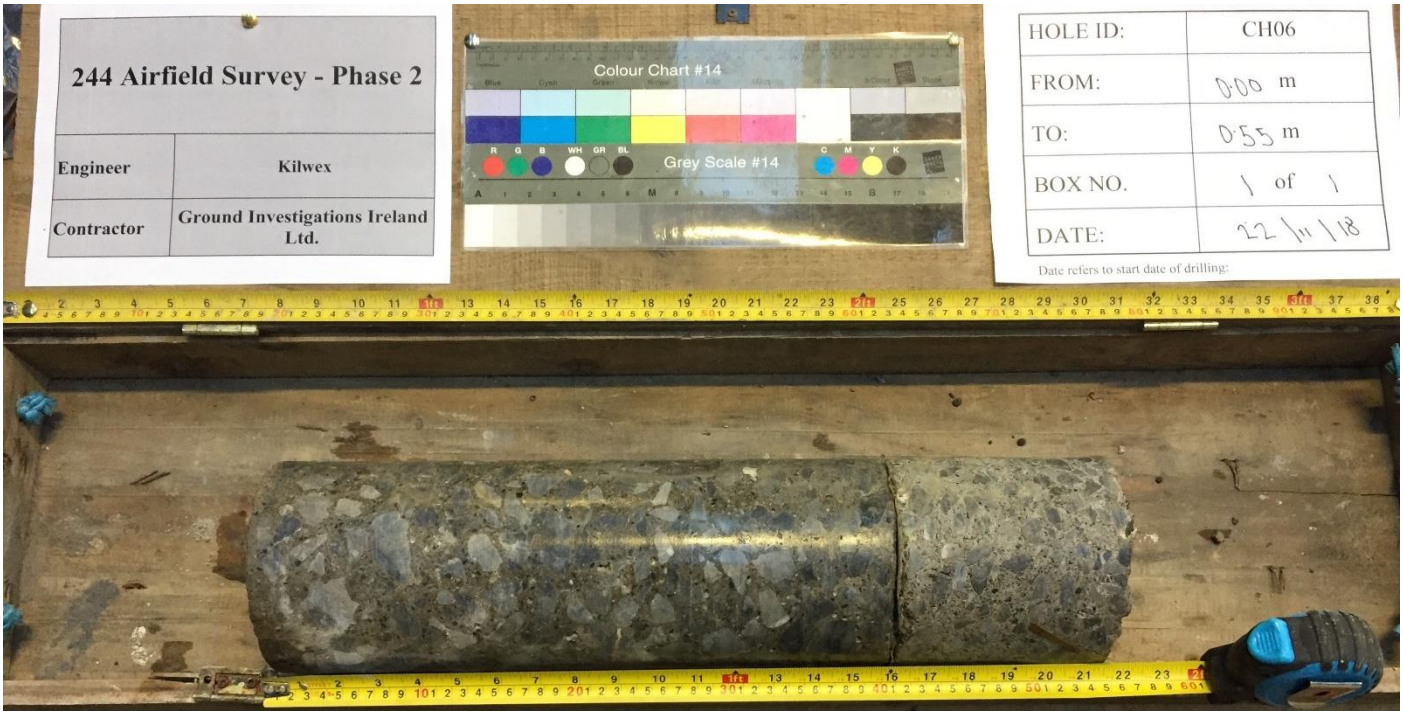
- Core recovered 0.600m
- Diameter of core 170mm
- Separation of core at 0.30m and 0.36m caused during core extraction

- 0.000 - 0.360 - Strong light grey CONCRETE. 80% to 90% aggregate, angular to sub angular fine to coarse limestone gravels with 5% small voids.
- 0.360 - 0.600 - Strong light grey CONCRETE. 80% to 90% aggregate, sub rounded to sub angular fine to coarse limestone gravels with 10% small voids.

  0.600 - 0.700 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Concrete

Vertical Core: CH06



Easting	316229.537
Northing	243253.694
Elevation	63.455

Layer	From (m)	To	Thickness	Material
1	0.000	0.400	0.400	Concrete
2	0.400	0.550	0.150	Concrete Base
3	0.550	0.650	0.100	804 Hardcore Fill

- Core recovered 0.550m
- Diameter of core 140mm
- Separation of core at 0.40m caused during core extraction

- 0.000 - 0.400 - Strong grey CONCRETE. 70% to 80% aggregate, angular to sub angular fine to coarse limestone gravels with 5% small voids.
- 0.400 - 0.550 - Strong light grey CONCRETE. 70% to 80% aggregate, sub rounded to sub angular fine to coarse limestone gravels with 5% small voids.

  0.550 - 0.650 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Concrete

Vertical Core: CH09



Easting	316348.955
Northing	243214.497
Elevation	64.648

Layer	From (m)	To	Thickness	Material
1	0.000	0.390	0.390	Concrete
2	0.390	0.560	0.170	Concrete Base
3	0.560	0.660	0.100	804 Hardcore Fill

- Core recovered 0.560m
- Diameter of core 140mm
- Separation of core at 0.39m caused during core extraction

- 0.000 - 0.390 - Strong grey CONCRETE. 70% to 80% aggregate, angular to sub angular fine to coarse limestone gravels with 10-20% small voids.
- 0.390 - 0.560 - Strong light grey CONCRETE. 70% to 80% aggregate, sub rounded to sub angular fine to coarse limestone gravels with 5-10% small voids.

  0.550 - 0.650 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Concrete

Vertical Core: CH10



Easting	316386.492
Northing	243154.013
Elevation	64.528

Layer	From (m)	To	Thickness	Material
1	0.000	0.120	0.120	Tarmacadam
2	0.120	0.300	0.180	804 Hardcore Fill

- Core recovered 0.120m
- Diameter of core 140mm

- 0.000 - 0.120 - Strong black Tarmacadam. 80% to 90% aggregate, angular to sub angular fine to coarse limestone gravels with 20% small voids.
- 0.120 – 0.300 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Tarmacadam

Vertical Core: CH11



Easting	316371.567
Northing	243102.681
Elevation	64.014

Layer	From (m)	To	Thickness	Material
1	0.000	0.390	0.390	Concrete
2	0.390	0.570	0.180	Concrete Base
3	0.570	0.670	0.100	804 Hardcore Fill

- Core recovered 0.570m
- Diameter of core 140mm
- Separation of core at 0.34m and 0.39m caused during core extraction

- 0.000 - 0.390 - Strong light grey CONCRETE. 70% to 80% aggregate, angular to sub angular fine to coarse limestone gravels with 5-10% small voids.
- 0.390 - 0.570 - Strong grey CONCRETE. 70% to 80% aggregate, angular to sub angular fine to coarse limestone gravels with 5-10% small voids.

  0.570 - 0.670 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Concrete

Vertical Core: CH12



Easting	316380.307
Northing	243082.957
Elevation	63.901

Layer	From (m)	To	Thickness	Material
1	0.000	0.340	0.340	Concrete
2	0.340	0.560	0.220	Concrete Base
3	0.560	0.660	0.100	804 Hardcore Fill

- Core recovered 0.560m
- Diameter of core 140mm
- Separation of core at 0.34m caused during core extraction

- 0.000 - 0.340 - Strong grey CONCRETE. 70% to 80% aggregate, angular to sub angular fine to coarse limestone gravels with 10-20% small voids.
- 0.340 - 0.560 - Strong light grey CONCRETE. 70% to 80% aggregate, sub rounded to sub angular fine to coarse limestone gravels with 5-10% small voids.

  0.560 - 0.660 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Concrete

Vertical Core: CH13



Easting	316288.381
Northing	243051.197
Elevation	62.840

Layer	From (m)	To	Thickness	Material
1	0.000	0.150	0.150	Tarmacadam
2	0.150	0.300	0.150	804 Hardcore Fill

- Core recovered 0.150m
- Diameter of core 140mm

- 0.000 - 0.150 - Strong black Tarmacadam. 80% to 90% aggregate, angular to sub angular fine to coarse limestone gravels with 20% small voids.
- 0.150 – 0.300 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Tarmacadam

Vertical Core: CH14



Easting	316203.870
Northing	243026.531
Elevation	62.828

Layer	From (m)	To	Thickness	Material
1	0.000	0.170	0.170	Tarmacadam
2	0.170	0.420	0.250	Concrete
3	0.420	0.520	0.100	804 Hardcore Fill

- Core recovered 0.420m
- Diameter of core 140mm
- Separation of core at 0.15m caused during core extraction

- 0.000 - 0.170 - Strong black Tarmacadam. 80% to 90% aggregate, angular to sub angular fine to coarse limestone gravels with 5-10% small voids.
- 0.170 - 0.420 - Strong grey CONCRETE. 70% to 80% aggregate, sub rounded to sub angular fine to coarse limestone gravels with 10-20% small voids.

  0.420 - 0.520 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Tarmacadam/Concrete

Vertical Core: CH15



Easting	316213.454
Northing	243004.609
Elevation	62.814

Layer	From (m)	To	Thickness	Material
1	0.000	0.170	0.170	Tarmacadam
2	0.170	0.430	0.260	Concrete
3	0.430	0.530	0.100	804 Hardcore Fill

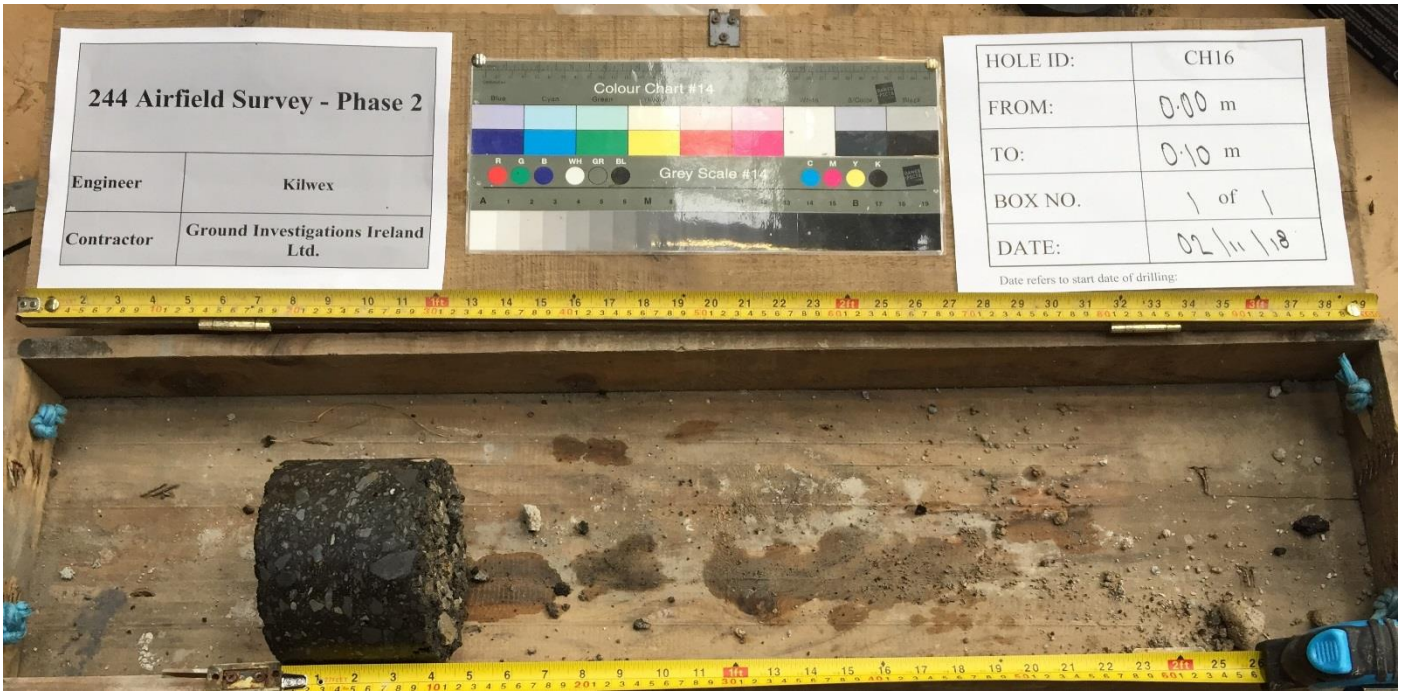
- Core recovered 0.430m
- Diameter of core 140mm
- Separation of core at 0.17m caused during core extraction

- 0.000 - 0.170 - Strong black Tarmacadam. 80% to 90% aggregate, angular to sub angular fine to coarse limestone gravels with 5-10% small voids.
- 0.170 - 0.430 - Strong grey CONCRETE. 70% to 80% aggregate, sub rounded to sub angular fine to coarse limestone gravels with 10-20% small voids.

  0.430 - 0.530 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Tarmacadam/Concrete

Vertical Core: CH16



Easting	316435.731
Northing	243092.563
Elevation	64.420

Layer	From (m)	To	Thickness	Material
1	0.000	0.100	0.100	Tarmacadam
2	0.100	0.300	0.200	804 Hardcore Fill

- Core recovered 0.100m
- Diameter of core 140mm

- 0.000 - 0.100 - Strong black Tarmacadam. 80% to 90% aggregate, angular to sub angular fine to coarse limestone gravels with 20% small voids.
- 0.100 – 0.300 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Tarmacadam

Vertical Core: CH17



Easting	316442.412
Northing	243014.831
Elevation	63.668

Layer	From (m)	To	Thickness	Material
1	0.000	0.380	0.380	Concrete
2	0.380	0.620	0.240	Concrete
3	0.620	0.710	0.090	804 Hardcore Fill

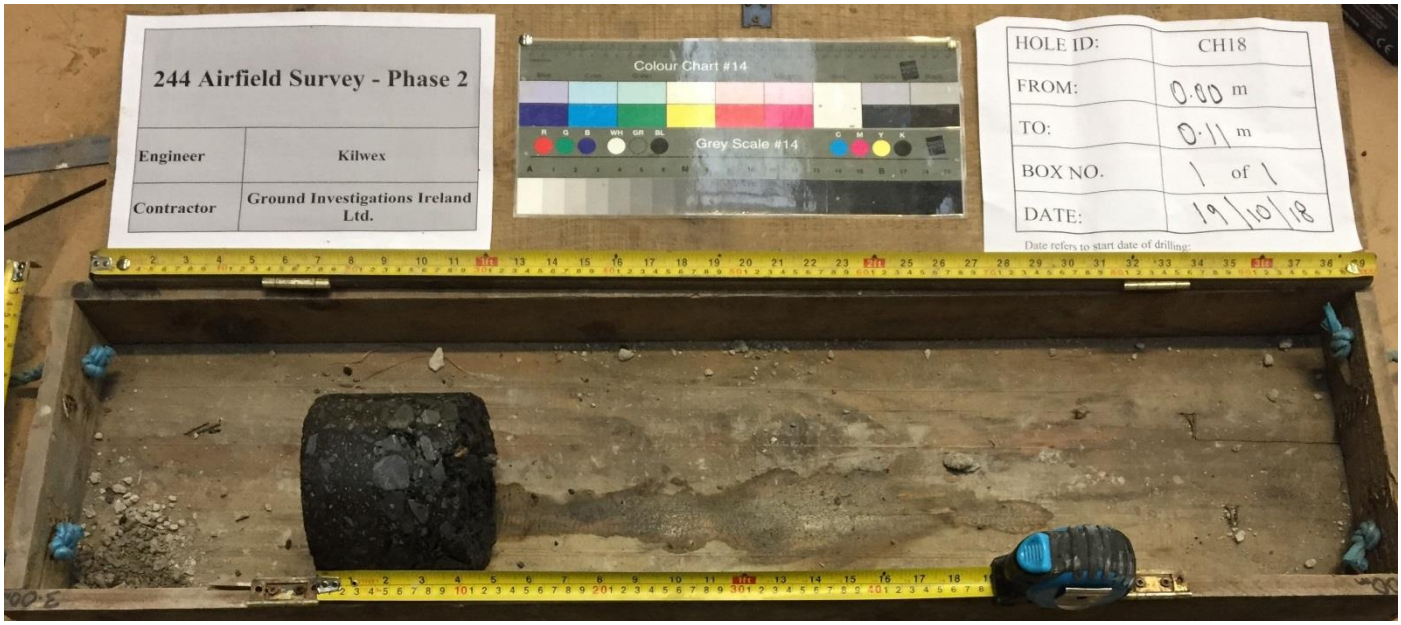
- Core recovered 0.560m
- Diameter of core 140mm
- Separation of core at 0.34m caused during core extraction

- 0.000 - 0.380 - Strong grey CONCRETE. 70% to 80% aggregate, angular to sub angular fine to coarse limestone gravels with 10-20% small voids.
- 0.340 - 0.620 - Strong light grey CONCRETE. 70% to 80% aggregate, sub rounded to sub angular fine to coarse limestone gravels with 5-10% small voids.

  0.620 - 0.710 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Concrete

Vertical Core: CH18



Easting	316480.931
Northing	242949.216
Elevation	63.211

Layer	From (m)	To	Thickness	Material
1	0.000	0.110	0.110	Tarmacadam
2	0.110	0.340	0.230	804 Hardcore Fill

- Core recovered 0.110m
- Diameter of core 140mm

- 0.000 - 0.110 - Strong black Tarmacadam. 80% to 90% aggregate, angular to sub rounded fine to coarse limestone gravels with 10-20% small voids.
- 0.110 – 0.340 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Tarmacadam

Vertical Core: CH20



Easting	316451.543
Northing	242843.195
Elevation	61.823

Layer	From (m)	To	Thickness	Material
1	0.000	0.360	0.360	Concrete
2	0.360	0.530	0.170	Concrete base
3	0.530	0.630	0.100	804 Hardcore Fill

- Core recovered 0.530m
- Diameter of core 170mm
- Separation of core at 0.36m caused during core extraction

- 0.000 - 0.360 - Strong light grey CONCRETE. 70% to 80% aggregate, angular to sub angular fine to coarse limestone gravels with 5-10% small voids.
- 0.360 - 0.530 - Strong grey CONCRETE. 60% to 70% aggregate, sub rounded to sub angular fine to coarse limestone gravels with 5% small voids.

  0.530 - 0.630 - Crushed Rock Fill

- No cracks in core
- 5mm and 10mm reinforcement bars of mesh at 100mm spacing in Concrete

Vertical Core: CH21



Easting	316296.506
Northing	242826.386
Elevation	62.475

Layer	From (m)	To	Thickness	Material
1	0.000	0.140	0.140	Concrete
2	0.140	0.400	0.260	Concrete Base
3	0.400	0.500	0.100	804 Hardcore Fill

- Core recovered 0.400m
- Diameter of core 140mm
- Separation of core at 0.14m caused during core extraction

- 0.000 - 0.140 - Strong black CONCRETE. 60% to 70% aggregate, angular to sub angular fine to coarse limestone gravels with 5% small voids.
- 0.140 - 0.400 - Strong light grey CONCRETE. 60% to 70% aggregate, sub rounded to sub angular fine to coarse limestone gravels with rare cobbles and with 5% small voids.

  0.400 - 0.500 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Concrete

Vertical Core: CH22



Easting	316308.811
Northing	242798.593
Elevation	62.422

Layer	From (m)	To	Thickness	Material
1	0.000	0.150	0.150	Tarmacadam
2	0.150	0.400	0.250	Concrete
3	0.400	0.500	0.100	804 Hardcore Fill

- Core recovered 0.400m
- Diameter of core 140mm
- Separation of core at 0.15m caused during core extraction

- 0.000 - 0.150 - Strong black Tarmacadam. 70% to 80% aggregate, angular to sub angular fine to coarse limestone gravels with 10-20% small voids.
- 0.150 - 0.400 - Strong grey CONCRETE. 70% to 80% aggregate, sub rounded to angular fine to coarse limestone gravels with 10-20% small voids.

  0.400 - 0.500 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Tarmacadam/Concrete

Vertical Core: CH23



Easting	316470.544
Northing	242789.449
Elevation	61.489

Layer	From (m)	To	Thickness	Material
1	0.000	0.380	0.380	Tarmacadam
2	0.380	0.480	0.100	Concrete Base
3	0.480	0.580	0.100	804 Hardcore Fill

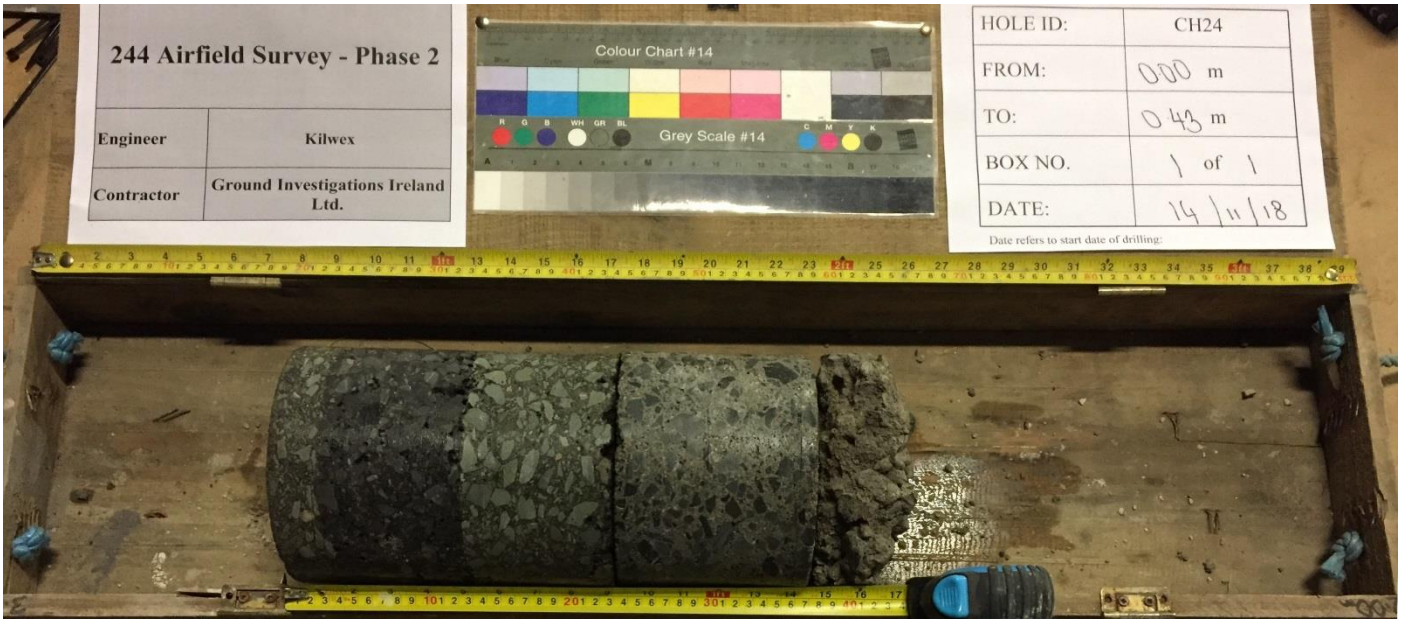
- Core recovered 0.480m
- Diameter of core 170mm
- Separation of core at 0.15m and 0.38m caused during core extraction

- 0.000 - 0.380 - Strong black Tarmacadam. 70% to 80% aggregate, angular to sub angular fine to coarse limestone gravels with 5-10% small voids.
- 0.380 - 0.480 - Strong light grey CONCRETE. 80% to 90% aggregate, angular to sub angular fine to coarse limestone gravels with 5% small voids.

  0.480 - 0.580 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Tarmacadam/Concrete

Vertical Core: CH24



Easting	316485.709
Northing	242757.139
Elevation	61.185

Layer	From (m)	To	Thickness	Material
1	0.000	0.030	0.030	Tarmacadam
2	0.030	0.130	0.100	Tarmacadam
3	0.130	0.430	0.300	Concrete Base
4	0.430	0.530	0.100	804 Hardcore Fill

- Core recovered 0.430m
- Diameter of core 170mm
- Separation of core at 0.23m and 0.36m caused during core extraction

- 0.000 - 0.030 - Strong black Tarmacadam. 80% to 90% aggregate, angular to sub angular fine to coarse limestone gravels.
- 0.030 - 0.130 – Medium strong black Tarmacadam. 70% to 80% aggregate, angular to sub angular fine to coarse limestone gravels with 20% small and medium voids.
- 0.130 - 0.430 - Strong light grey CONCRETE. 80% to 90% aggregate, sub rounded to sub angular fine to coarse limestone gravels with 5% small voids.

  0.430 - 0.530 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Tarmacadam/Concrete

Vertical Core: CH25



Easting	316441.892
Northing	242728.103
Elevation	61.489

Layer	From (m)	To	Thickness	Material
1	0.000	0.370	0.370	Concrete
2	0.370	0.520	0.150	Concrete
3	0.520	0.620	0.100	804 Hardcore Fill

- Core recovered 0.520m
- Diameter of core 170mm
- Separation of core at 0.37m caused during core extraction

- 0.000 - 0.520 - Strong light grey CONCRETE. 70% to 80% aggregate, angular to sub angular fine to coarse limestone gravels with 20% small voids.

  0.520 - 0.620 - Crushed Rock Fill

- No cracks in core
- No reinforcement in Concrete

Vertical Core: CH26



Easting	316480.500
Northing	242724.966
Elevation	61.247

Layer	From (m)	To	Thickness	Material
1	0.000	0.380	0.380	Concrete
2	0.380	0.550	0.170	Concrete Base
3	0.550	0.650	0.100	804 Hardcore Fill

- Core recovered 0.550m
- Diameter of core 170mm
- Separation of core at 0.38m caused during core extraction

- 0.000 - 0.380 – Strong light grey CONCRETE. 70% to 80% aggregate, sub angular to sub rounded fine to coarse limestone gravels with 10-20% small voids.
- 0.380 - 0.550 - Strong grey CONCRETE. 80% to 90% aggregate, sub rounded to sub angular fine to coarse limestone gravels with 5% small voids.

  0.550 - 0.650 - Crushed Rock Fill

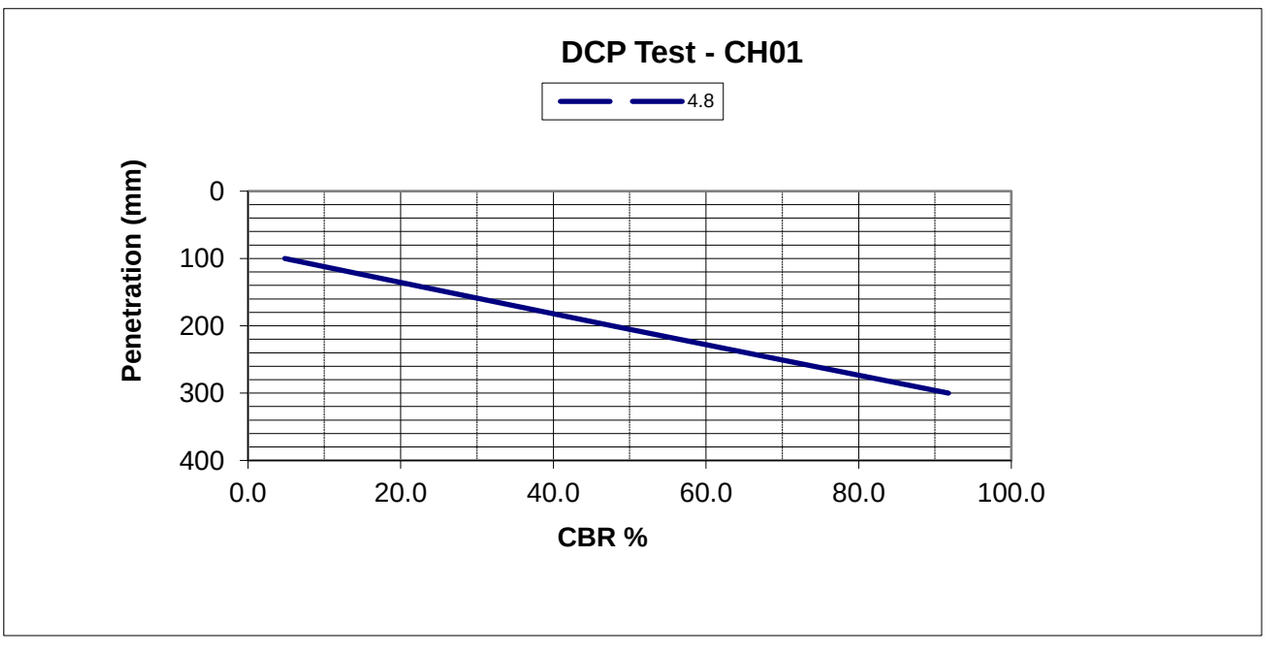
- No cracks in core
- No reinforcement in Concrete

Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH01
Client	Kilwex	**By**	RO'T
		Date	07/11/2018

Initial Depth 0.60m BGL
Final Depth 0.90m BGL Grey/brown fine to coarse angular to sub-angular Crushed Rock FILL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0	-	-	
100	3	33.3	4.8
200	18	5.6	47.7
300	30	3.3	91.8

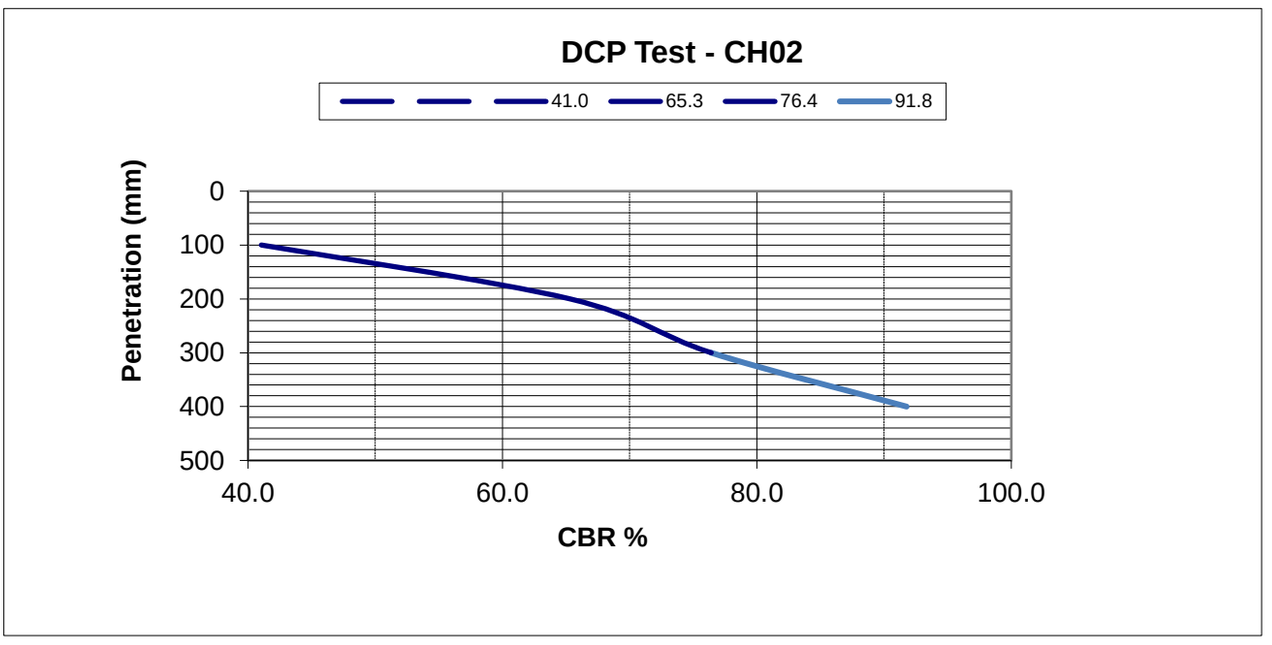
Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH02
Client	Kilwex	**By**	RO'T
		Date	07/11/2018
Initial Depth	0.70m BGL		
Final Depth	1.0m BGL		

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0	-	-	
100	16	6.3	41.0
200	23	4.3	65.3
300	26	3.8	76.4
400	30	3.3	91.8

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

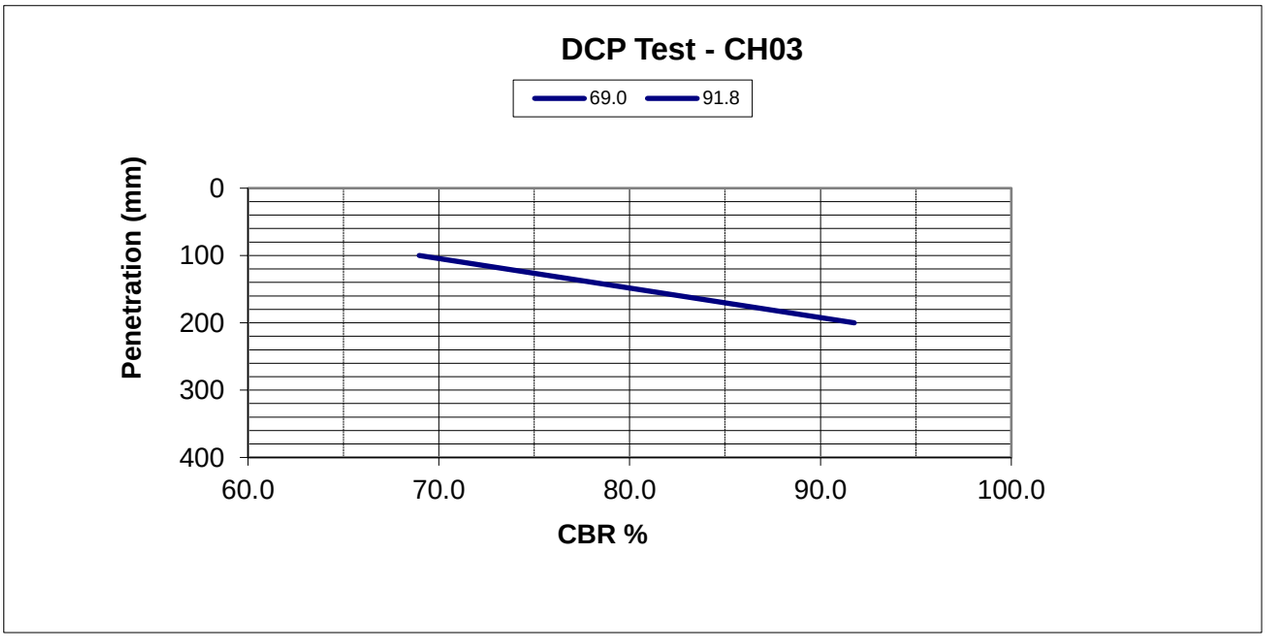


Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH03
Client	Kilwex	**By**	RO'T
		Date	08/11/2018

Initial Depth 0.60m BGL
Final Depth 0.80m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0	-	-	
100	24	4.2	69.0
200	30	3.3	91.8

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

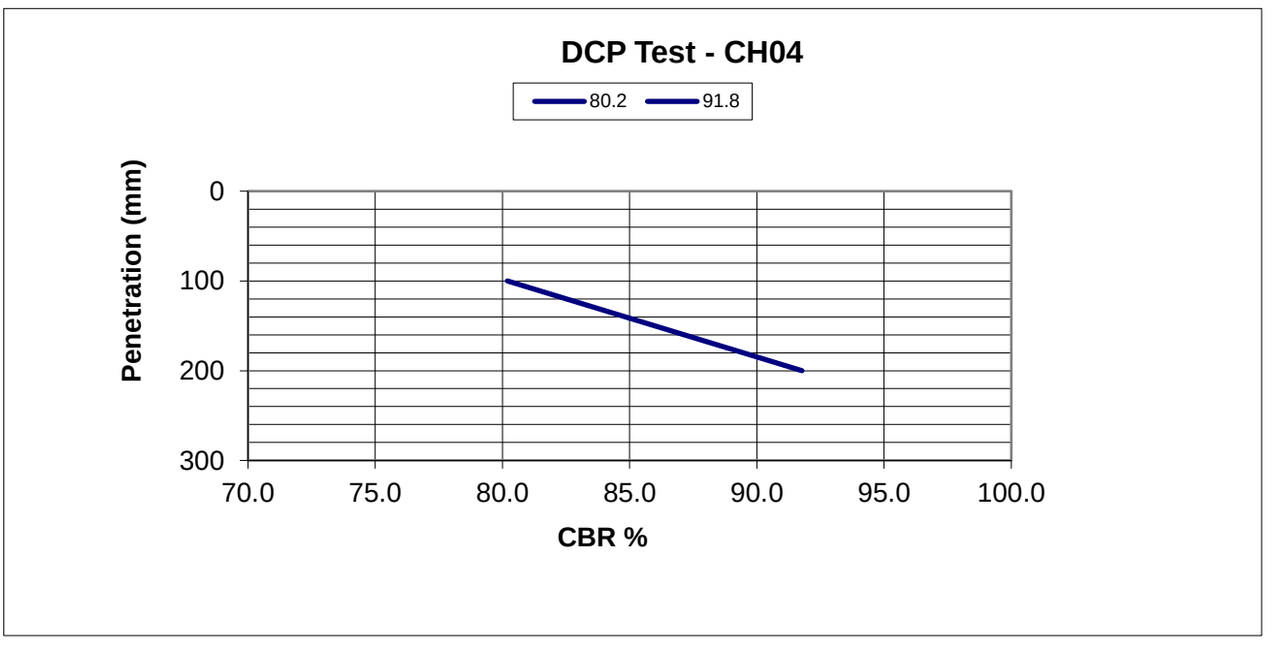


Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH04
Client	Kilwex	**By**	RO'T
		Date	19/11/2018

Initial Depth 0.70m BGL
Final Depth 0.90m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	27	3.7	80.2
200	30	3.3	91.8

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

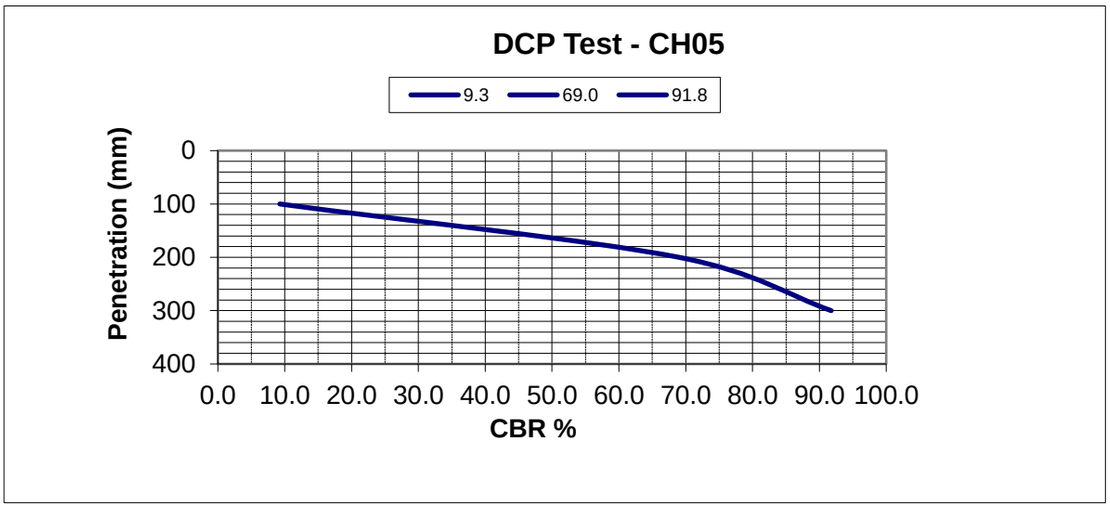


Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH05
Client	Kilwex	**By**	RO'T
		Date	19/11/2018

Initial Depth 0.80m BGL
Final Depth 1.10m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	5	20.0	9.3
200	24	4.2	69.0
300	30	3.3	91.8

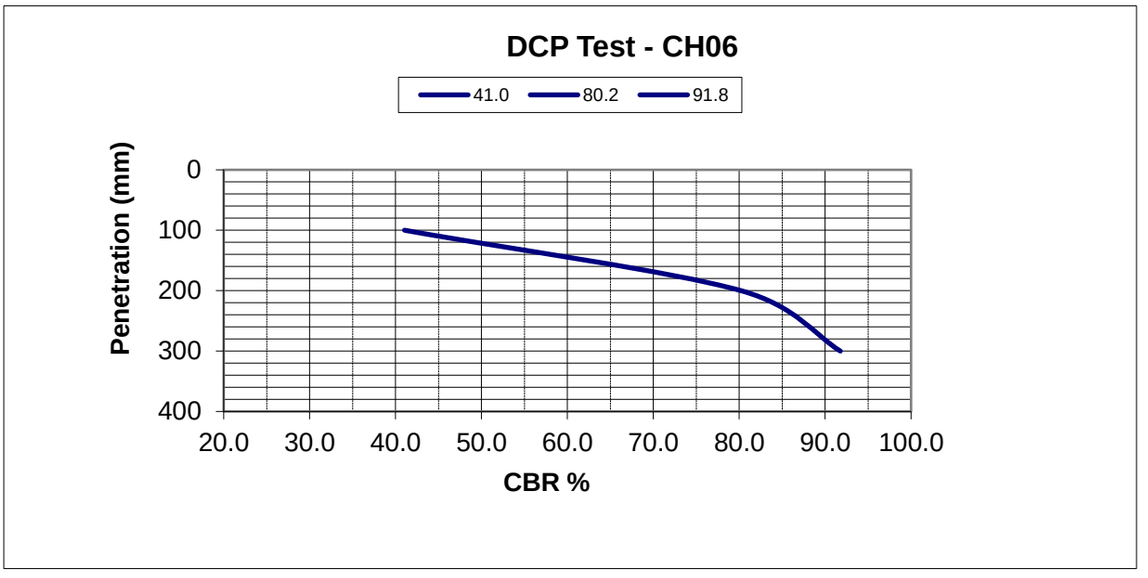
Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH06
Client	Kilwex	**By**	RO'T
		Date	22/11/2018
Initial Depth	0.80m BGL		
Final Depth	1.10m BGL		

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	16	6.3	41.0
200	27	3.7	80.2
300	30	3.3	91.8

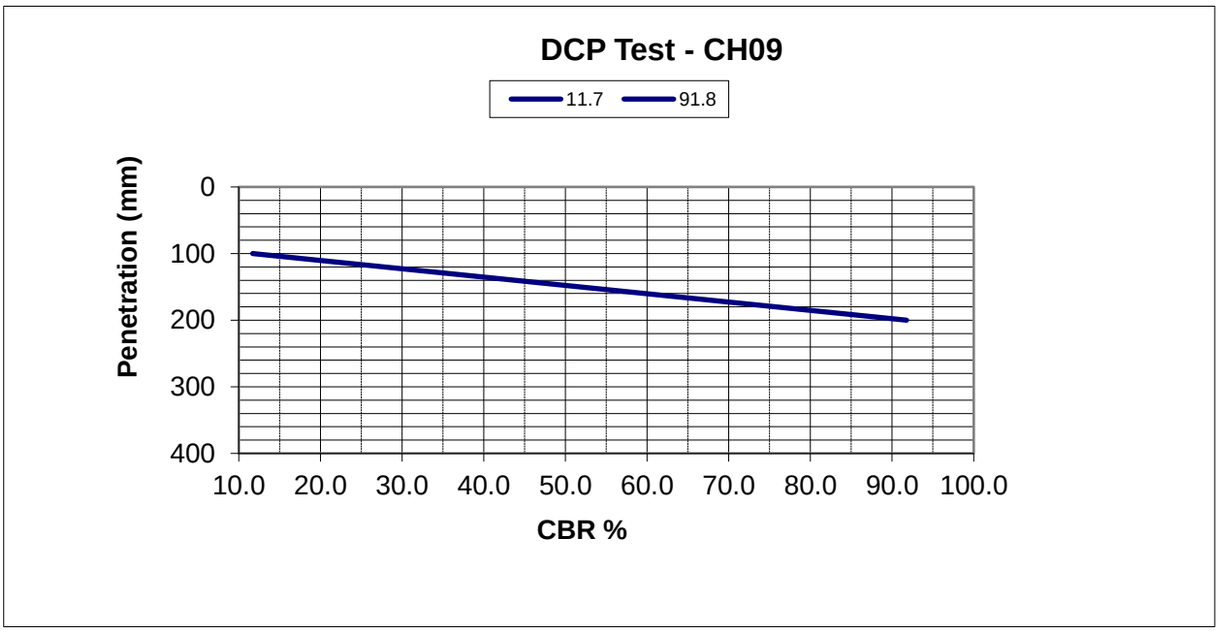
Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH09
Client	Kilwex	**By**	RO'T
		Date	08/11/2018
Initial Depth	0.70m BGL		

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	6	16.7	11.7
200	30	3.3	91.8

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

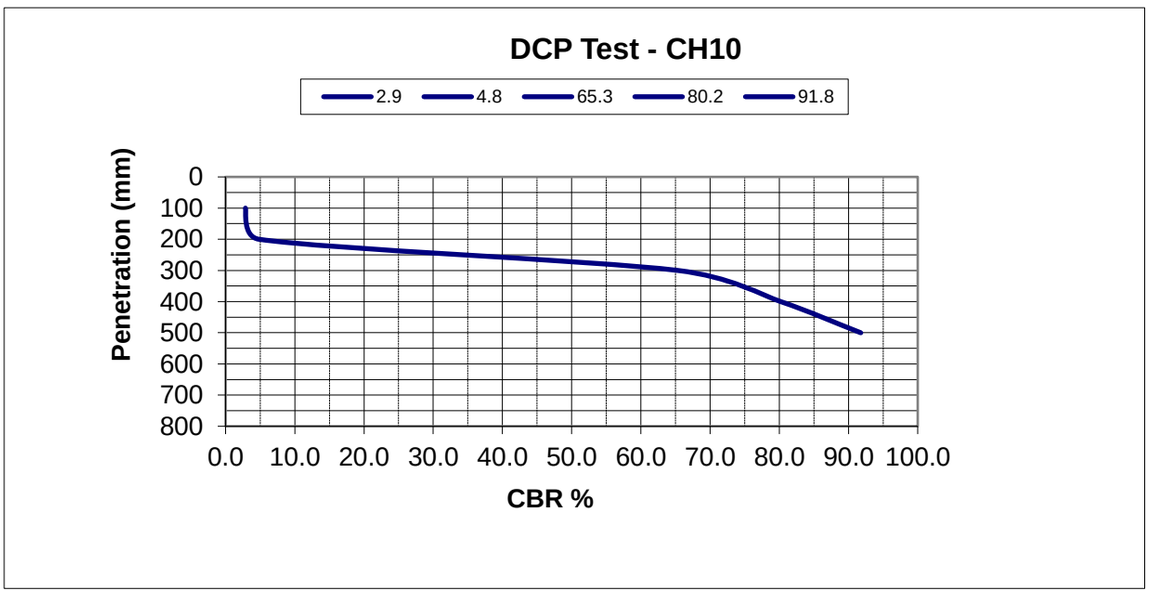


Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH10
Client	Kilwex	**By**	ROT
		Date	02/11/2018

Initial Depth 0.40m BGL
Final Depth 0.90m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	2	50.0	2.9
200	3	33.3	4.8
300	23	4.3	65.3
400	27	3.7	80.2
500	30	3.3	91.8

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

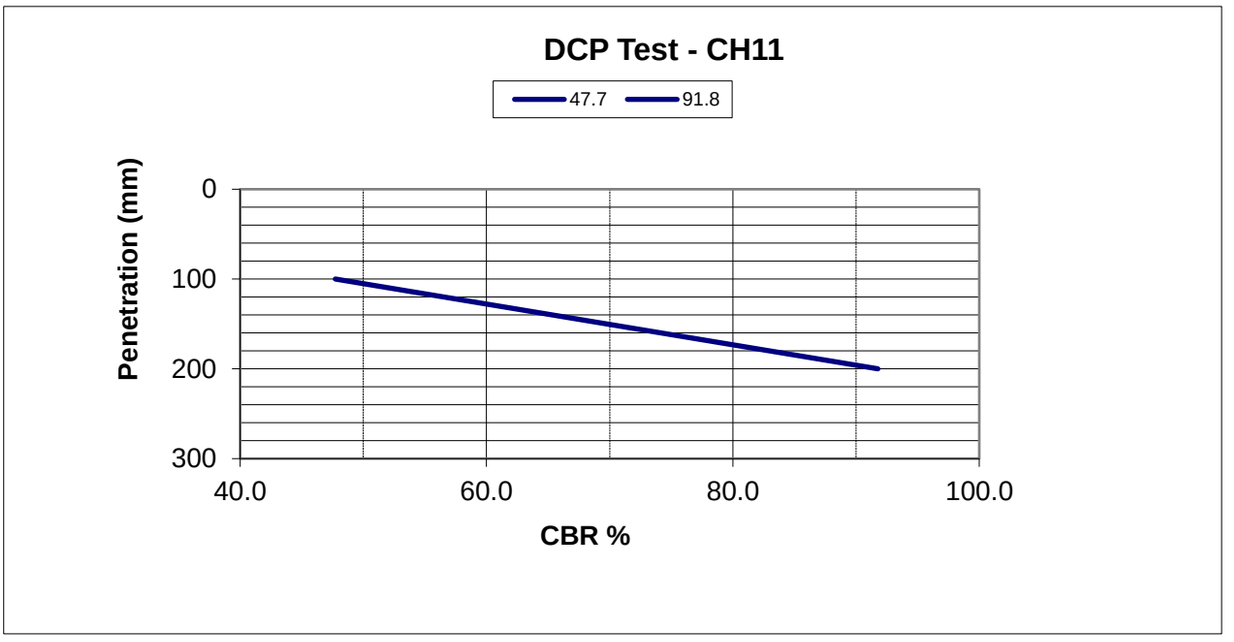


Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH11
Client	Kilwex	**By**	RO'T
		Date	08/11/2018

Initial Depth 0.60m BGL
Initial Depth 0.80m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0	-	-	
100	18	5.6	47.7
200	30	3.3	91.8

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

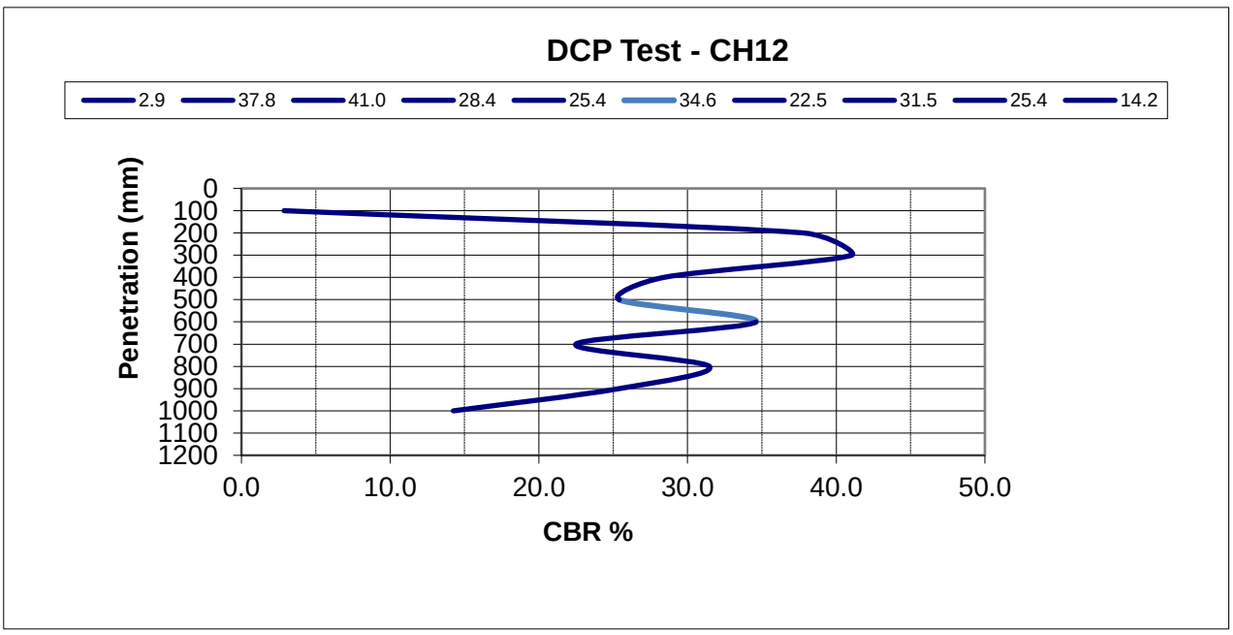


Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH12
Client	Kilwex	**By**	MC
		Date	19/10/2018

Initial Depth 0.70m BGL
Final Depth 1.70m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0	-	-	
100	2	50.0	2.9
200	15	6.7	37.8
300	16	6.3	41.0
400	12	8.3	28.4
500	11	9.1	25.4
600	14	7.1	34.6
700	10	10.0	22.5
800	13	7.7	31.5
900	11	9.1	25.4
1000	7	14.3	14.2

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

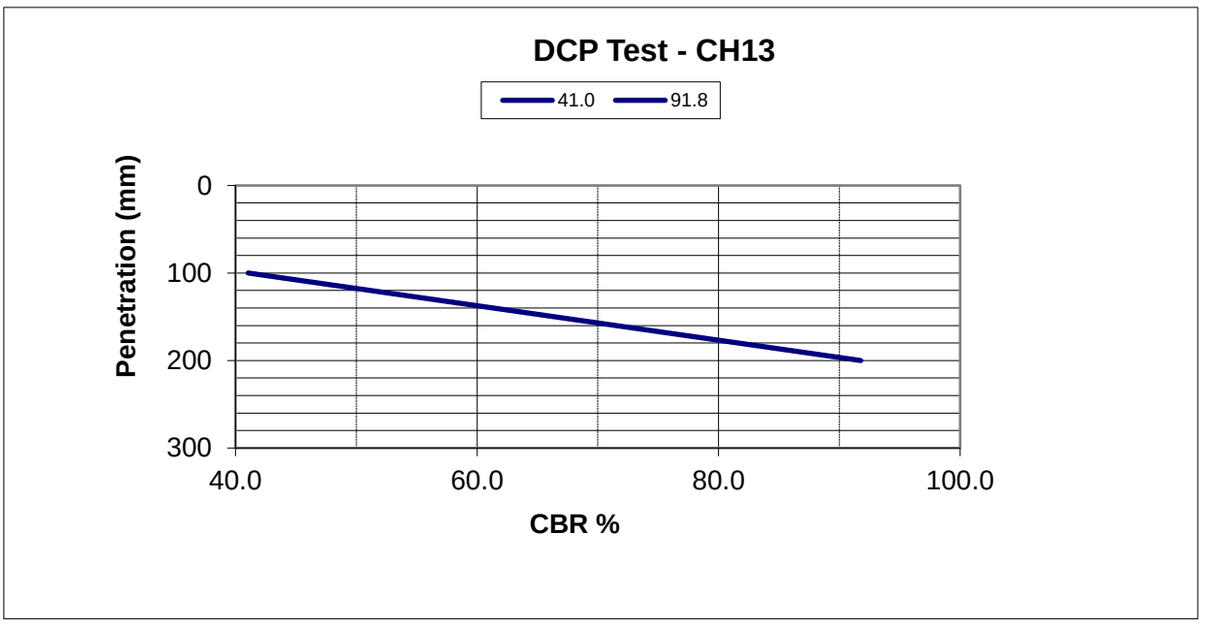


Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH13
Client	Kilwex	**By**	RO'T
		Date	01/11/2018

Initial Depth 0.60m BGL
Final Depth 0.80m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0	-	-	
100	16	6.3	41.0
200	30	3.3	91.8

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

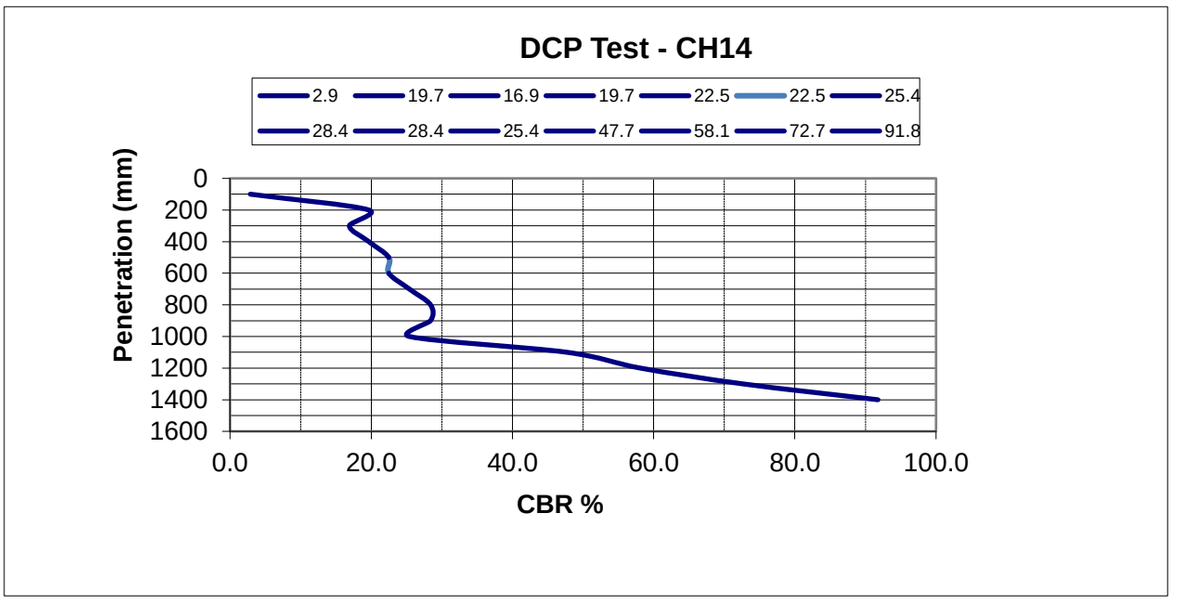


Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH14
Client	Kilwex	**By**	ROT
		Date	30/10/1984

Initial Depth 0.50m BGL
Final Depth 1.90m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	2	50.0	2.9
200	9	11.1	19.7
300	8	12.5	16.9
400	9	11.1	19.7
500	10	10.0	22.5
600	10	10.0	22.5
700	11	9.1	25.4
800	12	8.3	28.4
900	12	8.3	28.4
1000	11	9.1	25.4
1100	18	5.6	47.7
1200	21	4.8	58.1
1300	25	4.0	72.7
1400	30	3.3	91.8

Reference **Kleyn and Van Heerden (60° Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

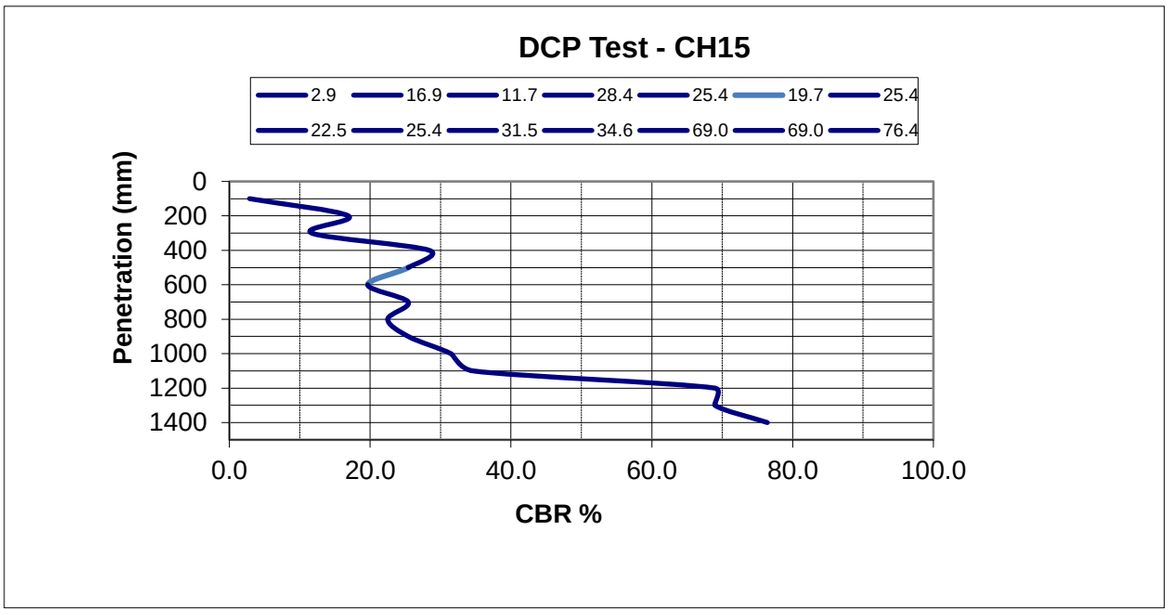


Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH15
Client	Kilwex	**By**	ROT
		Date	30/10/1984

Initial Depth 0.50m BGL
Final Depth 1.90m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	2	50.0	2.9
200	8	12.5	16.9
300	6	16.7	11.7
400	12	8.3	28.4
500	11	9.1	25.4
600	9	11.1	19.7
700	11	9.1	25.4
800	10	10.0	22.5
900	11	9.1	25.4
1000	13	7.7	31.5
1100	14	7.1	34.6
1200	24	4.2	69.0
1300	24	4.2	69.0
1400	26	3.8	76.4

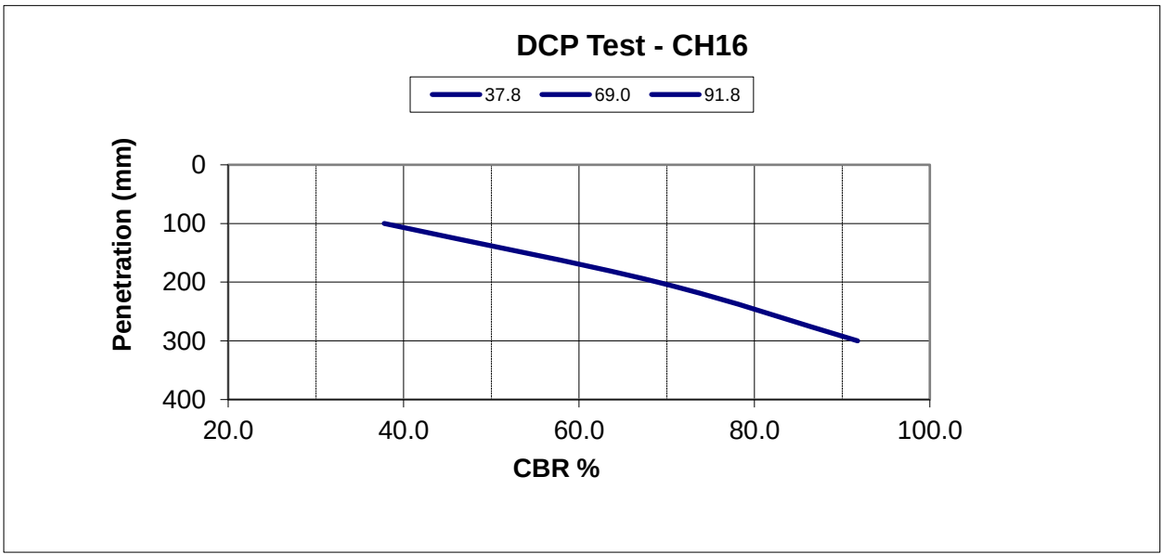
Reference **Kleyn and Van Heerden (60° Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH16
Client	Kilwex	**By**	RO'T
		Date	02/11/2018
Initial Depth	0.40m BGL		
Final Depth			

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0			
100	15	6.7	37.8
200	24	4.2	69.0
300	30	3.3	91.8

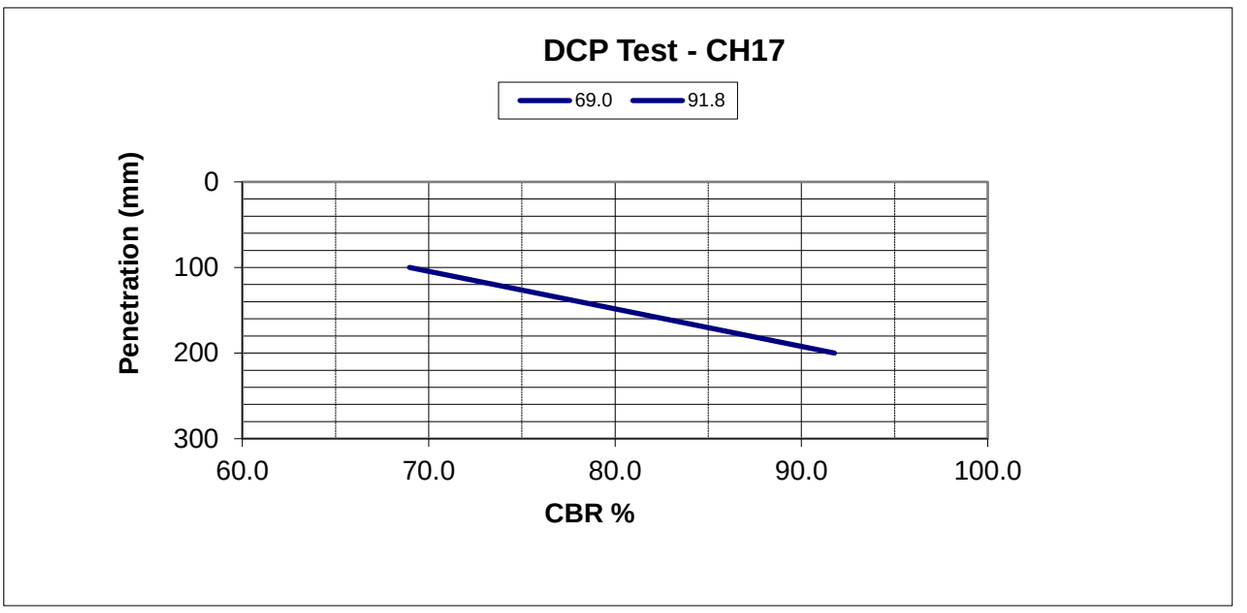
Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH17
Client	Kilwex	**By**	RO'T
		Date	19/10/2018
Initial Depth	0.60m BGL		
Final Depth	0.90m BGL		

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0	-	-	
100	24	4.2	69.0
200	30	3.3	91.8

Reference **Kleyn and Van Heerden (60° Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

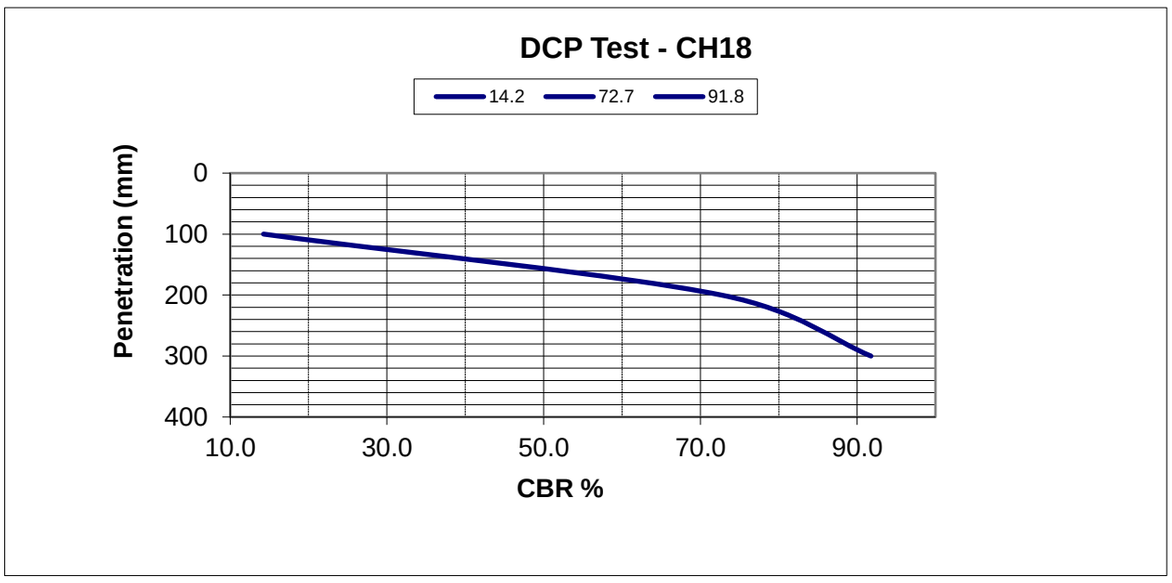


Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH18
Client	Kilwex	**By**	MC
		Date	19/10/2018

Initial Depth 0.40m BGL
Final Depth 0.70m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0	-	-	
100	7	14.3	14.2
200	25	4.0	72.7
300	30	3.3	91.8

Reference **Kleyn and Van Heerden (60° Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

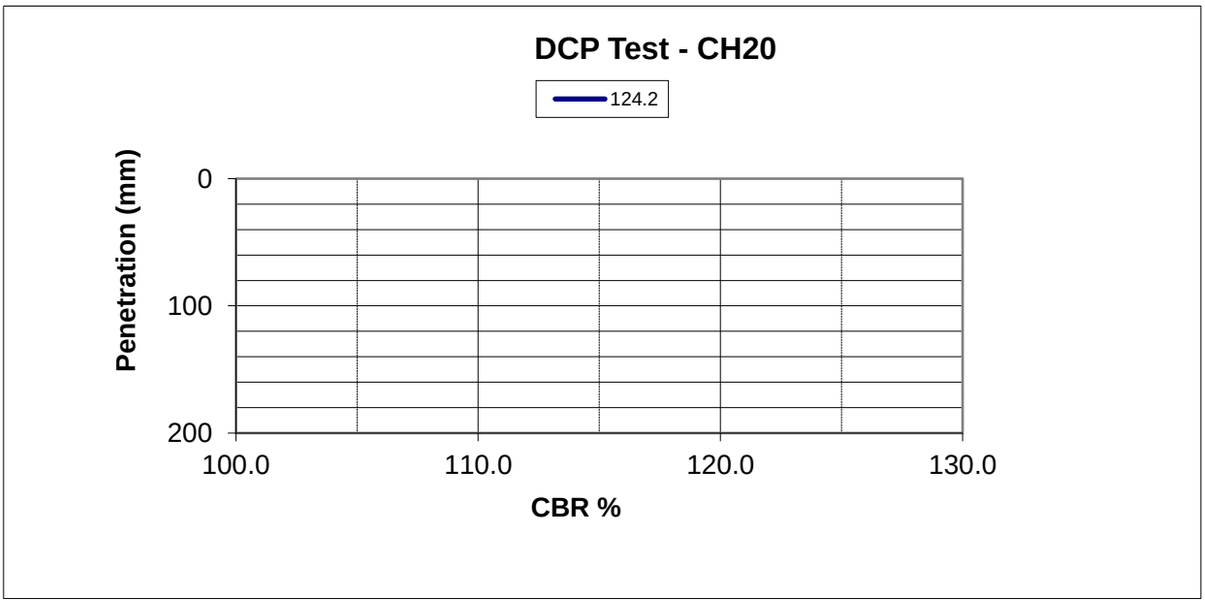


Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH20
Client	Kilwex	**By**	EB
		Date	14/11/2018

Initial Depth 0.60m BGL
Final Depth 0.70m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0	-	-	
100	38	2.6	124.2

Reference **Kleyn and Van Heerden (60° Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

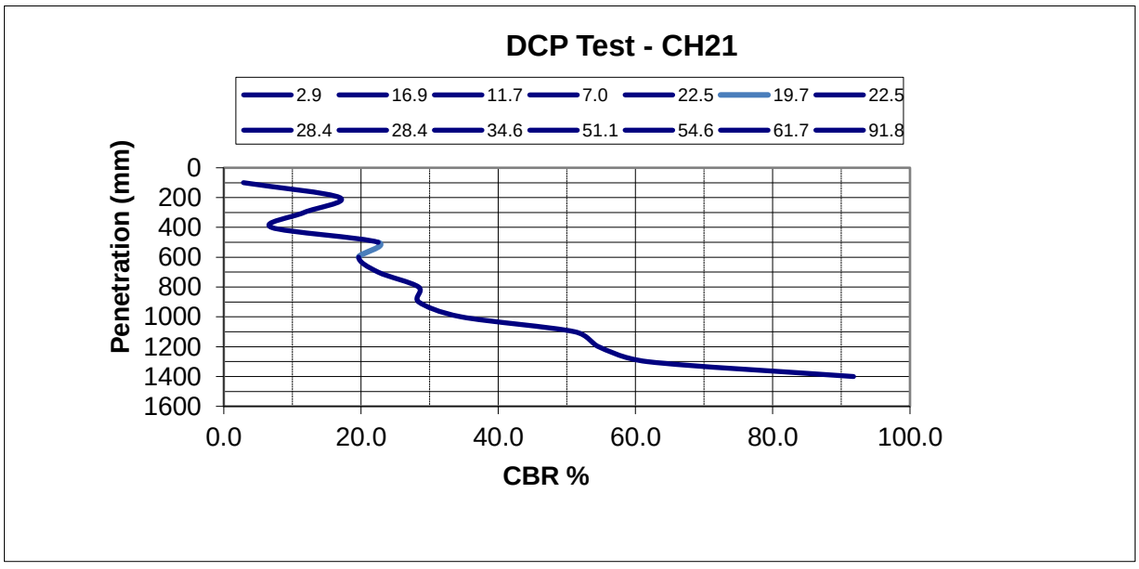


Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH21
Client	Kilwex	**By**	ROT
		Date	30/10/2018

Initial Depth 0.50m BGL
Final Depth 1.90m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0	-	-	
100	2	50.0	2.9
200	8	12.5	16.9
300	6	16.7	11.7
400	4	25.0	7.0
500	10	10.0	22.5
600	9	11.1	19.7
700	10	10.0	22.5
800	12	8.3	28.4
900	12	8.3	28.4
1000	14	7.1	34.6
1100	19	5.3	51.1
1200	20	5.0	54.6
1300	22	4.5	61.7
1400	30	3.3	91.8

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

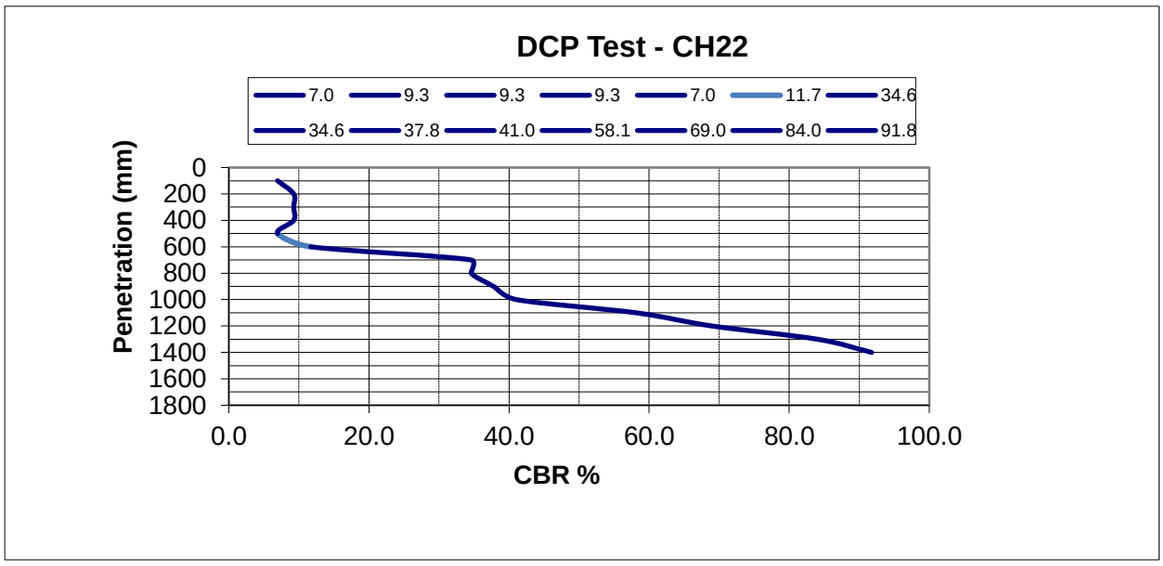


Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH22
Client	Kilwex	**By**	MC
		Date	01/11/2018

Initial Depth 0.50m BGL
Final Depth 1.90m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0	-	-	
100	4	25.0	7.0
200	5	20.0	9.3
300	5	20.0	9.3
400	5	20.0	9.3
500	4	25.0	7.0
600	6	16.7	11.7
700	14	7.1	34.6
800	14	7.1	34.6
900	15	6.7	37.8
1000	16	6.3	41.0
1100	21	4.8	58.1
1200	24	4.2	69.0
1300	28	3.6	84.0
1400	30	3.3	91.8

Reference **Kleyn and Van Heerden (60° Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)

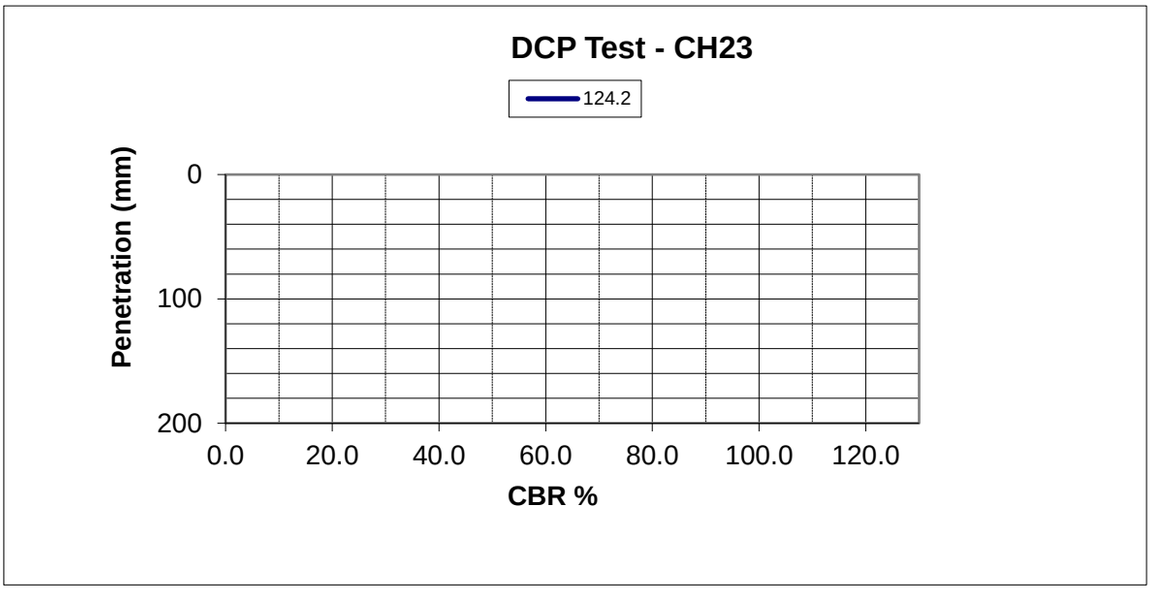


Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH23
Client	Kilwex	**By**	EB
		Date	14/11/2018

Initial Depth 0.60m BGL
Final Depth 0.70m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0	-	-	
100	38	2.6	124.2

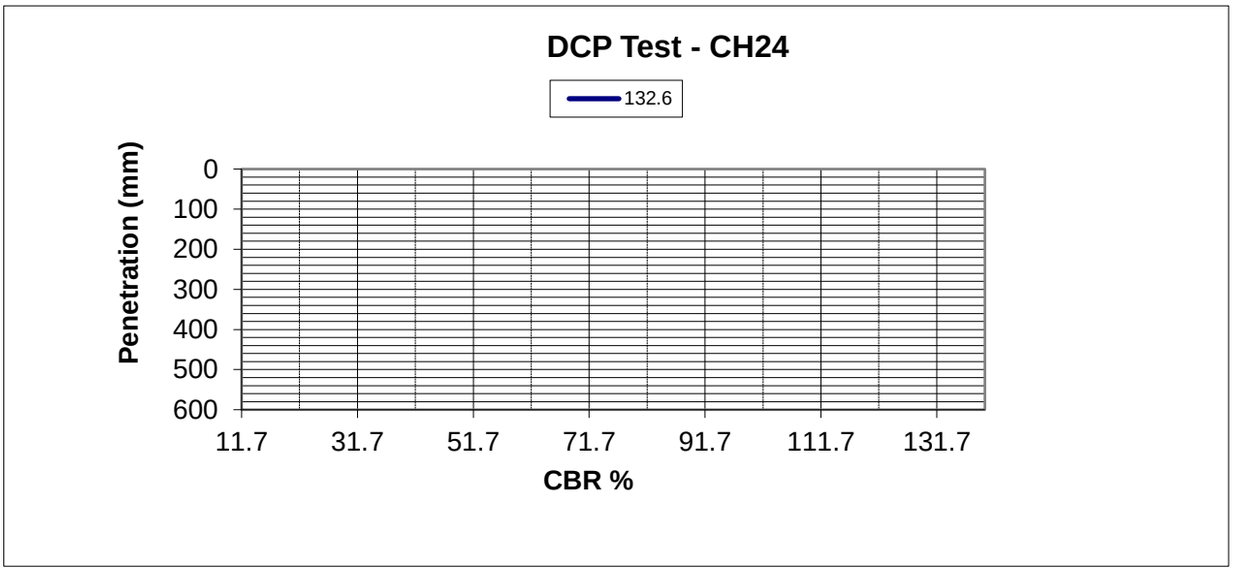
Reference **Kleyn and Van Heerden (60° Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH24
Client	Kilwex	**By**	EB
		Date	14/11/2018
Initial Depth	0.60m BGL		

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0	-	-	
100	40	2.5	132.6

Reference **Kleyn and Van Heerden (60° Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



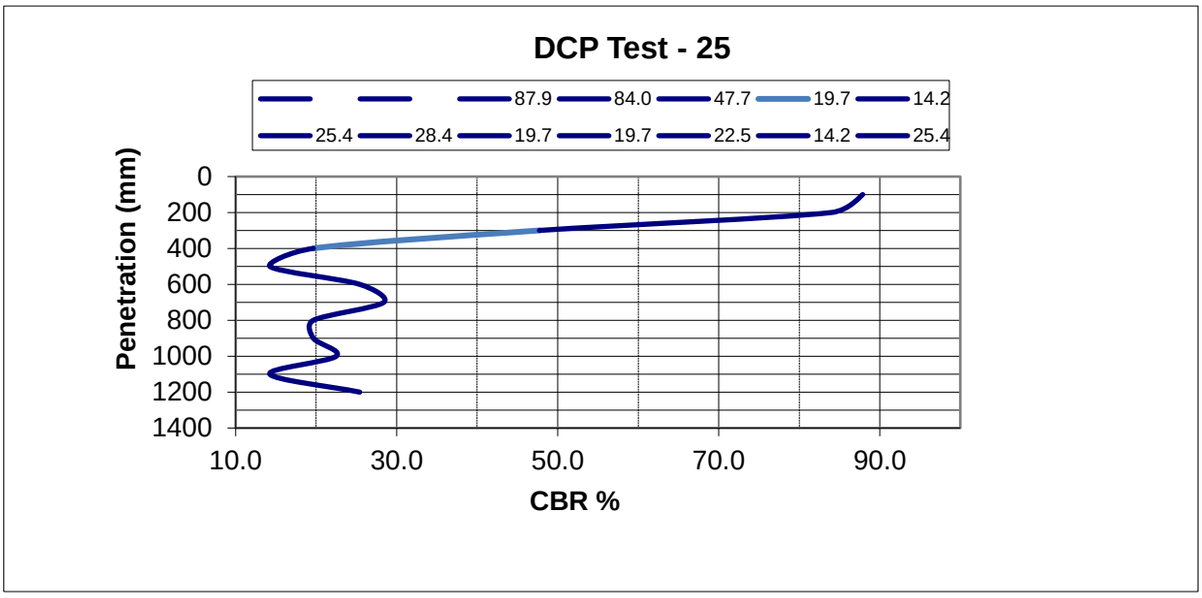
TRL DCP Test Report

Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH25
Client	Kilwex	**By**	EB
		Date	14/11/2018

Initial Depth 0.70m BGL
Final Depth 1.20m BGL

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0	-	-	
0	-	-	
100	29	3.4	87.9
200	28	3.6	84.0
300	18	5.6	47.7
400	9	11.1	19.7
500	7	14.3	14.2
600	11	9.1	25.4
700	12	8.3	28.4
800	9	11.1	19.7
900	9	11.1	19.7
1000	10	10.0	22.5
1100	7	14.3	14.2
1200	11	9.1	25.4

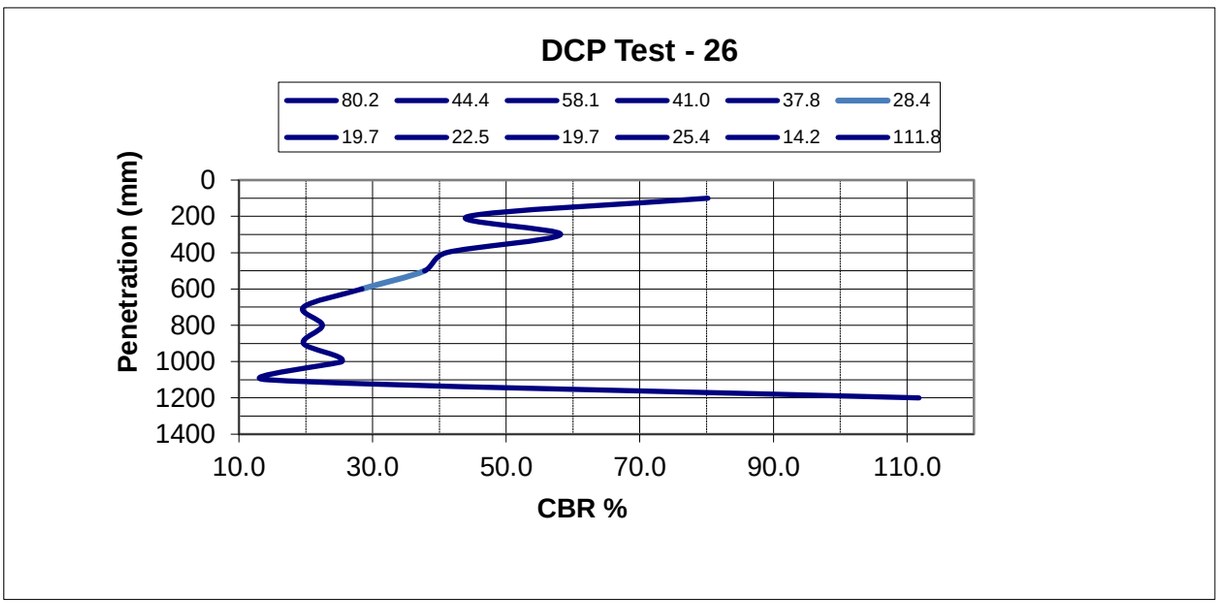
Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



Job Name	DAA Apron Survey - Phase 2	**Test Type**	Dynamic Cone Penetration Test
Job No.	7926-07-18	**Test Reference**	CH26
Client	Kilwex	**By**	EB
		Date	14/11/2018
Initial Depth	0.70m BGL		
Final Depth			

Depth (mm bgl)	No. of Blows per 100mm	Penetration per Blow (mm)	CBR (%)
0	-	-	
100	27	3.7	80.2
200	17	5.9	44.4
300	21	4.8	58.1
400	16	6.3	41.0
500	15	6.7	37.8
600	12	8.3	28.4
700	9	11.1	19.7
800	10	10.0	22.5
900	9	11.1	19.7
1000	11	9.1	25.4
1100	7	14.3	14.2
1200	35	2.9	111.8

Reference **Kleyn and Van Heerden (60^{o} Cone)**
Formula Log10 (CBR) = 2.632 - 1.28 Log10 (mm/blow)



APPENDIX 8 – Laboratory Test Records

LABORATORY REPORT

REPORT

4043

Contract Number: PSL18/5034

Report Date: 09 October 2018

Client's Reference: 7926-07-18

Client Name: Ground Investigations Ireland Ltd
Catherinestown House
Hazelhatch Road
Newcastle
Co Durham

For the attention of: Stephen Kealy

Contract Title: 244 Airfield Surveys Phase 2

Date Received: 29/9/2018
Date Commenced: 29/9/2018
Date Completed: 9/10/2018

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)
L Knight (Senior Technician)	S Eyre (Senior Technician)	A Fry (Senior Technician)

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SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP12		B	1.00		Brown very gravelly very sandy CLAY.
TP16		B	1.00		Brown very gravelly very sandy CLAY.
TP16		B	2.00		Brown very gravelly very sandy CLAY.
TP25		B	1.00		Brown gravelly sandy CLAY.
TP26		B	2.00		Brown very gravelly very sandy CLAY.
BH04		B	1.00		Brown very gravelly very sandy CLAY.
BH04		B	5.00		Dark grey very gravelly very sandy CLAY.
BH09		B	2.00		Brown gravelly sandy CLAY.
BH09		B	3.00		Dark brown very gravelly very sandy CLAY.
BH15		B	1.80		Brown very gravelly very sandy CLAY.
BH15		B	4.00		Brown very gravelly very sandy CLAY.

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^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
TP12		B	1.00		16			29	14	15	53	Low plasticity CL.
TP16		B	1.00		16			29	14	15	55	Low plasticity CL.
TP16		B	2.00		13			25	13	12	61	Low plasticity CL.
TP25		B	1.00		18			38	18	20	84	Intermediate plasticity CI.
TP26		B	2.00		13			28	14	14	58	Low plasticity CL.
BH04		B	1.00		14			27	13	14	60	Low plasticity CL.
BH04		B	5.00		16			28	14	14	64	Low plasticity CL.
BH09		B	2.00		20			40	19	21	76	Intermediate plasticity CI.
BH09		B	3.00		15			28	15	13	68	Low plasticity CL.
BH15		B	1.80		13			27	14	13	52	Low plasticity CL.
BH15		B	4.00		14			30	15	15	62	Low plasticity CL.

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

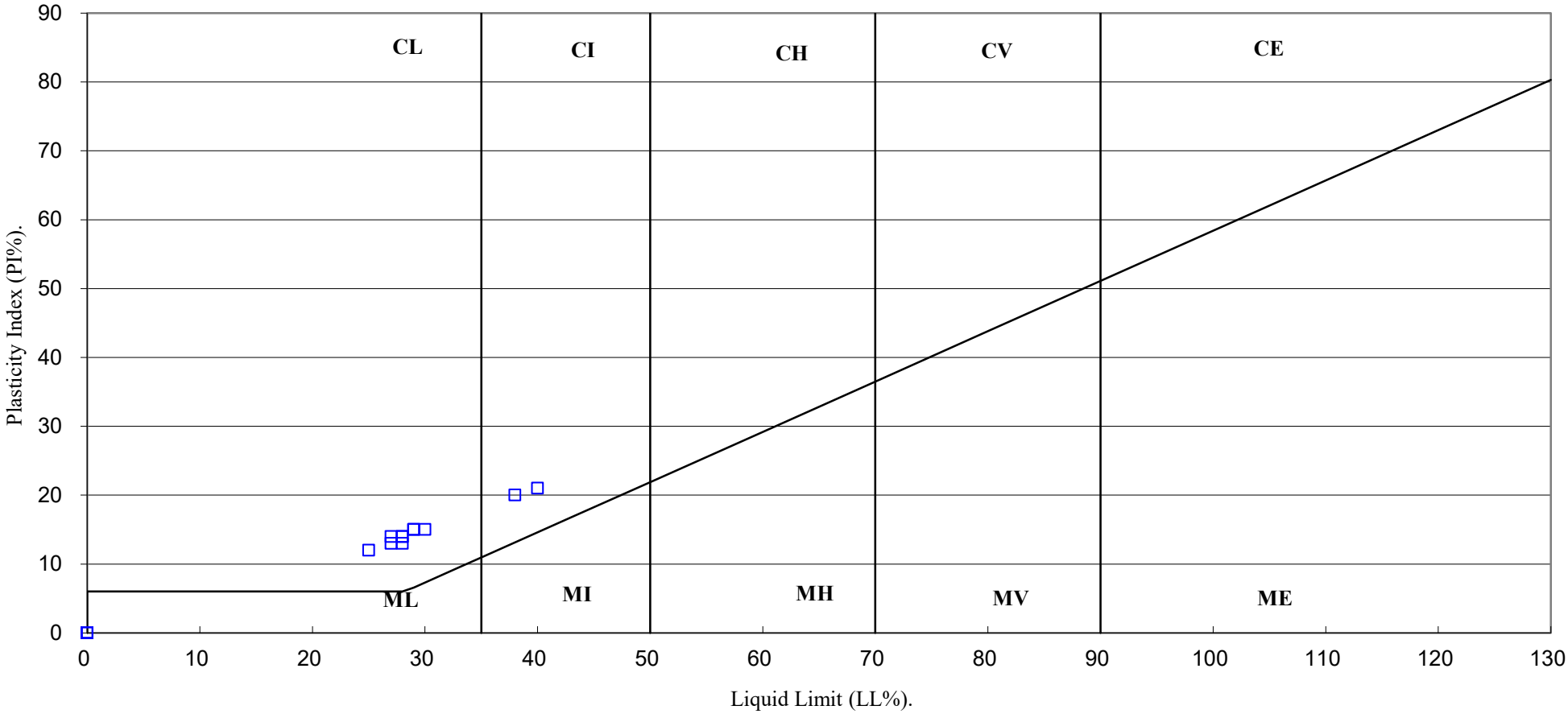
Contract No:

PSL18/5034

Client Ref:

7926-07-18

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043	PSL Professional Soils Laboratory	244 Airfield Surveys Phase 2	**Contract No:** PSL18/5034 **Client Ref:** 7926-07-18

PARTICLE SIZE DISTRIBUTION TEST

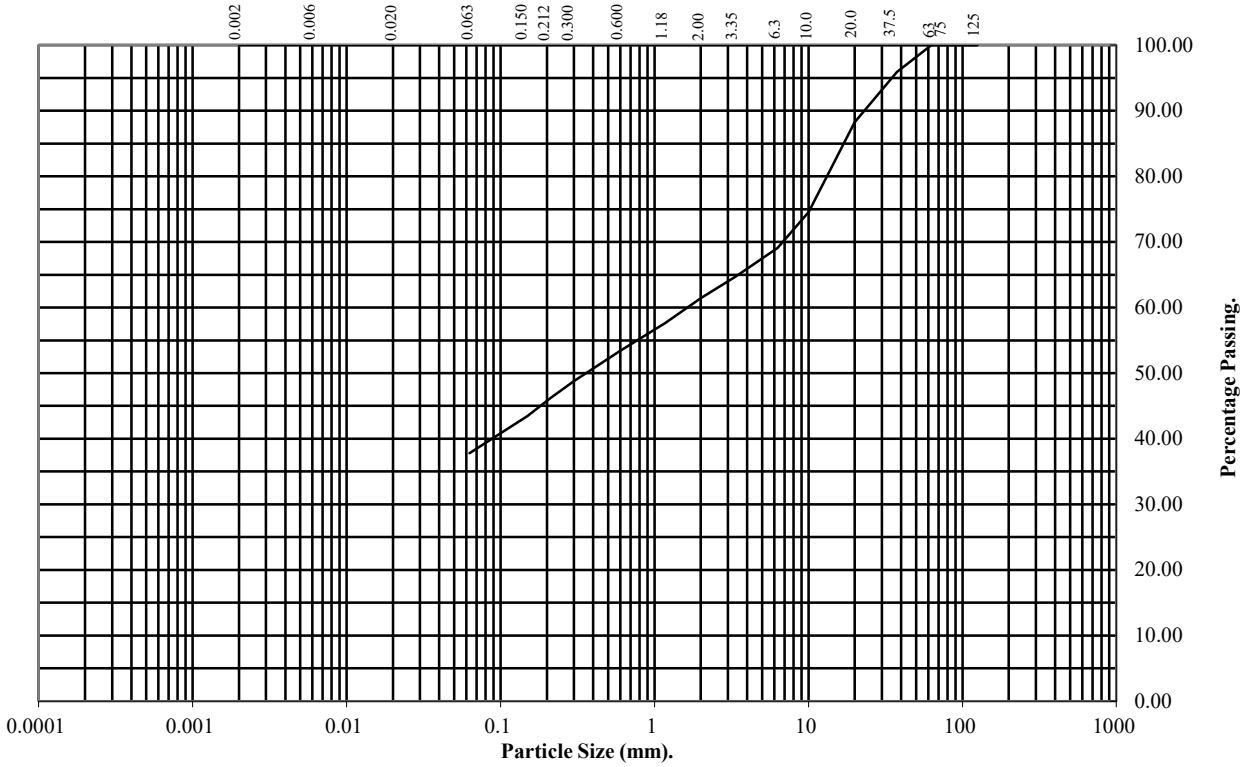
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP12 **Top Depth (m):** 1.00

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	96
20	88
10	75
6.3	69
3.35	65
2	61
1.18	58
0.6	53
0.3	49
0.212	46
0.15	43
0.063	38

Soil Fraction	Total Percentage
Cobbles	0
Gravel	39
Sand	23
Silt/Clay	38

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

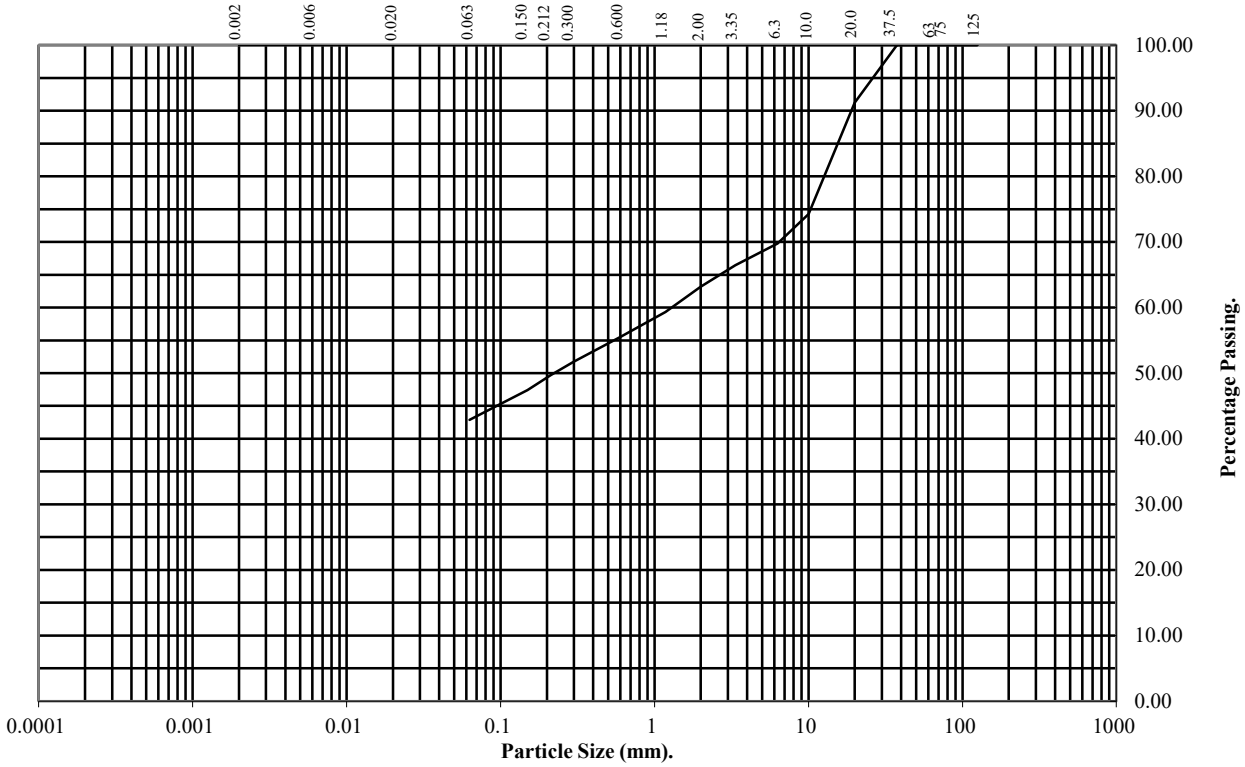
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP16 **Top Depth (m):** 1.00

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	91
10	74
6.3	70
3.35	66
2	63
1.18	59
0.6	55
0.3	52
0.212	50
0.15	47
0.063	43

Soil Fraction	Total Percentage
Cobbles	0
Gravel	37
Sand	20
Silt/Clay	43

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

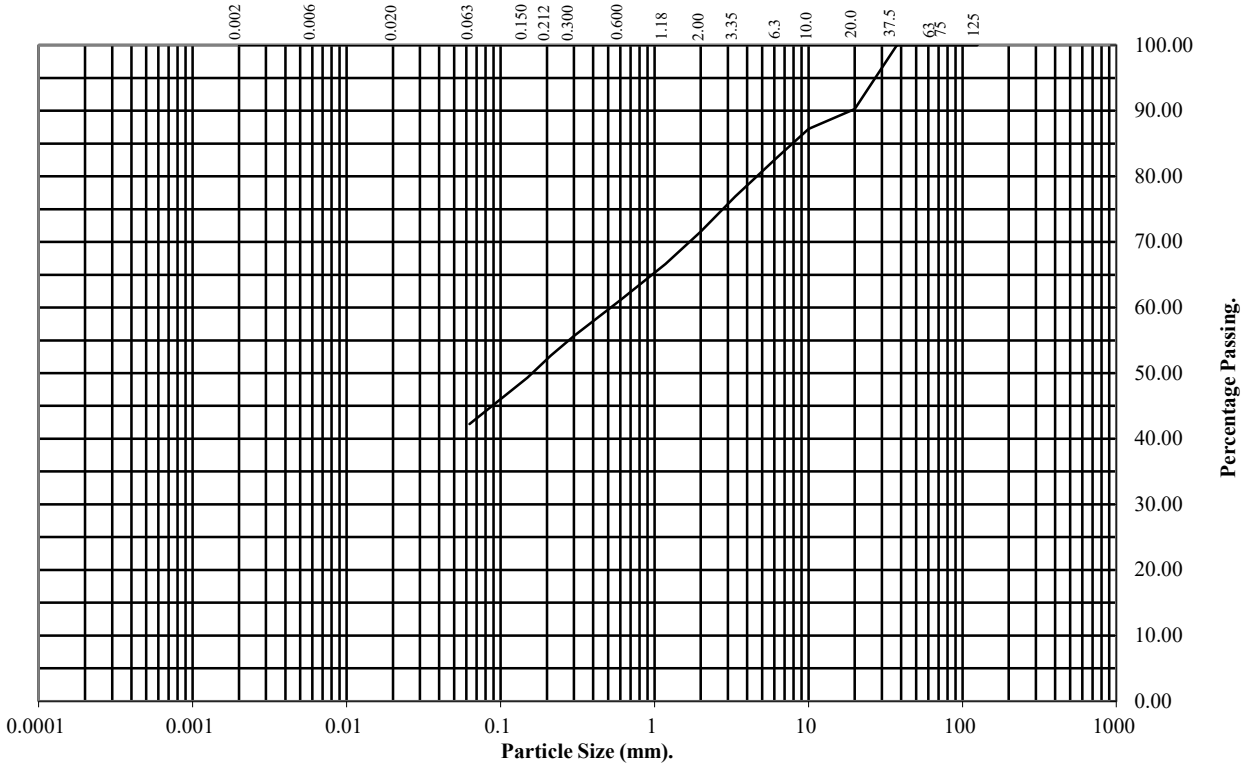
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP16 **Top Depth (m):** 2.00

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	90
10	87
6.3	83
3.35	77
2	72
1.18	67
0.6	61
0.3	56
0.212	53
0.15	49
0.063	42

Soil Fraction	Total Percentage
Cobbles	0
Gravel	28
Sand	30
Silt/Clay	42

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

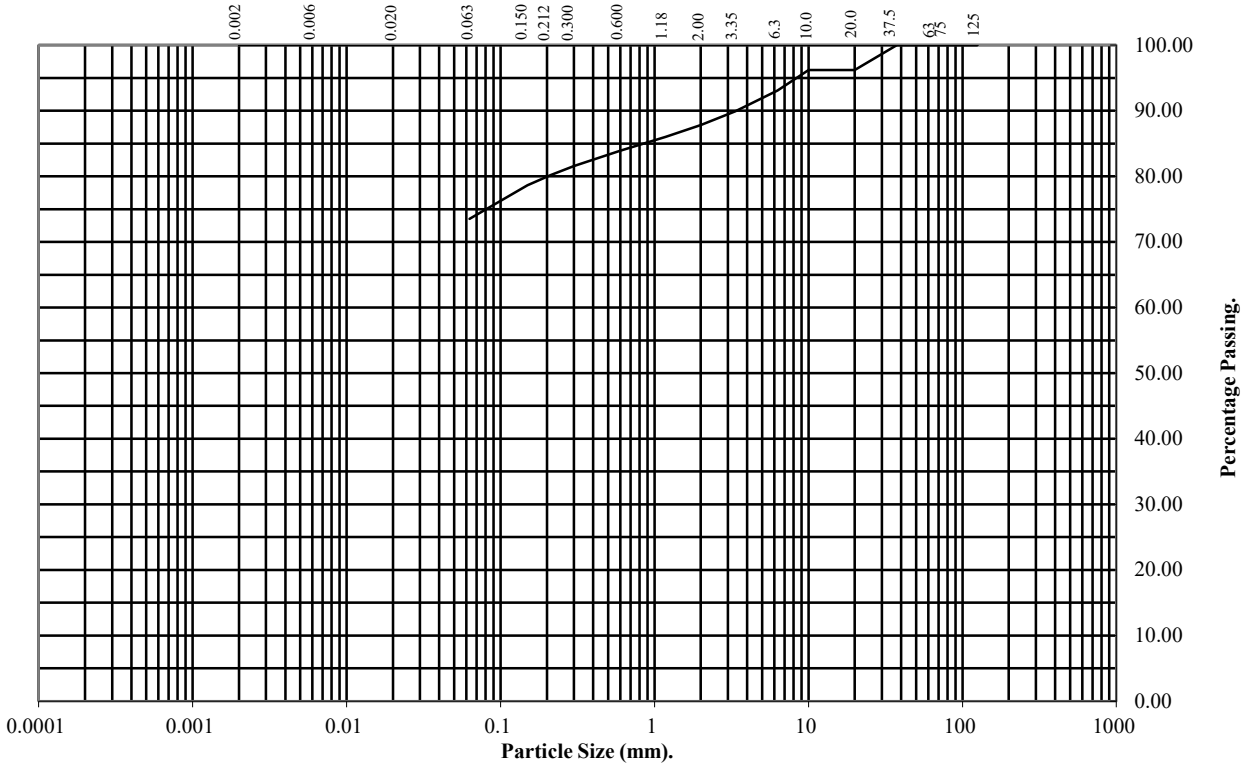
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP25 **Top Depth (m):** 1.00

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	96
10	96
6.3	93
3.35	90
2	88
1.18	86
0.6	84
0.3	82
0.212	80
0.15	79
0.063	74

Soil Fraction	Total Percentage
Cobbles	0
Gravel	12
Sand	14
Silt/Clay	74

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

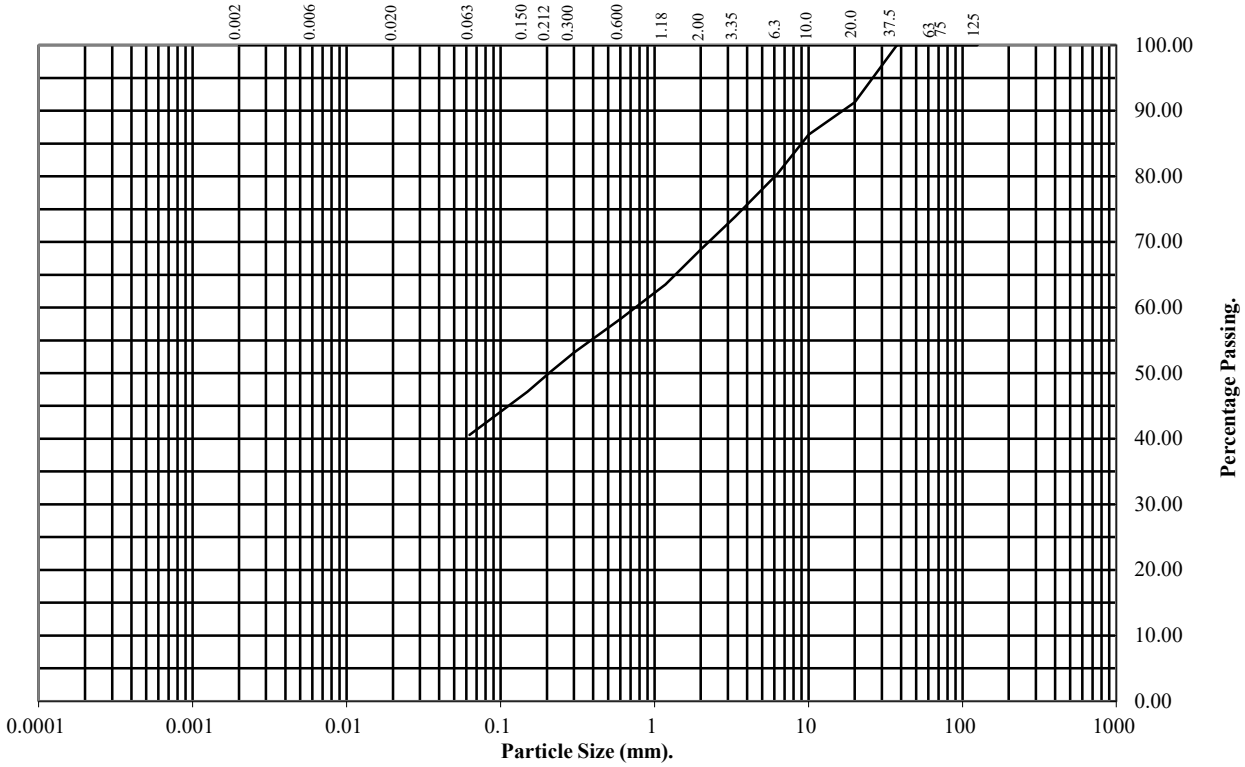
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP26 **Top Depth (m):** 2.00

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	91
10	86
6.3	80
3.35	74
2	69
1.18	64
0.6	58
0.3	53
0.212	50
0.15	47
0.063	41

Soil Fraction	Total Percentage
Cobbles	0
Gravel	31
Sand	28
Silt/Clay	41

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

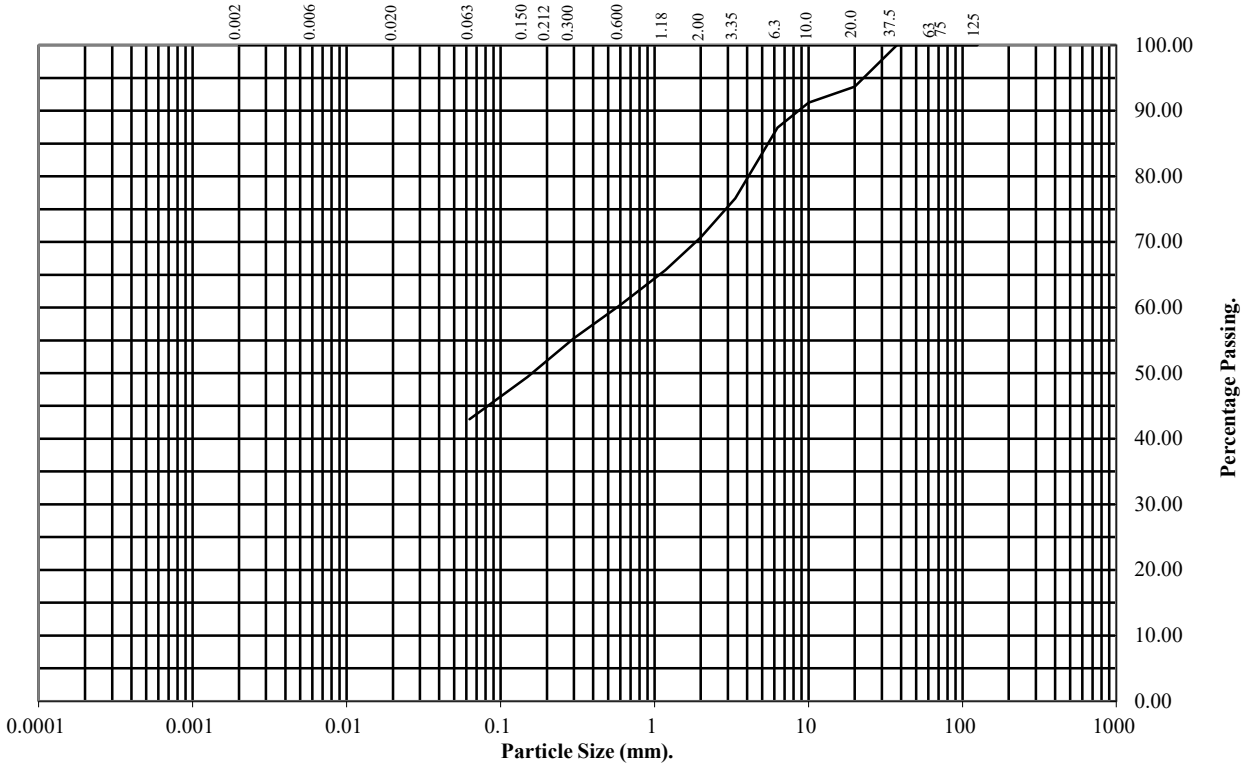
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: BH04 **Top Depth (m):** 1.00

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	94
10	91
6.3	87
3.35	77
2	71
1.18	66
0.6	60
0.3	55
0.212	52
0.15	49
0.063	43

Soil Fraction	Total Percentage
Cobbles	0
Gravel	29
Sand	28
Silt/Clay	43

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

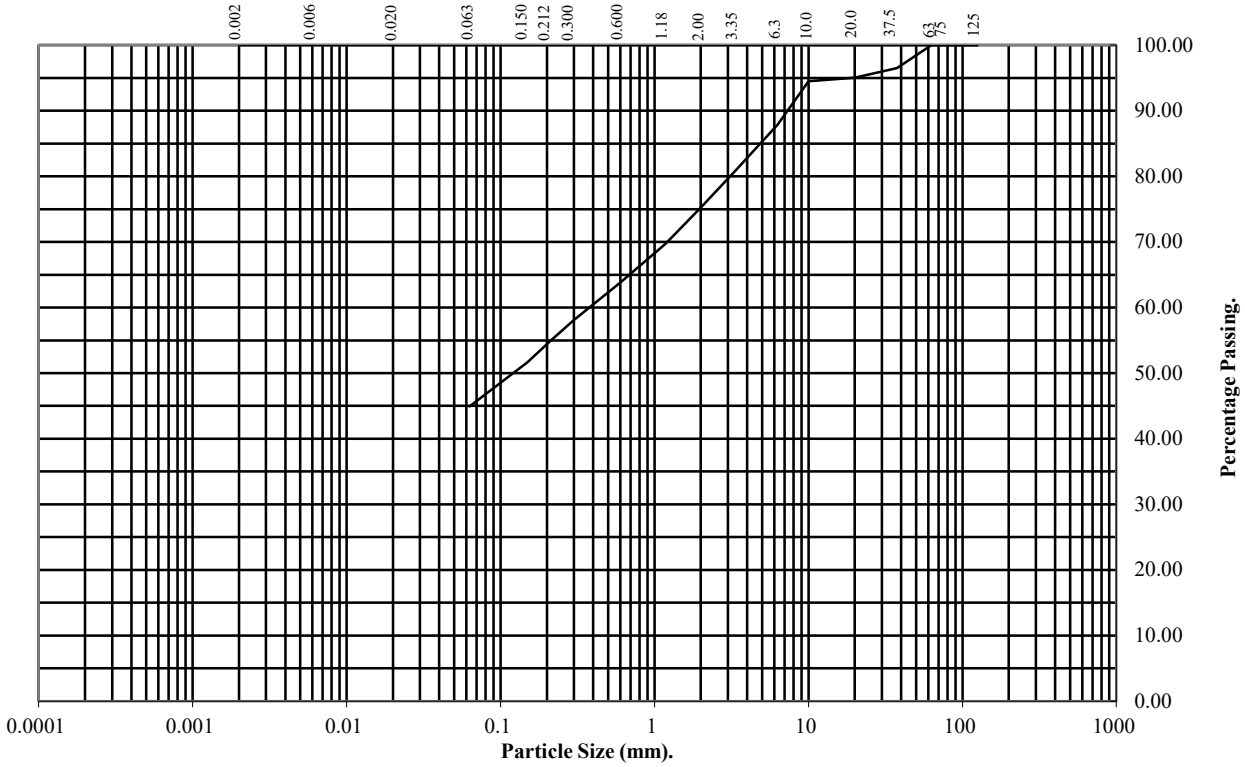
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: **BH04** **Top Depth (m):** **5.00**

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

Sample Type: **B**



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	97
20	95
10	95
6.3	88
3.35	81
2	75
1.18	70
0.6	64
0.3	58
0.212	55
0.15	52
0.063	45

Soil Fraction	Total Percentage
Cobbles	0
Gravel	25
Sand	30
Silt/Clay	45

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

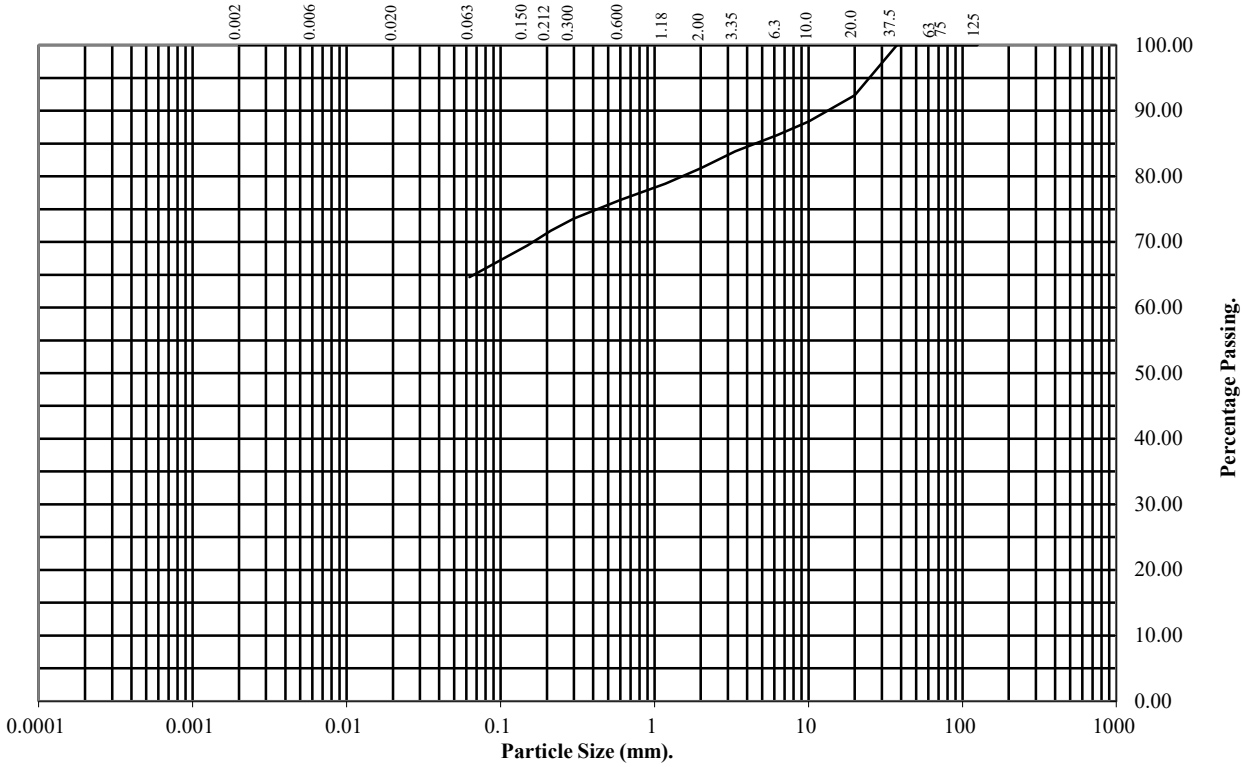
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: **BH09** **Top Depth (m):** **2.00**

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

Sample Type: **B**



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	92
10	88
6.3	86
3.35	84
2	81
1.18	79
0.6	76
0.3	74
0.212	72
0.15	69
0.063	65

Soil Fraction	Total Percentage
Cobbles	0
Gravel	19
Sand	16
Silt/Clay	65

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

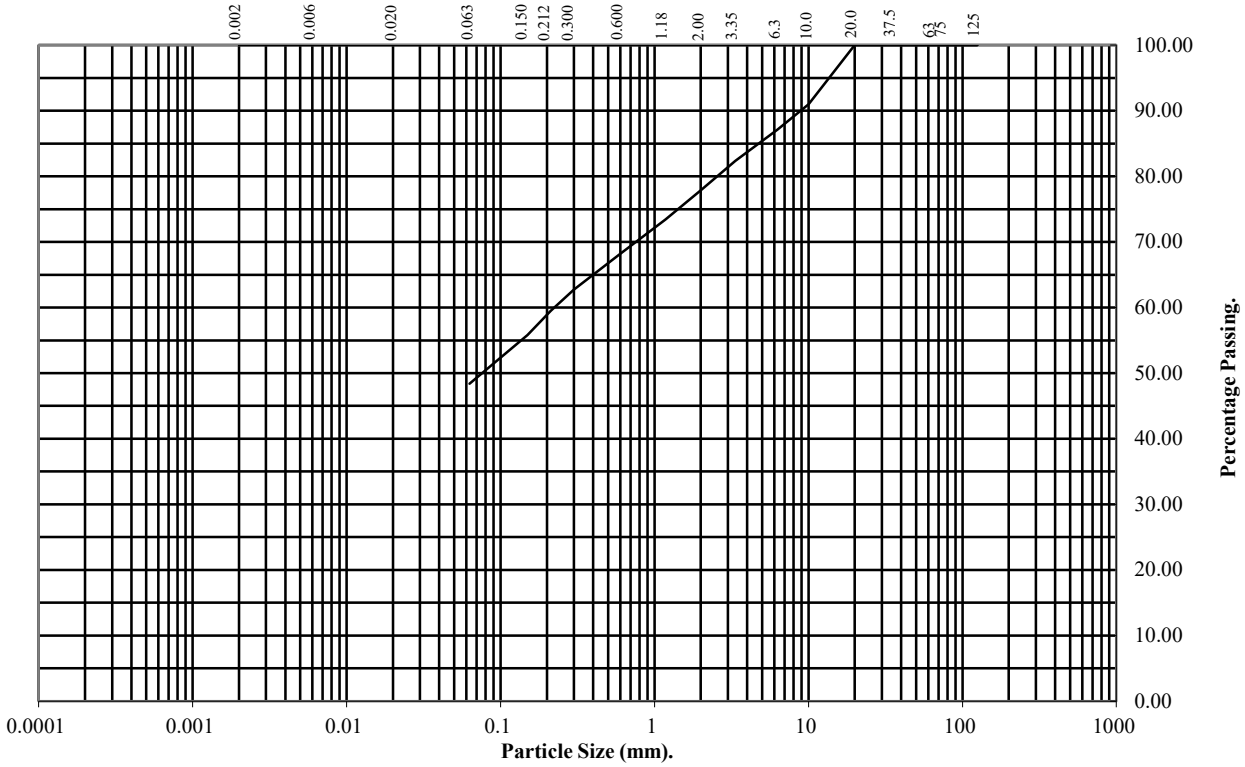
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: **BH09** **Top Depth (m):** **3.00**

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

Sample Type: **B**



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	91
6.3	87
3.35	82
2	78
1.18	73
0.6	68
0.3	63
0.212	60
0.15	56
0.063	48

Soil Fraction	Total Percentage
Cobbles	0
Gravel	22
Sand	30
Silt/Clay	48

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

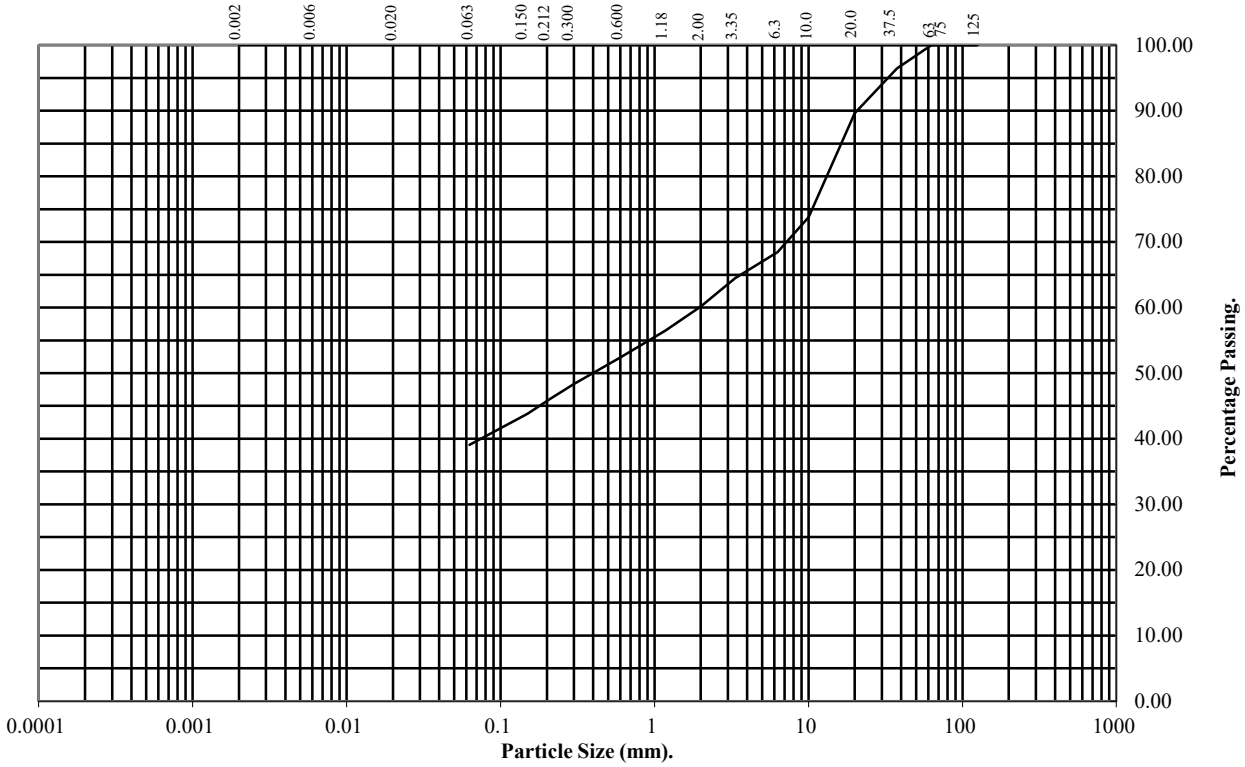
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: **BH15** **Top Depth (m):** **1.80**

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

Sample Type: **B**



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	96
20	90
10	74
6.3	68
3.35	64
2	60
1.18	56
0.6	52
0.3	48
0.212	46
0.15	44
0.063	39

Soil Fraction	Total Percentage
Cobbles	0
Gravel	40
Sand	21
Silt/Clay	39

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

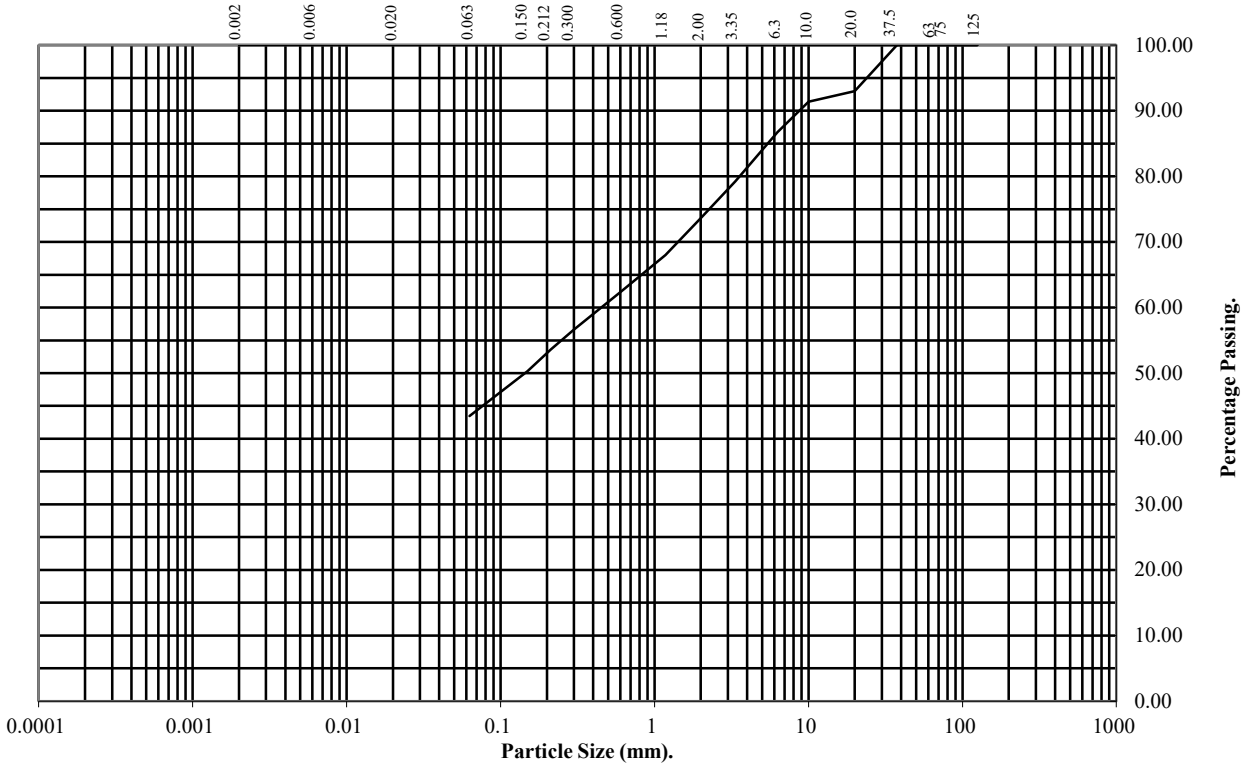
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: **BH15** **Top Depth (m):** **4.00**

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

Sample Type: **B**



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	93
10	91
6.3	87
3.35	79
2	74
1.18	68
0.6	62
0.3	57
0.212	54
0.15	50
0.063	43

Soil Fraction	Total Percentage
Cobbles	0
Gravel	26
Sand	31
Silt/Clay	43

Remarks:

See Summary of Soil Descriptions

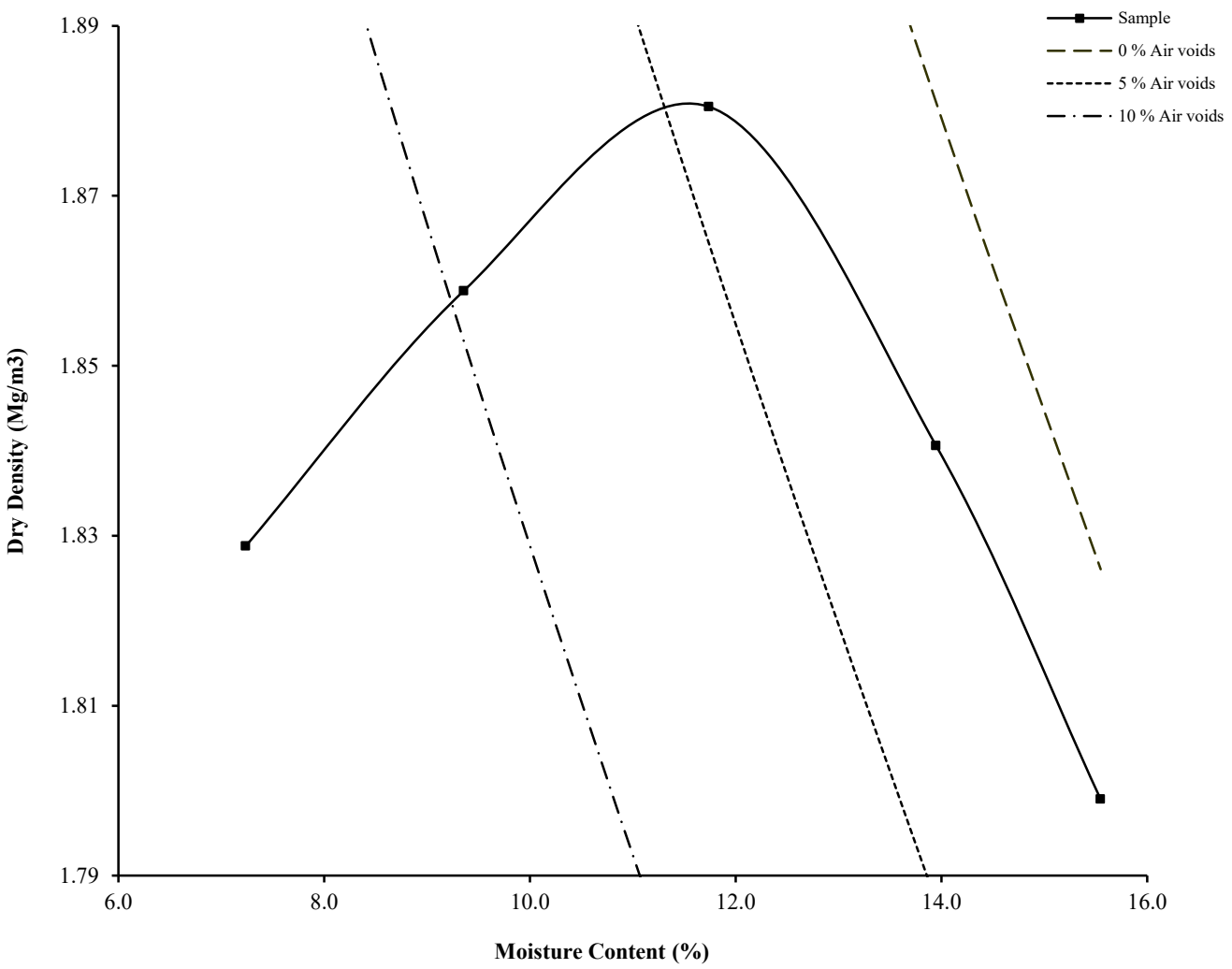
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP12 **Top Depth (m) :** 1.00

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

Sample Type: B



Initial Moisture Content:		16	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.55	Assumed	Material Retained on 37.5 mm Test Sieve (%):		4
Maximum Dry Density (Mg/m3):		1.88	Material Retained on 20.0 mm Test Sieve (%):		8
Optimum Moisture Content (%):		12			
Remarks See summary of soil descriptions.					

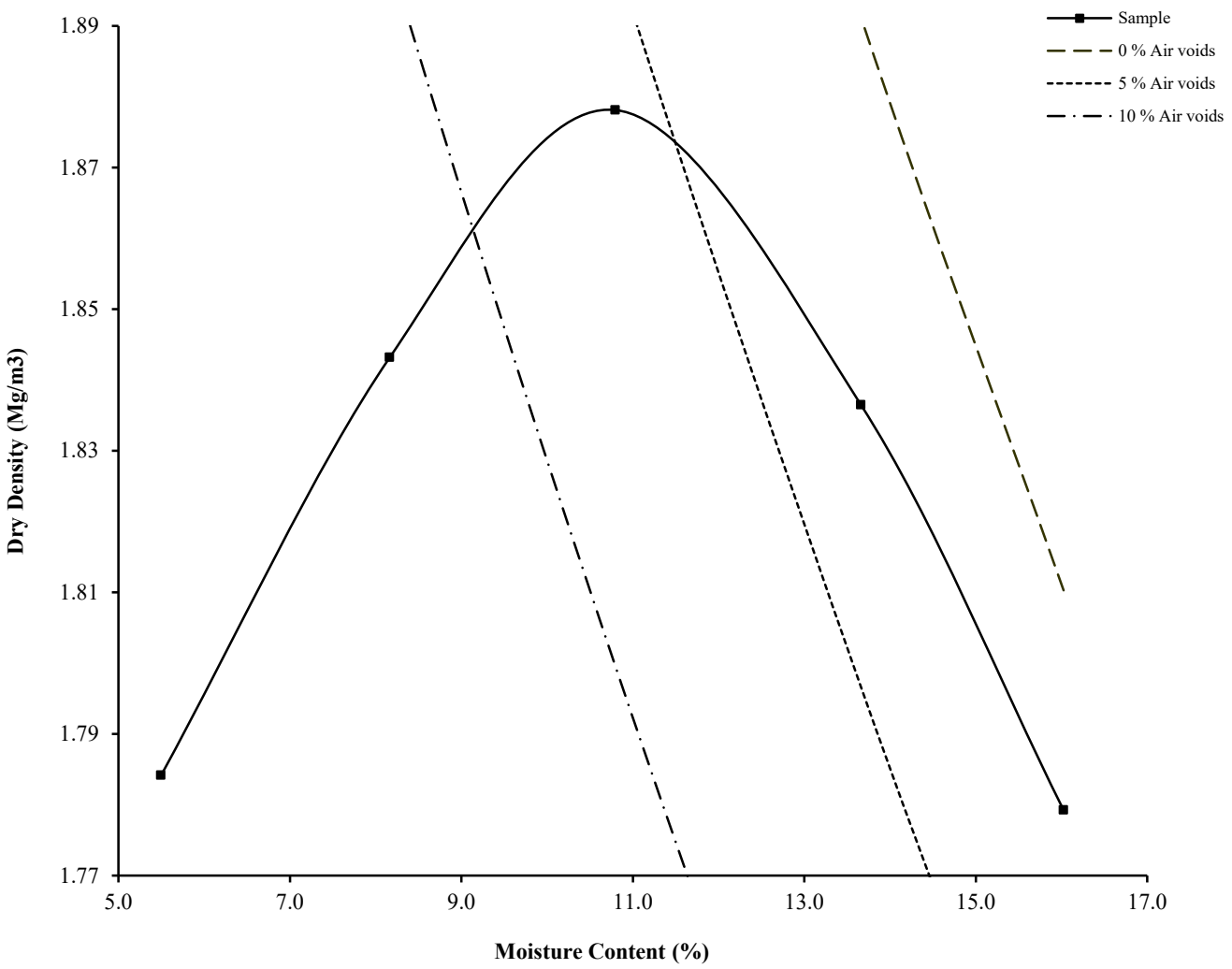
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP16 **Top Depth (m) :** 1.00

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

Sample Type: B



Initial Moisture Content:		16	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.55	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		1.88	Material Retained on 20.0 mm Test Sieve (%):		9
Optimum Moisture Content (%):		11			
Remarks See summary of soil descriptions.					

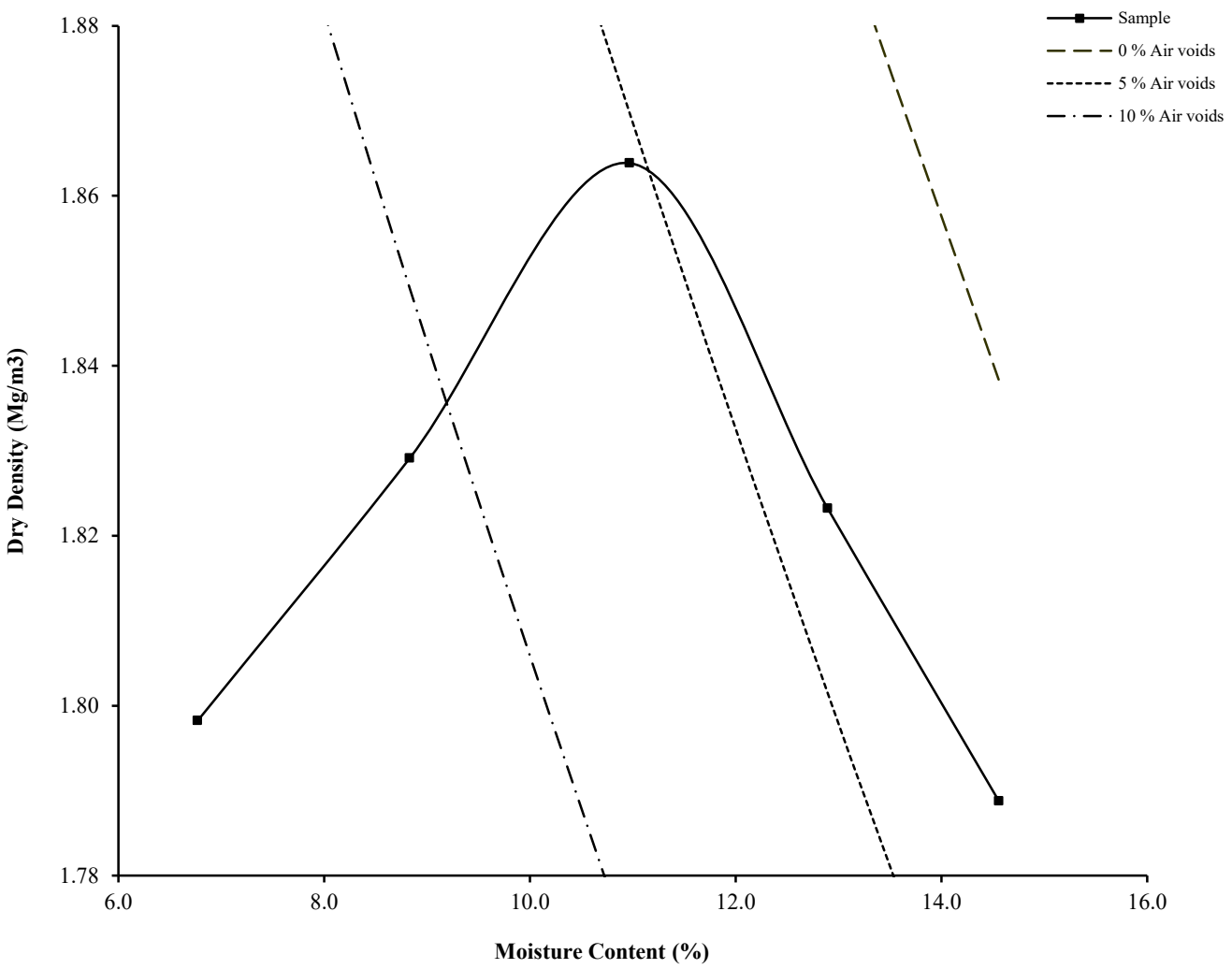
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP16 **Top Depth (m) :** 2.00

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

Sample Type: B



Initial Moisture Content:		13	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.51	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		1.86	Material Retained on 20.0 mm Test Sieve (%):		10
Optimum Moisture Content (%):		11			
Remarks See summary of soil descriptions.					

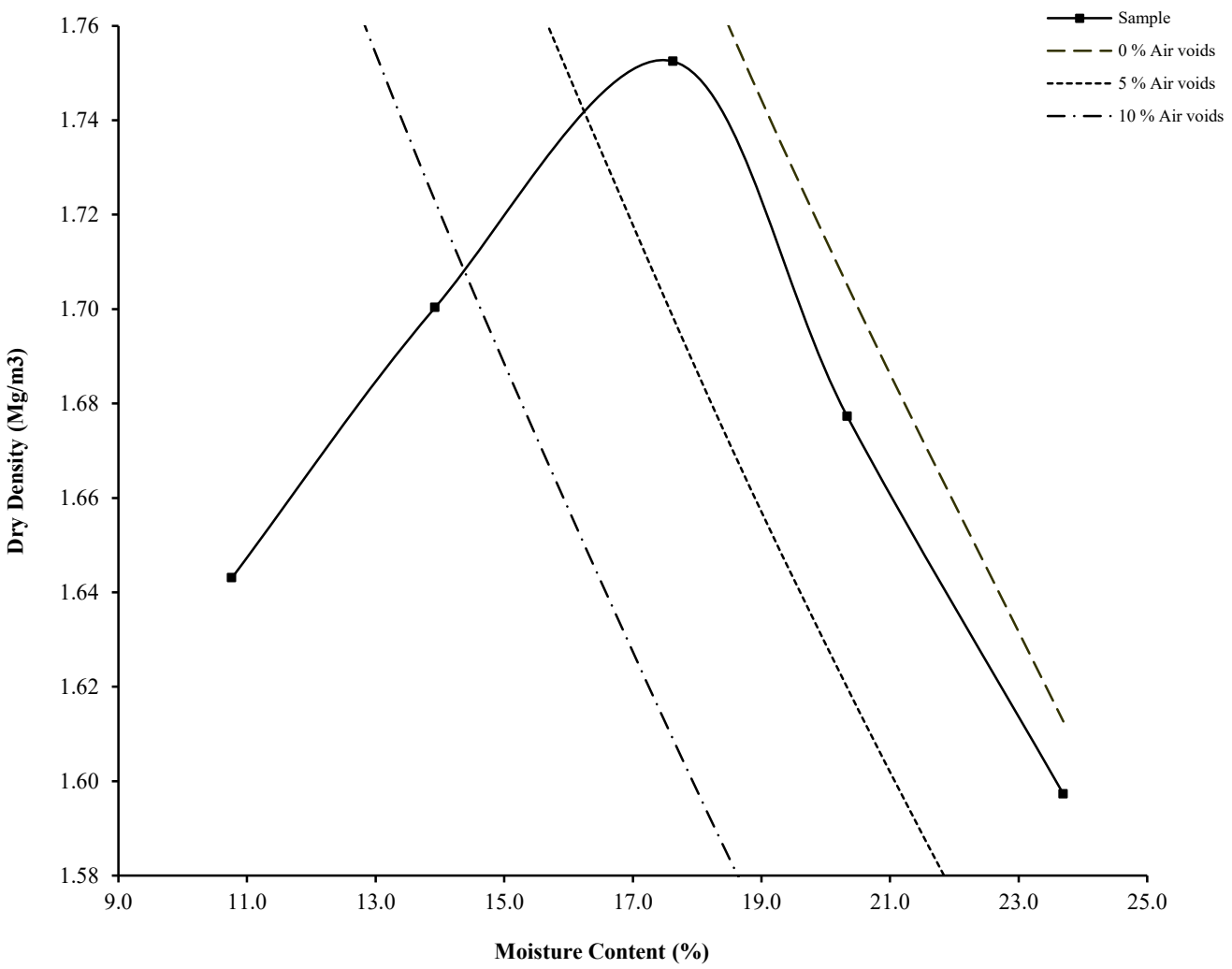
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP25 **Top Depth (m) :** 1.00

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

Sample Type: B



Initial Moisture Content:		18	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.61	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		1.75	Material Retained on 20.0 mm Test Sieve (%):		4
Optimum Moisture Content (%):		18			
Remarks See summary of soil descriptions.					

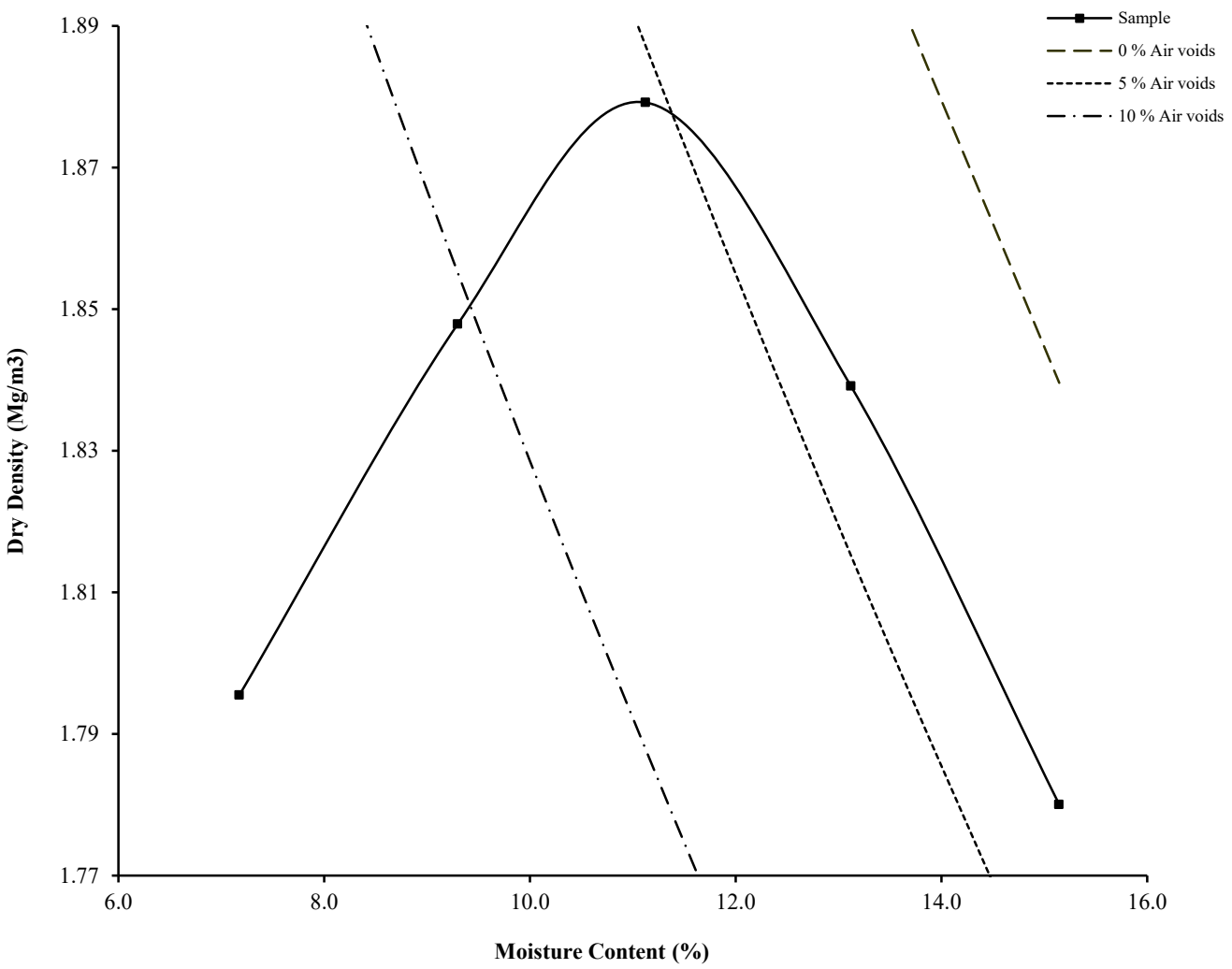
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP26 **Top Depth (m) :** 2.00

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

Sample Type: B



Initial Moisture Content:		13	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.55	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		1.88	Material Retained on 20.0 mm Test Sieve (%):		9
Optimum Moisture Content (%):		11			
Remarks See summary of soil descriptions.					

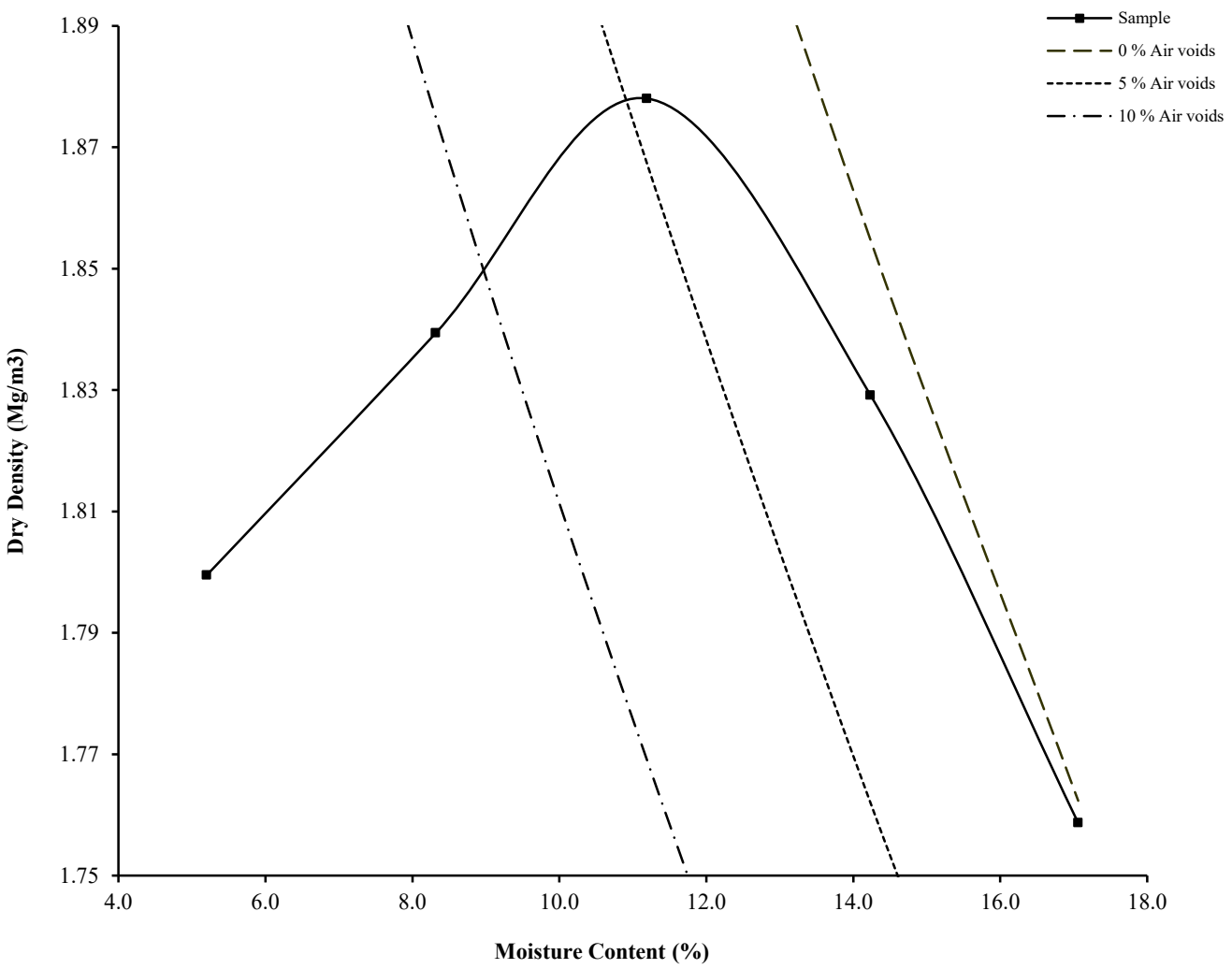
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: BH04 **Top Depth (m) :** 1.00

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

Sample Type: B



Initial Moisture Content:		14	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.52	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		1.88	Material Retained on 20.0 mm Test Sieve (%):		6
Optimum Moisture Content (%):		11			
Remarks See summary of soil descriptions.					

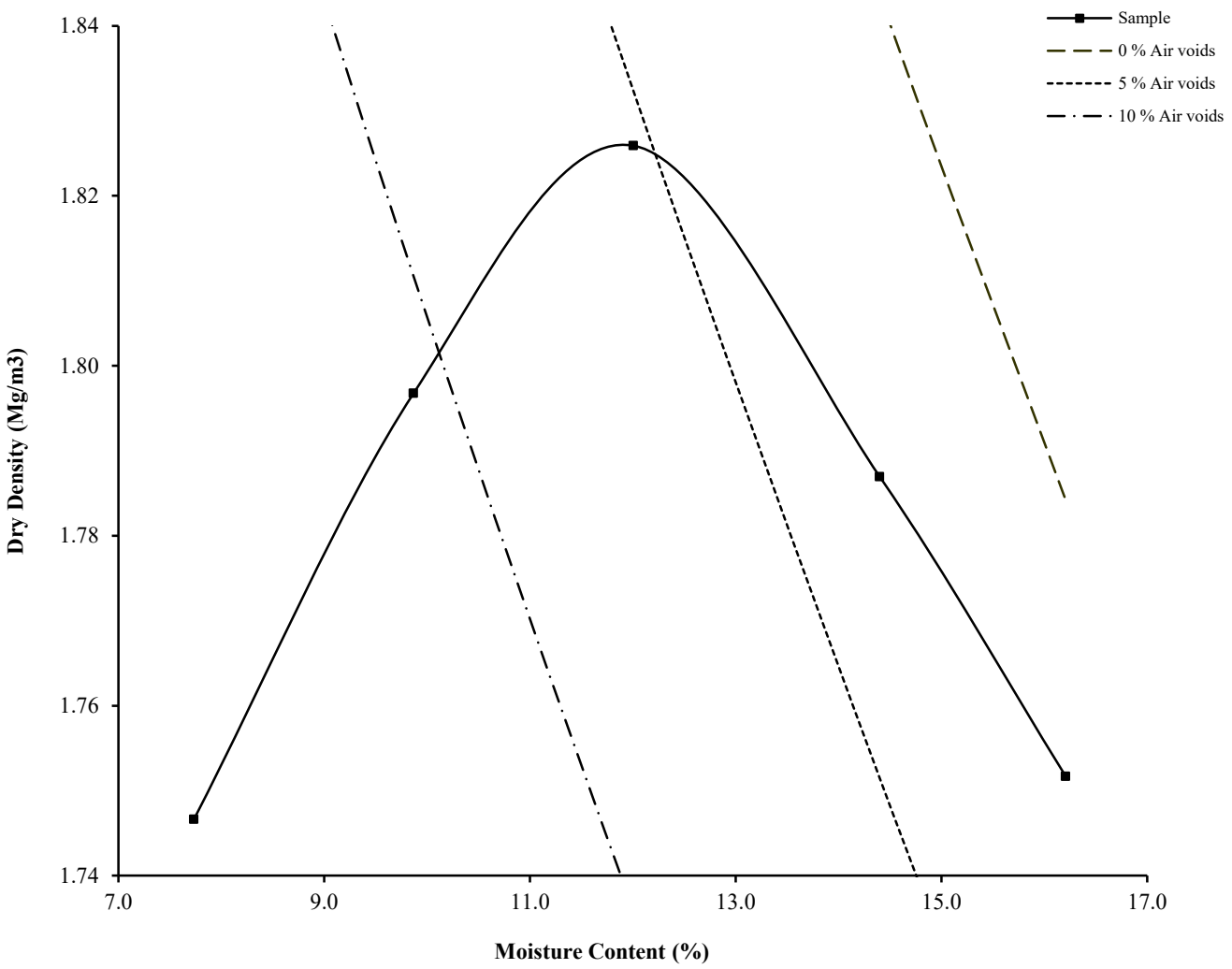
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: BH04 **Top Depth (m) :** 5.00

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

Sample Type: B



Initial Moisture Content:		16	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.51	Assumed	Material Retained on 37.5 mm Test Sieve (%):		3
Maximum Dry Density (Mg/m3):		1.83	Material Retained on 20.0 mm Test Sieve (%):		2
Optimum Moisture Content (%):		12			
Remarks See summary of soil descriptions.					

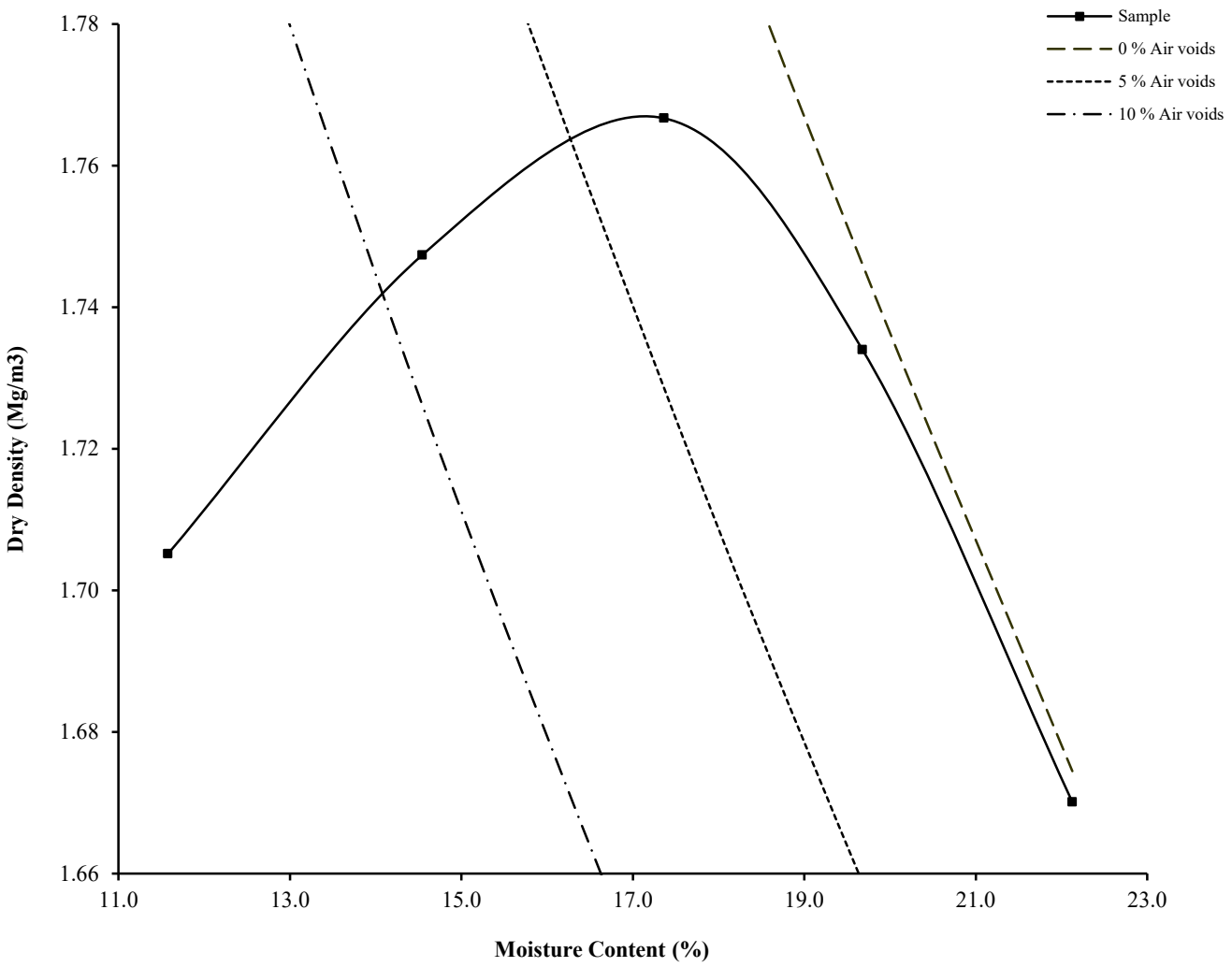
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: BH09 **Top Depth (m) :** 2.00

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

Sample Type: B



Initial Moisture Content:		20	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.66	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		1.77	Material Retained on 20.0 mm Test Sieve (%):		8
Optimum Moisture Content (%):		17			
Remarks See summary of soil descriptions.					

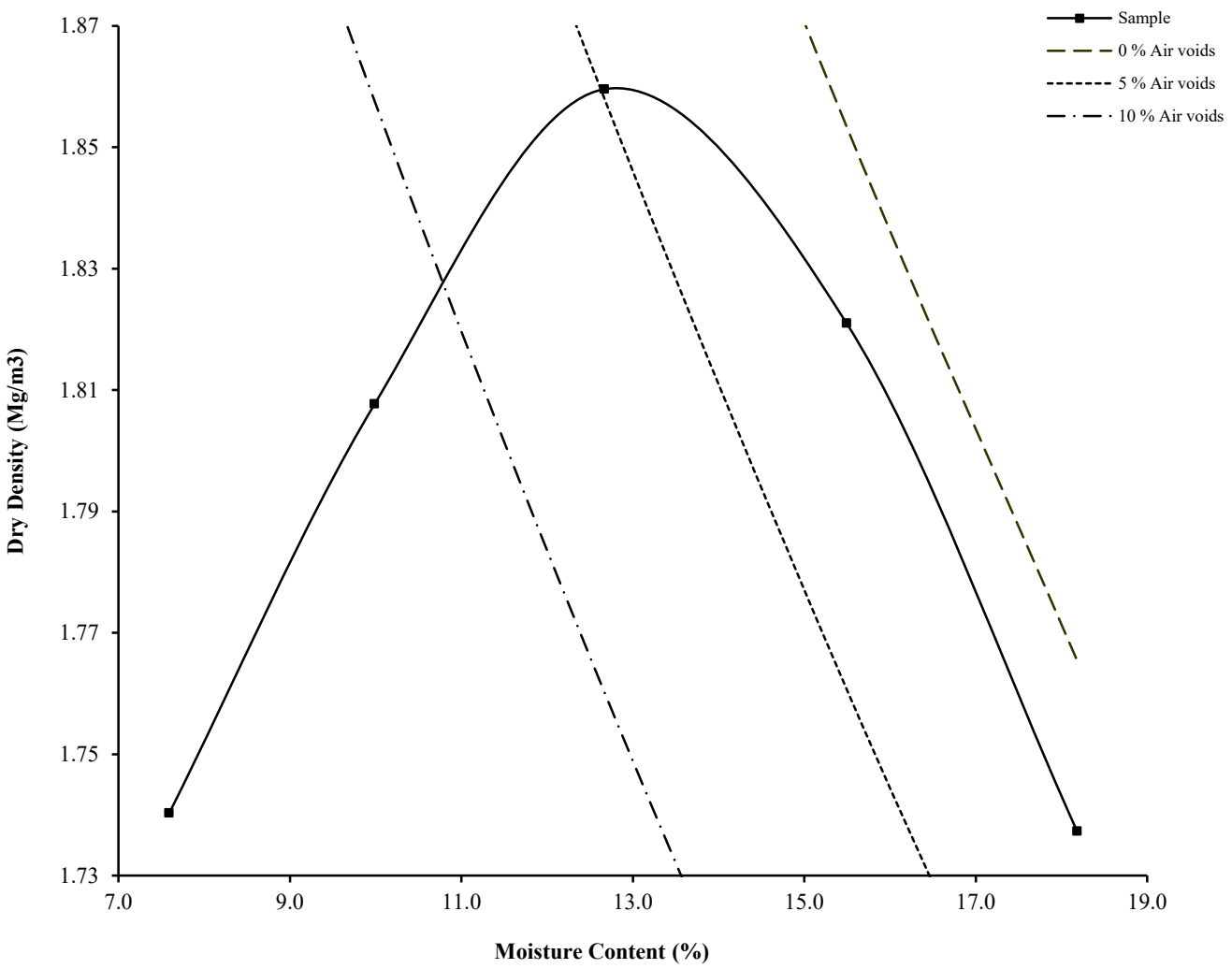
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: BH09 **Top Depth (m) :** 3.00

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

Sample Type: B



Initial Moisture Content:		15	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.6	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		1.86	Material Retained on 20.0 mm Test Sieve (%):		0
Optimum Moisture Content (%):		13			
Remarks See summary of soil descriptions.					

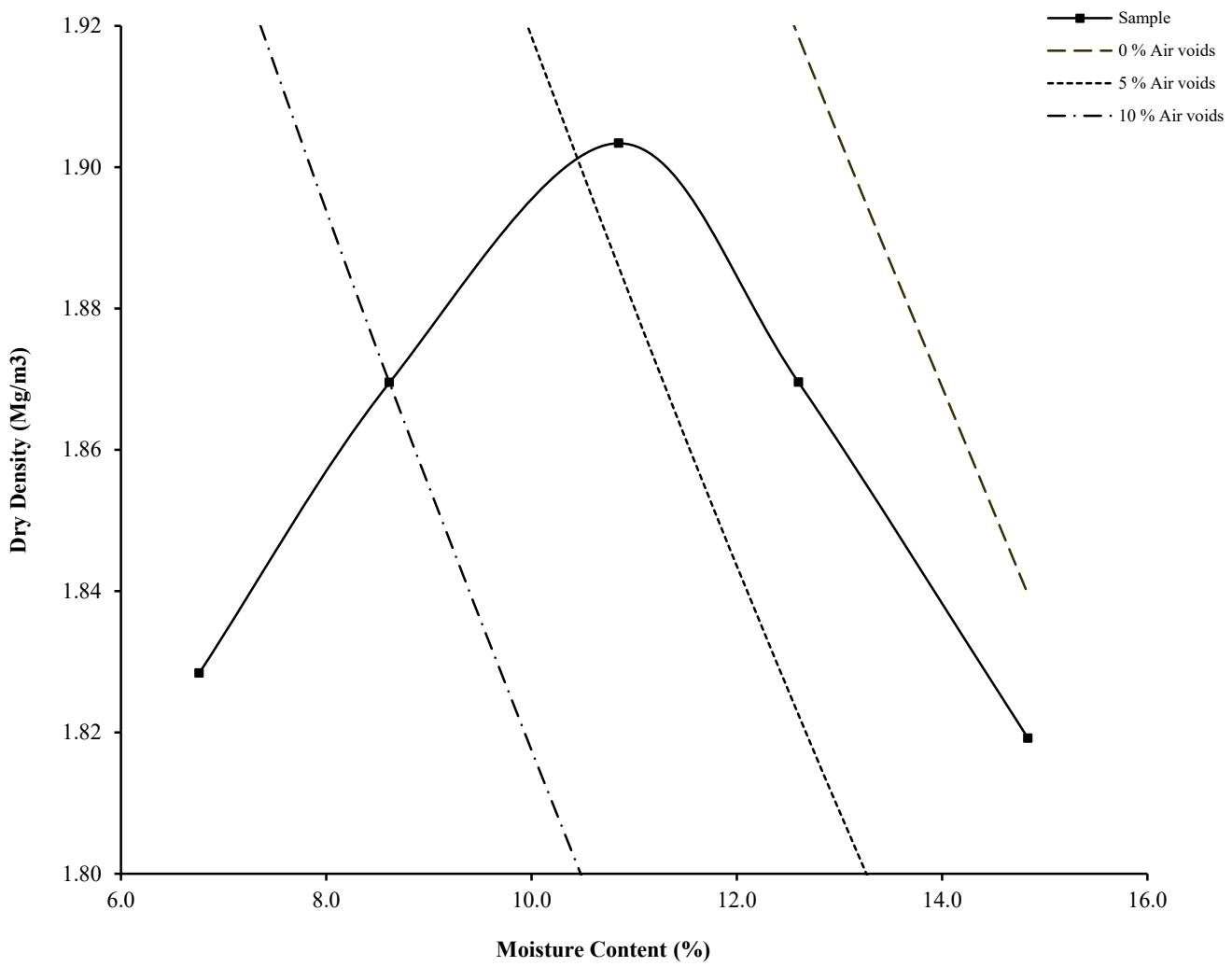
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: BH15 **Top Depth (m) :** 1.80

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

Sample Type: B



Initial Moisture Content:		13	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.53	Assumed	Material Retained on 37.5 mm Test Sieve (%):		4
Maximum Dry Density (Mg/m3):		1.90	Material Retained on 20.0 mm Test Sieve (%):		6
Optimum Moisture Content (%):		11			
Remarks See summary of soil descriptions.					

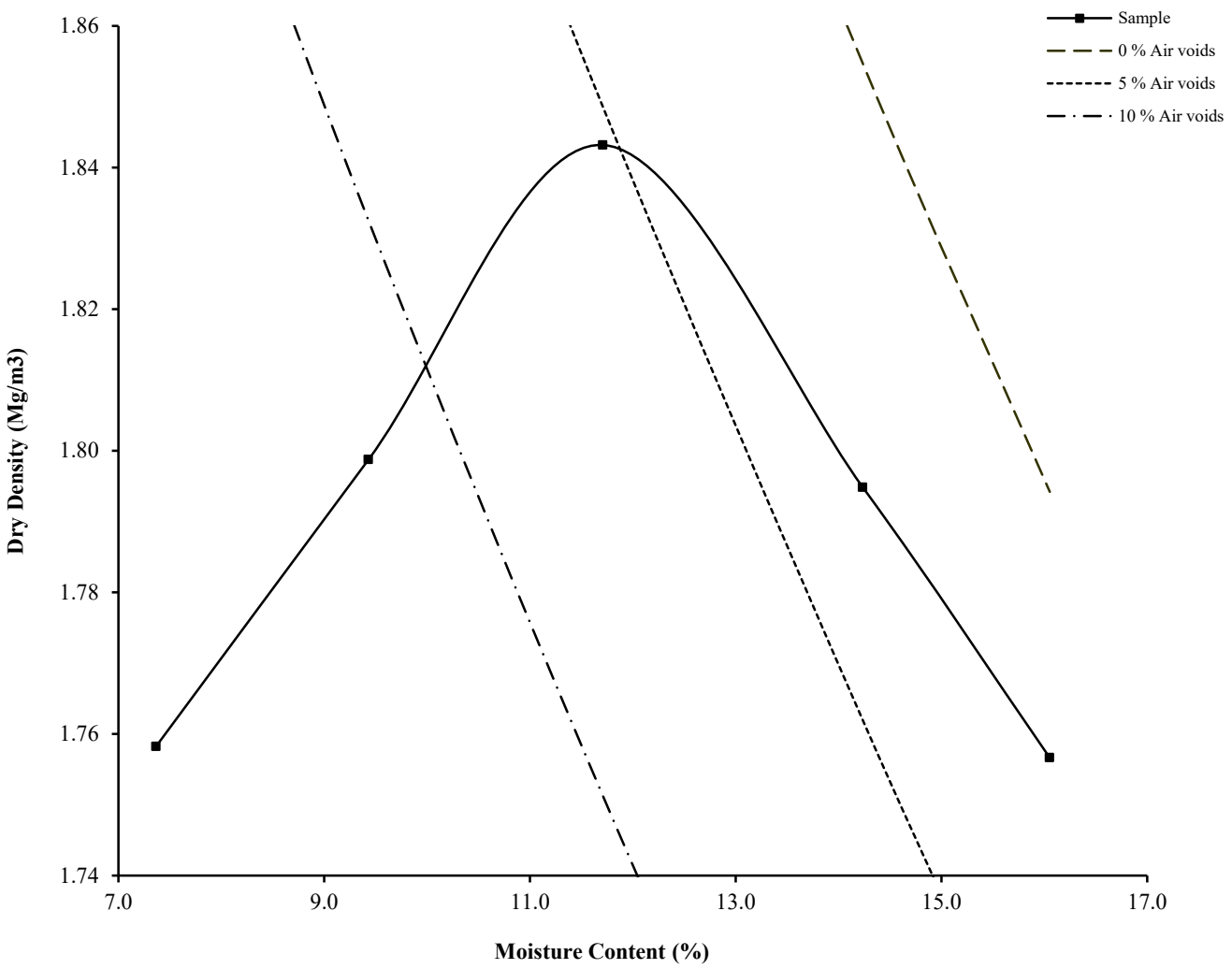
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: BH15 **Top Depth (m) :** 4.00

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

Sample Type: B



Initial Moisture Content:		14	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.52	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		1.84	Material Retained on 20.0 mm Test Sieve (%):		7
Optimum Moisture Content (%):		12			
Remarks See summary of soil descriptions.					

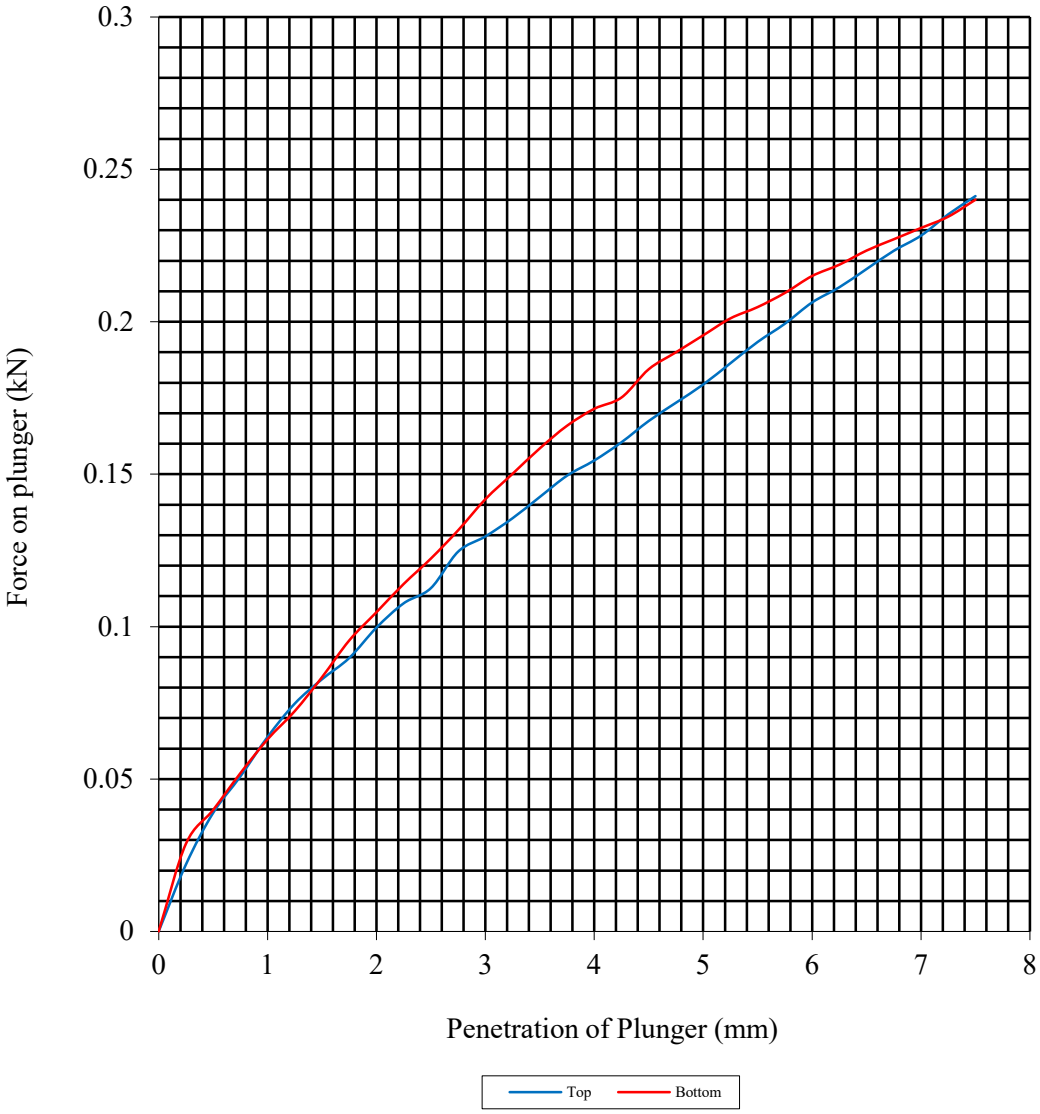
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: TP12 **Top Depth (m):** 1.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	16	Surcharge Kg:	4.20	Sample Top	15	Sample Top	0.9
Bulk Density Mg/m3:	2.08	Soaking Time hrs	0	Sample Bottom	16	Sample Bottom	1.0
Dry Density Mg/m3:	1.80	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			12				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL18/5034

Client Ref: 2201151

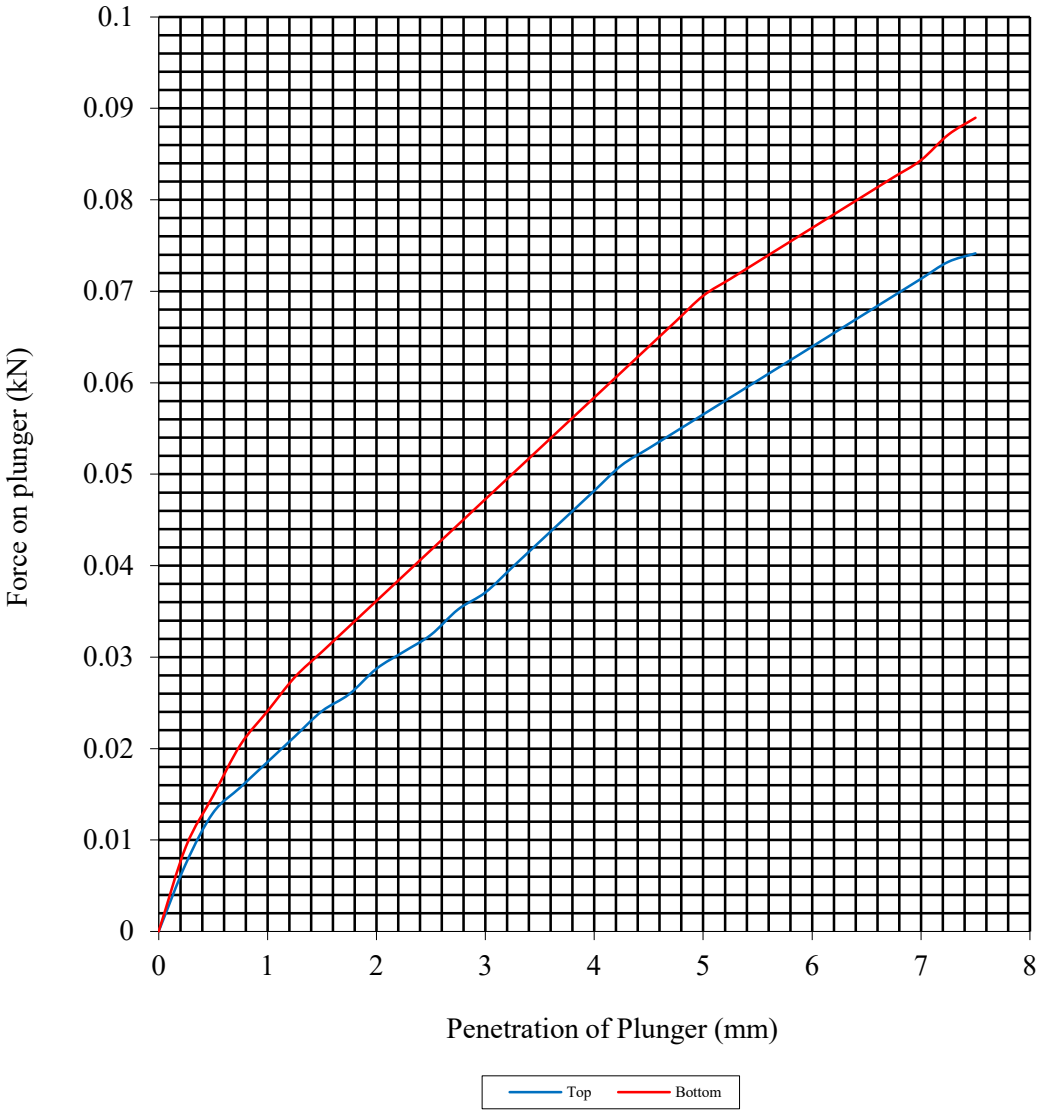
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: TP16 **Top Depth (m):** 1.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	16	Surcharge Kg:	4.20	Sample Top	16	Sample Top	0.3
Bulk Density Mg/m3:	2.06	Soaking Time hrs	0	Sample Bottom	16	Sample Bottom	0.3
Dry Density Mg/m3:	1.78	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			9				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL18/5034

Client Ref: 2201151

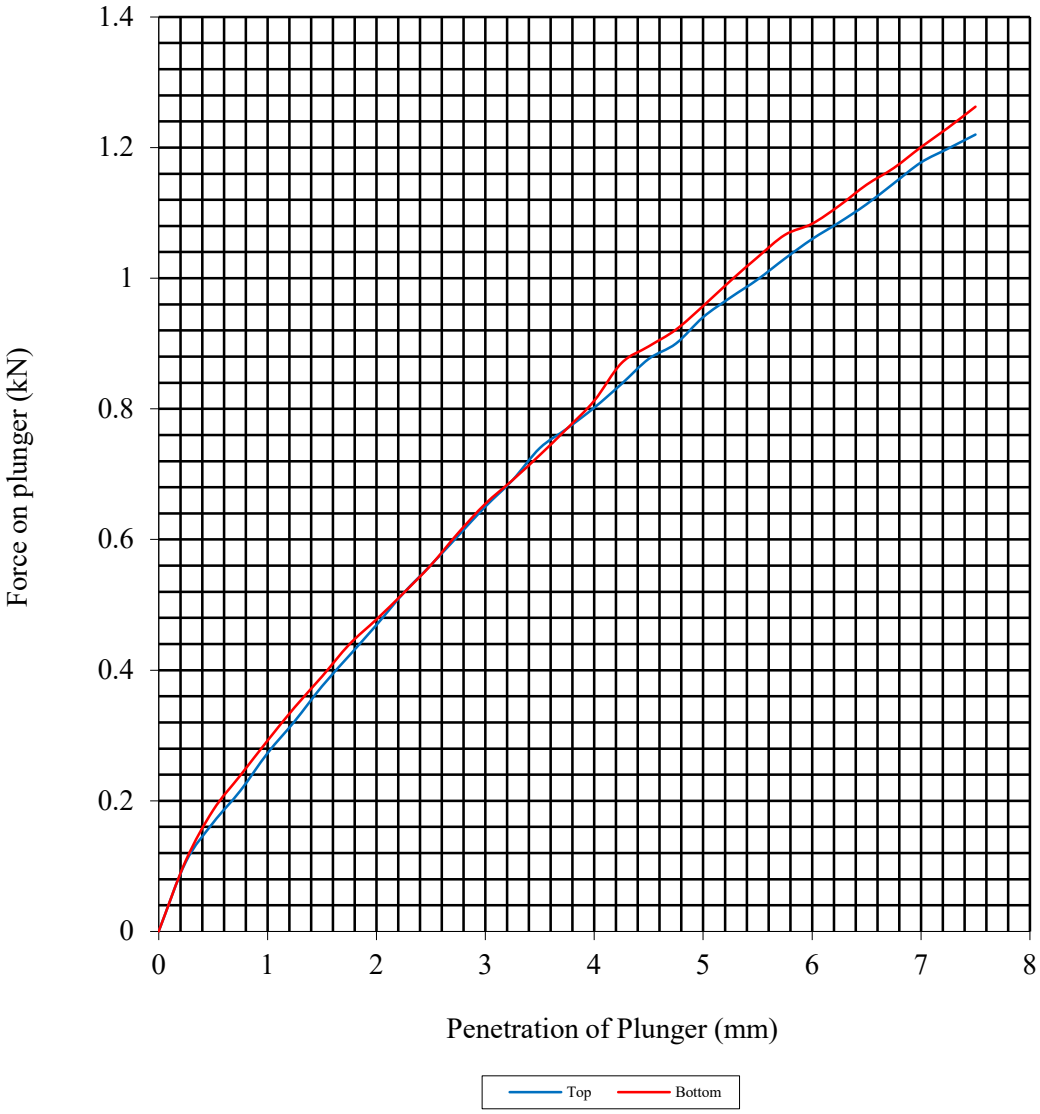
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: TP16 **Top Depth (m):** 2.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	13	Surcharge Kg:	4.20	Sample Top	13	Sample Top	4.7
Bulk Density Mg/m3:	2.05	Soaking Time hrs	0	Sample Bottom	13	Sample Bottom	4.8
Dry Density Mg/m3:	1.82	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			10				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL18/5034

Client Ref: 2201151

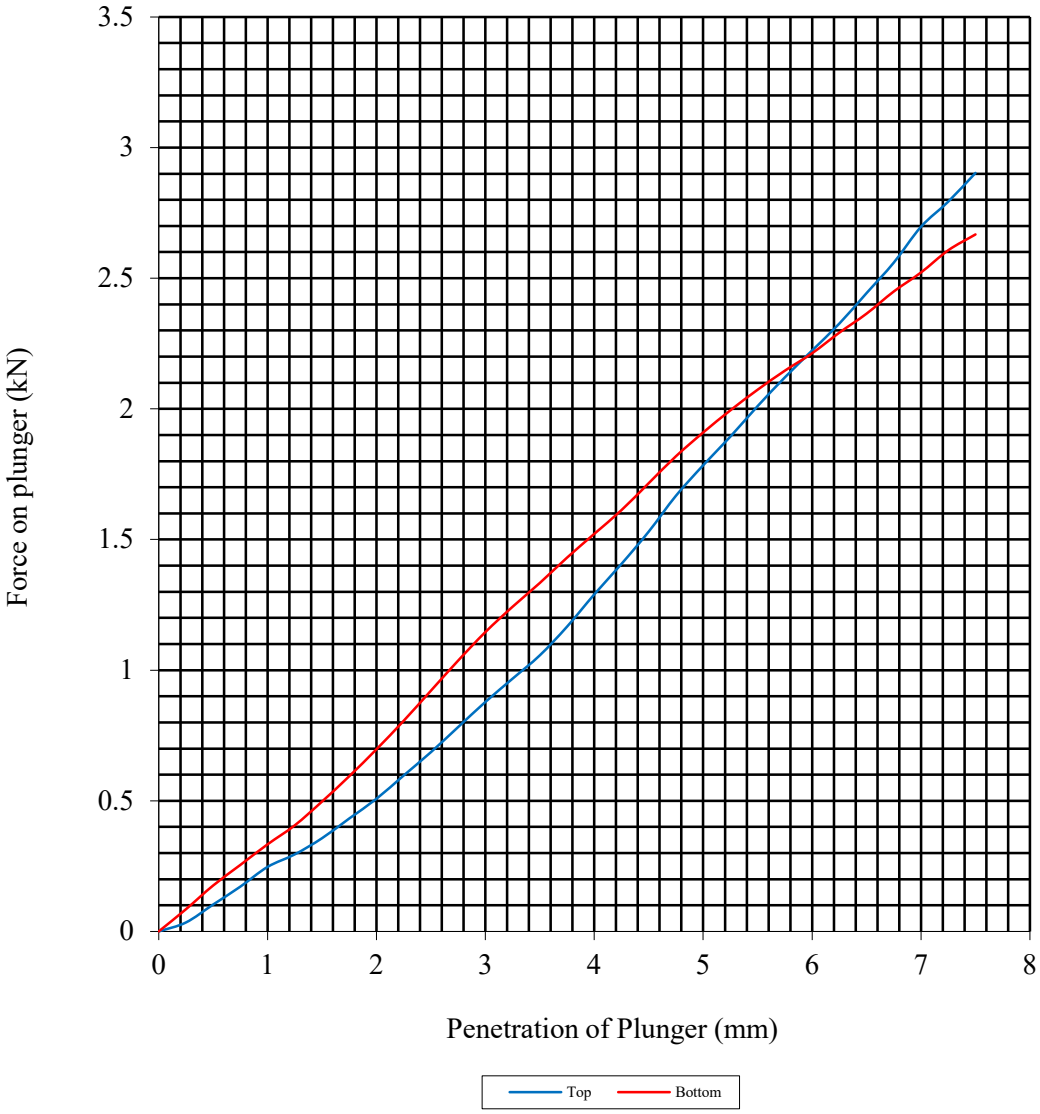
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: TP25 **Top Depth (m):** 1.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	18	Surcharge Kg:	4.20	Sample Top	18	Sample Top	8.9
Bulk Density Mg/m3:	2.06	Soaking Time hrs	0	Sample Bottom	17	Sample Bottom	9.5
Dry Density Mg/m3:	1.75	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			4				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL18/5034

Client Ref: 2201151

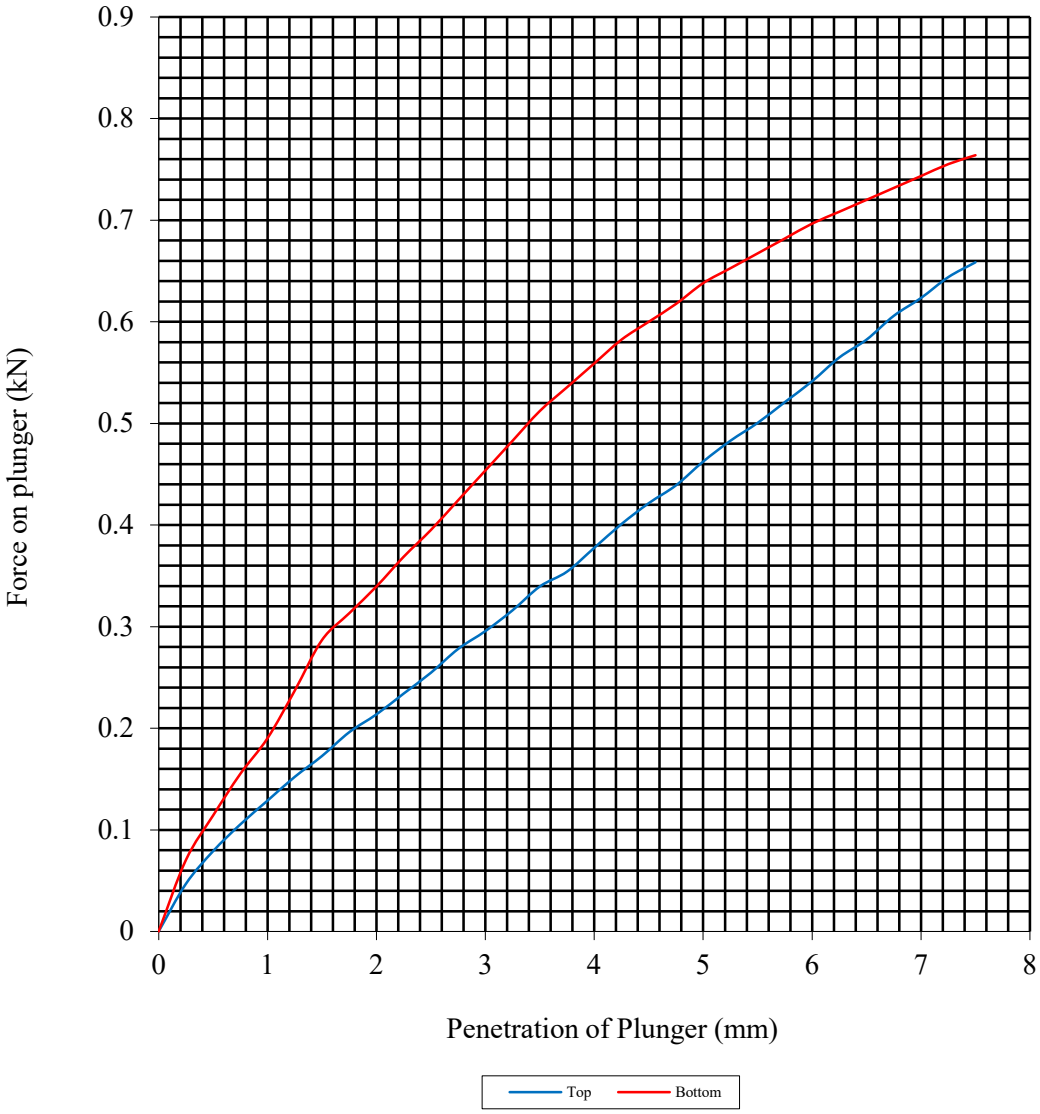
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: TP26 **Top Depth (m):** 2.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	13	Surcharge Kg:	4.20	Sample Top	13	Sample Top	2.3
Bulk Density Mg/m3:	2.08	Soaking Time hrs	0	Sample Bottom	13	Sample Bottom	3.2
Dry Density Mg/m3:	1.84	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			9				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL18/5034

Client Ref: 2201151

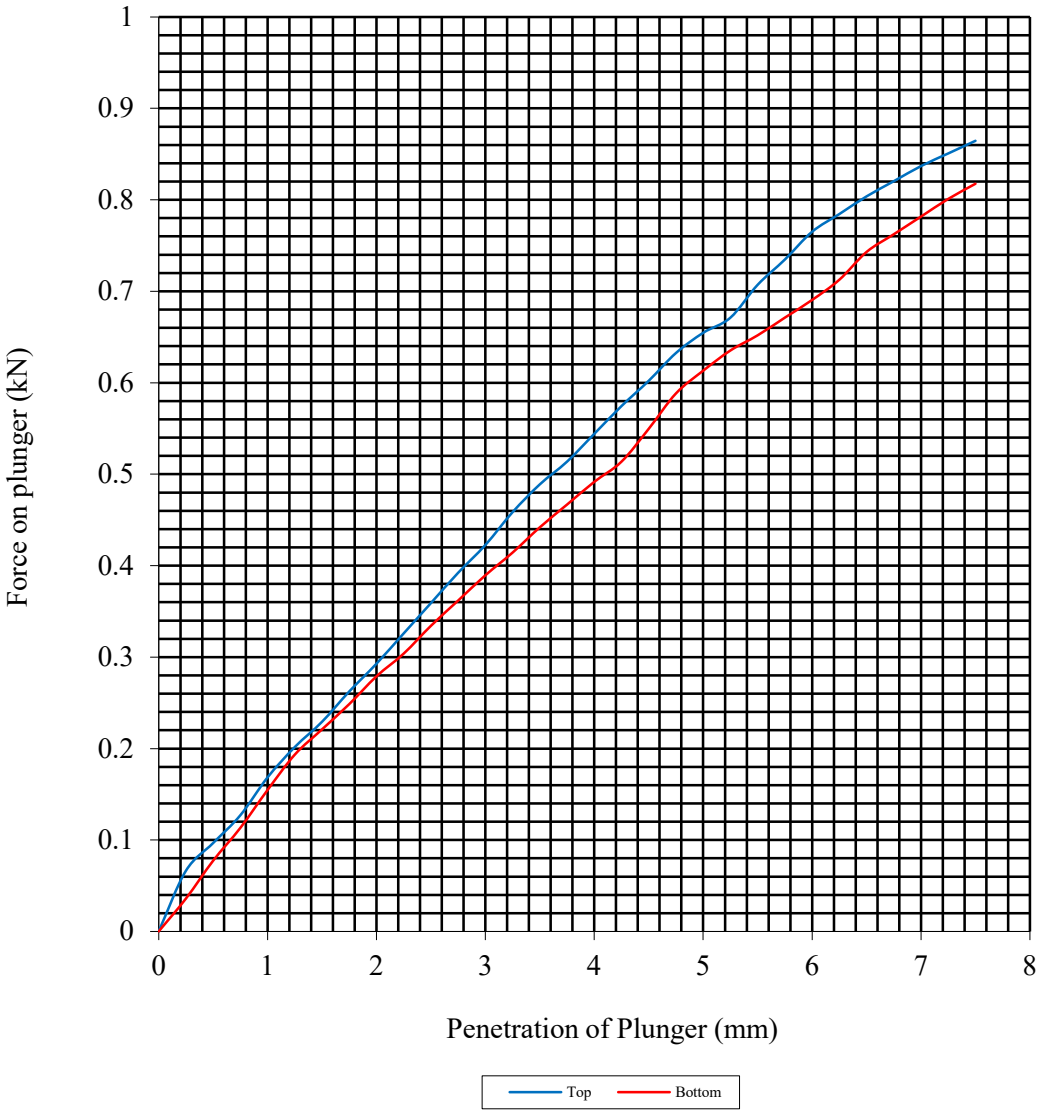
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: BH04 **Top Depth (m):** 1.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	14	Surcharge Kg:	4.20	Sample Top	14	Sample Top	3.3
Bulk Density Mg/m3:	2.09	Soaking Time hrs	0	Sample Bottom	14	Sample Bottom	3.1
Dry Density Mg/m3:	1.83	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			6				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL18/5034

Client Ref: 2201151

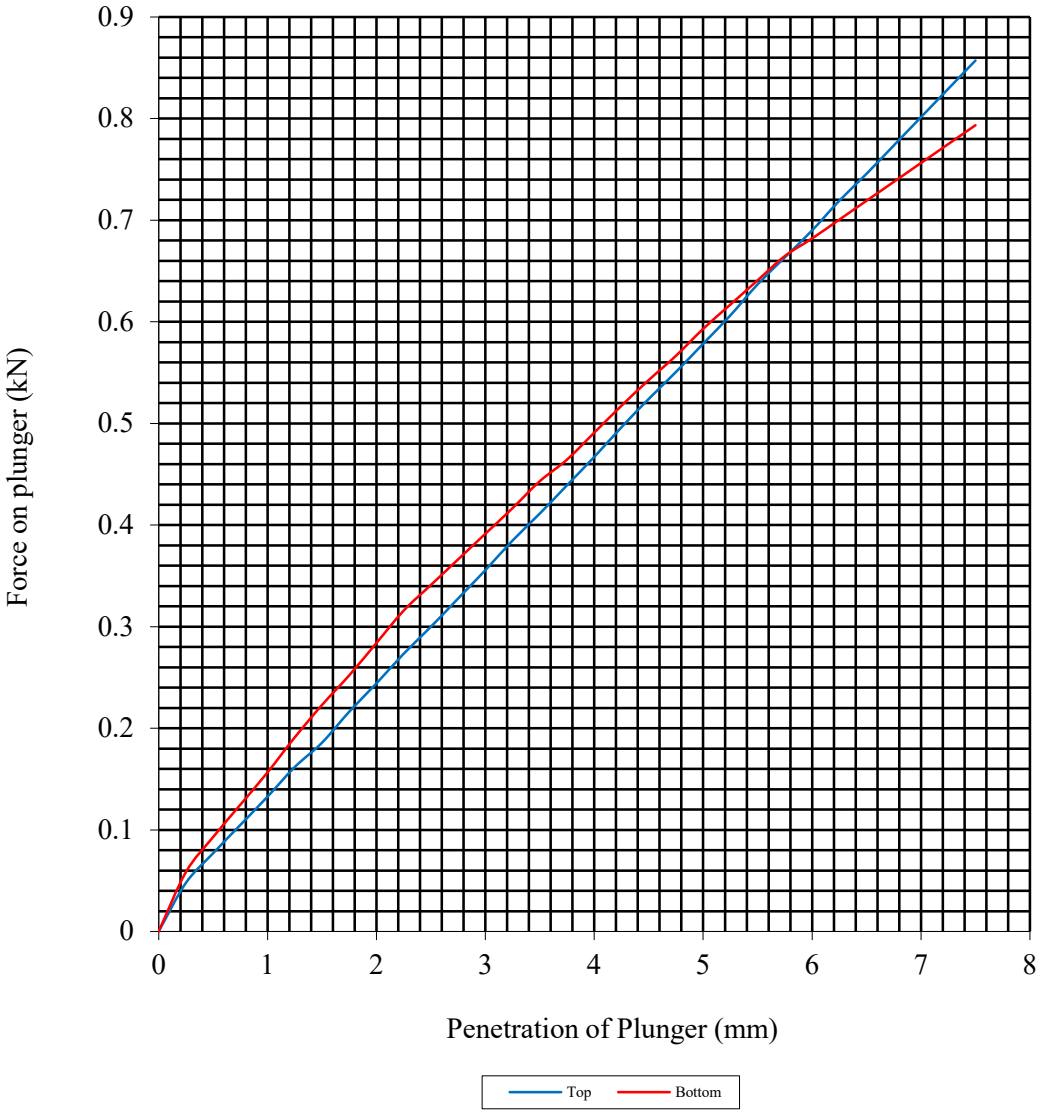
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: BH09 **Top Depth (m):** 2.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	20	Surcharge Kg:	4.20	Sample Top	20	Sample Top	2.9
Bulk Density Mg/m3:	2.08	Soaking Time hrs	0	Sample Bottom	20	Sample Bottom	3.0
Dry Density Mg/m3:	1.73	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			8				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL18/5034

Client Ref: 2201151

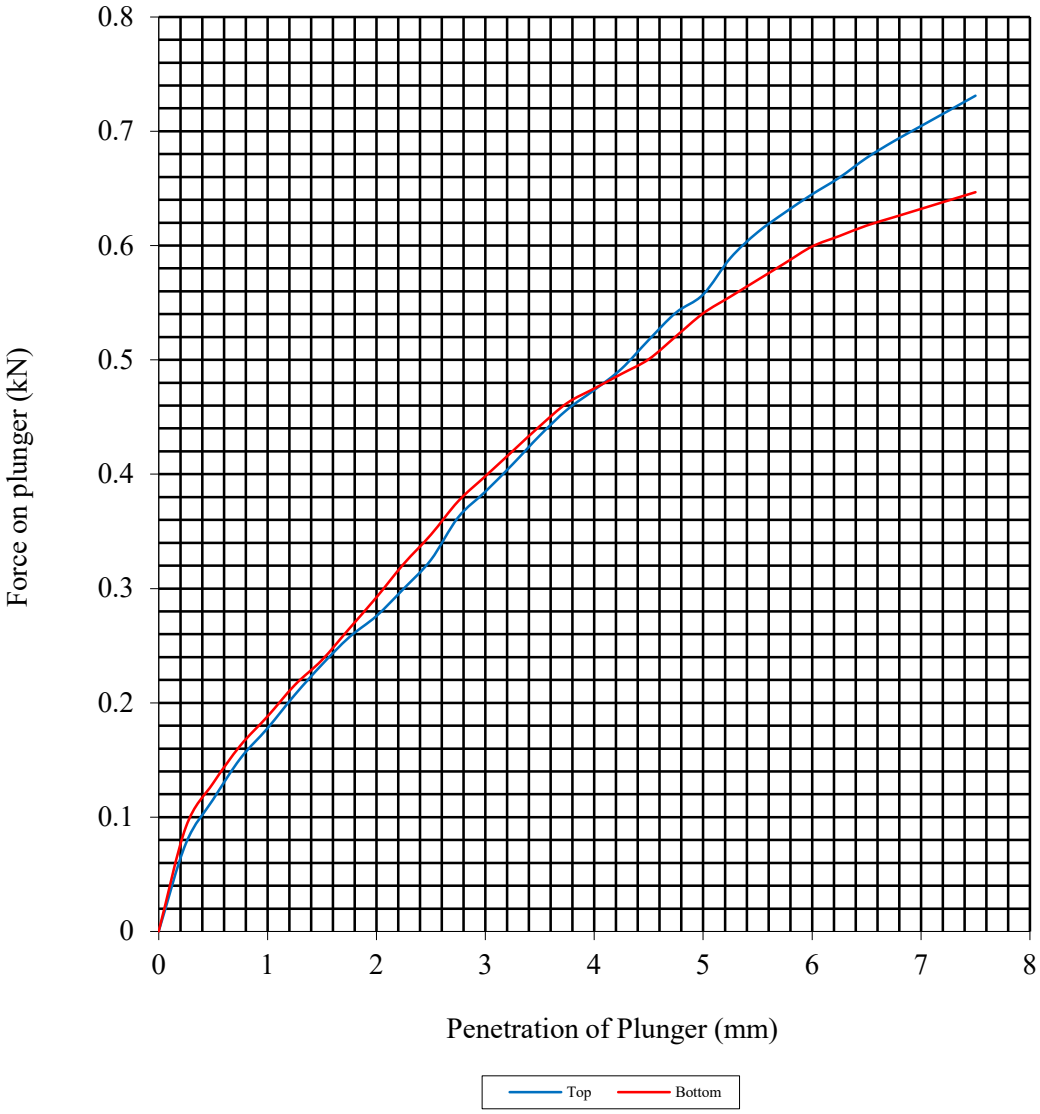
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: BH15 **Top Depth (m):** 1.80

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	15	Surcharge Kg:	4.20	Sample Top	15	Sample Top	2.8
Bulk Density Mg/m3:	2.11	Soaking Time hrs	0	Sample Bottom	15	Sample Bottom	2.7
Dry Density Mg/m3:	1.82	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			10				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL18/5034

Client Ref: 2201151

MOISTURE CONDITION VALUE

BS1377 : Part 4 : 1990 Clause 5.4

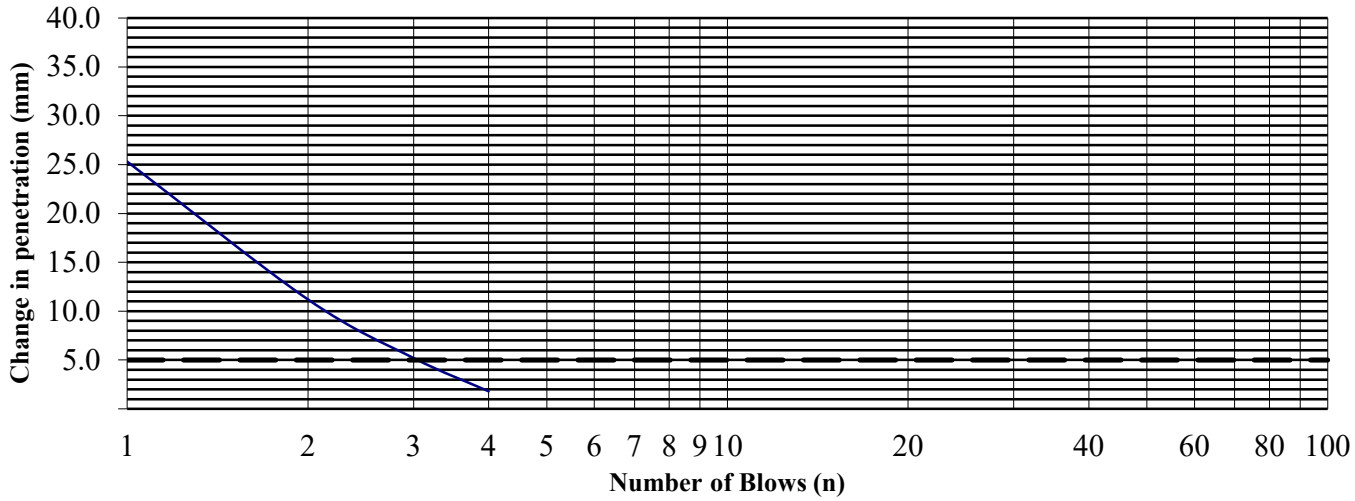
Hole Number: TP12 **Top Depth (m):** 1.00

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

Sample Type: B

Material Retained on the 20mm BS Test Sieve (%):	12
Interpretation based on steepest straight line intercept with 5mm change in penetration.	

MCV Determination



Blows (N)	Penetration (mm)	n to 4 n (mm)
1	65.1	25.3
2	49.8	11.2
3	43.4	5.2
4	39.8	1.8
6	38.8	
8	38.6	
12	38.2	
16	38.0	
24		
32		
48		
64		
96		
128		
192		
256		

Test Results.

Moisture Content (%)	16
MCV	4.0

MOISTURE CONDITION VALUE

BS1377 : Part 4 : 1990 Clause 5.4

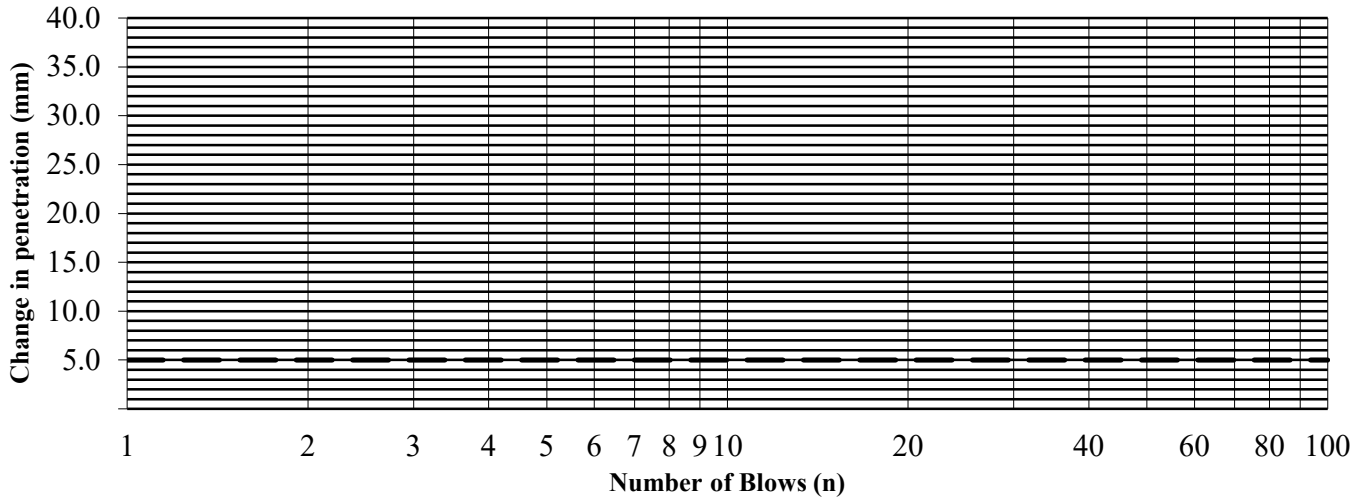
Hole Number: TP16 **Top Depth (m):** 1.00

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

Sample Type: B

Material Retained on the 20mm BS Test Sieve (%):	9
Interpretation based on steepest straight line intercept with 5mm change in penetration.	

MCV Determination



Blows (N)	Penetration (mm)	n to 4 n (mm)
1	43.2	2.2
2	41.2	
3	41.1	
4	41.0	
6		
8		
12		
16		
24		
32		
48		
64		
96		
128		
192		
256		

Test Results.

Moisture Content (%)	16
MCV	0.0

MOISTURE CONDITION VALUE

BS1377 : Part 4 : 1990 Clause 5.4

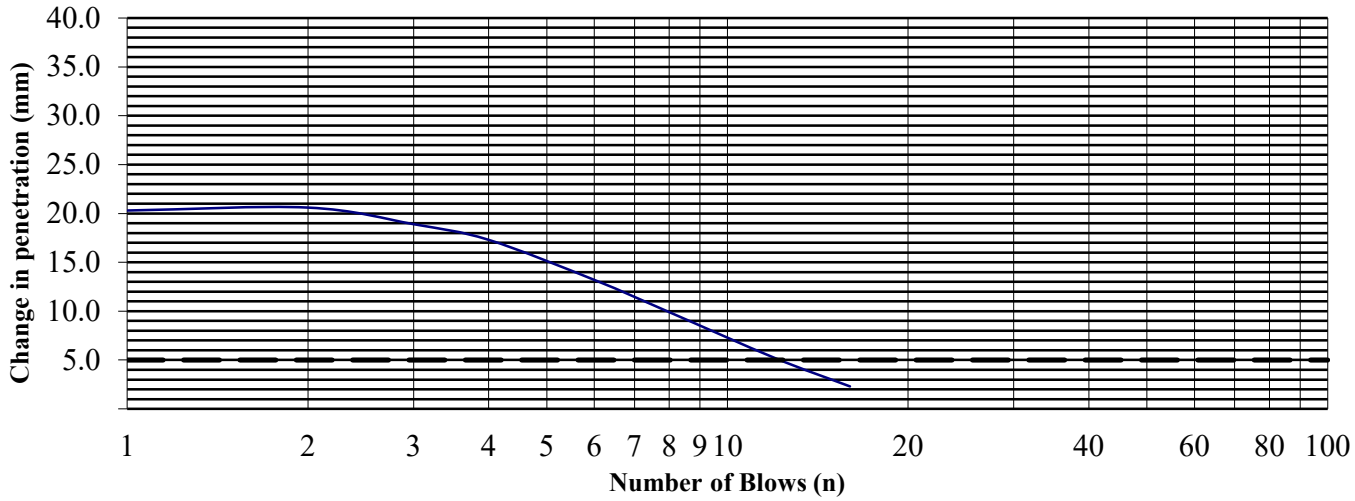
Hole Number: TP25 **Top Depth (m):** 1.00

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

Sample Type: B

Material Retained on the 20mm BS Test Sieve (%):	4
Interpretation based on steepest straight line intercept with 5mm change in penetration.	

MCV Determination



Blows (N)	Penetration (mm)	n to 4 n (mm)
1	80.1	20.3
2	71.0	20.6
3	64.4	18.9
4	59.8	17.3
6	54.0	13.2
8	50.4	9.9
12	45.5	5.2
16	42.5	2.3
24	40.8	
32	40.5	
48	40.3	
64	40.2	
96		
128		
192		
256		

Test Results.

Moisture Content (%)	18
MCV	10.9

MOISTURE CONDITION VALUE CALIBRATION

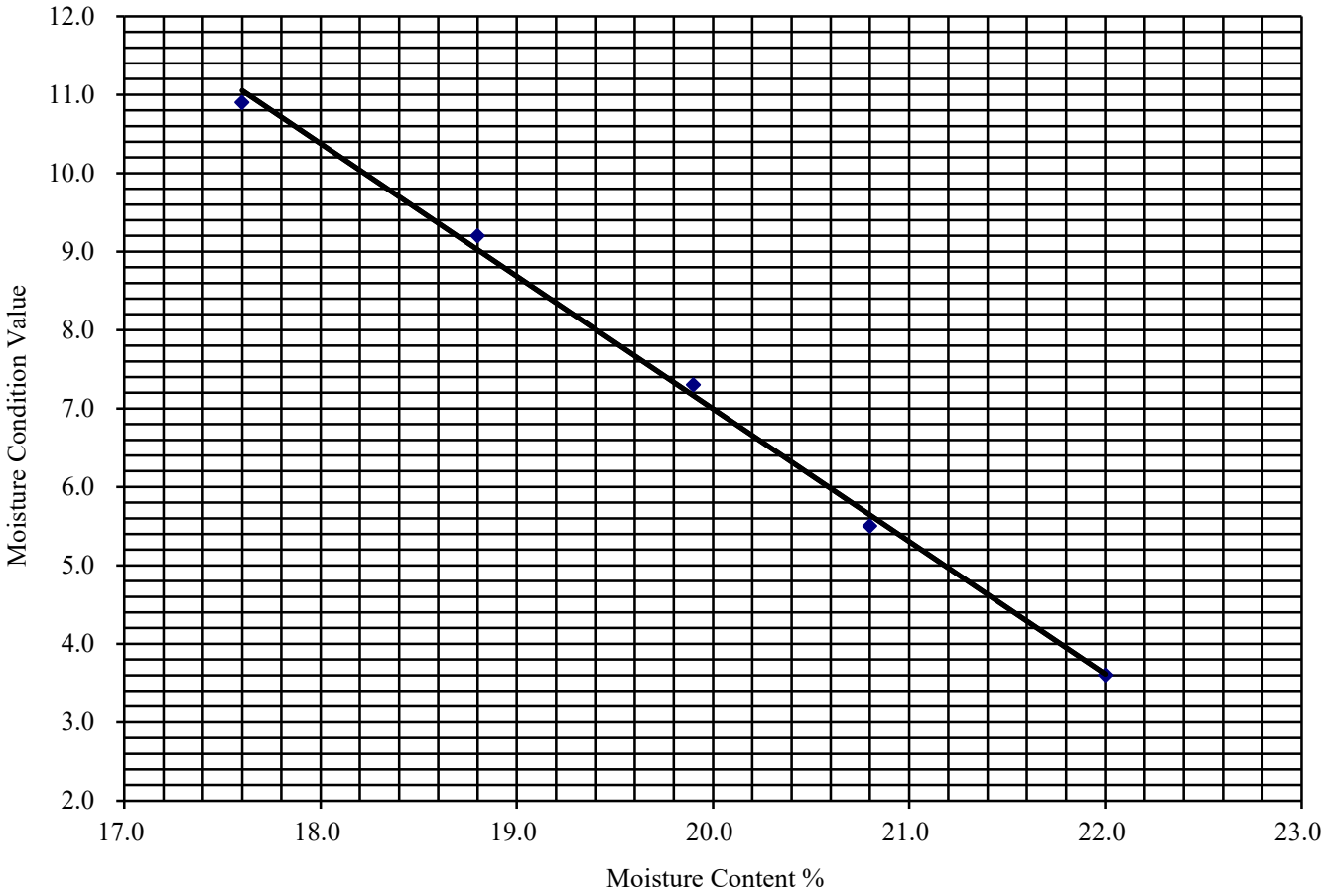
BS1377 : Part 4 : 1990 Clause 5.5

Hole Number: TP25 **Top Depth (m):** 1.00

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

Sample Type: B

Initial Moisture Content (%):	18
Single/Separate Samples Tested	Separate
Material Retained on the 20mm BS Test Sieve (%):	4



Test Results.

Test Number	1	2	3	4	5
Moisture Content (%)	17.6	18.8	19.9	20.8	22.0
MCV	10.9	9.2	7.3	5.5	3.6

MOISTURE CONDITION VALUE

BS1377 : Part 4 : 1990 Clause 5.4

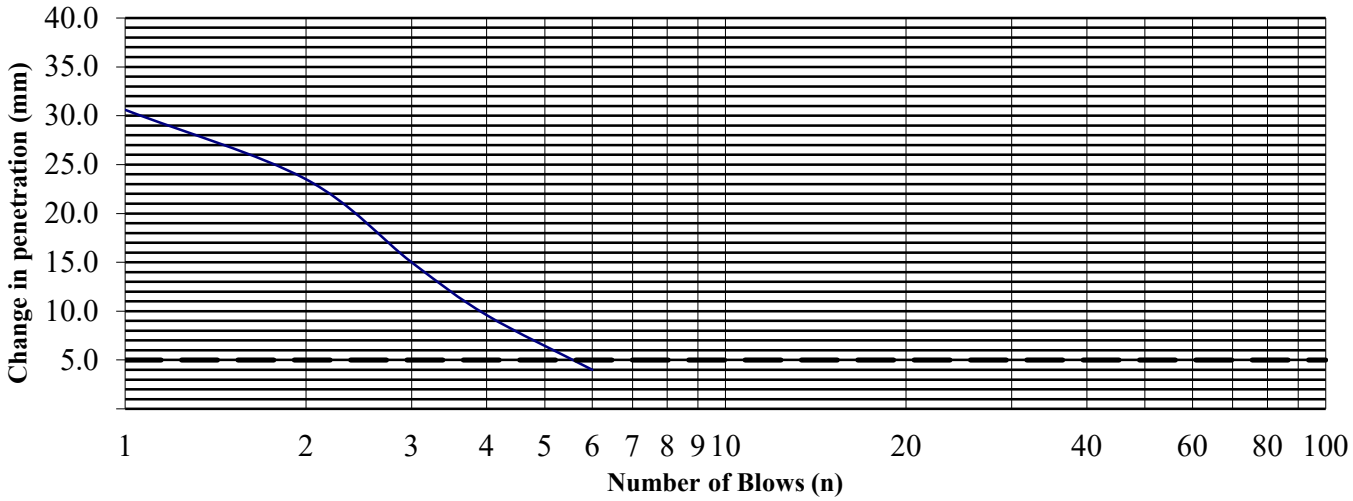
Hole Number: **BH04** **Top Depth (m):** **1.00**

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

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 4 n (mm)
1	76.7	30.6
2	61.0	23.5
3	51.9	15.0
4	46.1	9.6
6	40.0	4.0
8	37.5	
12	36.9	
16	36.5	
24	36.0	
32		
48		
64		
96		
128		
192		
256		

Test Results.

Moisture Content (%)	14
MCV	6.5

MOISTURE CONDITION VALUE

BS1377 : Part 4 : 1990 Clause 5.4

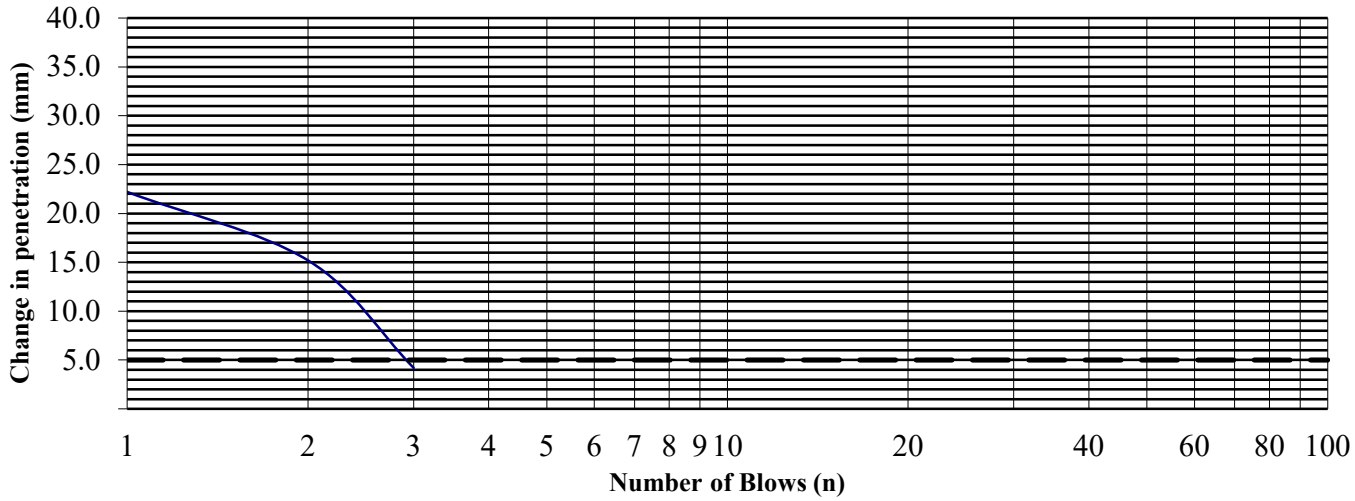
Hole Number: **BH09** **Top Depth (m):** **3.00**

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

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 4 n (mm)
1	61.4	22.2
2	48.1	15.2
3	41.9	4.2
4	39.2	
6	38.3	
8	32.9	
12	37.7	
16		
24		
32		
48		
64		
96		
128		
192		
256		

Test Results.

Moisture Content (%)	15
MCV	5.5

Certificate of Analysis

Certificate Number 18-23614

09-Oct-18

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

Our Reference 18-23614

Client Reference PSL18/5034

Order No (not supplied)

Contract Title 244 Airfield Surveys Phase 2

Description 4 Soil samples.

Date Received 05-Oct-18

Date Started 05-Oct-18

Date Completed 09-Oct-18

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

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 18-23614
Client Ref PSL18/5034
Contract Title 244 Airfield Surveys Phase 2

			Lab No	1401729	1401730	1401731	1401732
			Sample ID	TP12	TP16	TP16	BH15
			Depth	1.00	0.50	2.00	1.80
			Other ID				
			Sample Type	B	T	B	B
			Sampling Date	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Inorganics							
pH	DETSC 2008#			8.5	8.4	8.4	8.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	53	16	23	24

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 18-23614
Client Ref PSL18/5034
Contract 244 Airfield Surveys Phase 2

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1401729	TP12 1.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1401730	TP16 0.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1401731	TP16 2.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1401732	BH15 1.80 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 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.

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: PSL19/0004

Report Date: 08 January 2019

Client's Reference: 18/07/7926

Client Name: Ground Investigations Ireland Ltd
Catherinestown House
Hazelhatch Road
Newcastle
Co Durham

For the attention of: Stephen Kealy

Contract Title: 244 Airfield Surveys Phase 2

Date Received: 2/1/2019
Date Commenced: 2/1/2019
Date Completed: 8/1/2019

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)
L Knight (Senior Technician)	S Eyre (Senior Technician)	A Fry (Senior Technician)

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SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP01		B	2.00		Brown very gravelly very sandy CLAY.
TP01		B	3.00		Grey gravelly slightly very sandy CLAY.
TP02		B	2.00		Brown very gravelly very sandy CLAY.
TP03		B	2.00		Brown very gravelly very sandy CLAY.
TP03		B	3.00		Brown very gravelly very sandy CLAY.
TP08		B	2.00		Brown very gravelly sandy CLAY.
TP08		B	3.00		Brown gravelly very sandy CLAY.
TP10		B	2.00		Brown very gravelly very sandy CLAY.
TP18		B	2.00		Brown gravelly sandy CLAY.
TP19		B	2.00		Brown gravelly very sandy CLAY.
TP20		B	3.00		Brown gravelly very sandy CLAY.
BH01		B	3.00		Brown gravelly very sandy CLAY.
BH01		B	4.00		Brown very gravelly very sandy CLAY.
BH07		B	2.00		Brown gravelly very sandy CLAY.
BH07		B	3.00		Brown gravelly very sandy CLAY.
BH07		B	5.00		Brown gravelly sandy CLAY.
BH11		B	4.00		Brown gravelly very sandy CLAY.
BH11		B	5.00		Brown gravelly very sandy CLAY.

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^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
TP01		B	2.00		15			29	14	15	51	Low plasticity CL.
TP02		B	2.00		18			27	13	14	57	Low plasticity CL.
TP03		B	2.00		19			30	15	15	57	Low plasticity CL.
TP03		B	3.00		16			30	14	16	62	Low plasticity CL.
TP08		B	2.00		26		2.48	46	22	24	59	Intermediate plasticity CI.
TP10		B	2.00		13			28	13	15	55	Low plasticity CL.
TP18		B	2.00		17			42	20	22	77	Intermediate plasticity CI.
TP19		B	2.00		17			34	18	16	68	Low plasticity CL.
TP20		B	3.00		16			32	16	16	67	Low plasticity CL.

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

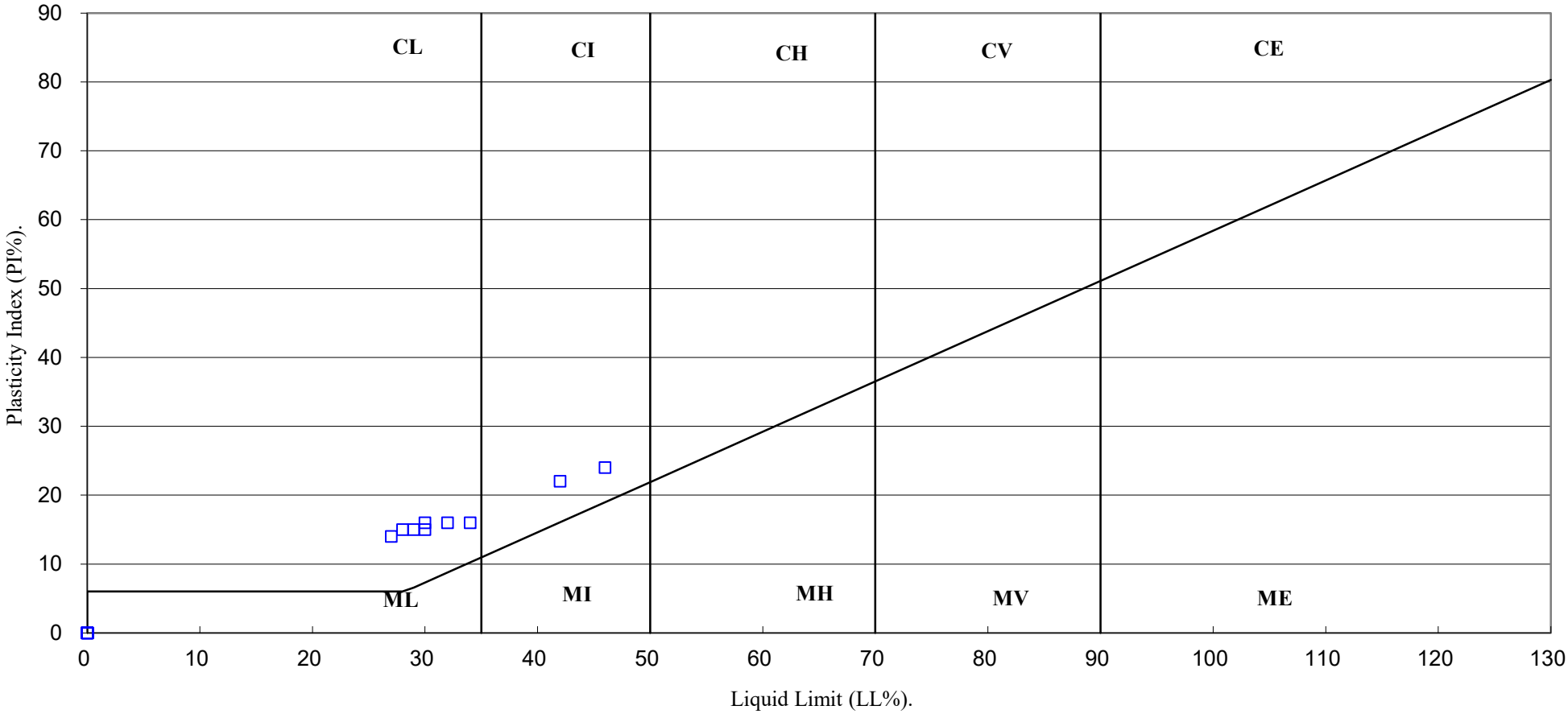
Contract No:

PSL19/0004

Client Ref:

7926-07-18

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043	PSL Professional Soils Laboratory	244 Airfield Surveys Phase 2	Contract No: PSL19/0004 Client Ref: 7926-07-18

PARTICLE SIZE DISTRIBUTION TEST

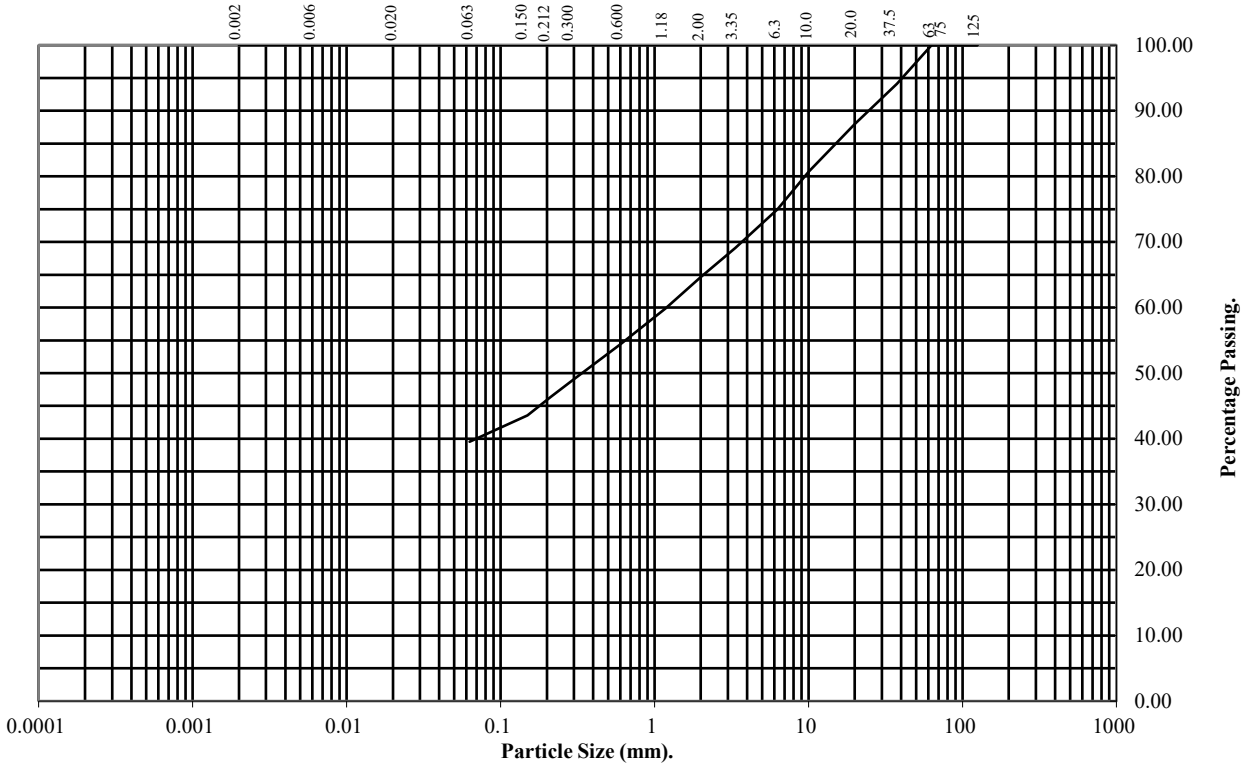
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP01 **Top Depth (m):** 2.00

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	94
20	88
10	81
6.3	75
3.35	69
2	65
1.18	60
0.6	54
0.3	49
0.212	46
0.15	44
0.063	40

Soil Fraction	Total Percentage
Cobbles	0
Gravel	35
Sand	25
Silt/Clay	40

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

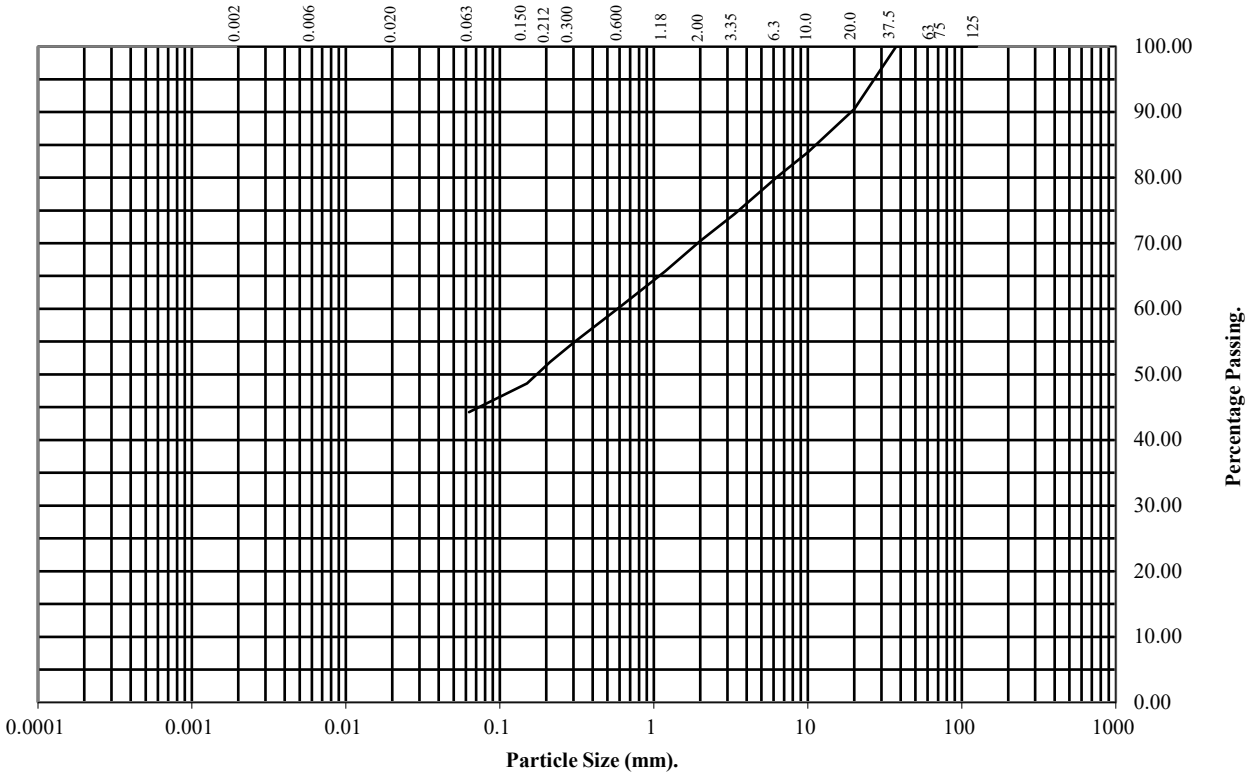
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP02 **Top Depth (m):** 2.00

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	90
10	84
6.3	80
3.35	74
2	70
1.18	66
0.6	60
0.3	55
0.212	52
0.15	49
0.063	44

Soil Fraction	Total Percentage
Cobbles	0
Gravel	30
Sand	26
Silt/Clay	44

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

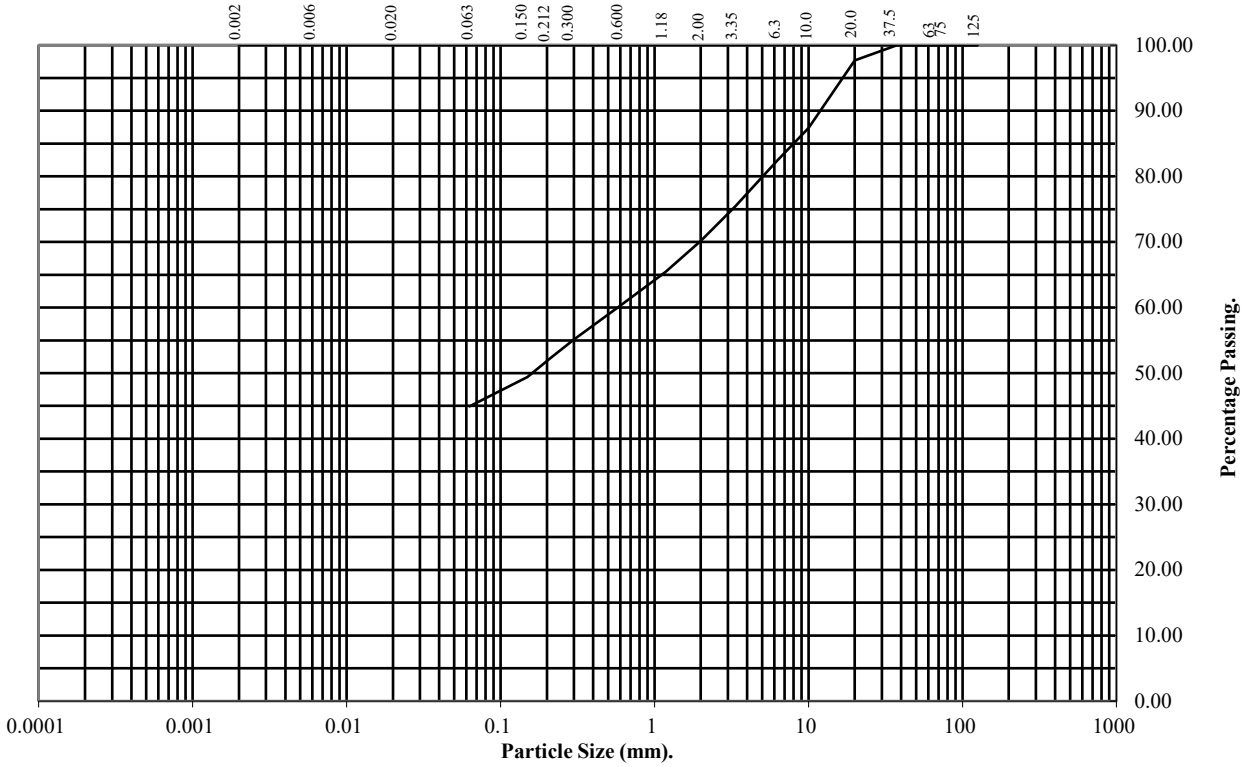
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP03 **Top Depth (m):** 2.00

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	98
10	87
6.3	82
3.35	75
2	70
1.18	65
0.6	60
0.3	55
0.212	52
0.15	49
0.063	45

Soil Fraction	Total Percentage
Cobbles	0
Gravel	30
Sand	25
Silt/Clay	45

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

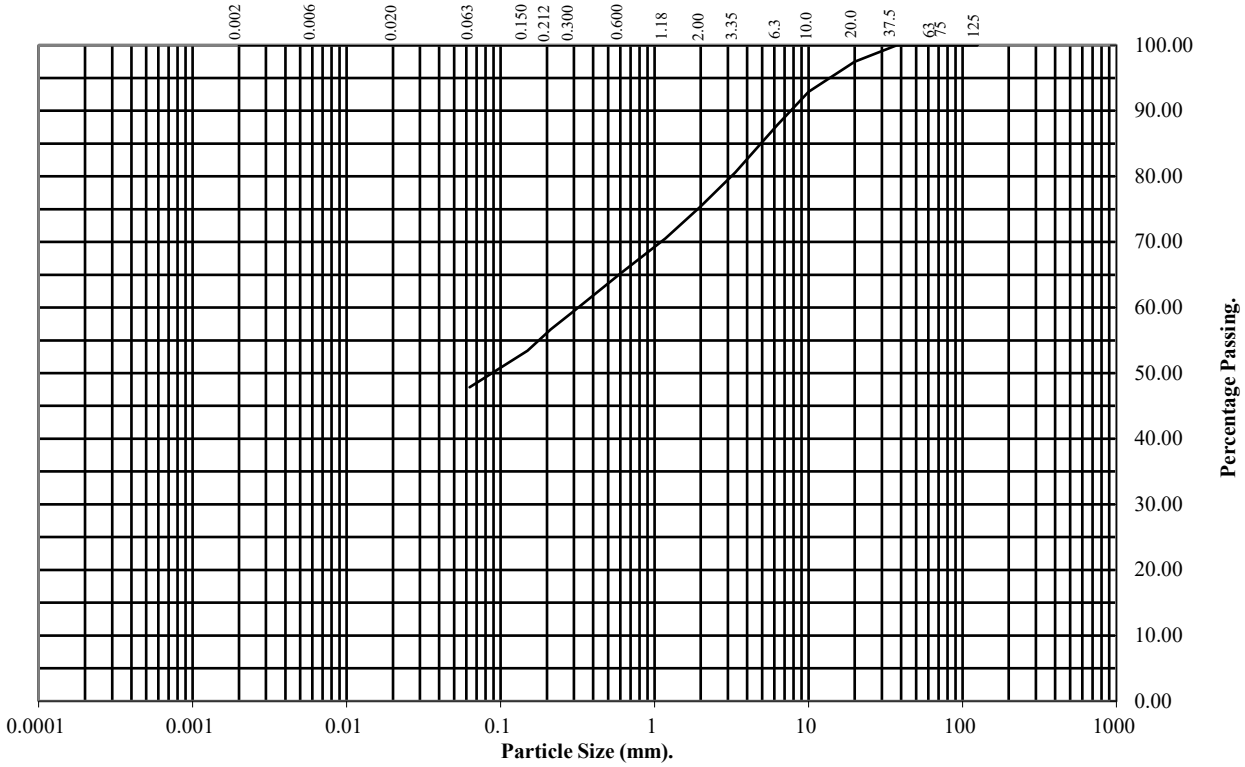
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP03 **Top Depth (m):** 3.00

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	97
10	93
6.3	88
3.35	81
2	75
1.18	71
0.6	65
0.3	59
0.212	57
0.15	53
0.063	48

Soil Fraction	Total Percentage
Cobbles	0
Gravel	25
Sand	27
Silt/Clay	48

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

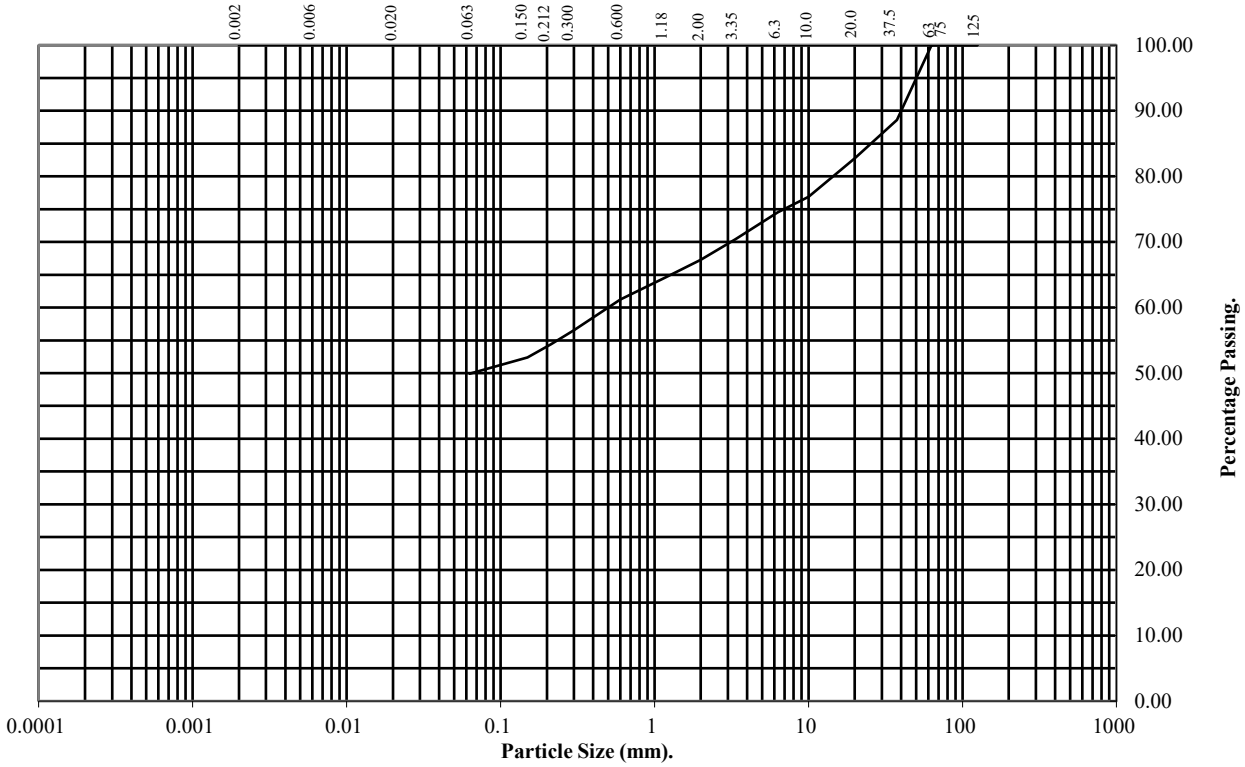
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP08 **Top Depth (m):** 2.00

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	89
20	83
10	77
6.3	74
3.35	70
2	67
1.18	65
0.6	61
0.3	57
0.212	54
0.15	52
0.063	50

Soil Fraction	Total Percentage
Cobbles	0
Gravel	33
Sand	17
Silt/Clay	50

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

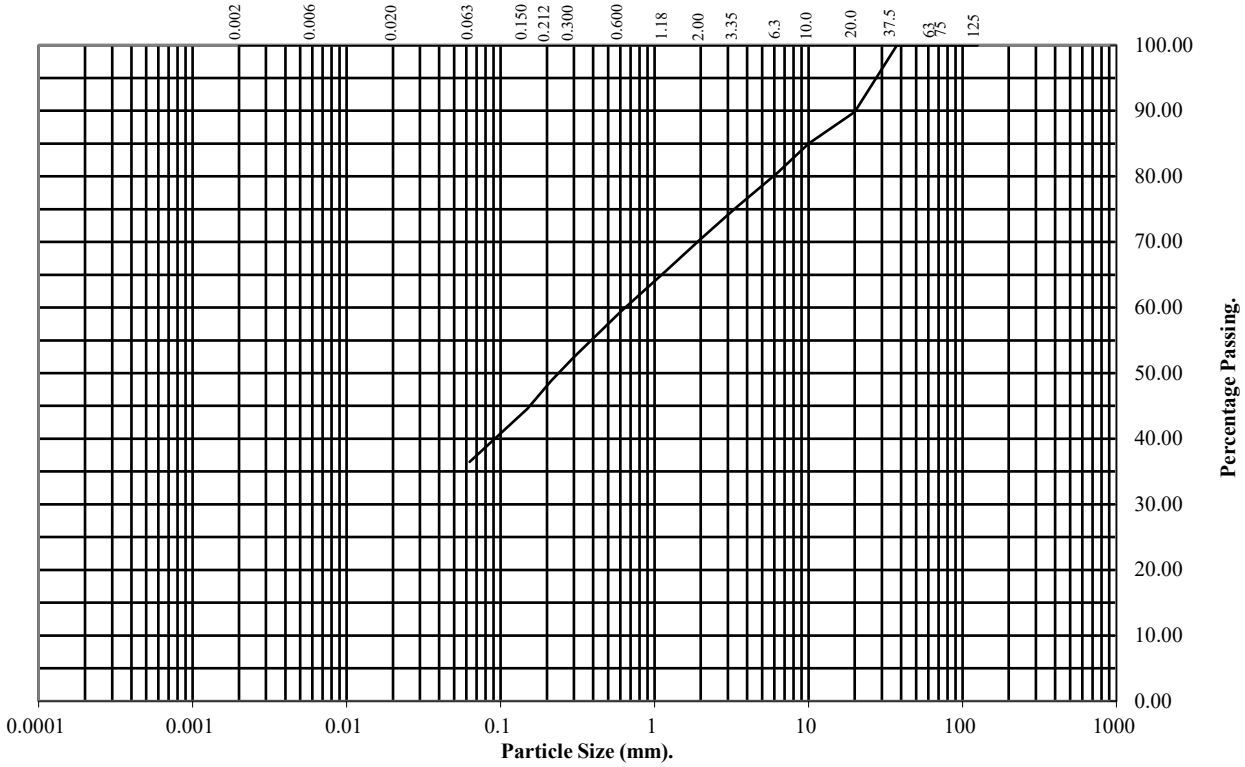
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP10 **Top Depth (m):** 2.00

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	90
10	85
6.3	81
3.35	75
2	70
1.18	66
0.6	59
0.3	52
0.212	49
0.15	45
0.063	36

Soil Fraction	Total Percentage
Cobbles	0
Gravel	30
Sand	34
Silt/Clay	36

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

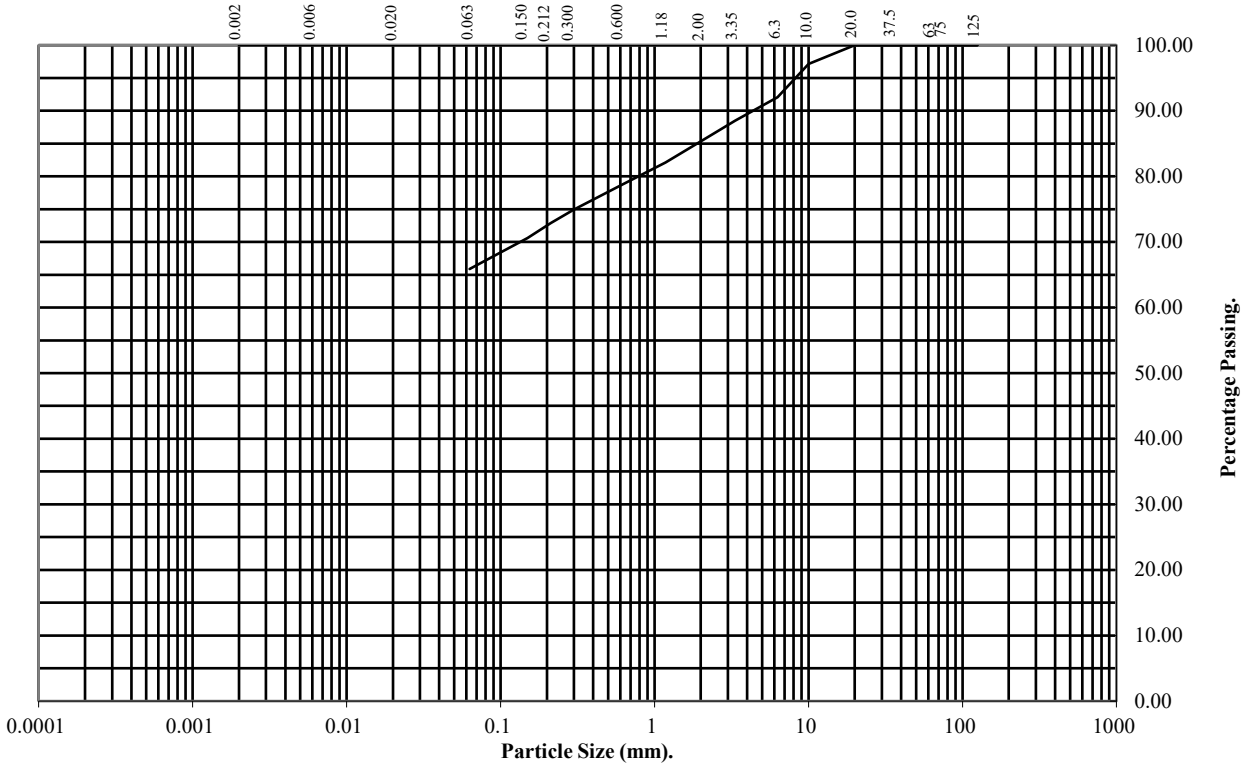
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP18 **Top Depth (m):** 2.00

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	97
6.3	92
3.35	89
2	85
1.18	82
0.6	79
0.3	75
0.212	73
0.15	71
0.063	66

Soil Fraction	Total Percentage
Cobbles	0
Gravel	15
Sand	19
Silt/Clay	66

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

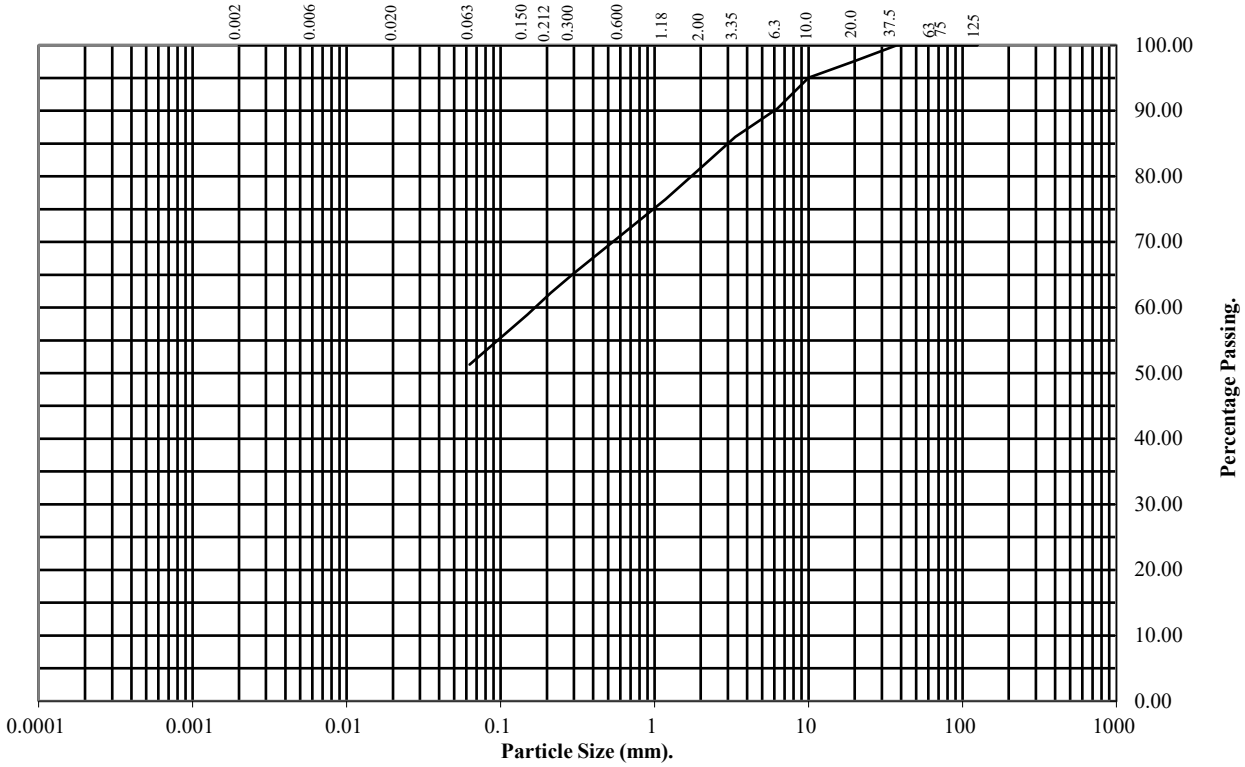
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP19 **Top Depth (m):** 2.00

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	98
10	95
6.3	90
3.35	86
2	81
1.18	77
0.6	71
0.3	65
0.212	62
0.15	59
0.063	51

Soil Fraction	Total Percentage
Cobbles	0
Gravel	19
Sand	30
Silt/Clay	51

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

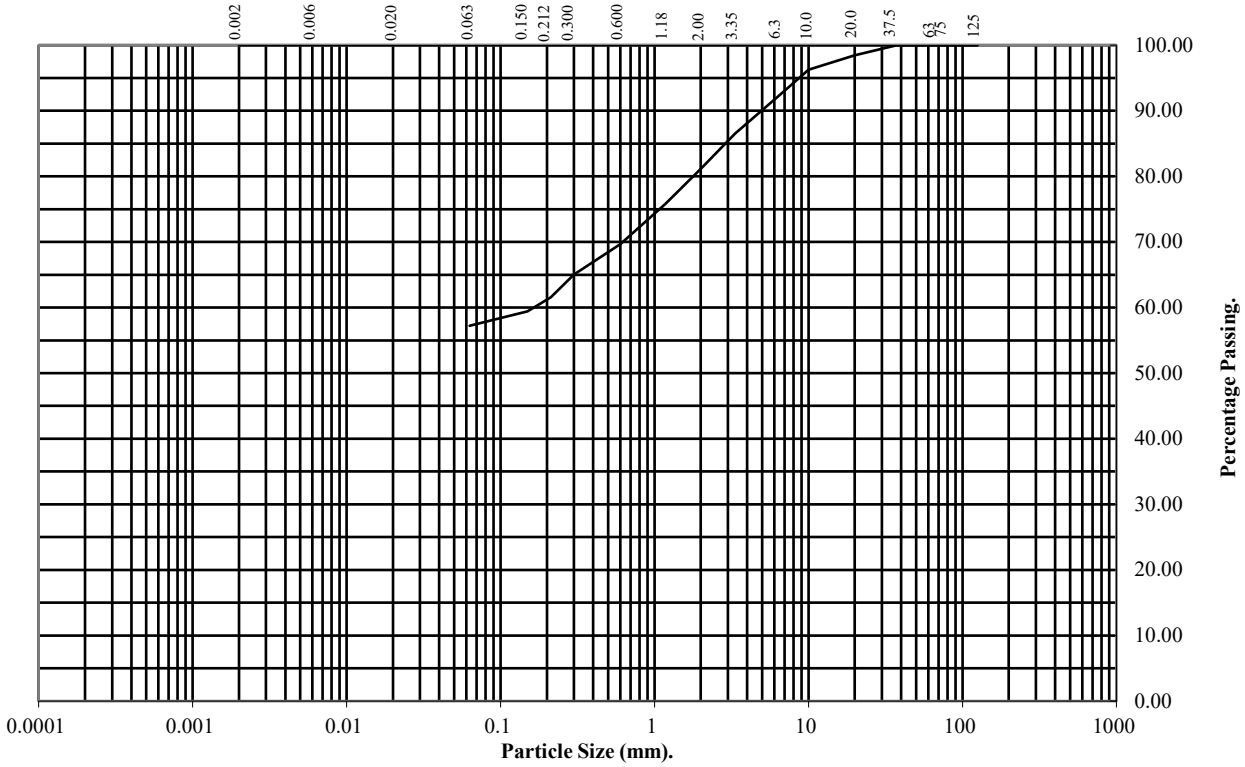
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP20 **Top Depth (m):** 3.00

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	98
10	96
6.3	92
3.35	87
2	81
1.18	76
0.6	70
0.3	65
0.212	62
0.15	59
0.063	57

Soil Fraction	Total Percentage
Cobbles	0
Gravel	19
Sand	24
Silt/Clay	57

Remarks:

See Summary of Soil Descriptions

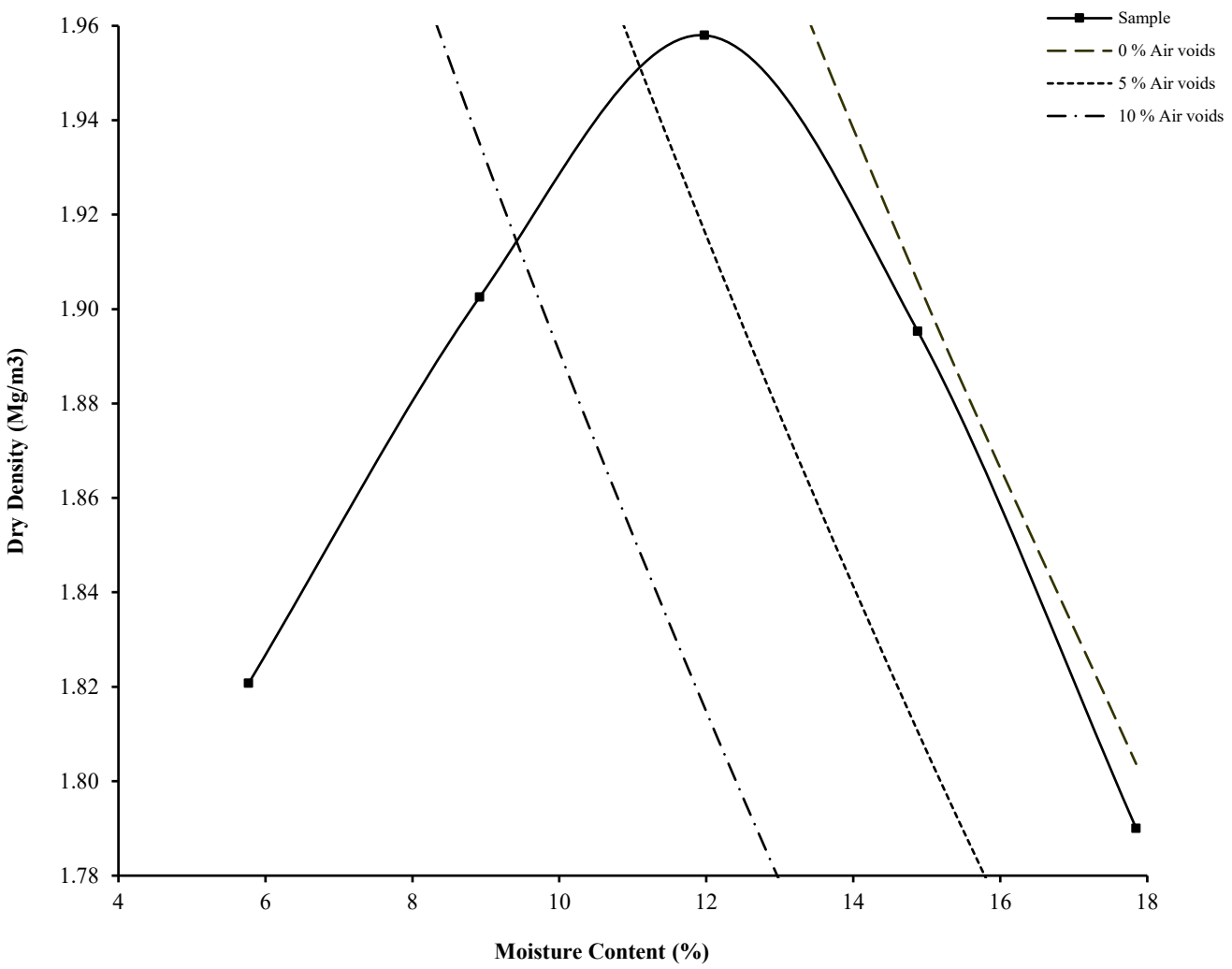
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP01 **Top Depth (m) :** 2.00

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

Sample Type: B



Initial Moisture Content:		15	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.66	Assumed	Material Retained on 37.5 mm Test Sieve (%):		6
Maximum Dry Density (Mg/m3):		1.96	Material Retained on 20.0 mm Test Sieve (%):		6
Optimum Moisture Content (%):		12			
Remarks See summary of soil descriptions.					

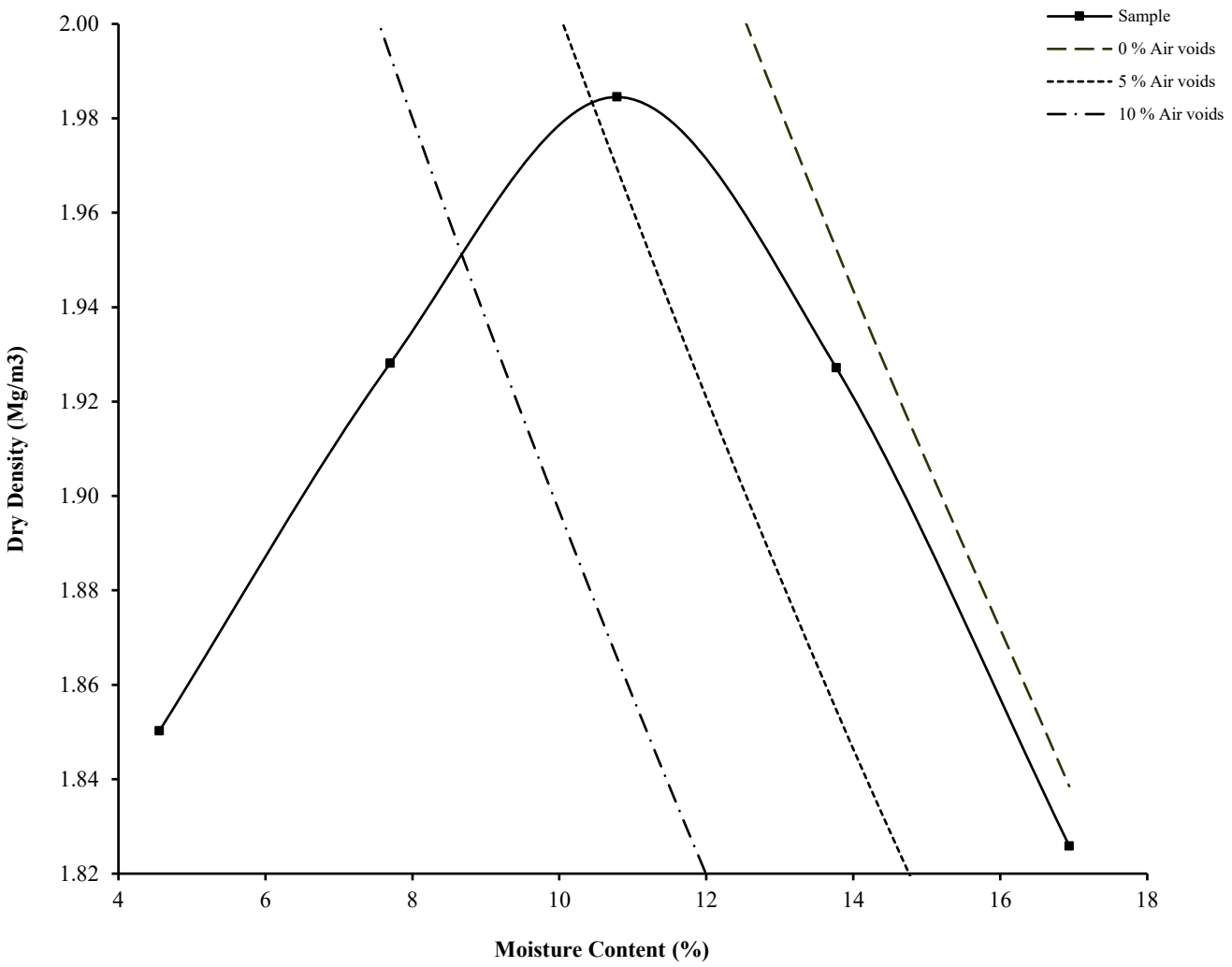
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP01 **Top Depth (m) :** 3.00

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

Sample Type: B



Initial Moisture Content:		14	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.67	Assumed	Material Retained on 37.5 mm Test Sieve (%):		4
Maximum Dry Density (Mg/m3):		1.98	Material Retained on 20.0 mm Test Sieve (%):		11
Optimum Moisture Content (%):		11			
Remarks See summary of soil descriptions.					

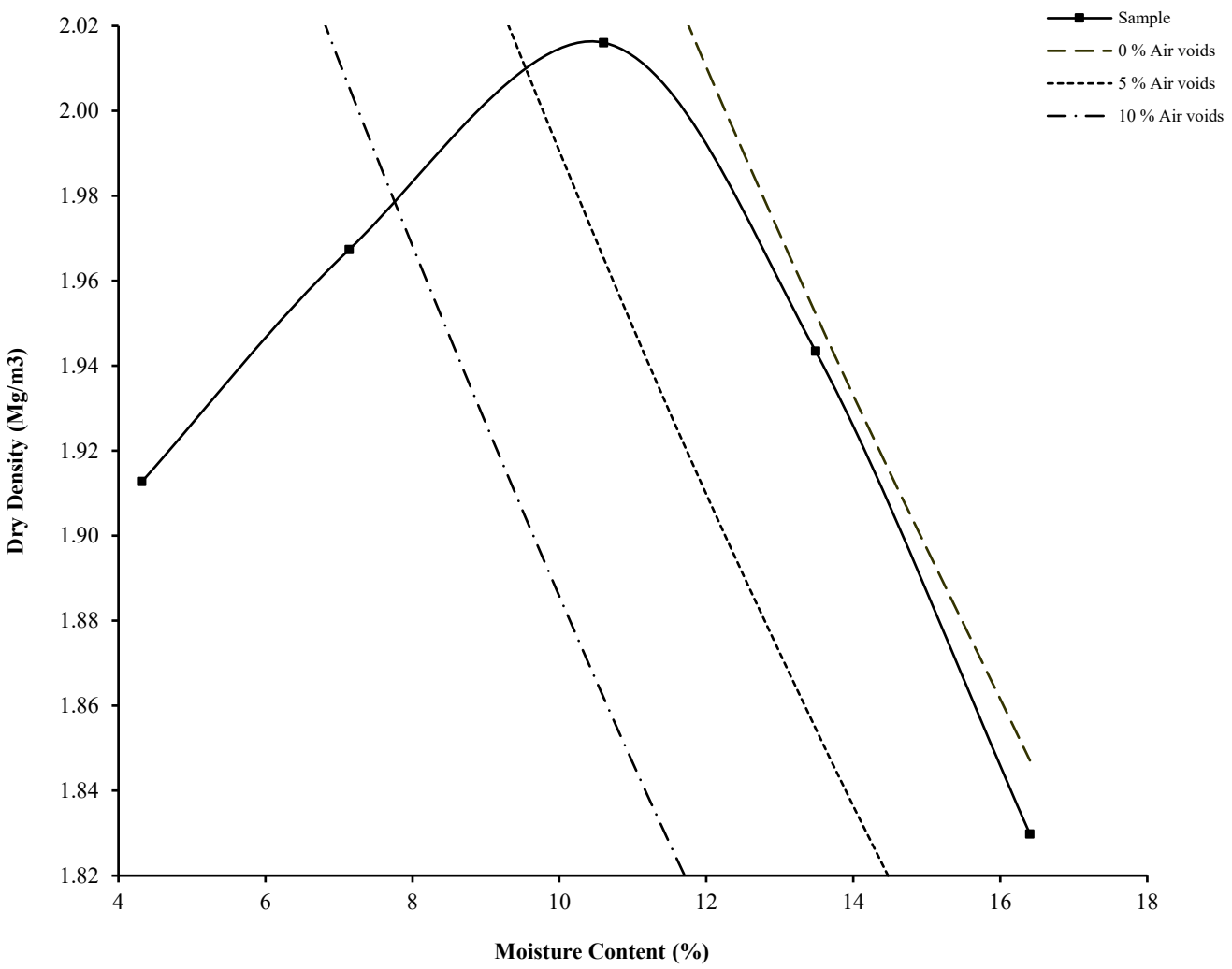
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP02 **Top Depth (m) :** 2.00

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

Sample Type: B



Initial Moisture Content:		18	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		2.02	Material Retained on 20.0 mm Test Sieve (%):		10
Optimum Moisture Content (%):		11			
Remarks See summary of soil descriptions.					

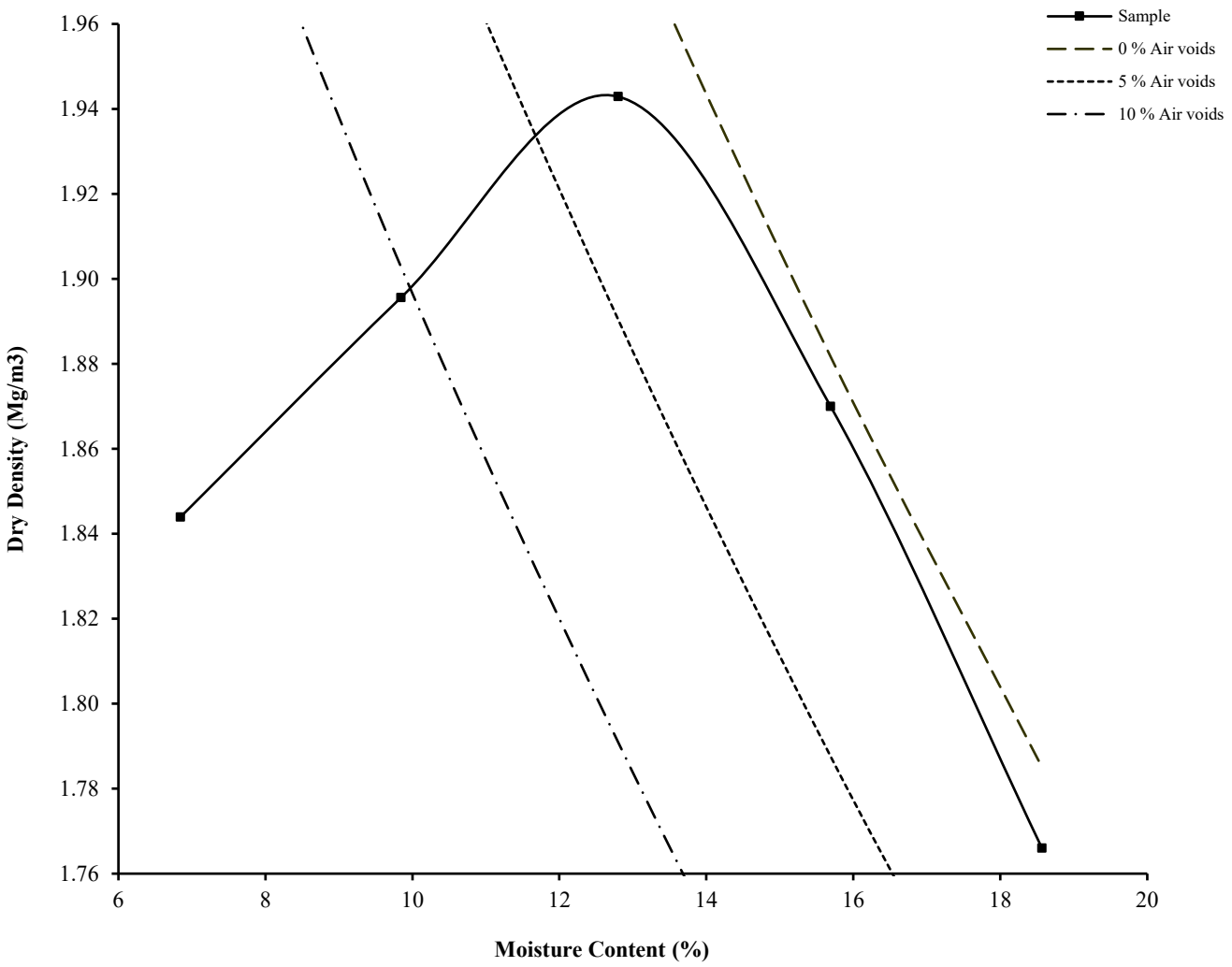
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP03 **Top Depth (m) :** 2.00

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

Sample Type: B



Initial Moisture Content:		19	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.67	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		1.94	Material Retained on 20.0 mm Test Sieve (%):		2
Optimum Moisture Content (%):		13			
Remarks See summary of soil descriptions.					

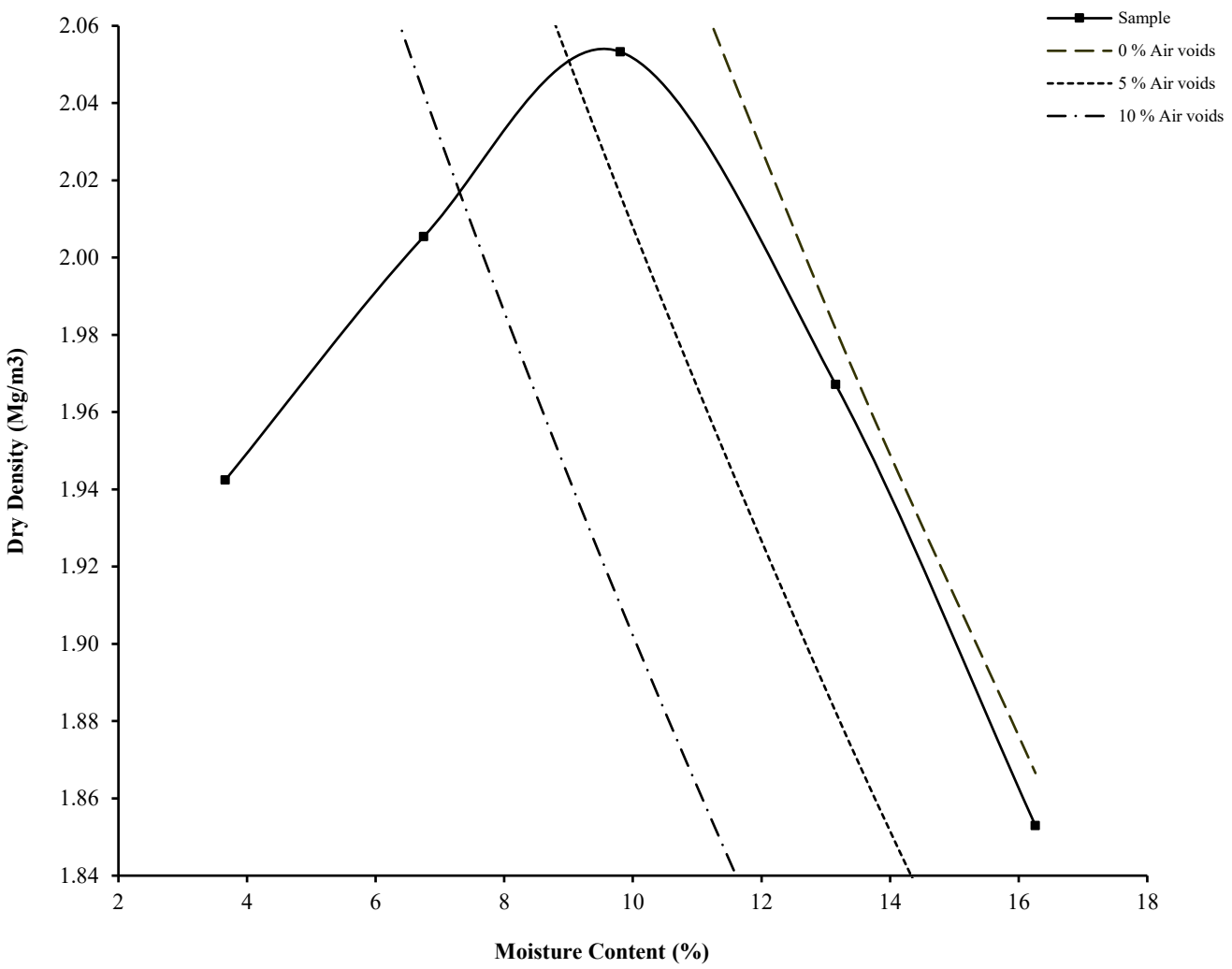
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP03 **Top Depth (m) :** 3.00

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

Sample Type: B



Initial Moisture Content:		16	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m3):	2.68	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		2.05	Material Retained on 20.0 mm Test Sieve (%):		3
Optimum Moisture Content (%):		10			
Remarks See summary of soil descriptions.					

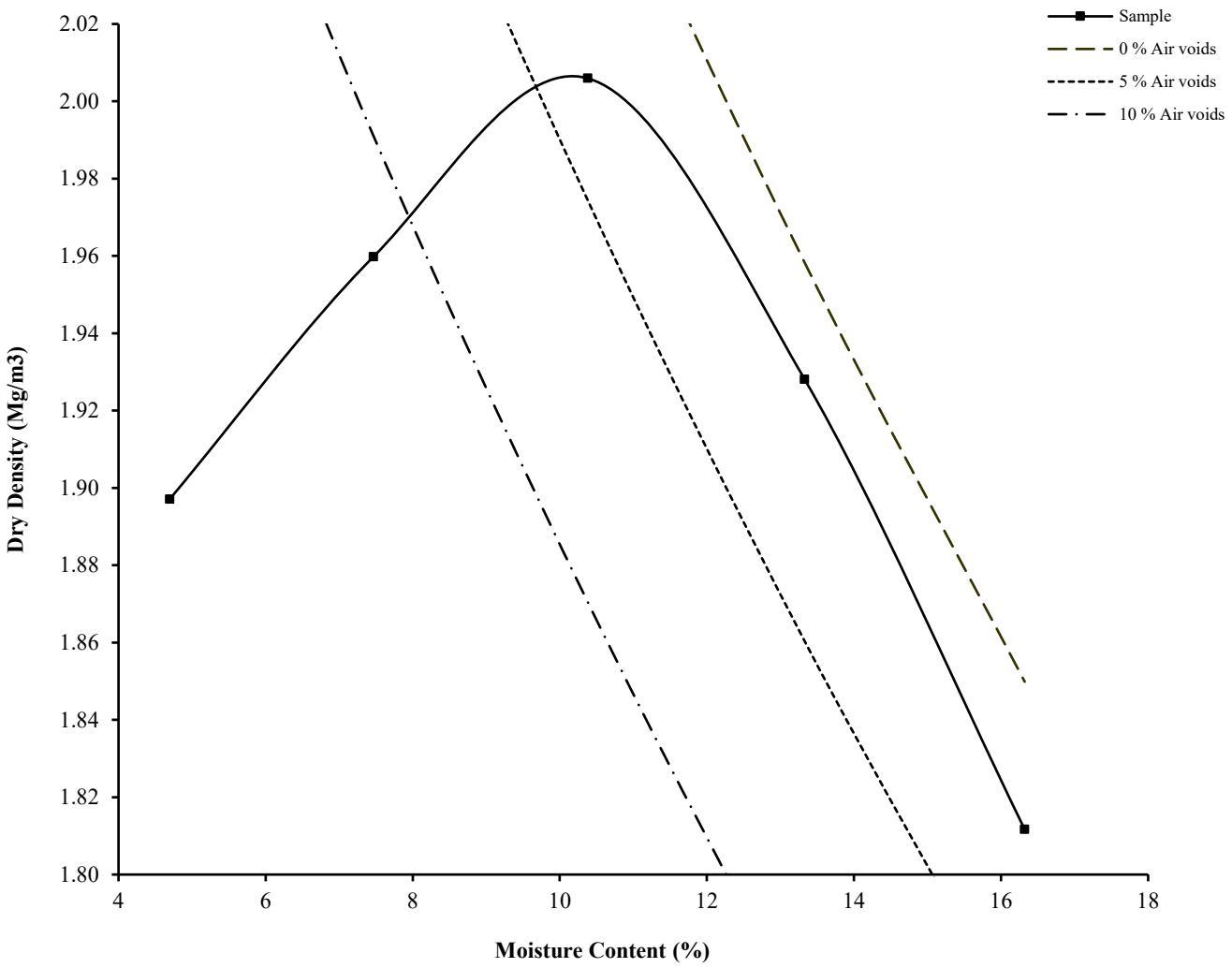
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP08 **Top Depth (m) :** 3.00

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

Sample Type: B



Initial Moisture Content:		16	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		2.01	Material Retained on 20.0 mm Test Sieve (%):		8
Optimum Moisture Content (%):		10			
Remarks See summary of soil descriptions.					

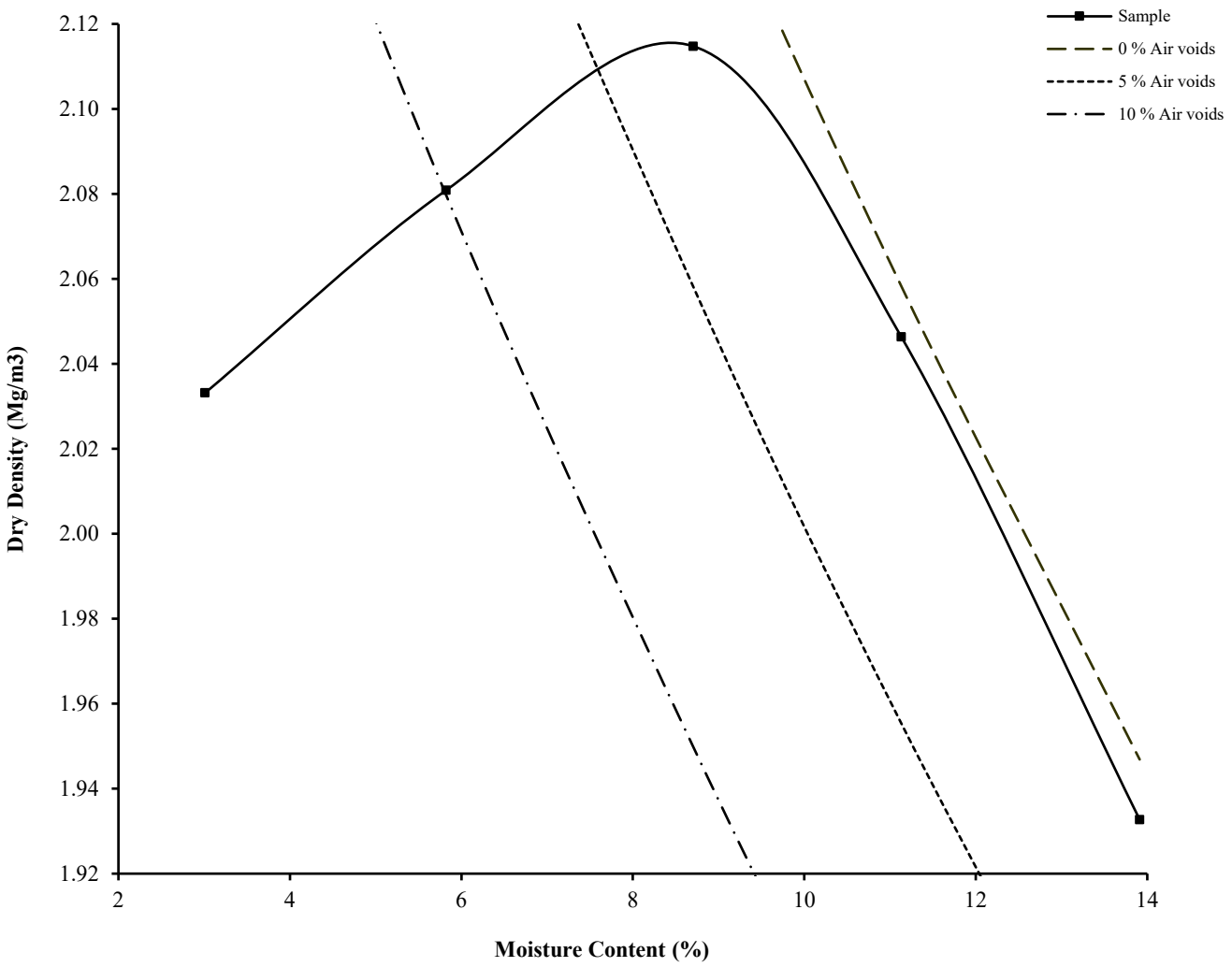
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP10 **Top Depth (m) :** 2.00

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

Sample Type: B



Initial Moisture Content:		13	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m3):	2.67	Assumed	Material Retained on 37.5 mm Test Sieve (%):		0
Maximum Dry Density (Mg/m3):		2.11	Material Retained on 20.0 mm Test Sieve (%):		10
Optimum Moisture Content (%):		9			
Remarks See summary of soil descriptions.					

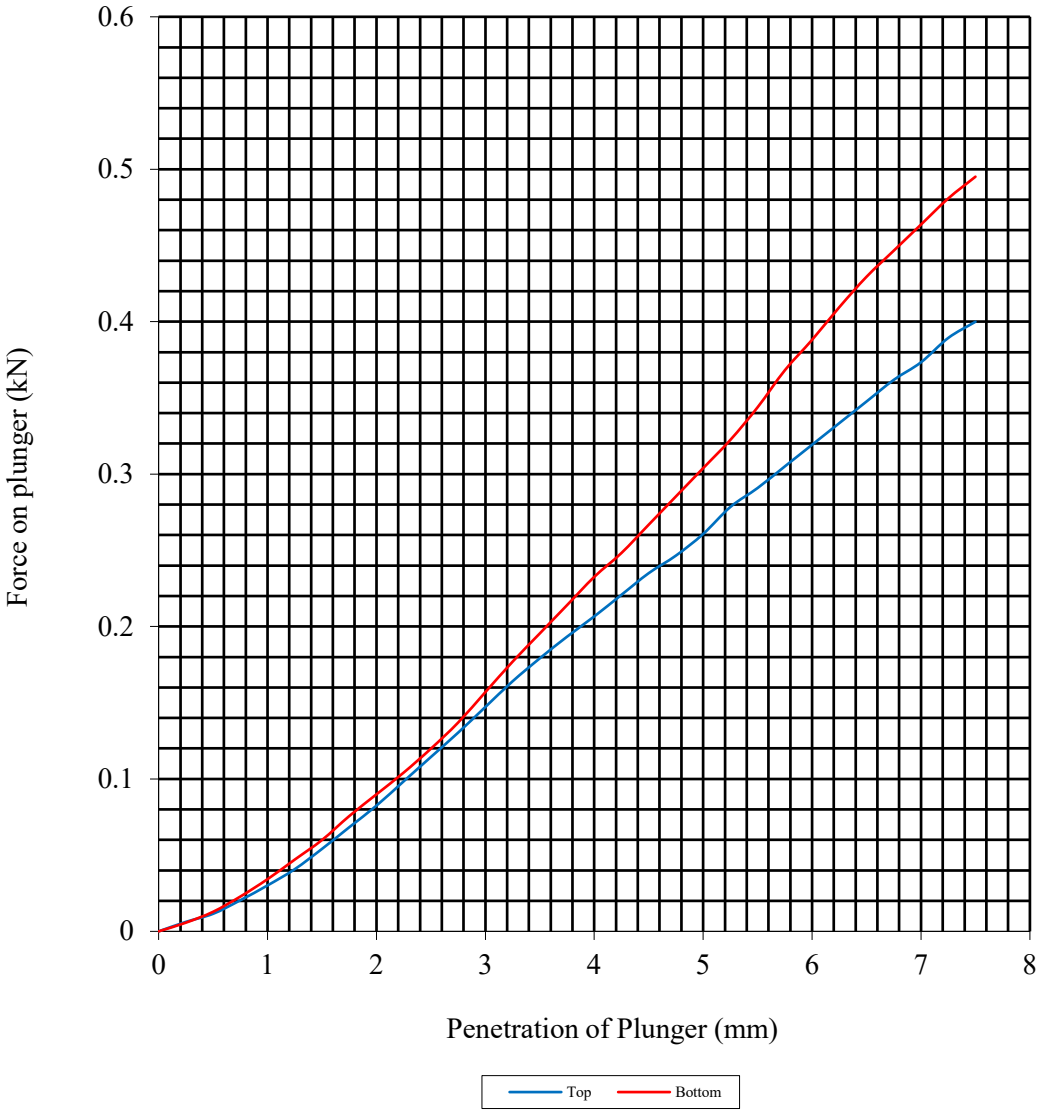
CALIFORNIA BEARING RATIO TEST

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: BH01 **Top Depth (m):** 4.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	11	Surcharge Kg:	4.20	Sample Top	11	Sample Top	1.3
Bulk Density Mg/m3:	2.27	Soaking Time hrs	0	Sample Bottom	11	Sample Bottom	1.5
Dry Density Mg/m3:	2.04	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			28				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL19/0004

Client Ref: 7926-07-18

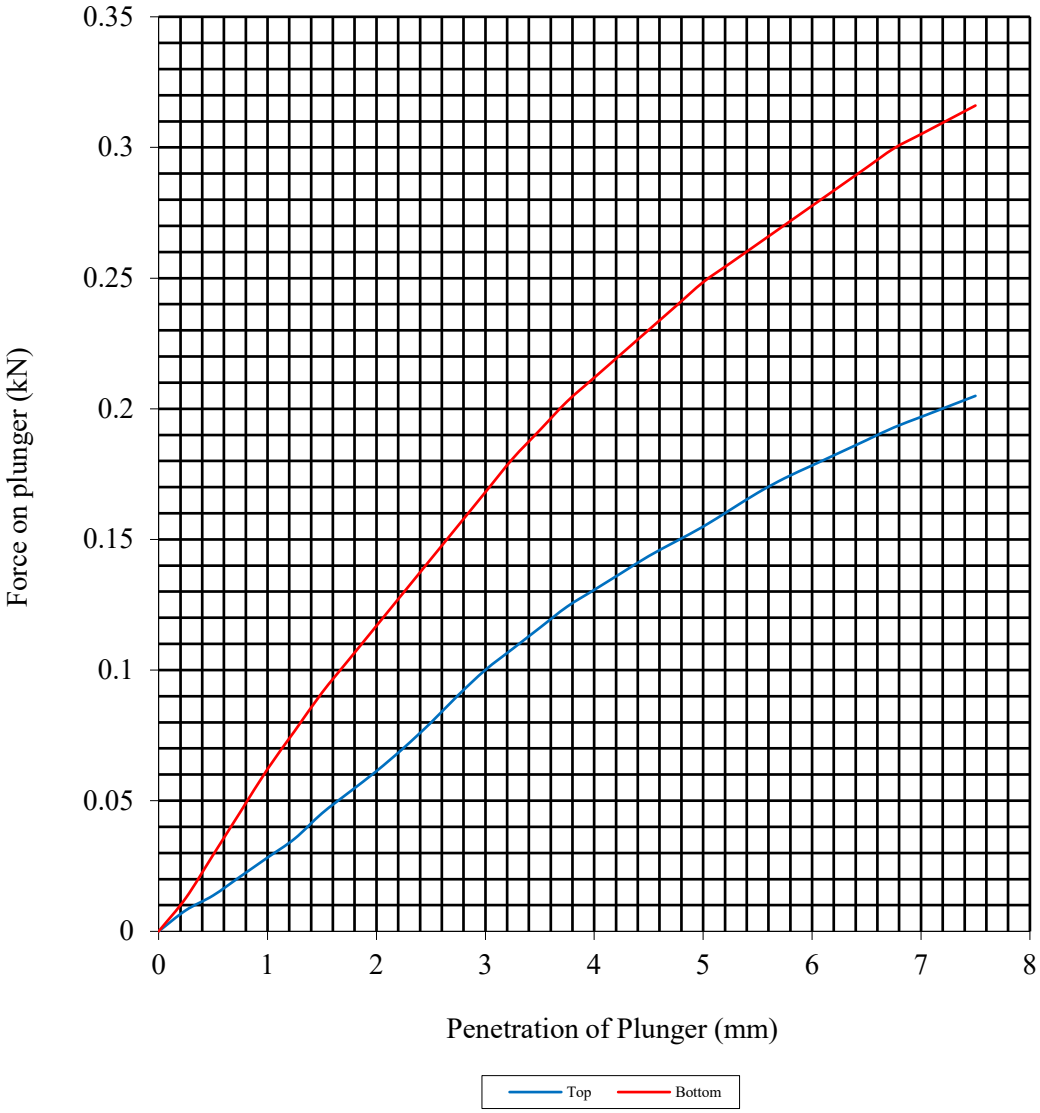
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: BH07 **Top Depth (m):** 5.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	20	Surcharge Kg:	4.20	Sample Top	20	Sample Top	0.8
Bulk Density Mg/m3:	2.08	Soaking Time hrs	0	Sample Bottom	20	Sample Bottom	1.2
Dry Density Mg/m3:	1.74	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			16				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL19/0004

Client Ref: 7926-07-18

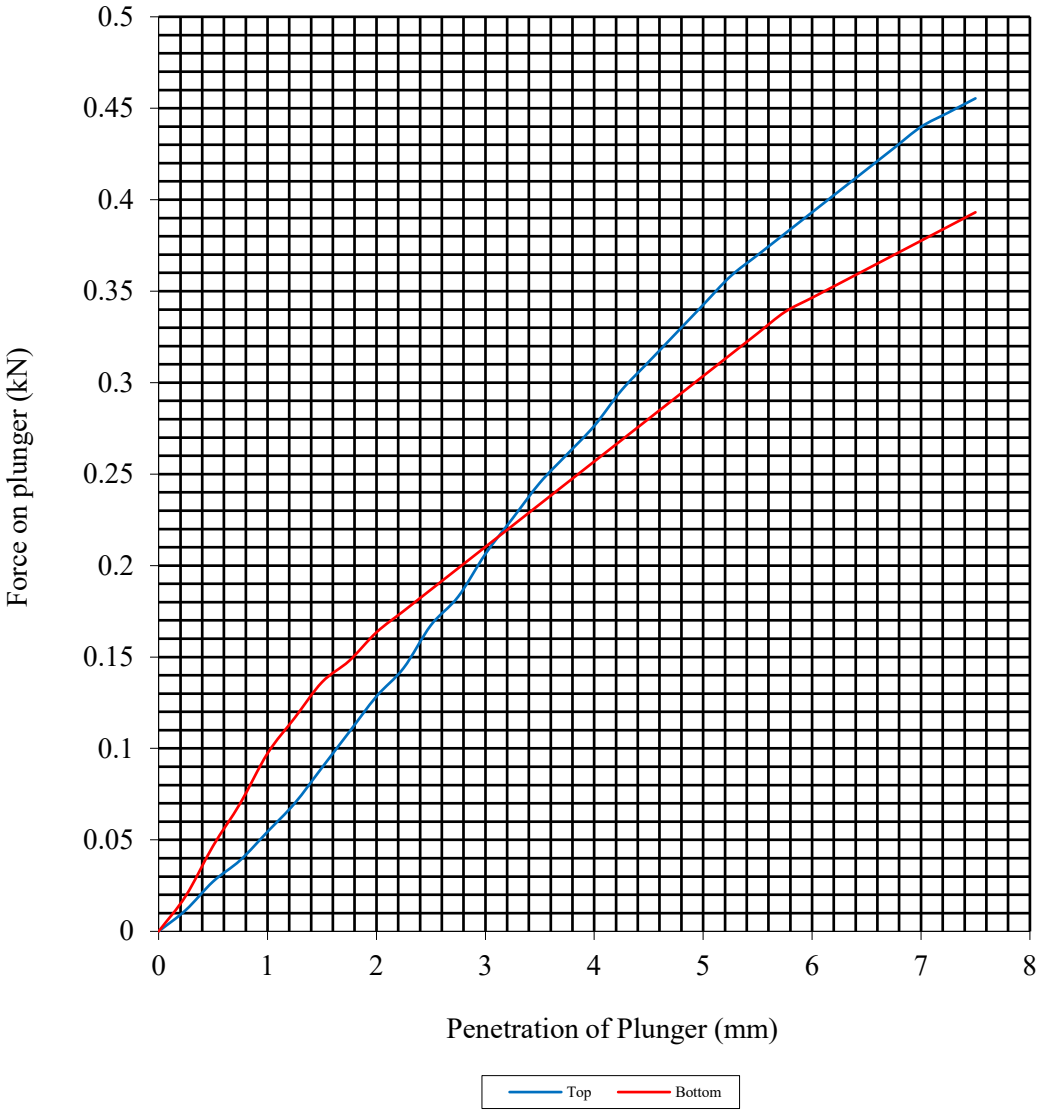
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: BH11 **Top Depth (m):** 4.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	16	Surcharge Kg:	4.20	Sample Top	16	Sample Top	1.7
Bulk Density Mg/m3:	2.17	Soaking Time hrs	0	Sample Bottom	16	Sample Bottom	1.5
Dry Density Mg/m3:	1.87	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			3				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL19/0004

Client Ref: 7926-07-18

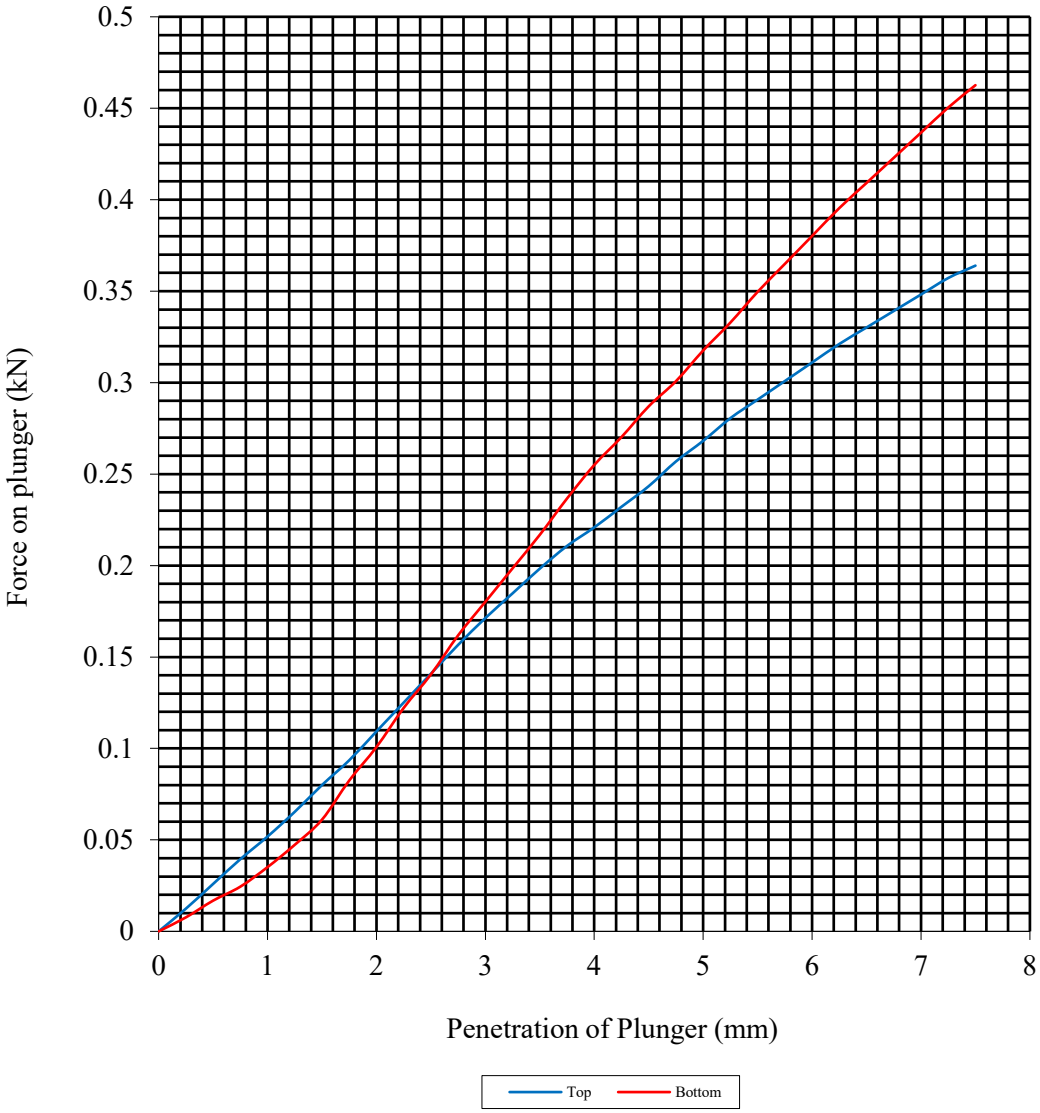
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: TP01 **Top Depth (m):** 2.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	15	Surcharge Kg:	4.20	Sample Top	15	Sample Top	1.3
Bulk Density Mg/m3:	2.19	Soaking Time hrs	0	Sample Bottom	15	Sample Bottom	1.6
Dry Density Mg/m3:	1.90	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			12				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL19/0004

Client Ref: 7926-07-18

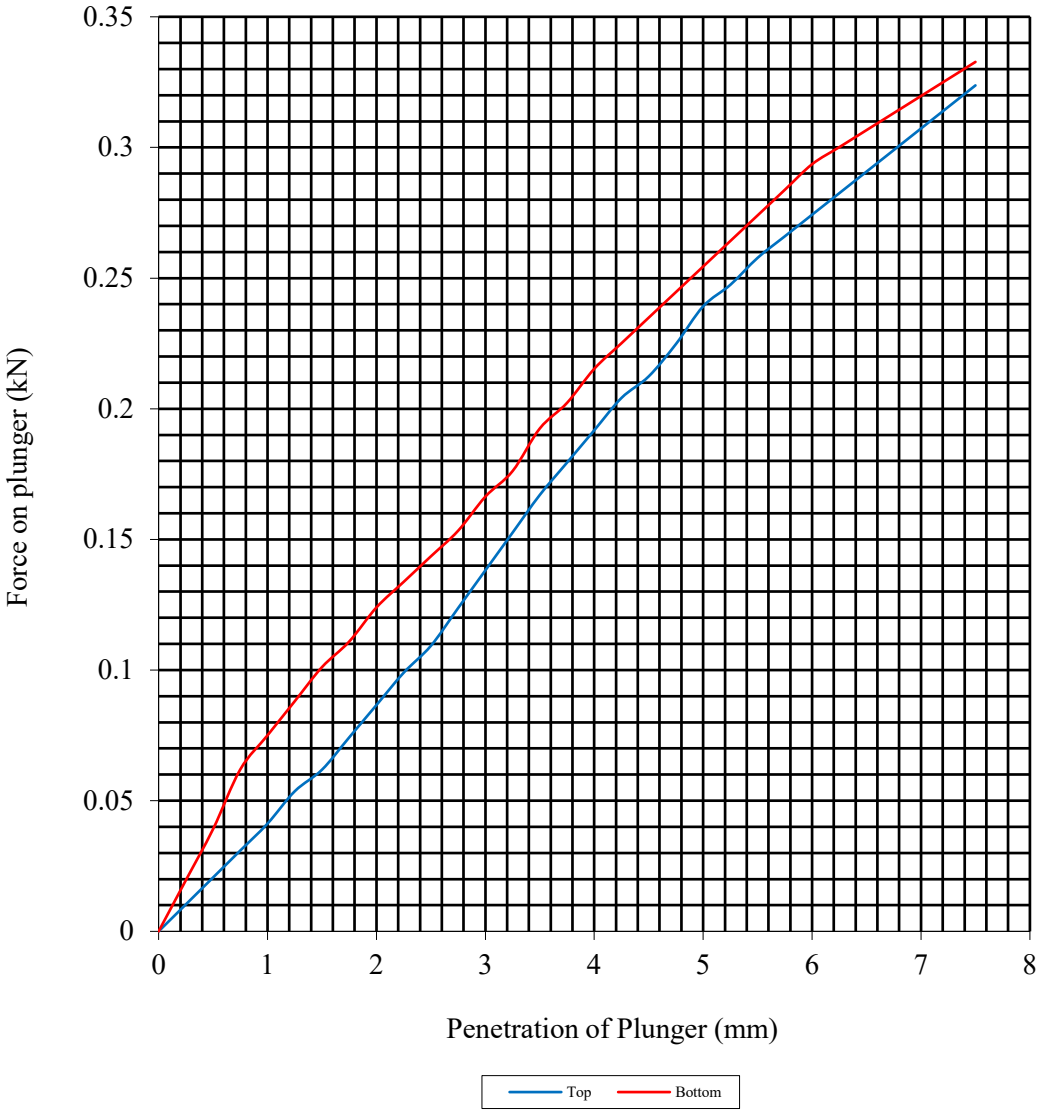
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: TP01 **Top Depth (m):** 3.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	14	Surcharge Kg:	4.20	Sample Top	14	Sample Top	1.2
Bulk Density Mg/m3:	2.25	Soaking Time hrs	0	Sample Bottom	14	Sample Bottom	1.3
Dry Density Mg/m3:	1.98	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			15				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL19/0004

Client Ref: 7926-07-18

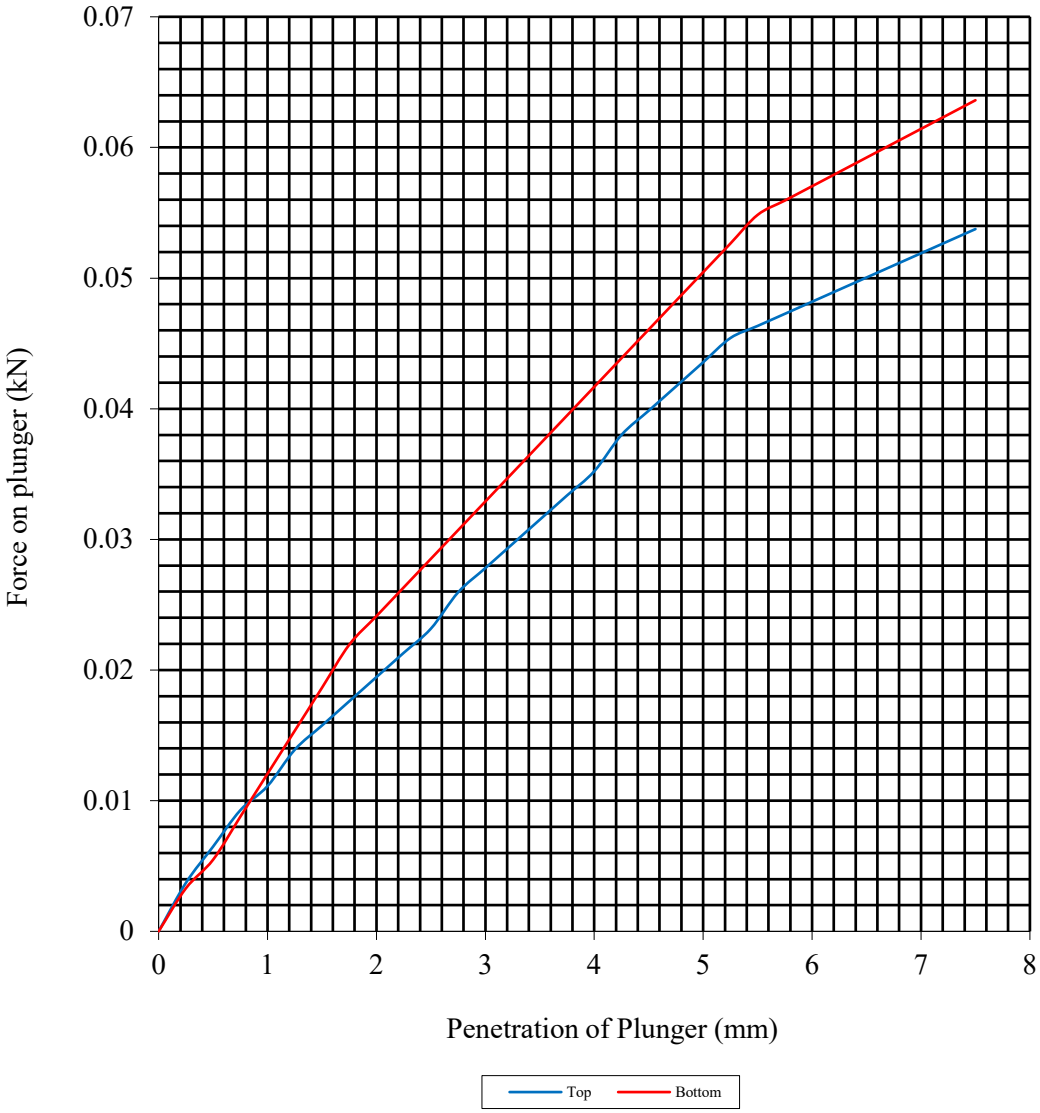
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: TP02 **Top Depth (m):** 2.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	18	Surcharge Kg:	4.20	Sample Top	18	Sample Top	0.2
Bulk Density Mg/m3:	2.10	Soaking Time hrs	0	Sample Bottom	18	Sample Bottom	0.3
Dry Density Mg/m3:	1.78	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			10				
Compaction Conditions		4.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL19/0004

Client Ref: 7926-07-18

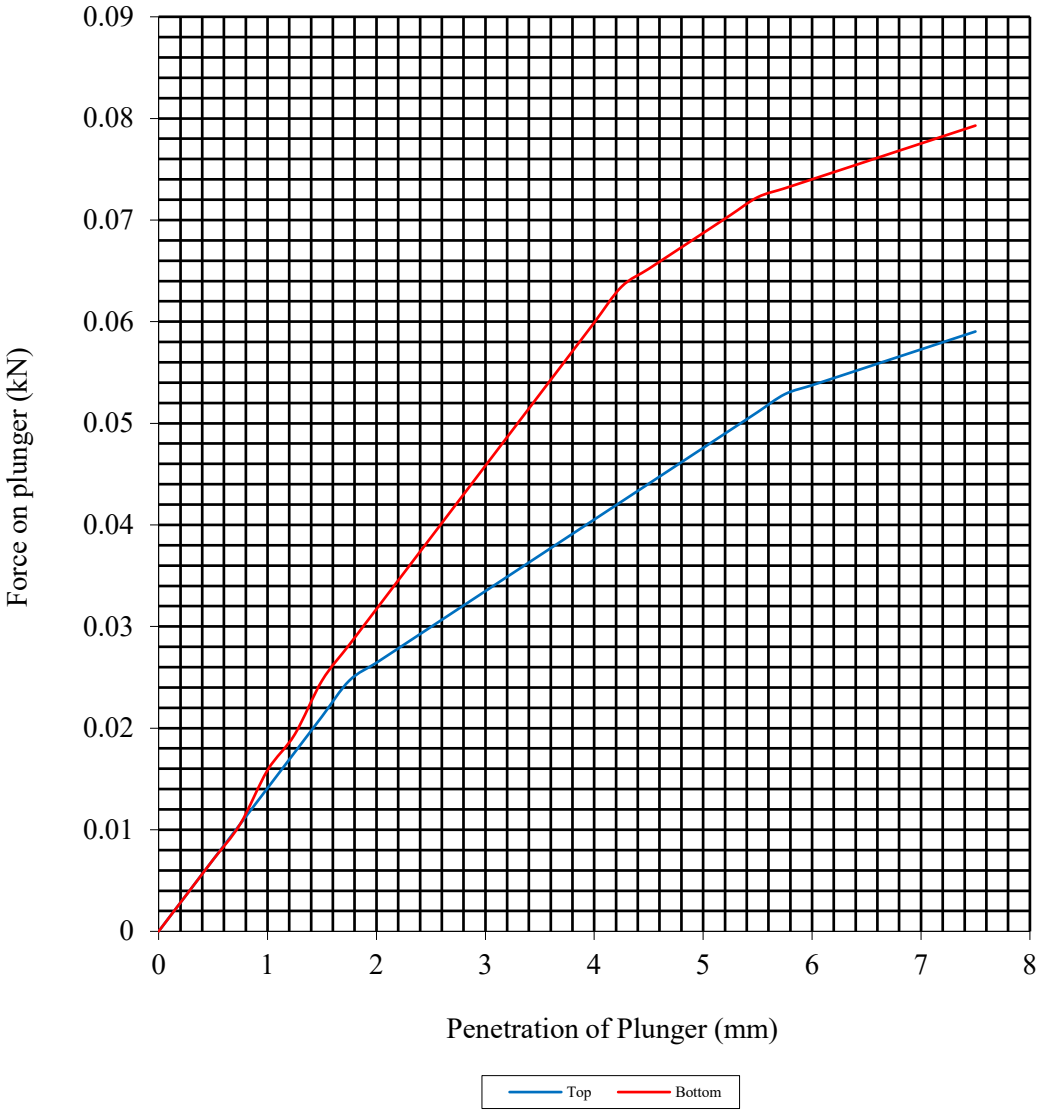
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: TP03 **Top Depth (m):** 2.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	19	Surcharge Kg:	4.20	Sample Top	19	Sample Top	0.2
Bulk Density Mg/m3:	2.10	Soaking Time hrs	0	Sample Bottom	19	Sample Bottom	0.3
Dry Density Mg/m3:	1.77	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			2				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL19/0004

Client Ref: 7926-07-18

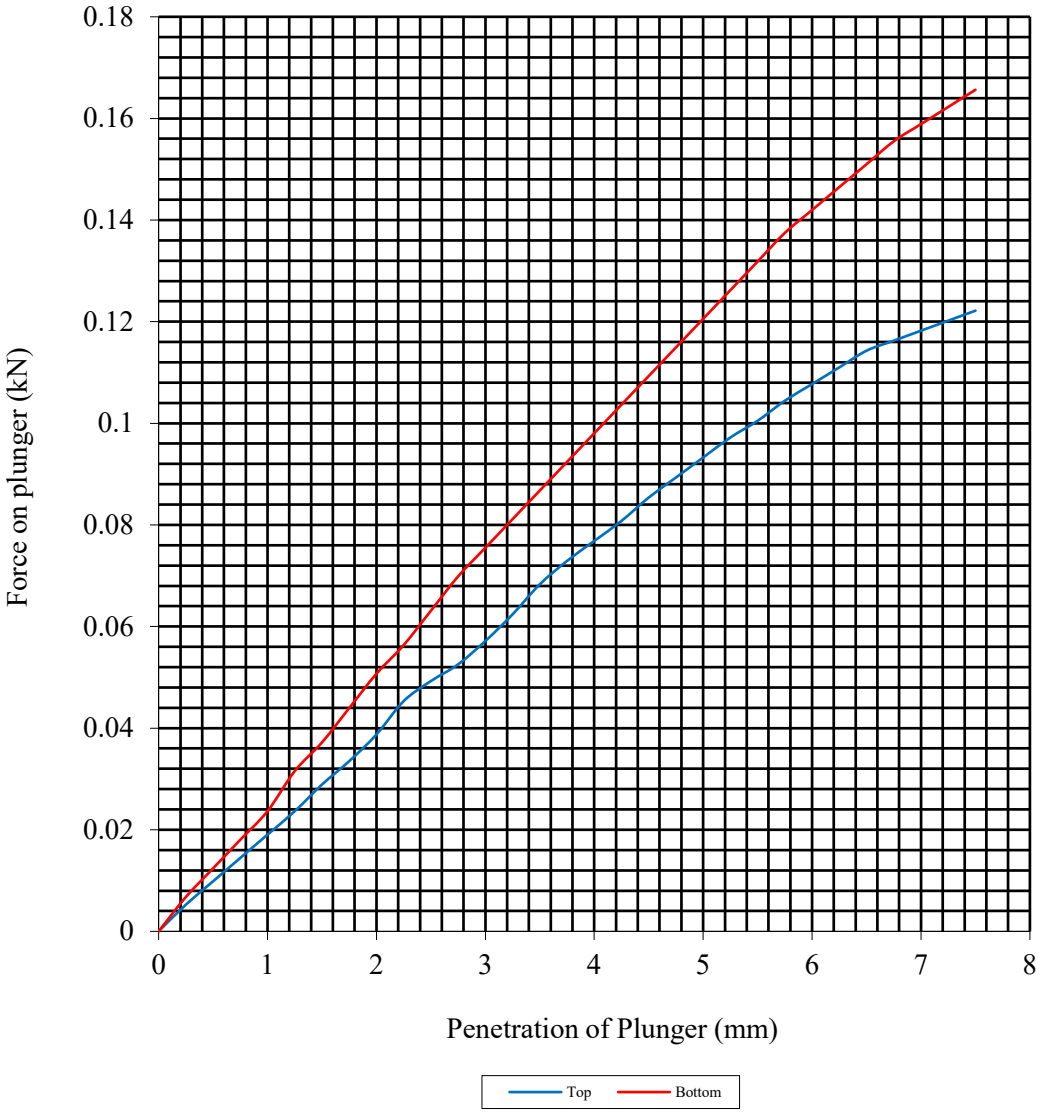
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: TP03 **Top Depth (m):** 3.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	16	Surcharge Kg:	4.20	Sample Top	16	Sample Top	0.5
Bulk Density Mg/m3:	2.14	Soaking Time hrs	0	Sample Bottom	16	Sample Bottom	0.6
Dry Density Mg/m3:	1.85	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			3				
Compaction Conditions		4.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL19/0004

Client Ref: 7926-07-18

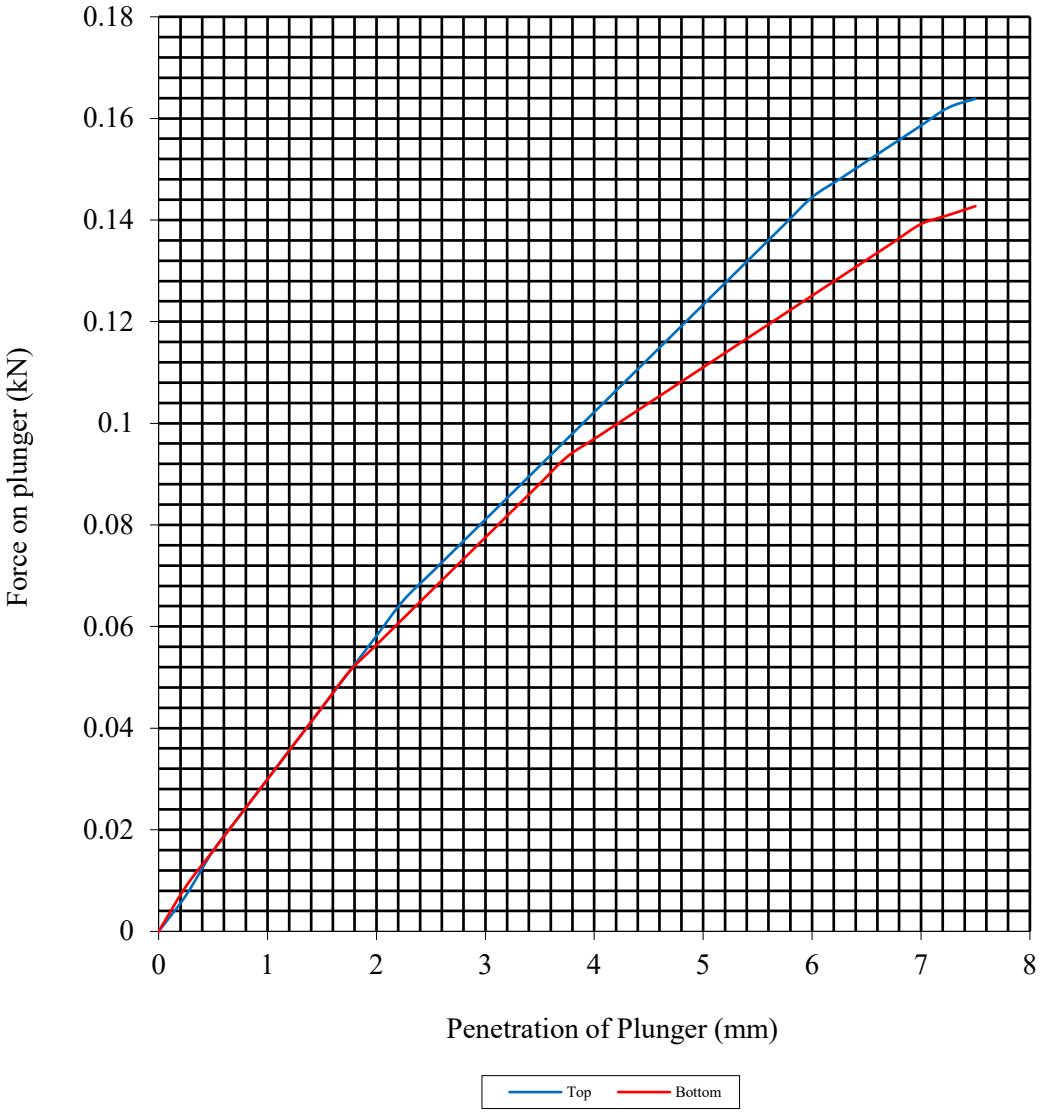
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: TP08 **Top Depth (m):** 2.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	26	Surcharge Kg:	4.20	Sample Top	26	Sample Top	0.6
Bulk Density Mg/m3:	2.01	Soaking Time hrs	0	Sample Bottom	26	Sample Bottom	0.6
Dry Density Mg/m3:	1.59	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			17				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL19/0004

Client Ref: 7926-07-18

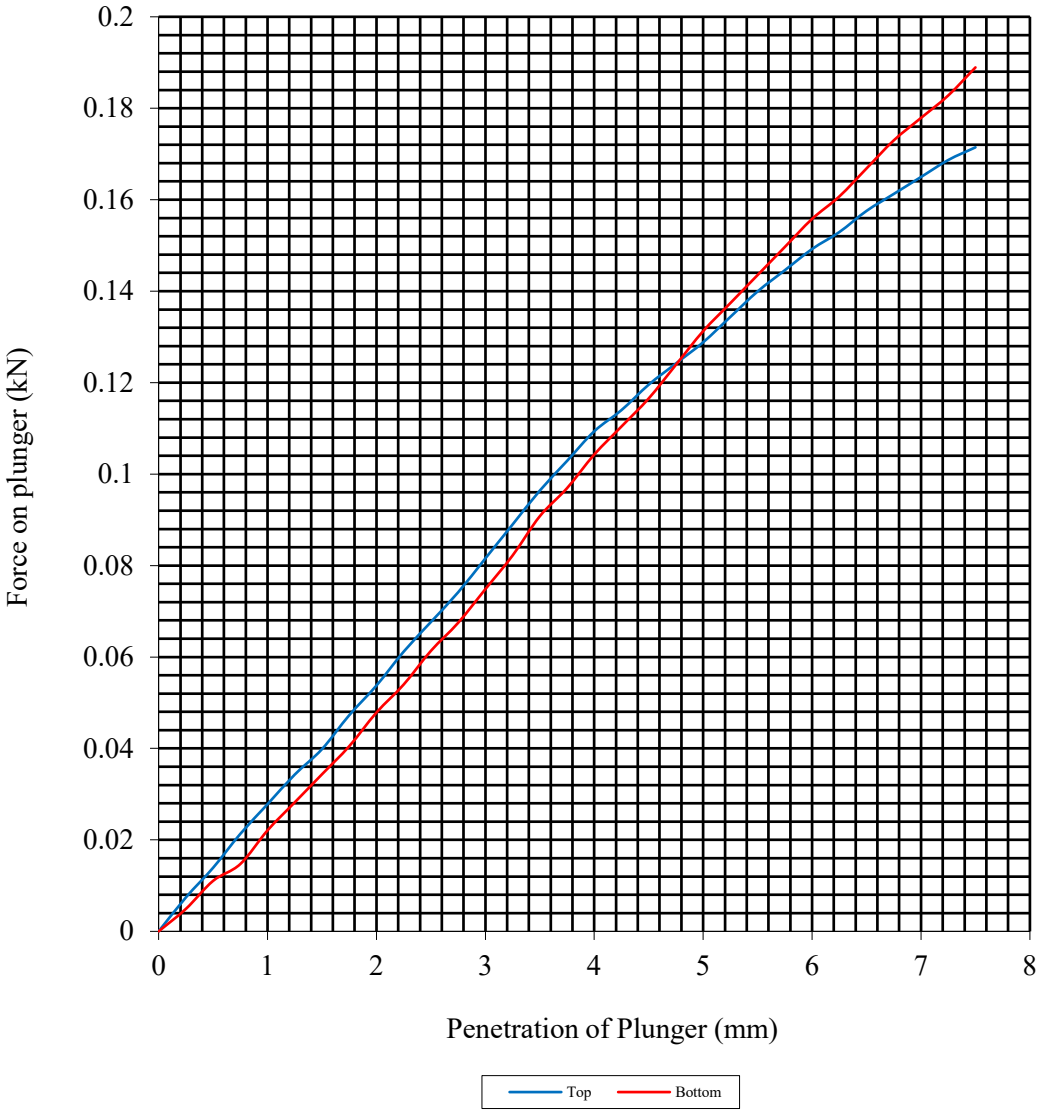
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: TP19 **Top Depth (m):** 2.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	17	Surcharge Kg:	4.20	Sample Top	17	Sample Top	0.6
Bulk Density Mg/m3:	2.12	Soaking Time hrs	0	Sample Bottom	17	Sample Bottom	0.7
Dry Density Mg/m3:	1.81	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			2				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL19/0004

Client Ref: 7926-07-18

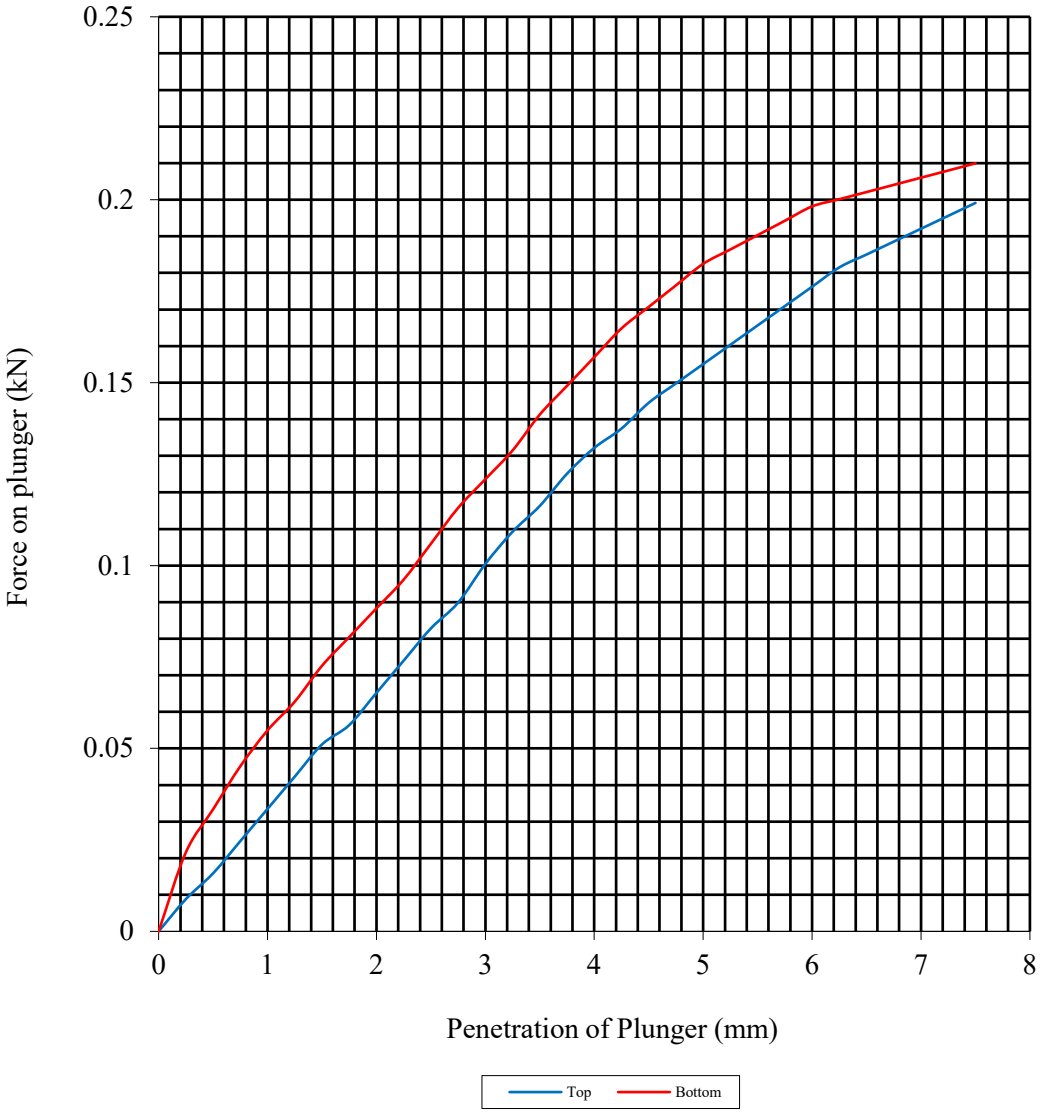
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: TP20 **Top Depth (m):** 3.00

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

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	16	Surcharge Kg:	4.20	Sample Top	16	Sample Top	0.8
Bulk Density Mg/m3:	2.15	Soaking Time hrs	0	Sample Bottom	16	Sample Bottom	0.9
Dry Density Mg/m3:	1.86	Swelling mm:	0	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			2				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL19/0004

Client Ref: 7926-07-18

MOISTURE CONDITION VALUE CALIBRATION

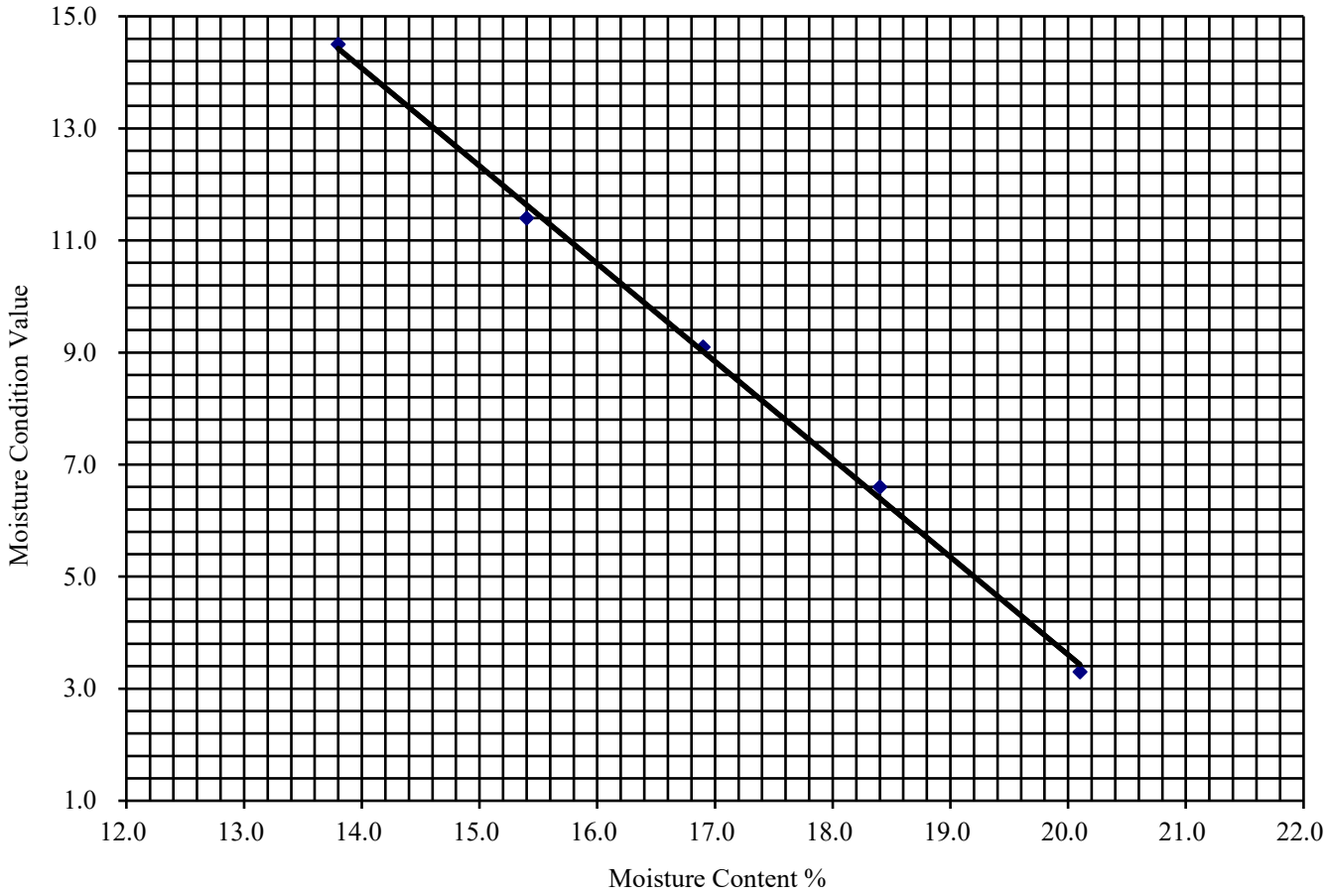
BS1377 : Part 4 : 1990 Clause 5.5

Hole Number: **BH01** **Top Depth (m):** **3.00**

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

Sample Type: **B**

Initial Moisture Content (%):	20
Single/Separate Samples Tested	Separate
Material Retained on the 20mm BS Test Sieve (%):	2



Test Results.

Test Number	1	2	3	4	5
Moisture Content (%)	13.8	15.4	16.9	18.4	20.1
MCV	14.5	11.4	9.1	6.6	3.3

MOISTURE CONDITION VALUE CALIBRATION

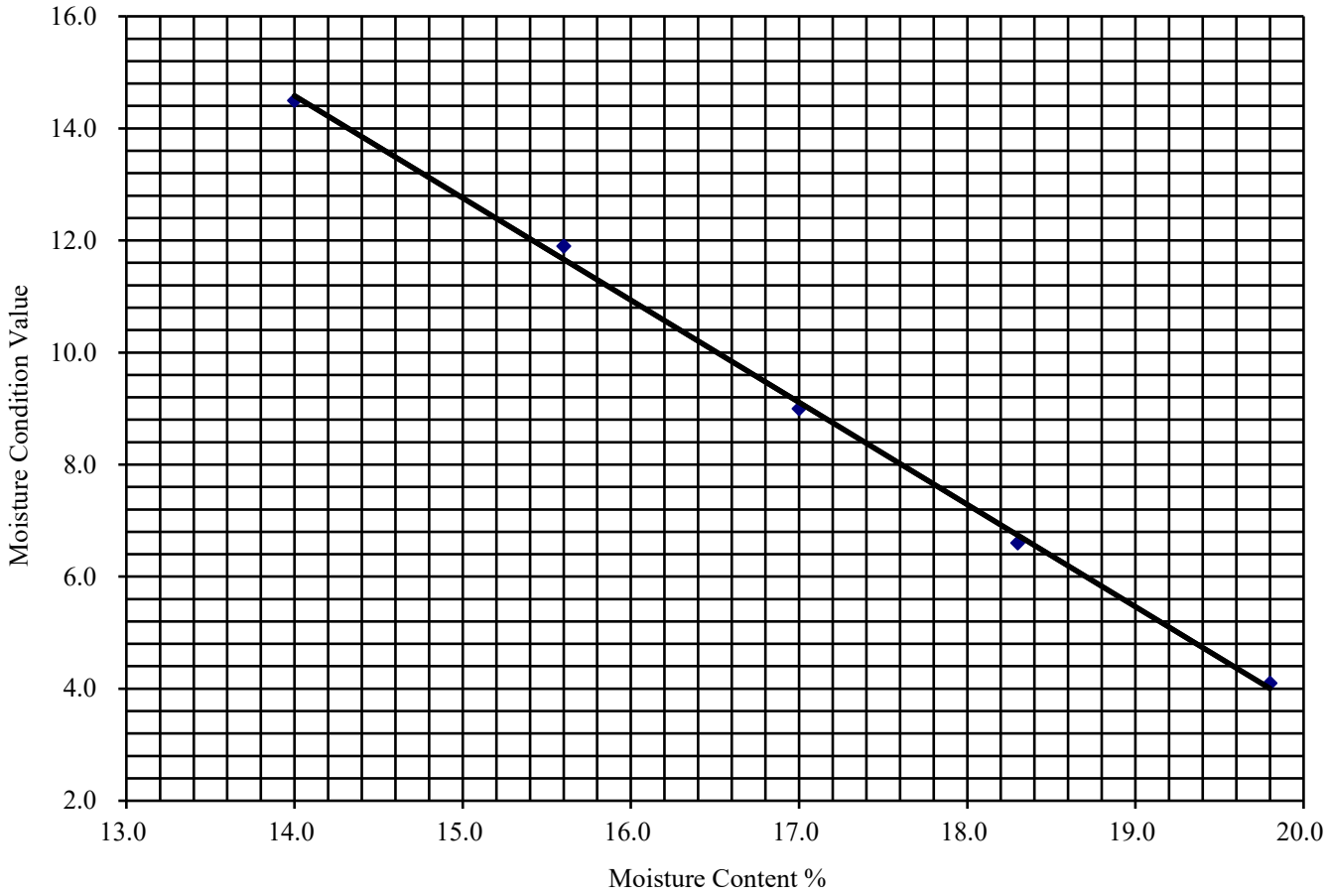
BS1377 : Part 4 : 1990 Clause 5.5

Hole Number: **BH07** **Top Depth (m):** **2.00**

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

Sample Type: **B**

Initial Moisture Content (%):	20
Single/Separate Samples Tested	Separate
Material Retained on the 20mm BS Test Sieve (%):	2.6



Test Results.

Test Number	1	2	3	4	5
Moisture Content (%)	14.0	15.6	17.0	18.3	19.8
MCV	14.5	11.9	9.0	6.6	4.1

MOISTURE CONDITION VALUE

BS1377 : Part 4 : 1990 Clause 5.4

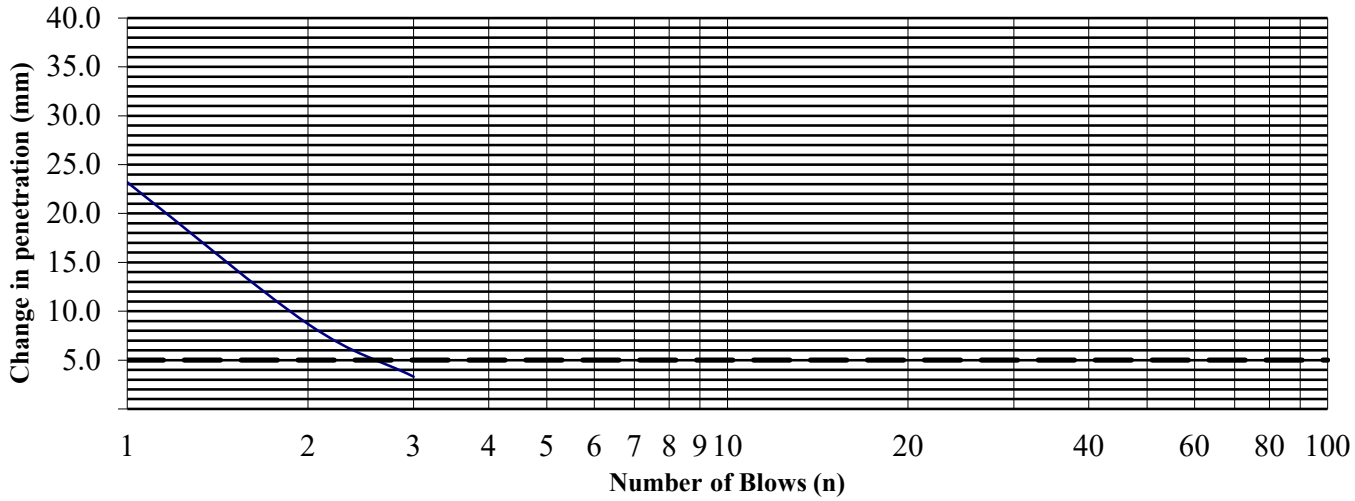
Hole Number: **BH07** **Top Depth (m):** **3.00**

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

Sample Type: **B**

Material Retained on the 20mm BS Test Sieve (%):	12
Interpretation based on steepest straight line intercept with 5mm change in penetration.	

MCV Determination



Blows (N)	Penetration (mm)	n to 4 n (mm)
1	60.2	23.2
2	44.8	8.7
3	39.2	3.3
4	37.0	
6	36.3	
8	36.1	
12	35.9	
16		
24		
32		
48		
64		
96		
128		
192		
256		

Test Results.

Moisture Content (%)	19
MCV	4.2

UKAS TESTING 4043

PSL Professional Soils Laboratory

244 Airfield Surveys Phase 2

Contract No: PSL19/0004

Client Ref:

MOISTURE CONDITION VALUE CALIBRATION

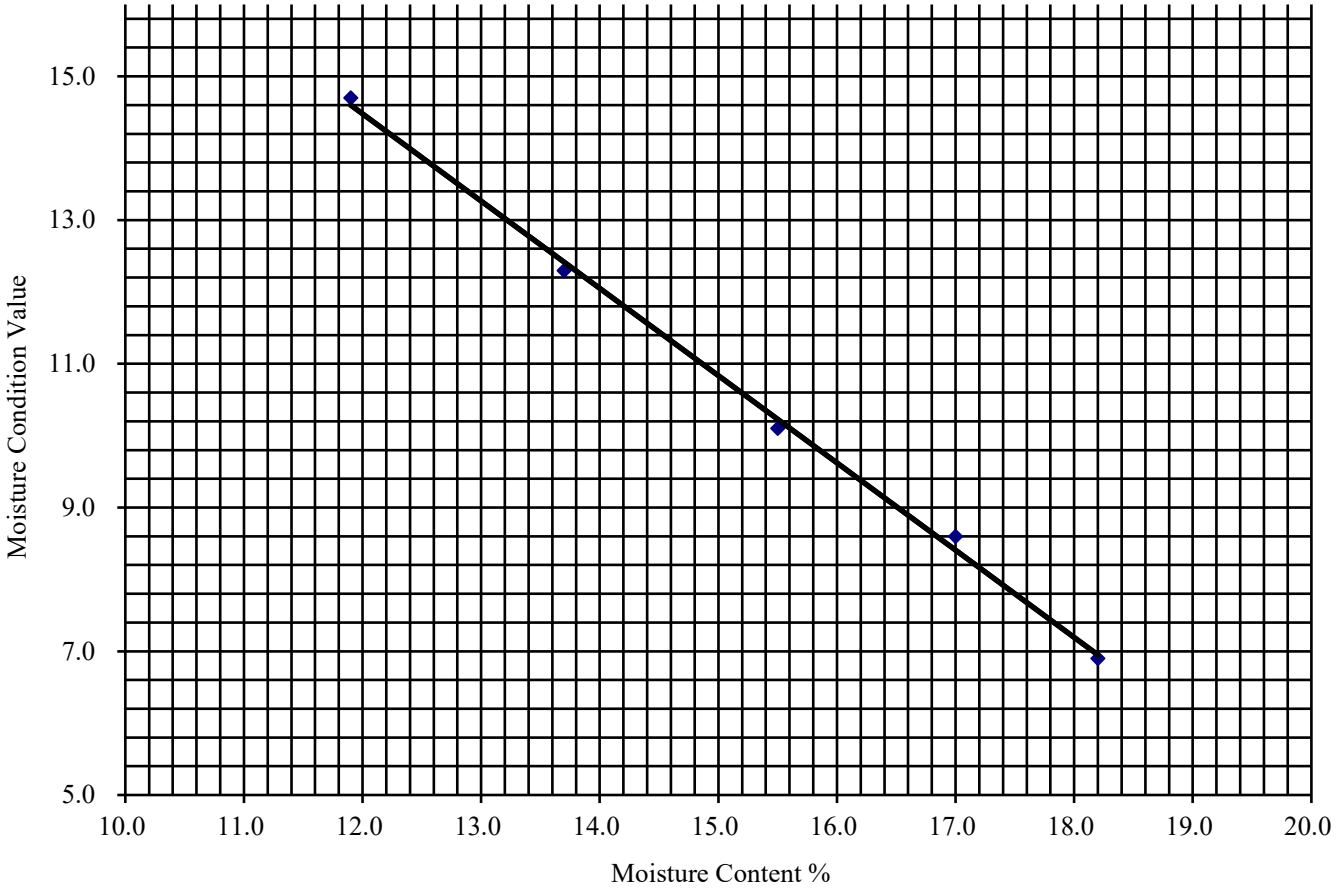
BS1377 : Part 4 : 1990 Clause 5.5

Hole Number: **BH11** **Top Depth (m):** **5.00**

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

Sample Type: **B**

Initial Moisture Content (%):	18
Single/Separate Samples Tested	Separate
Material Retained on the 20mm BS Test Sieve (%):	12



Test Results.

Test Number	1	2	3	4	5
Moisture Content (%)	11.9	13.7	15.5	17.0	18.2
MCV	14.7	12.3	10.1	8.6	6.9

MOISTURE CONDITION VALUE CALIBRATION

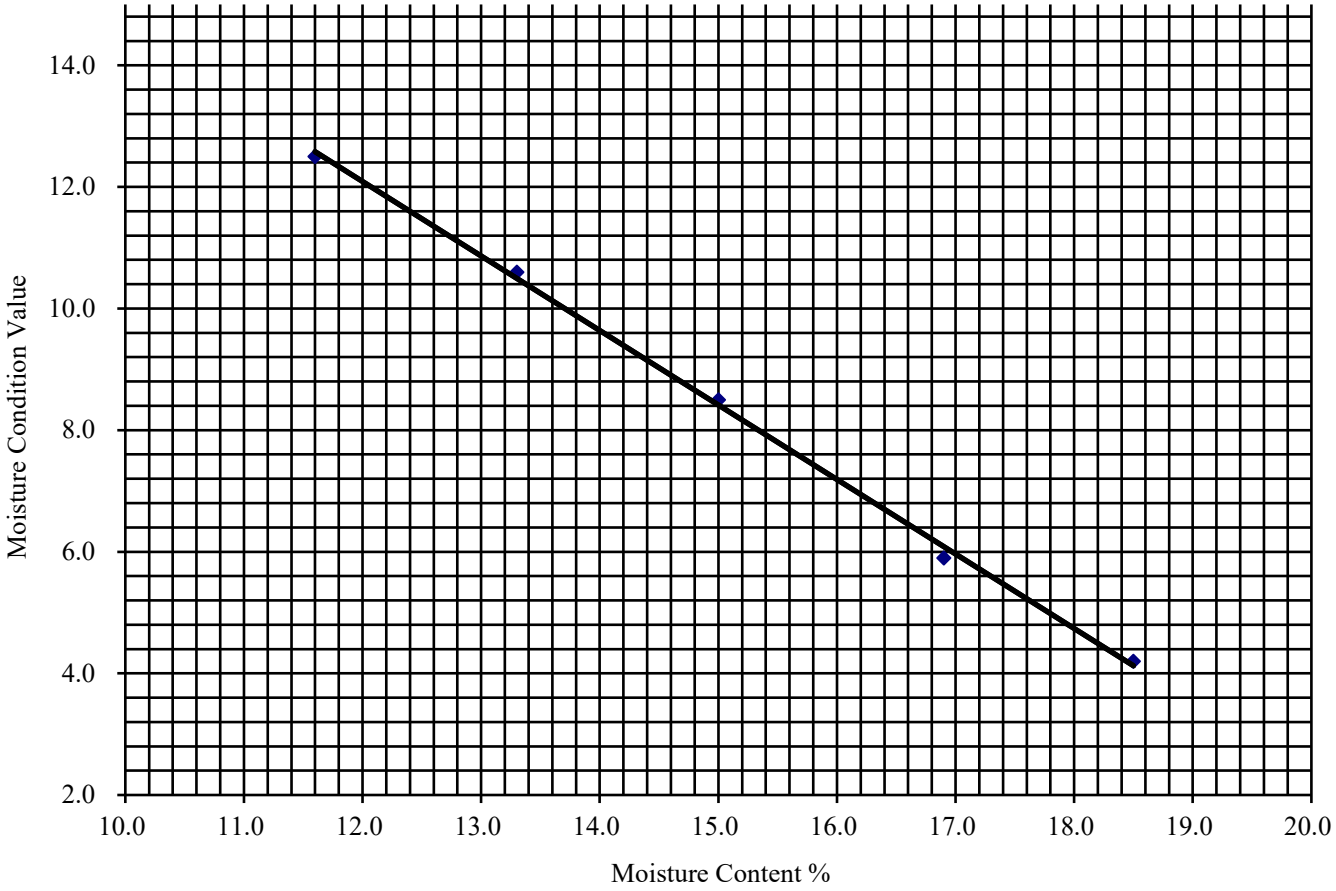
BS1377 : Part 4 : 1990 Clause 5.5

Hole Number: TP18 **Top Depth (m):** 2.00

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

Sample Type: B

Initial Moisture Content (%):	17
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 (%)	11.6	13.3	15.0	16.9	18.5
MCV	12.5	10.6	8.5	5.9	4.2

Certificate of Analysis

Certificate Number	18-29987
	07-Jan-19
Client	Professional Soils Laboratory Ltd 5/7 Hexthorpe Road Hexthorpe DN4 0AR
Our Reference	18-29987
Client Reference	PSL19/0004
Order No	(not supplied)
Contract Title	244 Airfeild Surveys Phase 2
Description	8 Soil samples.
Date Received	22-Dec-18
Date Started	22-Dec-18
Date Completed	07-Jan-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

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 18-29987
Client Ref PSL19/0004
Contract Title 244 Airfeild Surveys Phase 2

				Lab No	1440240	1440241	1440242	1440243	1440244	1440245	1440246	1440247
				Sample ID	TP01	TP01	TP03	TP08	TP10	TP19	BH01	BH07
				Depth	2.00	3.00	3.00	3.00	2.00	2.00	2.00	3.00
				Other ID								
				Sample Type	B	B	B	B	B	B	B	B
				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**									
Inorganics												
Loss on Ignition at 440oC	DETSC 2003#	0.01	%						15	1.9		
Organic matter	DETSC 2002#	0.1	%	0.3		0.4						
Sulphur as S, Total	DETSC 2320	0.01	%									0.02
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.04		0.01			0.01	0.02	

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 18-29987
Client Ref PSL19/0004
Contract 244 Airfeild Surveys Phase 2

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1440240	TP01 2.00 SOIL		PT 1L	Sample date not supplied, Organic Matter (Manual) (28 days)	
1440241	TP01 3.00 SOIL		PT 1L	Sample date not supplied, Total Sulphate ICP (730 days)	
1440242	TP03 3.00 SOIL		PT 1L	Sample date not supplied, Organic Matter (Manual) (28 days)	
1440243	TP08 3.00 SOIL		PT 1L	Sample date not supplied, Total Sulphate ICP (730 days)	
1440244	TP10 2.00 SOIL		PT 1L	Sample date not supplied, Loss on Ignition (730 days)	
1440245	TP19 2.00 SOIL		PT 1L	Sample date not supplied, Loss on Ignition (730 days)	
1440246	BH01 2.00 SOIL		PT 1L	Sample date not supplied, Total Sulphate ICP (730 days)	
1440247	BH07 3.00 SOIL		PT 1L	Sample date not supplied, Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 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.

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

Exova Jones Environmental

Registered Office: Exova Environmental UK Limited, 10 Lower Grosvenor Place, London, SW1W 0EN. Reg No. 11371415

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

Ground Investigations Ireland
Catherinestown House
Hazelhatch Road
Newcastle
Co. Dublin
Ireland

Attention :	Stephen Kealy
Date :	2nd October, 2018
Your reference :	244 Airfield surveys
Our reference :	Test Report 18/15076 Batch 1
Location :	
Date samples received :	20th September, 2018
Status :	Final report
Issue :	1

Two samples were received for analysis on 20th September, 2018 of which two were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: Ground Investigations Ireland
Reference: 244 Airfield surveys
Location:
Contact: Stephen Kealy
JE Job No.: 18/15076

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1	2											
Sample ID	TP12	TP15											
Depth	1.00	1.80											
COC No / misc													
Containers	T	T											
Sample Date	19/09/2018	19/09/2018											
Sample Type	Soil	Soil											
Batch Number	1	1											
Date of Receipt	20/09/2018	20/09/2018											
Sulphate as SO4 (2:1 Ext) #	0.0151	0.0191										<0.0015	g/l	TM38/PM20
pH #	8.83	8.72										<0.01	pH units	TM73/PM11

Please see attached notes for all abbreviations and acronyms

Client Name: Ground Investigations Ireland
Reference: 244 Airfield surveys
Location:
Contact: Stephen Kealy

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 18/15076						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 18/15076

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to an Exova Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 18/15076

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No

Exova Jones Environmental

Registered Office: Exova Environmental UK Limited, 10 Lower Grosvenor Place, London, SW1W 0EN. Reg No. 11371415

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Ground Investigations Ireland
Catherinestown House
Hazelhatch Road
Newcastle
Co. Dublin
Ireland

Attention :	Stephen Kealy
Date :	11th October, 2018
Your reference :	244 DAA Airfield Surveys Phase 2
Our reference :	Test Report 18/15607 Batch 1
Location :	244 DAA Airfield Surveys Phase 2
Date samples received :	28th September, 2018
Status :	Final report
Issue :	1

One sample were received for analysis on 28th September, 2018 of which one were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Where Waste Acceptance Criteria Suite (EC Decision of 19 December 2002 (2003/33/EC)) has been requested, all analyses have been performed using the relevant EN methods where they exist.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: Ground Investigations Ireland
Reference: 244 DAA Airfield Surveys Phase 2
Location: 244 DAA Airfield Surveys Phase 2
Contact: Stephen Kealy
JE Job No.: 18/15607

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-3										LOD/LOR	Units	Method No.
Sample ID	TP16												
Depth	0.50												
COC No / misc													
Containers	V J T												
Sample Date	14/08/2018												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	28/09/2018												
PAH MS													
Naphthalene #	<0.04										<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03										<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05										<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04										<0.04	mg/kg	TM4/PM8
Phenanthrene #	<0.03										<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04										<0.04	mg/kg	TM4/PM8
Fluoranthene #	<0.03										<0.03	mg/kg	TM4/PM8
Pyrene #	<0.03										<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06										<0.06	mg/kg	TM4/PM8
Chrysene #	<0.02										<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	<0.07										<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04										<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	<0.04										<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04										<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04										<0.04	mg/kg	TM4/PM8
Coronene	<0.04										<0.04	mg/kg	TM4/PM8
PAH 17 Total	<0.64										<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05										<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02										<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	96										<0	%	TM4/PM8
Mineral Oil (C10-C40)	<30										<30	mg/kg	TM5/PM8/PM16
MTBE #	<5										<5	ug/kg	TM31/PM12
Benzene #	<5										<5	ug/kg	TM31/PM12
Toluene #	<5										<5	ug/kg	TM31/PM12
Ethylbenzene #	<5										<5	ug/kg	TM31/PM12
m/p-Xylene #	<5										<5	ug/kg	TM31/PM12
o-Xylene #	<5										<5	ug/kg	TM31/PM12
PCB 28 #	<5										<5	ug/kg	TM17/PM8
PCB 52 #	<5										<5	ug/kg	TM17/PM8
PCB 101 #	<5										<5	ug/kg	TM17/PM8
PCB 118 #	<5										<5	ug/kg	TM17/PM8
PCB 138 #	<5										<5	ug/kg	TM17/PM8
PCB 153 #	<5										<5	ug/kg	TM17/PM8
PCB 180 #	<5										<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35										<35	ug/kg	TM17/PM8
Natural Moisture Content	12.3										<0.1	%	PM4/PM0
Total Organic Carbon #	0.86										<0.02	%	TM21/PM24

Please see attached notes for all abbreviations and acronyms

Client Name: Ground Investigations Ireland
Reference: 244 DAA Airfield Surveys Phase 2
Location: 244 DAA Airfield Surveys Phase 2
Contact: Stephen Kealy
JE Job No.: 18/15607

Report : EN12457_2

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-3															
Sample ID	TP16															
Depth	0.50															
COC No / misc																
Containers	V J T															
Sample Date	14/08/2018															
Sample Type	Soil															
Batch Number	1											Inert	Stable Non-reactive	Hazardous	LOD LOR	Units	Method No.
Date of Receipt	28/09/2018															
Solid Waste Analysis																
Total Organic Carbon #	0.86											3	5	6	<0.02	%	TM21/PM24
Sum of BTEX	<0.025											6	-	-	<0.025	mg/kg	TM31/PM12
Sum of 7 PCBs #	<0.035											1	-	-	<0.035	mg/kg	TM17/PM8
Mineral Oil	<30											500	-	-	<30	mg/kg	TM5/PM8/PM16
PAH Sum of 17	<0.64											100	-	-	<0.64	mg/kg	TM4/PM8
CEN 10:1 Leachate																	
Dry Matter Content Ratio	85.8											-	-	-	<0.1	%	NONE/PM4

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	16.5
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	85.8
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**18/15607**			
Sample No	**3**			
Client Sample No	**TP16**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**0.50**			
Sample Date	**14/08/2018**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.86	3	5	6
Loss on Ignition (%)	-	-	-	10
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 17(mg/kg)	<0.64	100	-	-
pH (pH Units)	-	-	>6	-
ANC to pH 7 (mol/kg)	-	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	-	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	0.0027	0.027	0.5	2	25
Barium	0.018	0.18	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	<0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.011	0.11	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	<0.002	<0.02	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	<0.003	<0.03	4	50	200
Chloride	0.3	<3	800	15000	25000
Fluoride	0.5	5	10	150	500
Sulphate as SO4	15.49	154.9	1000	20000	50000
Total Dissolved Solids	93	930	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	<2	<20	500	800	1000

Client Name: Ground Investigations Ireland

Reference: 244 DAA Airfield Surveys Phase 2

Location: 244 DAA Airfield Surveys Phase 2

Contact: Stephen Kealy

Matrix : Solid

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
18/15607	1	TP16	0.50	1-3	GRO, PAH, PCB, TOC	Sample holding time exceeded prior to receipt

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 18/15607

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to an Exova Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

Appendix - Methods used for WAC (2003/33/EC)

JE Job No.: 18/15607

Leachate tests	
10l/kg; 4mm	I.S. EN 12457-2:2002 Specified particle size; water added to L/S ratio; capped; agitated for 24 ± 0.5 hours; eluate settled and filtered over 0.45 µm membrane filter.
Eluate analysis	
As	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ba	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cd	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cr total	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cu	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Hg	I.S. EN 13370 rec. EN 1483 (CVAAS)
Mo	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ni	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Pb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Sb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Se	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Zn	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Chloride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Fluoride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Sulphate	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Phenol index	I.S. EN 13370 rec. ISO 6439 (4-Aminoantipyrine spectrometic methods after distillation)* (BY HPLC - Jones Env)
DOC	I.S. EN 1484
TDS	I.S. EN 15216
Compositional analysis	
TOC	I.S. EN 13137 Method B: carbonates removed with acid; TOC by combustion.
BTEX	GC-FID
PCB7**	I.S. EN 15308 analysis by GC-ECD.
Mineral oil	I.S. EN 14039 C10 to C40 analysis by GC-FID.
PAH17***	I.S. EN 15527 PAH17 analysis by GC-MS
Metals	I.S. EN 13657 - Aqua regia digestion: EN ISO 11885 (ICP-OES)
Other	
Dry matter	I.S. EN 14346 sample is dried to a constant mass in an oven at 105 ± 3 °C; Method B Water content by direct Karl-Fischer-titration and either volumetric or coulometric detection.
LOI	I.S. EN 15169 Difference in mass after heating in a furnace up to 550 ± 25 °C.
ANC	CEN/TS 15364 Determined by amouns of acid or base needed to cover the pH range

Notes:

*If not suitable due to LOD, precision, etc., any other suitable method can be used, e.g. AFS, ICP-MS
**PCB-28, PCB-52, PCB-101, PCB-118, PCB-138, PCB-153 and PCB-180

***Naphthalene, Acenaphthylene, Acenaphthene, Anthracene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Benzo(a)pyrene, Chrysene, Coronene, Dibenzo(a,h)anthracene, Fluorene, Fluoranthene, Indeno(1,2,3-c,d)pyrene, Phenanthrene and Pyrene.

Please include all sections of this report if it is reproduced

JE Job No: 18/15607

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM20	Modified BS 1377-3: 1990/USEPA 160.3 Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.			AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

JE Job No: 18/15607

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM0	No preparation is required.	Yes		AR	Yes
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060, APHA Standard Methods for Examination of Water and Wastewater 5310B, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.			AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	