

## FOREWORD

### Notes on Site Investigation Procedure

The following notes should be read in conjunction with the report. Any modifications to the procedures outlined below are indicated in the main text.

### GENERAL

The recommendations made and opinions expressed in the Report are based on the "Boring Records, an examination of samples and results of the site and laboratory tests. No responsibility can be held for conditions which have not been revealed by the boreholes, for example, between borehole positions. Whilst the report may express an opinion on a possible configuration of strata both between borehole positions and below the maximum depth of the investigation, this is for guidance only and no liability can be accepted for its accuracy.

### BORING TECHNIQUE

Unless otherwise stated the 'Shell and Auger' technique of soft ground boring has been employed. Whilst this technique allows the maximum data to be obtained on strata conditions, a degree of mixing of some layered soils, (e.g. thin layers of coarse and fine granular material) is inevitable. Specific attention is drawn to this factor where evidence of such a condition is available.

### GROUND WATER

The ground water conditions entered on the Boring Records are those appertaining at the time of the investigation. The normal rate of boring does not usually permit the recording of an equilibrium water level for any one water strike. Moreover, ground water levels are subject to variations caused by seasonal effects or changes in local drainage conditions. The table of each Boring Record shows the ground water level at the quoted borehole and casing depths, usually at the start of the day's work. The word "none" indicates that ground water was sealed off by the borehole casing.

### GAS MONITORING

Unless otherwise stated gas monitoring is carried out using a GA2000 infra red gas detector. The gases monitored for and levels noted are recorded and plotted on the relevant test data sheets. Unless stated otherwise no monitoring is carried out for gas pressure or to calculate gas flow rates.

### ROUTINE SAMPLING

Undisturbed samples of predominantly cohesive soils are obtained in a 102mm diameter open-drive sampler, complying with the requirements of the British Standard Code of Practice B.S. 5930. Large disturbed samples of granular soils, or of soils in which undisturbed sampling is not possible or appropriate, are taken from the boring tools and sealed into polythene bags. Small disturbed samples are taken at frequent intervals and sealed into 0.5 kg glass jars or polythene bags for subsequent visual classification. Where encountered in sufficient quantity, samples of groundwater are taken.

Unless otherwise stated in the main text, disturbed soil samples may not be at their natural water content.

## REPORT ON A SITE INVESTIGATION FOR PROPOSED RESIDENTIAL / COMERCIAL DEVELOPMENT AT PARKGATE STREET, DUBLIN ON BEHALF OF ARUP, CONSULTING ENGINEERS

REPORT NO. 8483 / 1

MARCH 2003

### INTRODUCTION

The proposed development site is located in the Hickeys commercial warehousing facility located off Parkgate Street in Dublin.

An investigation of sub-soil conditions was ordered by the projects consulting engineers, Arup Ireland, on behalf of their clients, Hickey & Company.

The programme of the investigation included,

- ✓ The construction of eight exploratory boreholes to establish stratification. During the course of boring in-situ tests were performed at regular intervals and representative soil samples were recovered for visual examination and laboratory analysis.
- ✓ The drilling of four rotary coreholes to establish the depth to, type of and quality of the underlying bedrock.
- ✓ The installation of six groundwater monitoring standpipes at selected borehole and corehole locations and the carrying out of in situ gas and groundwater monitoring / permeability tests at these locations.
- ✓ The drilling of sixteen window sample holes using a Terrier 1000 unit in areas of restricted access and to recover samples for environmental tests.
- ✓ The carrying out of laboratory soils testing ( Geotechnical & Environmental ) as specified by the projects engineers.

This report has been issued in two Volumes. This document is Volume 1 and details all information pertaining to the investigation while Volume 2 contains environmental test results from Geochem Report 02 - B02182.

## **II. FIELDWORK**

The site is referred to as Hickeys Parkgate Street and the locations of all of the investigation points are shown on the detailed site plan enclosed in Appendix VIII to this report.

Site works were supervised by a representative of the consulting engineers and by an IGSL engineer.

The methods utilised during the course of the field investigations are outlined in the following sections .

### *Cable Tool Boreholes.*

Conventional cable tool techniques ( shell and auger ) were employed at eight locations across the site . All field work was carried out in accordance with BS5930.

Sampling and in - situ testing were performed to BS1377. Disturbed and undisturbed soil samples were taken at regular intervals or at changes in stratification while standard penetration tests ( SPT's ) were also carried out to establish relative in - situ soil strength.

Full details of stratification, testing, sampling, comments on groundwater and notes on any obstructions to normal boring encountered are given in the detailed borehole records enclosed in Appendix I to this report.

Groundwater standpipes were installed in selected boreholes. Standpipes were installed to the specifications of the projects engineers.

### *Rotary Coring*

A total of four rotary coreholes were constructed across the site. The results of these are enclosed in the detailed coring records enclosed in Appendix II to this report.

Rotary core drilling was undertaken using a top drive lorry mounted Hands England rotary coring rig

The coring operation utilised HQ coring techniques which open a 90mm hole and recover a 75mm core of rock. Air mist flush was used in the drillhole and the cores were packed in 3m core boxes and returned to I.G.S.L.'s laboratory in Newbridge, County Kildare.

The rock cores were then logged by I.G.S.L.'s engineering geologist and detailed core logs are presented in the relevant appendix. These logs include descriptions and the standard mechanical indices ( TCR, SCR and RQD ). In addition, a graphic fracture spacing log has been prepared, and this is incorporated as part of the engineering geological core records.

### *Window Sampling*

A total of sixteen window samples were carried out at locations indicated on the attached site plan. The window sampler, a Terrier 1000, complies with the requirements of Eurocode 7, Part 2.

The window sample equipment consists of a hollow steel pipe with a plastic liner fitted inside the tube. The soil sample moves up inside the hollow tube as the steel casing is driven into the ground by a powered automatic drop hammer. The inner plastic liner is then removed from the steel tube, split and the recovered sample of soil is logged and sub samples taken for environmental / geotechnical laboratory analysis.

The window sample records are presented in Appendix III to this report.

### **III. TESTING**

During the course of the investigation samples of the sub soils were taken from the boreholes and window sample holes.

The disturbed soil samples, along with the recovered rock cores, were returned to IGSL's laboratory where a programme of testing was scheduled by the projects engineers.

#### **Geotechnical Testing – Soils & Rock**

All of the geotechnical test data is included in Appendix VI to this report.

Tests carried out included

- ✓ Moisture Content Tests
- ✓ Atterburg Limits ( Classification tests ).
- ✓ pH and SO<sup>3</sup> Tests
- ✓ Particle Size Distribution Tests ( Wet Sieve )
- ✓ Sedimentation Analysis ( by Hydrometer ).
- ✓ Organic Content Tests
- ✓ Point Load Tests
- ✓ Uniaxial Compressive Strength ( UCS ) Tests

#### **Environmental Testing ( Soils, Water & Leachate )**

Selected soil and water samples were dispatched to the Alcontrol Geochem environmental testing facility in Dublin where they were tested for contaminants as specified by Arup.

Environmental tests were reported on in two sections,

- ✓ Section 1 – Geochem Report No.03 – B00011 containing soil and water samples from the boreholes ( 5nr tests ) is contained in Appendix VII to this report.
- ✓ Section 2 – Geochem Report No. 02 – B02182 containing window sample test results and one groundwater sample ( 30 nr tests ) are presented in Volume II and the tests carried out are summarised in Appendix VIII to this report.

#### **In Situ Tests**

##### ***1. Standard Penetration Tests***

The relative in-situ strength of the sub-soils was established at intervals by cone penetration test . A solid conical point is hammered into the soil and the blow count for 300mm of penetration is recorded in four 75mm increments. Results are presented in the right - hand column of the boring and coring records.

##### ***2. Permeability Tests***

The permeability tests of the soils was determined by falling head tests ( standpipes ). Falling head tests were carried out at four locations and are shown in Appendix VI to this report/

##### ***3. Gas Monitoring***

Gas monitoring was carried out over a period of three site visits using a GA2000 infra red gas detector. This equipment monitors for Methane, Carbon Dioxide, Hydrogen Sulphide and Oxygen. Monitoring results are detailed in Appendix IV to this report.

## APPENDIX I CABLE TOOL BOREHOLE

130528

<b>REPORT NO: 8483</b>		<b>GEOTECHNICAL BORING RECORD</b>		<b>IGSL</b>	
CONTRACT : Hickeys Fabrics Ltd., Parkgate Street, Dublin.				BOREHOLE NO: BH1 Sheet 1 of 1	
CLIENT : Hickeys Fabrics Ltd.	GROUND LEVEL (MOD)	3.30		DATE STARTED: 11/12/2002	
ENGINEER : Arup Consulting Engineers	BOREHOLE DIAMETER (mm)	200		DATE COMPLETED: 11/12/2002	
CO-ORDINATES : E 313673.33 N 234317.40	BOREHOLE DEPTH (m)	6.00		BORED BY: Carrington	
		CASING DEPTH (m)			

DEPTH (m)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLE			FIELD TEST RESULTS	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)		
0	Made ground (Medium dense clayey sandy GRAVEL with bricks and cobbles)								
1					7936	B	1.00	N=23	
2					7937	B	2.00	N=33	
2	Stiff brown sandy CLAY		0.80	2.50					
3	Medium dense brown sandy fine to coarse sub rounded GRAVEL		0.30	3.00	7938	B	3.00	N=13	
4	Medium dense black sandy medium to coarse sub-rounded to rounded GRAVEL with cobbles		-0.20	3.50					
5					7939	B	4.00	N=21	
6	Contamination evident in Gravels				7940	B	5.00	N=25	
7					7941	B	6.00	N=50/ 10mm	
8	End of Borehole at 6.00 m		-2.70	6.00					

Hard Strata Boring / Chiselling				Water Strike Details			
From (m)	To (m)	Hours	Comments	Water Strike	Casing Depth	Sealed At	Rise To
1.60	1.80	1hr		4.00	6.50		2.00
2.30	2.50	1hr					20
5.60	5.80	1hr					
6.00	6.00	1hr					

Standpipe Installation Details					Groundwater Observations				
Date	Tip Depth	RZ Top	RZ Base	Type	Date	Hole Depth	Casing Depth	Depth to Water	Comments
11/12/2002	6.00	1.00	6.00	SP	11/12/2002	6.50	6.50	2.00	End of drilling

Remarks:

130329

**REPORT NO: 8483 GEOTECHNICAL BORING RECORD IGSL**

CONTRACT : Hickeys Fabrics Ltd., Parkgate Street, Dublin. BOREHOLE NO: BH2 Sheet 1 of 1  
 CLIENT : Hickeys Fabrics Ltd. DATE STARTED: 12/12/2002  
 ENGINEER : Arup Consulting Engineers BOREHOLE DIAMETER (mm) 200 DATE COMPLETED: 12/12/2002  
 CO-ORDINATES : E 313872.40 BORED BY: Carrington  
 N 234347.22 CASING DEPTH (m) 7.00

DEPTH (m)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)		
0.00	Made ground (Medium dense clayey sandy GRAVEL with bricks and cobbles)	[Pattern]			7942	B	0.00		
1.00	Made ground (Loose to medium dense clayey sandy GRAVEL with bricks, ash and cobbles)	[Pattern]	2.68	1.00	7943	B	1.00	N=19	
2.00					7944	B	2.00	N=8	
3.00	Medium dense brown sandy fine to coarse sub rounded GRAVEL with cobbles	[Pattern]	0.68	3.00	7945	B	3.00	N=13	
4.00					7946	B	4.00	N=15	
5.00					7947	B	5.00	N=19	
6.00					7948	B	6.00	N=26	
7.00	End of Borehole at 7.00 m		-3.32	7.00	7949	B	7.00	N=50/ 10mm	

Hard Strata Boring / Chiselling				Water Strike Details					
From (m)	To (m)	Hours	Comments	Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments
0.20	0.50	1hr		4.00	7.00	-	2.00	20	
0.80	0.95	1hr							
5.60	5.70	1hr							
6.70	6.90	1hr							
7.00	7.00	1hr							

Groundwater Observations				
Date	Hole Depth	Casing Depth	Depth to Water	Comments
12/12/2002	7.00	7.00	-	Borehole dry at end of drilling

Standpipe Installation Details				
Date	Tip Depth	RZ Top	RZ Base	Type
12/12/2002	7.00	1.00	7.00	SP

Remarks:

130330

**REPORT NO: 8483 GEOTECHNICAL BORING RECORD IGSL**

CONTRACT : Hickeys Fabrics Ltd., Parkgate Street, Dublin. BOREHOLE NO: BH3 Sheet 1 of 1  
 CLIENT : Hickeys Fabrics Ltd. DATE STARTED: 13/12/2002  
 ENGINEER : Arup Consulting Engineers BOREHOLE DIAMETER (mm) 200 DATE COMPLETED: 13/12/2002  
 CO-ORDINATES : E 313875.70 BORED BY: Carrington  
 N 234376.31 CASING DEPTH (m) 0.40

DEPTH (m)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)		
0.00	Concrete and fill	[Pattern]							
0.40	End of Borehole at 0.40 m		3.45	0.40					

Hard Strata Boring / Chiselling				Water Strike Details					
From (m)	To (m)	Hours	Comments	Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments
0.00	0.40	1.00							

Groundwater Observations				
Date	Hole Depth	Casing Depth	Depth to Water	Comments
13/12/2002	0.40	0.40	-	Borehole dry at end of drilling

Standpipe Installation Details				
Date	Tip Depth	RZ Top	RZ Base	Type

Remarks:

130331

**REPORT NO: 8483**      **GEOTECHNICAL BORING RECORD**      **IGSL**

CONTRACT : Hickeys Fabrics Ltd., Parkgate Street, Dublin.      BOREHOLE NO: BH4  
Sheet 1 of 1

CLIENT : Hickeys Fabrics Ltd.      GROUND LEVEL (mOD) 4.57      DATE STARTED: 14/12/2002  
ENGINEER : Arup Consulting Engineers      BOREHOLE DIAMETER (mm) 200      DATE COMPLETED: 15/12/2002

CO-ORDINATES : E 313670.52      BOREHOLE DEPTH (m) 5.00      BORED BY: Carrington  
N 234409.35      CASING DEPTH (m)

DEPTH (m)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)		
0	Made ground (Dense clayey sandy GRAVEL with bricks and cobbles)	[Pattern]							
1					7965	B	1.00	N=32	
2					7966	B	2.00	N=31	
3					7967	B	3.00	N=24	
4	Medium dense brown sandy fine to coarse sub rounded GRAVEL	[Pattern]	0.57	4.00	7968	B	4.00	N=23	
5	End of Borehole at 5.00 m	[Pattern]	-0.43	5.00	7969	B	5.00	N=50/ 10mm	

Hard Strata Boring / Chiselling				Water Strike Details			
From (m)	To (m)	Hours	Comments	Water Strike	Casing Depth	Sealed At	Rise To
0.20	0.40	1.00	.	4.50	3.00	-	3.00
0.80	1.00	1.00	.				20
1.40	1.80	1.00	.				
5.00	5.00	1.00	.				

Groundwater Observations			
Date	Hole Depth	Casing Depth	Depth to Water
15/12/2002	5.00	5.00	-

Standpipe Installation Details				
Date	Tip Depth	RZ Top	RZ Base	Type
15/12/2002	5.00	1.00	5.00	SP

Remarks:

130332

**REPORT NO: 8483**      **GEOTECHNICAL BORING RECORD**      **IGSL**

CONTRACT : Hickeys Fabrics Ltd., Parkgate Street, Dublin.      BOREHOLE NO: BH5  
Sheet 1 of 1

CLIENT : Hickeys Fabrics Ltd.      GROUND LEVEL (mOD) 3.84      DATE STARTED: 10/12/2002  
ENGINEER : Arup Consulting Engineers      BOREHOLE DIAMETER (mm) 200      DATE COMPLETED: 10/12/2002

CO-ORDINATES : E 313681.42      BOREHOLE DEPTH (m) 7.20      BORED BY: Carrington  
N 234335.97      CASING DEPTH (m)

DEPTH (m)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)		
0	Made ground (Very loose GRAVEL with cobbles)	[Pattern]			7928	B	0.00		
1					7929	B	1.00	N=4	
2					7930	B	1.50		
3	Soft to firm brown sandy CLAY	[Pattern]	1.84	2.00				N=4	
4					7931	B	3.00	N=6	
5	Medium dense sandy fine to coarse sub rounded GRAVEL	[Pattern]	-0.16	4.00	7932	B	4.00	N=11	
6	Medium dense fine to medium GRAVEL with cobbles	[Pattern]	-1.16	5.00	7933	B	5.00	N=15	
7					7934	B	6.00	N=11	
8					7935	B	7.00	N=98/ 160mm	
9	End of Borehole at 6.50 m	[Pattern]	-3.36	7.20					

Hard Strata Boring / Chiselling				Water Strike Details			
From (m)	To (m)	Hours	Comments	Water Strike	Casing Depth	Sealed At	Rise To
0.10	0.40	1.00	.	4.00	7.20	-	2.00
0.50	0.70	1.00	.				20
0.80	1.00	1.00	.				
4.70	4.80	1.00	.				
6.70	6.90	1.00	.				
7.20	7.20	1.00	.				

Groundwater Observations			
Date	Hole Depth	Casing Depth	Depth to Water
10/12/2002	7.20	7.20	2.00

Standpipe Installation Details				
Date	Tip Depth	RZ Top	RZ Base	Type
10/12/2002	7.20	1.00	7.20	SP

Remarks:

130333

**REPORT NO: 8483**      **GEOTECHNICAL BORING RECORD**      **IGSL**

CONTRACT : Hickeys Fabrics Ltd., Parkgate Street, Dublin.      BOREHOLE NO: BH6  
Sheet 1 of 1

CLIENT : Hickeys Fabrics Ltd.      GROUND LEVEL (mOD)      3.80      DATE STARTED: 13/12/2002  
ENGINEER : Arup Consulting Engineers      BOREHOLE DIAMETER (mm)      200      DATE COMPLETED: 13/12/2002

CO-ORDINATES : E 313681.75      BOREHOLE DEPTH (m)      7.00      BORED BY: Carrington  
N 234362.10      CASING DEPTH (m)

DEPTH (m)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)		
0.00	Made ground (Medium dense clayey sandy GRAVEL with bricks and cobbles)	[Pattern]			7950	B	0.00		
1.50					7951	B	1.50	N=29	
2.00					7952	B	2.00	N=9	
3.00	Medium dense sandy fine to coarse sub rounded GRAVEL	[Pattern]	1.10	2.50	7953	B	3.00	N=13	
4.00					7954	B	4.00	N=17	
5.00					7955	B	5.00	N=17	
6.00	Soft grey SILT	[Pattern]	-2.40	6.00	7956	B	6.00	N=10	
6.30	Loose black fine to coarse sub rounded GRAVEL with shells	[Pattern]	-2.70	6.30					
7.00	End of Borehole at 7.00 m		-3.40	7.00	7957	B	7.00	N=R	

Hard Strata Boring / Chiselling				Water Strike Details			
From (m)	To (m)	Hours	Comments	Water Strike	Casing Depth	Sealed At	Rise To
0.20	0.80	1.00		4.00	7.00	-	2.00
0.70	1.00	1.00					
1.30	2.00	1.00					

Groundwater Observations				
Date	Hole Depth	Casing Depth	Depth to Water	Comments
13/12/2002	7.00	7.00	2.00	End of drilling

Standpipe Installation Details				
Date	Tip Depth	RZ Top	RZ Base	Type
12/12/2002	7.00	1.00	7.00	SP

Remarks:

**REPORT NO: 8483**      **GEOTECHNICAL BORING RECORD**      **IGSL**

CONTRACT : Hickeys Fabrics Ltd., Parkgate Street, Dublin.      BOREHOLE NO: BH7  
Sheet 1 of 1

CLIENT : Hickeys Fabrics Ltd.      GROUND LEVEL (mOD)      4.01      DATE STARTED: 13/12/2002  
ENGINEER : Arup Consulting Engineers      BOREHOLE DIAMETER (mm)      200      DATE COMPLETED: 14/12/2002

CO-ORDINATES : E 313700.10      BOREHOLE DEPTH (m)      6.50      BORED BY: Carrington  
N 234379.78      CASING DEPTH (m)

DEPTH (m)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)		
0.50	Made ground (Medium dense clayey sandy GRAVEL with bricks and cobbles)	[Pattern]			7958	B	0.50	N=28	
1.50					7959	B	1.50	N=16	
2.50					7960	B	2.50	N=11	
3.00	Soft grey SILT	[Pattern]	1.01	3.00					
3.50	Medium dense brown sandy fine to coarse sub rounded GRAVEL	[Pattern]	0.51	3.50	7961	B	3.50	N=17	
4.50					7962	B	4.50	N=24	
5.50					7963	B	5.50	N=21	
6.00	Medium dense black fine to coarse sub rounded to rounded GRAVEL	[Pattern]	-1.89	6.00					
6.50	End of Borehole at 7.00 m		-2.49	6.50	7964	B	6.50	N=R	

Hard Strata Boring / Chiselling				Water Strike Details			
From (m)	To (m)	Hours	Comments	Water Strike	Casing Depth	Sealed At	Rise To
0.20	0.40	1.00		4.00	6.50	-	3.00
1.10	1.30	1.00					
2.00	2.30	1.00					
6.10	6.20	1.00					
6.50	6.50	1.00					

Groundwater Observations				
Date	Hole Depth	Casing Depth	Depth to Water	Comments
14/12/2002	6.50	6.50	-	Borehole dry at end of drilling

Standpipe Installation Details				
Date	Tip Depth	RZ Top	RZ Base	Type
14/12/2002	6.50	1.00	6.50	SP

Remarks:

13033 5

<b>REPORT NO: 8483</b>		<b>GEOTECHNICAL BORING RECORD</b>		<b>IGSL</b>
CONTRACT : Hickeys Fabrics Ltd., Parkgate Street, Dublin.		BOREHOLE NO: BH8		Sheet 1 of 1
CLIENT : Hickeys Fabrics Ltd.	GROUND LEVEL (mOD) 4.80	DATE STARTED: 15/12/2002		
ENGINEER : Arup Consulting Engineers	BOREHOLE DIAMETER (mm) 200	DATE COMPLETED: 15/12/2002		
CO-ORDINATES : E 313679.24 N 234414.20	BOREHOLE DEPTH (m) 1.00	BORED BY: Carrington		
	CASING DEPTH (m)			

DEPTH (m)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES				FIELD TEST RESULTS	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)			
0	Made ground (Medium dense clayey sandy GRAVEL with bricks and cobbles)									
1.00	End of Borehole at 1.00 m		3.80	1.00						
2										
3										
4										
5										
6										
7										
8										
9										
10										

From (m)	To (m)	Hours	Comments
0.10	0.40	1.00	.
0.25	0.50	1.00	.
0.50	0.90	1.00	.
1.00	1.00	1.00	.

Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments

Date	Tip Depth	RZ Top	RZ Base	Type

Date	Hole Depth	Casing Depth	Depth to Water	Comments
15/12/2002	1.00	1.00	-	Borehole dry at end of drilling

Remarks:

## APPENDIX II ROTARY COREHOLES



130336

<b>REPORT NO.</b> 8483		<b>GEOTECHNICAL CORE LOG RECORD</b>		<b>IGSL</b>
<b>CONTRACT:</b> Hickeys Fabrics Ltd., Parkgate Street, Dublin.		<b>DRILLHOLE NO.:</b> RC1		<b>SHEET:</b> Sheet 1 of 2
<b>CLIENT:</b> Hickeys Fabrics Ltd. <b>ENGINEER:</b> Arup Consulting Engineers		<b>CORE DIAMETER (mm):</b> 74	<b>DATE STARTED:</b> 18/12/2002	<b>DATE COMPLETED:</b> 18/12/2002
<b>CO-ORDINATES:</b> 313673.33 234317.40		<b>GROUND LEVEL (mOD):</b> 3.30	<b>INCLINATION (Degrees):</b> 90	<b>DRILLED BY:</b> MHRILL <b>LOGGED BY:</b> IGSL
		<b>FLUSH:</b> Water		

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD $q_p$ (50) (MPa)	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
0													OPEN HOLE : No recovery, observed by driller as returns of sandy gravelly clay with occasional cobbles and boulders
1											N=8		
2											N=14		
3											N=40		
4													
5													
6	6.20								-2.90	6.20	N=48/75mm		Strong to locally moderately strong, thickly bedded to locally thinly bedded, grey/dark grey, fine-grained, LIMESTONE, fresh to very locally slightly weathered intersected by smooth, planar, tight, locally clay/calcite-filled, locally slightly iron-oxide stained fractures of 30/45° & very locally sub-vertical dip. (Predominantly calci-siltite with more argillaceous layers at 6.55-7.0m, 8.5-9.0m, 9.2-9.4m & 9.84-10.7m) (Clay-filled fracture at 7.42-7.48m)
7	7.70	100	88	37									
		100	75	7									

Continued next sheet

<b>REMARKS:</b>	<b>INSTALLATION DETAILS</b> Installation Type : Depth to Response Zone top (m) : Depth to Response Zone bottom (m) : Comments :
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<b>REPORT NO.</b> 8483		<b>GEOTECHNICAL CORE LOG RECORD</b>		<b>IGSL</b>
<b>CONTRACT:</b> Hickeys Fabrics Ltd., Parkgate Street, Dublin.		<b>DRILLHOLE NO.:</b> RC1		<b>SHEET:</b> Sheet 2 of 2
<b>CLIENT:</b> Hickeys Fabrics Ltd. <b>ENGINEER:</b> Arup Consulting Engineers		<b>CORE DIAMETER (mm):</b> 74	<b>DATE STARTED:</b> 18/12/2002	<b>DATE COMPLETED:</b> 18/12/2002
<b>CO-ORDINATES:</b> 313673.33 234317.40		<b>GROUND LEVEL (mOD):</b> 3.30	<b>INCLINATION (Degrees):</b> 90	<b>DRILLED BY:</b> MHRILL <b>LOGGED BY:</b> IGSL
		<b>FLUSH:</b> Water		

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD $q_p$ (50) (MPa)	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
9.20													Strong to locally moderately strong, thickly bedded to locally thinly bedded, grey/dark grey, fine-grained, LIMESTONE, fresh to very locally slightly weathered intersected by smooth, planar, tight, locally clay/calcite-filled, locally slightly iron-oxide stained fractures of 30/45° & very locally sub-vertical dip. (Predominantly calci-siltite with more argillaceous layers at 6.55-7.0m, 8.5-9.0m, 9.2-9.4m & 9.84-10.7m) (Clay-filled fracture at 7.42-7.48m) End of Borehole at 10.70 m
10		100	75	18									
10.70									-7.40	10.70			
11													
12													
13													
14													
15													
16													

<b>REMARKS:</b>	<b>INSTALLATION DETAILS</b> Installation Type : Depth to Response Zone top (m) : Depth to Response Zone bottom (m) : Comments :
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130337

REPORT NO. 8483		GEOTECHNICAL CORE LOG RECORD		IGSL									
CONTRACT: Hickeys Fabrics Ltd., Parkgate Street, Dublin.			DRILLHOLE NO: RC2		SHEET: Sheet 1 of 2								
CLIENT: Hickeys Fabrics Ltd.		CORE DIAMETER (mm): 74	DATE STARTED: 19/12/2002		DATE COMPLETED: 19/12/2002								
ENGINEER: Arup Consulting Engineers		GROUND LEVEL (mOD): 3.68	DRILLED BY: MHDRILL		LOGGED BY: IGSL								
CO-ORDINATES: 313872.40		INCLINATION (Degrees): 90	FLUSH: Water		CORE DIAMETER (mm): 74								
234347.22		FLUSH: Water	LOGGED BY: IGSL		GROUND LEVEL (mOD): 3.68								
CO-ORDINATES: 234347.22	INCLINATION (Degrees): 90	DRILLED BY: MHDRILL	LOGGED BY: IGSL	CORE DIAMETER (mm): 74	GROUND LEVEL (mOD): 3.68								
CO-ORDINATES: 234347.22	INCLINATION (Degrees): 90	DRILLED BY: MHDRILL	LOGGED BY: IGSL	CORE DIAMETER (mm): 74	GROUND LEVEL (mOD): 3.68								
DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD $q_{(50)}$ (MPa)	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
0	0	0	0	0	250								OPEN HOLE : No recovery, observed by drier as returns of sandy gravelly clay with occasional cobbles and boulders
1											N=23		
2													
3	0	0	0	0							N=24		
4													
5													
6	6.00								-2.32	6.00	N=50/250mm		Angular gravel, cobble and boulder-sized returns of limestone with traces of grey/black clay -PROBABLE BOULDER CLAY
7	7.80	11	3	0					-4.12	7.80			Strong to locally moderately strong, thickly bedded to locally thinly bedded, grey/dark grey, fine-grained, LIMESTONE, fresh to very locally slightly/moderately weathered intersected by smooth, planar, tight, Continued next sheet
REMARKS:													INSTALLATION DETAILS Installation Type : Depth to Response Zone top (m) : Depth to Response Zone bottom (m) : Comments :

REPORT NO. 8483		GEOTECHNICAL CORE LOG RECORD		IGSL									
CONTRACT: Hickeys Fabrics Ltd., Parkgate Street, Dublin.			DRILLHOLE NO: RC2		SHEET: Sheet 2 of 2								
CLIENT: Hickeys Fabrics Ltd.		CORE DIAMETER (mm): 74	DATE STARTED: 19/12/2002		DATE COMPLETED: 19/12/2002								
ENGINEER: Arup Consulting Engineers		GROUND LEVEL (mOD): 3.68	DRILLED BY: MHDRILL		LOGGED BY: IGSL								
CO-ORDINATES: 313872.40		INCLINATION (Degrees): 90	FLUSH: Water		CORE DIAMETER (mm): 74								
234347.22		FLUSH: Water	LOGGED BY: IGSL		GROUND LEVEL (mOD): 3.68								
CO-ORDINATES: 234347.22	INCLINATION (Degrees): 90	DRILLED BY: MHDRILL	LOGGED BY: IGSL	CORE DIAMETER (mm): 74	GROUND LEVEL (mOD): 3.68								
DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD $q_{(50)}$ (MPa)	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
9.30													locally clay/calclite-filled fractures of 60/45° & very locally sub-horizontal & sub-vertical dip. (Predominantly calc-siltite with more argillaceous layers at 8.1-8.19m, 8.94-9.14m & 10.53-11.1m)
10		100	70	17									
11	10.80												
12		100	63	24									
13	12.30												
14	12.90	100	100	23									End of Borehole at 12.90 m
15													
16													
REMARKS:													INSTALLATION DETAILS Installation Type : Depth to Response Zone top (m) : Depth to Response Zone bottom (m) : Comments :

130338

<b>REPORT NO.</b> 8483		<b>GEOTECHNICAL CORE LOG RECORD</b>		<b>IGSL</b>
<b>CONTRACT:</b> Hickeys Fabrics Ltd., Parkgate Street, Dublin.			<b>DRILLHOLE NO :</b> RC3	<b>SHEET:</b> Sheet 1 of 2
<b>CLIENT:</b> Hickeys Fabrics Ltd. <b>ENGINEER:</b> Arup Consulting Engineers		<b>CORE DIAMETER (mm):</b> 74 <b>GROUND LEVEL (mOD):</b> 3.85	<b>DATE STARTED:</b> 18/12/2002 <b>DATE COMPLETED:</b> 18/12/2002	
<b>CO-ORDINATES:</b> 313675.70 234376.31		<b>INCLINATION (Degrees):</b> 90 <b>FLUSH:</b> Water	<b>DRILLED BY:</b> MHDRILL <b>LOGGED BY:</b> IGSL	

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.O.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD I <sub>50</sub> (MPa)	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
0													OPEN HOLE : No recovery, observed by driller as returns of sandy gravelly clay with occasional cobbles and boulders
1													
2											N=10		
3											N=16		
4	0	0	0										
5													
6													
7	7.00								-3.15	7.00			Angular gravel, cobble and boulder-sized returns of limestone with traces of grey/black clay -PROBABLE BOULDER CLAY
8													
8.50		40	20	0					-4.05	7.90			Strong to locally moderately strong, thickly bedded to locally thinly bedded, black/grey, fine-grained, LIMESTONE (ARGILLACEOUS), fresh to very locally slightly/moderately
													Continued next sheet

<b>REMARKS:</b>	<b>INSTALLATION DETAILS</b> Installation Type : Depth to Response Zone top (m) : Depth to Response Zone bottom (m) : Comments :
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<b>REPORT NO.</b> 8483		<b>GEOTECHNICAL CORE LOG RECORD</b>		<b>IGSL</b>
<b>CONTRACT:</b> Hickeys Fabrics Ltd., Parkgate Street, Dublin.			<b>DRILLHOLE NO :</b> RC3	<b>SHEET:</b> Sheet 2 of 2
<b>CLIENT:</b> Hickeys Fabrics Ltd. <b>ENGINEER:</b> Arup Consulting Engineers		<b>CORE DIAMETER (mm):</b> 74 <b>GROUND LEVEL (mOD):</b> 3.85	<b>DATE STARTED:</b> 18/12/2002 <b>DATE COMPLETED:</b> 19/12/2002	
<b>CO-ORDINATES:</b> 313675.70 234376.31		<b>INCLINATION (Degrees):</b> 90 <b>FLUSH:</b> Water	<b>DRILLED BY:</b> MHDRILL <b>LOGGED BY:</b> IGSL	

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.O.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD I <sub>50</sub> (MPa)	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
10.00	100	43	7										weathered intersected by smooth, planar, tight, locally clay-ameared, calcite-filled fractures of 45° & very locally sub-horizontal dip. (Moderately weathered layer at 8.3-8.5m)
11.50	100	47	0										
13.00	100	85	9										
13.00									-9.15	13.00			End of Borehole at 13.00 m

<b>REMARKS:</b>	<b>INSTALLATION DETAILS</b> Installation Type : Depth to Response Zone top (m) : Depth to Response Zone bottom (m) : Comments :
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130 334

<b>REPORT NO.</b> 8483		<b>GEOTECHNICAL CORE LOG RECORD</b>			<b>IGSL</b>
<b>CONTRACT:</b> Hickeys Fabrics Ltd., Parkgate Street, Dublin.					<b>DRILLHOLE NO.:</b> RC4
					<b>SHEET:</b> Sheet 1 of 2
<b>CLIENT:</b> Hickeys Fabrics Ltd.		<b>CORE DIAMETER (mm):</b> 74	<b>DATE STARTED:</b> 19/12/2002		
<b>ENGINEER:</b> Arup Consulting Engineers		<b>GROUND LEVEL (mOD):</b> 4.57	<b>DATE COMPLETED:</b> 19/12/2002		
<b>CO-ORDINATES:</b> 313670.52		<b>INCLINATION (Degrees):</b> 90	<b>DRILLED BY:</b> MHDRILL		
234409.35		<b>FLUSH:</b> Water	<b>LOGGED BY:</b> IGSL		
<b>DOWNHOLE DEPTH (m)</b>	<b>CORE RUN DEPTH (m)</b>	<b>T.C.R.%</b>	<b>S.C.R.%</b>	<b>R.O.D.%</b>	<b>Fracture Spacing (mm)</b>
<b>UCS (MPa)</b>	<b>POINT LOAD Is(50) MPa</b>	<b>SYMBOLIC LOG</b>	<b>ELEVATION (mOD)</b>	<b>DEPTH (m)</b>	<b>SPT (N value)</b>
<b>STANDPIPE DETAILS</b>					
<b>GEOTECHNICAL DESCRIPTION</b>					
<p>OPEN HOLE : No recovery, observed by driller as returns of sandy gravelly clay with occasional cobbles and boulders</p>					
<p>Angular gravel, cobble and boulder-sized returns of limestone with traces of grey/black clay -PROBABLE BOULDER CLAY</p>					
Continued next sheet					
<b>REMARKS:</b>		<b>INSTALLATION DETAILS</b>			
		Installation Type :			
		Depth to Response Zone top (m) :			
		Depth to Response Zone bottom (m) :			
		Comments :			

<b>REPORT NO.</b> 8483		<b>GEOTECHNICAL CORE LOG RECORD</b>			<b>IGSL</b>
<b>CONTRACT:</b> Hickeys Fabrics Ltd., Parkgate Street, Dublin.					<b>DRILLHOLE NO.:</b> RC4
					<b>SHEET:</b> Sheet 2 of 2
<b>CLIENT:</b> Hickeys Fabrics Ltd.		<b>CORE DIAMETER (mm):</b> 74	<b>DATE STARTED:</b> 19/12/2002		
<b>ENGINEER:</b> Arup Consulting Engineers		<b>GROUND LEVEL (mOD):</b> 4.57	<b>DATE COMPLETED:</b> 19/12/2002		
<b>CO-ORDINATES:</b> 313670.52		<b>INCLINATION (Degrees):</b> 90	<b>DRILLED BY:</b> MHDRILL		
234409.35		<b>FLUSH:</b> Water	<b>LOGGED BY:</b> IGSL		
<b>DOWNHOLE DEPTH (m)</b>	<b>CORE RUN DEPTH (m)</b>	<b>T.C.R.%</b>	<b>S.C.R.%</b>	<b>R.O.D.%</b>	<b>Fracture Spacing (mm)</b>
<b>UCS (MPa)</b>	<b>POINT LOAD Is(50) MPa</b>	<b>SYMBOLIC LOG</b>	<b>ELEVATION (mOD)</b>	<b>DEPTH (m)</b>	<b>SPT (N value)</b>
<b>STANDPIPE DETAILS</b>					
<b>GEOTECHNICAL DESCRIPTION</b>					
<p>Angular gravel, cobble and boulder-sized returns of limestone with traces of grey/black clay -PROBABLE BOULDER CLAY</p>					
<p>Strong to locally moderately strong, thickly bedded to locally thinly bedded, grey/dark grey, fine-grained, LIMESTONE, fresh to very locally slightly/moderately weathered intersected by smooth, planar, tight, locally clay smeared, very locally moderately iron-oxide stained fractures of 45° &amp; locally irregular dip. (Predominantly argillaceous with more calc-siltite layers at 9.15-10.0m, 10.7-10.82m, 11.05-11.14m &amp; 11.67-12.4m) (Slightly/moderately weathered layers at 10.0-10.7m, 11.14-11.5m &amp; 12.42-12.9m)</p>					
End of Borehole at 13.00 m					
<b>REMARKS:</b>		<b>INSTALLATION DETAILS</b>			
		Installation Type :			
		Depth to Response Zone top (m) :			
		Depth to Response Zone bottom (m) :			
		Comments :			

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

<b>CONTRACT:</b>	Hickeys Fabrics Ltd., Parkgate Street, Dublin.	<b>Trial Pit No.:</b>	WS1
<b>CLIENT:</b>	Hickeys Fabrics Ltd.	<b>Sheet:</b>	Sheet 1 of 2
<b>ENGINEER:</b>	Arup Consulting Engineers	<b>Excavation Method:</b>	Window Sampler
<b>CO-ORDINATES:</b>	E 313680.90 N 234328.61	<b>Hammer Mass (kg):</b>	60.0
		<b>Increment Size (mm):</b>	1000
		<b>Fall Height (mm):</b>	500.00
		<b>Date Started:</b>	11/12/2002
		<b>Date Completed:</b>	11/12/2002
		<b>Ground Level (mOD):</b>	3.53

**APPENDIX III  
WINDOW SAMPLE LOGS**

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
0.0	Made ground (slightly clayey sandy GRAVEL)	[Cross-hatched pattern]							191	0m to 1m - 60% recovery
1.0									36	1m to 2m - 36% recovery
2.0			2.20	1.33					39	2m to 3m - 39% recovery
3.0	Brown sandy fine to medium sub rounded to rounded GRAVEL	[Dotted pattern]							47	3m to 4m - 47% recovery
4.0	Continued next sheet		4.00	-0.47					53	4m to 5m - 53% recovery

**Groundwater Observations:**

**Stability:**

**Remarks:** Pipe installed at 2.5m

130341

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

CONTRACT: Hickeys Fabrics Ltd., Parkgate Street, Dublin.

CLIENT: Hickeys Fabrics Ltd.

ENGINEER: Arup Consulting Engineers

CO-ORDINATES: E 313680.90  
N 234328.61

HAMMER MASS (kg) : 50.0  
INCREMENT SIZE (mm) : 1000  
FALL HEIGHT (mm) : 500.00

Trial Pit No.: WS1

Sheet: Sheet 2 of 2

Excavation Method: Window Sampler

Date Started: 11/12/2002

Date Completed: 11/12/2002

Ground Level (mOD): 3.53

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
4.0	Final depth, 5.00 m									
5.0										
6.0										
7.0										
8.0										

Groundwater Observations:

Stability:

Remarks: Pipe installed at 2.5m

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

CONTRACT: Hickeys Fabrics Ltd., Parkgate Street, Dublin.

CLIENT: Hickeys Fabrics Ltd.

ENGINEER: Arup Consulting Engineers

CO-ORDINATES: E 313689.29  
N 234344.11

HAMMER MASS (kg) : 50.0  
INCREMENT SIZE (mm) : 1000  
FALL HEIGHT (mm) : 500.00

Trial Pit No.: WS2

Sheet: Sheet 1 of 1

Excavation Method: Window Sampler

Date Started: 11/12/2002

Date Completed: 11/12/2002

Ground Level (mOD): 3.75

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
0.0	Made ground (slightly clayey sandy GRAVEL)									
1.0										
2.0										
2.20	Brown clayey sandy fine to medium sub rounded to rounded GRAVEL		2.20	1.55						
3.0										
4.0	Final depth, 4.00 m		4.00	-0.25						

Groundwater Observations:

Stability:

Remarks: Pipe installed at 2.5m

130342

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

CONTRACT: Hickeys Fabrics Ltd., Parkgate Street, Dublin.		Trial Pit No.: WS3
CLIENT: Hickeys Fabrics Ltd.		Sheet: Sheet 1 of 1
ENGINEER: Arup Consulting Engineers		Excavation Method: Window Sampler
CO-ORDINATES: E 313676.46 N 234350.12		Date Started: 11/12/2002
HAMMER MASS (kg): 50.0 INCREMENT SIZE (mm): 1000 FALL HEIGHT (mm): 500.00		Date Completed: 11/12/2002
		Ground Level (mOD): 3.61

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
0.0	Made ground (slightly clayey sandy GRAVEL)								35	0m to 1m - 80% recovery
1.0									39	1m to 2m - 80% recovery
2.0									108	2m to 3m - 10% recovery
	Brown clayey sandy fine to medium sub rounded to rounded GRAVEL		2.20	1.41						
3.0									129	3m to 4m - 10% recovery
4.0	Final depth, 4.00 m		4.00	-0.39						

Groundwater Observations:

Stability:

Remarks: Pipe installed at 3m

130343

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

CONTRACT: Hickeys Fabrics Ltd., Parkgate Street, Dublin.		Trial Pit No.: WS4
CLIENT: Hickeys Fabrics Ltd.		Sheet: Sheet 1 of 2
ENGINEER: Arup Consulting Engineers		Excavation Method: Window Sampler
CO-ORDINATES: E 313675.78 N 234376.36		Date Started: 11/12/2002
HAMMER MASS (kg): 50.0 INCREMENT SIZE (mm): 1000 FALL HEIGHT (mm): 500.00		Date Completed: 11/12/2002
		Ground Level (mOD): 3.62

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
0.0	Made ground (slightly clayey sandy GRAVEL)								75	0m to 1m - 40% recovery
1.0									65	1m to 2m - 80% recovery
2.0									68	2m to 3m - 80% recovery
	Brown clayey gravelly SAND		2.30	1.32						
3.0									47	3m to 4m - 88% recovery
	Brown very sandy fine to medium sub rounded to rounded GRAVEL becoming coarser with depth		3.00	0.62						
4.0	Continued next sheet								47	4m to 5m - 47% recovery

Groundwater Observations:

Stability:

Remarks:

130344

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

CONTRACT: Hickeys Fabrics Ltd., Parkgate Street, Dublin.  
 CLIENT: Hickeys Fabrics Ltd.  
 ENGINEER: Arup Consulting Engineers  
 CO-ORDINATES: E 313675.78 N 234376.36  
 HAMMER MASS (kg): 50.0  
 INCREMENT SIZE (mm): 1000  
 FALL HEIGHT (mm): 500.00  
 Trial Pit No.: WS4  
 Sheet: Sheet 2 of 2  
 Excavation Method: Window Sampler  
 Date Started: 11/12/2002  
 Date Completed: 11/12/2002  
 Ground Level (mOD): 3.62

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
4.0	Brown very sandy fine to medium sub rounded to rounded GRAVEL becoming coarser with depth	[Pattern]								
5.0	Final depth, 5.00 m		5.00	-1.38						
6.0										
7.0										
8.0										

Groundwater Observations:  
 Stability:  
 Remarks:

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

CONTRACT: Hickeys Fabrics Ltd., Parkgate Street, Dublin.  
 CLIENT: Hickeys Fabrics Ltd.  
 ENGINEER: Arup Consulting Engineers  
 CO-ORDINATES: E 313670.86 N 234393.94  
 HAMMER MASS (kg): 50.0  
 INCREMENT SIZE (mm): 1000  
 FALL HEIGHT (mm): 500.00  
 Trial Pit No.: WSS  
 Sheet: Sheet 1 of 2  
 Excavation Method: Window Sampler  
 Date Started: 14/12/2002  
 Date Completed: 14/12/2002  
 Ground Level (mOD): 4.02

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
0.0	Made ground (slightly clayey sandy GRAVEL)	[Pattern]							61	0m to 1m - 80% recovery
1.0									27	1m to 2m - 80% recovery
2.0									31	2m to 3m - 80% recovery
2.20	Brown slightly sandy slightly gravelly CLAY	[Pattern]	2.20	1.82						
3.0									68	3m to 4m - 80% recovery
3.80	Brown fine to coarse angular GRAVEL	[Pattern]	3.80	0.22						
4.0	Continued next sheet								52	4m to 5m - 90% recovery

Groundwater Observations:  
 Stability:  
 Remarks: Pipe installed at 4m



130345

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

<b>CONTRACT:</b> Hickeys Fabrics Ltd., Parkgate Street, Dublin.		<b>Trial Pit No.:</b> WSS
<b>CLIENT:</b> Hickeys Fabrics Ltd.		<b>Sheet:</b> Sheet 2 of 2
<b>ENGINEER:</b> Arup Consulting Engineers		<b>Excavation Method:</b> Window Sampler
<b>CO-ORDINATES:</b> E 313670.86 N 234393.94		<b>Date Started:</b> 14/12/2002
<b>HAMMER MASS (kg):</b> 50.0 <b>INCREMENT SIZE (mm):</b> 1000 <b>FALL HEIGHT (mm):</b> 500.00		<b>Date Completed:</b> 14/12/2002
		<b>Ground Level (mOD):</b> 4.02

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH		
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample	Recovery
4.0	Brown fine to coarse angular GRAVEL	[Pattern]									
	Grey sandy fine to coarse angular gravelly CLAY	[Pattern]	4.70	-0.68							
5.0	Final depth, 5.00 m	[Pattern]	5.00	-0.98							
8.0											
7.0											
9.0											

**Groundwater Observations:**

**Stability:**

**Remarks:** Pipe installed at 4m

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

<b>CONTRACT:</b> Hickeys Fabrics Ltd., Parkgate Street, Dublin.		<b>Trial Pit No.:</b> WS6
<b>CLIENT:</b> Hickeys Fabrics Ltd.		<b>Sheet:</b> Sheet 1 of 1
<b>ENGINEER:</b> Arup Consulting Engineers		<b>Excavation Method:</b> Window Sampler
<b>CO-ORDINATES:</b> E 313665.32 N 234405.39		<b>Date Started:</b> 14/12/2002
<b>HAMMER MASS (kg):</b> 50.0 <b>INCREMENT SIZE (mm):</b> 1000 <b>FALL HEIGHT (mm):</b> 500.00		<b>Date Completed:</b> 14/12/2002
		<b>Ground Level (mOD):</b> 4.11

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH		
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample	Recovery
0.0	Made ground (slightly clayey sandy GRAVEL)	[Pattern]									
-1.0											
-2.0											
-3.0	Grey very sandy CLAY	[Pattern]	2.59	1.52							
-4.0	Final depth, 4.00 m	[Pattern]	4.00	0.11							

**Groundwater Observations:**

**Stability:**

**Remarks:** Pipe installed at 2.7m

130346

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

<b>CONTRACT:</b> Hickeys Fabrics Ltd., Parkgate Street, Dublin.	<b>Trial Pit No.:</b> WS7
<b>CLIENT:</b> Hickeys Fabrics Ltd.	<b>Sheet:</b> Sheet 1 of 2
<b>ENGINEER:</b> Arup Consulting Engineers	<b>Excavation Method:</b> Window Sampler
<b>CO-ORDINATES:</b> E 313720.04 N 234404.35	<b>Date Started:</b> 14/12/2002
	<b>Date Completed:</b> 14/12/2002
	<b>Ground Level (mOD):</b> 4.23
<b>HAMMER MASS (kg):</b> 50.0	
<b>INCREMENT SIZE (mm):</b> 1000	
<b>FALL HEIGHT (mm):</b> 500.00	

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
0.0	Made ground (slightly clayey sandy GRAVEL)								105	0m to 1m - 90% recover
-1.0									67	1m to 2m - 10% recover
-2.0									39	2m to 3m - 40% recover
-3.0	Brown very gravelly CLAY		3.00	1.23					44	3m to 4m - 10% recover
	Grey very sandy CLAY		3.28	0.95						
-4.0	Continued next sheet								36	4m to 5m - 40% recover

**Groundwater Observations:**

**Stability:**

**Remarks:** Pipe installed at 4m

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

<b>CONTRACT:</b> Hickeys Fabrics Ltd., Parkgate Street, Dublin.	<b>Trial Pit No.:</b> WS7
<b>CLIENT:</b> Hickeys Fabrics Ltd.	<b>Sheet:</b> Sheet 2 of 2
<b>ENGINEER:</b> Arup Consulting Engineers	<b>Excavation Method:</b> Window Sampler
<b>CO-ORDINATES:</b> E 313720.04 N 234404.35	<b>Date Started:</b> 14/12/2002
	<b>Date Completed:</b> 14/12/2002
	<b>Ground Level (mOD):</b> 4.23
<b>HAMMER MASS (kg):</b> 50.0	
<b>INCREMENT SIZE (mm):</b> 1000	
<b>FALL HEIGHT (mm):</b> 500.00	

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
4.0	Grey very sandy CLAY									
	Brown fine well rounded GRAVEL		4.70	-0.47						
-5.0	Final depth, 5.00 m		5.00	-0.77						
-6.0										
-7.0										
-8.0										

**Groundwater Observations:**

**Stability:**

**Remarks:** Pipe installed at 4m

130347

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

CONTRACT: Hickeys Fabrics Ltd., Parkgate Street, Dublin.  
 CLIENT: Hickeys Fabrics Ltd.  
 ENGINEER: Arup Consulting Engineers  
 CO-ORDINATES: E 313717.57 N 234389.02  
 HAMMER MASS (kg): 50.0  
 INCREMENT SIZE (mm): 1000  
 FALL HEIGHT (mm): 500.00  
 Trial Pit No.: W58  
 Sheet: Sheet 1 of 1  
 Excavation Method: Window Sampler  
 Date Started: 14/12/2002  
 Date Completed: 14/12/2002  
 Ground Level (mOD): 4.23

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
0.0	Made ground (slightly clayey sandy GRAVEL)	[Hatched pattern]							82	0m to 1m - 80% recover
1.0									73	1m to 2m - 70% recover
2.0	Final depth, 2.00 m		2.00	2.23						
3.0										
4.0										

Groundwater Observations:  
 Stability:  
 Remarks:

130348

**REPORT NO. 8483 DYNAMIC PROBE WITH WINDOW SAMPLES I.G.S.L.**

CONTRACT: Hickeys Fabrics Ltd.  
 CLIENT Hickeys Fabrics Ltd.  
 ENGINEER: ARUP Consulting Engineers  
 LOCATION: Park Gate Street, Dublin  
 PROBE NO.: W59  
 SHEET: 1 of 1  
 DATE STARTED: 14/12/02  
 DATE COMPLETED: 14/12/02  
 PROBED BY: I.G.S.L.  
 GROUND LEVEL (mOD):  
 DATUM:  
 PROBE WEIGHT (DPL,DPM,DPH): DPH  
 HAMMER MASS (kg): 50  
 FALL HEIGHT (mm): 500  
 90° CONE DIAMETER (mm): 43.7  
 SPECIFIC WORK PER BLOW (kJ/m^2): 167  
 BLOWS COUNTED OVER (mm): 100

DOWNHOLE DEPTH (m)	SOIL DESCRIPTION	Depth (m)	WINDOW SAMPLE DEPTH	RECOVERY (%)	BLOWCOUNT	ELEVATION (mOD)	DEPTH (m)	BLOWS PER 100mm	GRAPHIC PROBE RECORD						
									0	10	20	30	40		
0.0	Made ground (slightly clayey sandy GRAVEL)	0.25													
-0.5	Refusal large cobbles - hole abandoned														
-1.0															
-1.5															
-2.0															
-2.5															
-3.0															
-3.5															
-4.0															
-4.5															
-5.0															

COMMENTS: INSTALLATIONS:

130349

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

**CONTRACT:** Hickeys Fabrics Ltd., Parkgate Street, Dublin.  
**CLIENT:** Hickeys Fabrics Ltd.  
**ENGINEER:** Arup Consulting Engineers  
**CO-ORDINATES:** E 313721.55  
 N 234364.87

**Trial Pit No.:** WS10  
**Sheet:** Sheet 1 of 1  
**Excavation Method:** Window Sampler  
**Date Started:** 14/12/2002  
**Date Completed:** 14/12/2002  
**Ground Level (mOD):** 4.21

**HAMMER MASS (kg):** 50.0  
**INCREMENT SIZE (mm):** 1000  
**FALL HEIGHT (mm):** 500.00

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
0.0	Made ground (slightly clayey sandy GRAVEL)	[Cross-hatched pattern]							56	0m to 1m - 70% recovery
1.0									43	1m to 2m - 70% recovery
2.0									38	2m to 3m - 80% recovery
3.0									44	3m to 4m - 10% recovery
	Grey slightly sandy CLAY	[Dotted pattern]	3.34	0.87						
4.0	Final depth, 4.00 m		4.00	0.21						

**Groundwater Observations:**  
**Stability:**  
**Remarks:** Pipe installed at 2.6m

130350

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

**CONTRACT:** Hickeys Fabrics Ltd., Parkgate Street, Dublin.  
**CLIENT:** Hickeys Fabrics Ltd.  
**ENGINEER:** Arup Consulting Engineers  
**CO-ORDINATES:** E 313740.67  
 N 234375.04

**Trial Pit No.:** WS11  
**Sheet:** Sheet 1 of 2  
**Excavation Method:** Window Sampler  
**Date Started:** 14/12/2002  
**Date Completed:** 14/12/2002  
**Ground Level (mOD):** 4.22

**HAMMER MASS (kg):** 50.0  
**INCREMENT SIZE (mm):** 1000  
**FALL HEIGHT (mm):** 500.00

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
0.0	Made ground (slightly clayey sandy GRAVEL)	[Cross-hatched pattern]							71	0m to 1m - 10% recovery
1.0									52	1m to 2m - 80% recovery
2.0									41	2m to 3m - 80% recovery
3.0									20	3m to 4m - 80% recovery
	Brown slightly gravelly sandy CLAY	[Dotted pattern]	2.50	1.72						
	Grey sandy CLAY	[Dotted pattern]	3.70	0.52						
4.0	Continued next sheet								30	4m to 5m - 70% recovery

**Groundwater Observations:**  
**Stability:**  
**Remarks:** Pipe installed at 5m

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

CONTRACT: Hickeys Fabrics Ltd., Parkgate Street, Dublin.  
 CLIENT: Hickeys Fabrics Ltd.  
 ENGINEER: Anup Consulting Engineers  
 CO-ORDINATES: E 313740.67 N 234375.04

Trial Pit No.: WS11  
 Sheet: Sheet 2 of 2  
 Excavation Method: Window Sampler  
 Date Started: 14/12/2002  
 Date Completed: 14/12/2002  
 Ground Level (mOD): 4.22

HAMMER MASS (kg): 50.0  
 INCREMENT SIZE (mm): 1000  
 FALL HEIGHT (mm): 500.00

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
4.0	Grey sandy CLAY									
5.0	Brown fine to medium sub angular GRAVEL Final depth, 5.00 m		4.90 5.00	-0.68 -0.78						
6.0										
7.0										
8.0										

Groundwater Observations:

Stability:

Remarks: Pipe installed at 5m

130351  
**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

CONTRACT: Hickeys Fabrics Ltd., Parkgate Street, Dublin.  
 CLIENT: Hickeys Fabrics Ltd.  
 ENGINEER: Anup Consulting Engineers  
 CO-ORDINATES: E 313775.98 N 234374.47

Trial Pit No.: WS12  
 Sheet: Sheet 1 of 2  
 Excavation Method: Window Sampler  
 Date Started: 14/12/2002  
 Date Completed: 14/12/2002  
 Ground Level (mOD): 4.27

HAMMER MASS (kg): 50.0  
 INCREMENT SIZE (mm): 1000  
 FALL HEIGHT (mm): 500.00

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
0.0	Made ground (slightly clayey sandy GRAVEL)									
1.0										
2.0	Brown slightly sandy gravelly CLAY		2.00	2.27						
3.0										
4.0	Continued next sheet									

Groundwater Observations:

Stability:

Remarks: Pipe installed at 4m

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

CONTRACT: Hickeys Fabrics Ltd., Parkgate Street, Dublin.  
 CLIENT: Hickeys Fabrics Ltd.  
 ENGINEER: Arup Consulting Engineers

Trial Pit No.: WS12  
 Sheet: Sheet 2 of 2  
 Excavation Method: Window Sampler  
 Date Started: 14/12/2002  
 Date Completed: 14/12/2002  
 Ground Level (mOD): 4.27

CO-ORDINATES: E 313775.98  
 N 234374.47  
 HAMMER MASS (kg): 60.0  
 INCREMENT SIZE (mm): 1000  
 FALL HEIGHT (mm): 500.00

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples		Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount
4.0	Brown slightly sandy gravelly CLAY								
5.0	Final depth, 5.00 m		5.00	-0.73					
6.0									
7.0									
8.0									

Groundwater Observations:  
 Stability:  
 Remarks: Pipe installed at 4m

130352

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

CONTRACT: Hickeys Fabrics Ltd., Parkgate Street, Dublin.  
 CLIENT: Hickeys Fabrics Ltd.  
 ENGINEER: Arup Consulting Engineers

Trial Pit No.: WS13  
 Sheet: Sheet 1 of 2  
 Excavation Method: Window Sampler  
 Date Started: 14/12/2002  
 Date Completed: 14/12/2002  
 Ground Level (mOD): 4.25

CO-ORDINATES: E 313741.78  
 N 234354.43  
 HAMMER MASS (kg): 50.0  
 INCREMENT SIZE (mm): 1000  
 FALL HEIGHT (mm): 600.00

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples		Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount
0.0	Made ground (slightly clayey sandy GRAVEL)								
1.0									
2.0									
3.0									
3.70	Brown slightly gravelly sandy CLAY		3.70	0.55					
4.0	Continued next sheet								

Groundwater Observations:  
 Stability:  
 Remarks: Pipe installed at 4m

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

CONTRACT: Hickeys Fabrics Ltd., Parkgate Street, Dublin.  
 CLIENT: Hickeys Fabrics Ltd.  
 ENGINEER: Arup Consulting Engineers  
 CO-ORDINATES: E 313741.78 N 234354.43  
 HAMMER MASS (kg): 50.0  
 INCREMENT SIZE (mm): 1000  
 FALL HEIGHT (mm): 500.00  
 Trial Pit No.: WS13  
 Sheet: Sheet 2 of 2  
 Excavation Method: Window Sampler  
 Date Started: 14/12/2002  
 Date Completed: 14/12/2002  
 Ground Level (mOD): 4.25

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Sinker (m)	Samples		Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount
4.0	Brown slightly gravelly sandy CLAY	[Pattern]							
5.0	Brown sandy fine rounded GRAVEL Final depth, 5.00 m	[Pattern]	4.85	-0.60					
			5.00	-0.75					
8.0									
7.0									
8.0									

Groundwater Observations:  
 Stability:  
 Remarks: Pipe installed at 4m

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

CONTRACT: Hickeys Fabrics Ltd., Parkgate Street, Dublin.  
 CLIENT: Hickeys Fabrics Ltd.  
 ENGINEER: Arup Consulting Engineers  
 CO-ORDINATES: E 313755.03 N 234361.44  
 HAMMER MASS (kg): 50.0  
 INCREMENT SIZE (mm): 1000  
 FALL HEIGHT (mm): 500.00  
 Trial Pit No.: WS14  
 Sheet: Sheet 1 of 1  
 Excavation Method: Window Sampler  
 Date Started: 14/12/2002  
 Date Completed: 14/12/2002  
 Ground Level (mOD): 4.27

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Sinker (m)	Samples		Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount
0.0	Made ground (slightly clayey sandy GRAVEL)	[Pattern]							
1.0									73 0m to 1m - 50% recovery
2.0									57 1m to 2m - 10% recovery
3.0									65 2m to 3m - 70% recovery
3.10	Brown slightly gravelly sandy CLAY	[Pattern]	3.10	1.17					54 3m to 4m - 60% recovery
3.60	Brown slightly gravelly sandy CLAY with cobbles	[Pattern]	3.60	0.67					
4.0	Final depth, 4.00 m		4.00	0.27					

Groundwater Observations:  
 Stability:  
 Remarks: Pipe installed at 3.6m

130354

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

<b>CONTRACT:</b> Hickeys Fabrics Ltd., Parkgate Street, Dublin.	<b>Trial Pit No.:</b> WS15
<b>CLIENT:</b> Hickeys Fabrics Ltd.	<b>Sheet:</b> Sheet 1 of 1
<b>ENGINEER:</b> Arup Consulting Engineers	<b>Excavation Method:</b> Window Sampler
<b>CO-ORDINATES:</b> E 313724.44 N 234353.80	<b>Date Started:</b> 15/12/2002
	<b>Date Completed:</b> 15/12/2002
	<b>Ground Level (mOD):</b> 4.24
<b>HAMMER MASS (kg):</b> 50.0	
<b>INCREMENT SIZE (mm):</b> 1000	
<b>FALL HEIGHT (mm):</b> 600.00	

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
0.0	Made ground (slightly clayey sandy GRAVEL)	[Pattern]						45	0m to 1m - 60% recovery	
1.0								46	1m to 2m - 80% recovery	
1.80	Black SILT	[Pattern]	1.80	2.44						
2.00	Made ground (slightly clayey sandy GRAVEL)	[Pattern]	2.00	2.24				38	2m to 3m - 70% recovery	
3.0								38	3m to 4m - 10% recovery	
3.20	Brown slightly sandy CLAY	[Pattern]	3.20	1.04						
3.72	Brown fine to medium GRAVEL	[Pattern]	3.72	0.52						
4.00	Final depth, 4.00 m		4.00	0.24						

Groundwater Observations:

Stability:

Remarks:

130355

**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

<b>CONTRACT:</b> Hickeys Fabrics Ltd., Parkgate Street, Dublin.	<b>Trial Pit No.:</b> WS16
<b>CLIENT:</b> Hickeys Fabrics Ltd.	<b>Sheet:</b> Sheet 1 of 2
<b>ENGINEER:</b> Arup Consulting Engineers	<b>Excavation Method:</b> Window Sampler
<b>CO-ORDINATES:</b> E 313705.45 N 234344.07	<b>Date Started:</b> 15/12/2002
	<b>Date Completed:</b> 15/12/2002
	<b>Ground Level (mOD):</b> 4.17
<b>HAMMER MASS (kg):</b> 50.0	
<b>INCREMENT SIZE (mm):</b> 1000	
<b>FALL HEIGHT (mm):</b> 500.00	

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
0.0	Made ground (slightly clayey sandy GRAVEL)	[Pattern]						33	0m to 1m - 80% recovery	
1.0								36	1m to 2m - 80% recovery	
2.0								27	2m to 3m - 10% recovery	
2.30	Brown very clayey SAND	[Pattern]	2.30	1.87						
3.0								52	3m to 4m - 90% recovery	
3.52			3.52	0.65						
4.0	Continued next sheet							49	4m to 5m - 20% recovery	

Groundwater Observations:

Stability:

Remarks: Pipe installed at 4m



**REPORT NO. 8483 GEOTECHNICAL WINDOW SAMPLE RECORD IGSL**

<b>CONTRACT:</b> Hickeys Fabrics Ltd., Parkgate Street, Dublin.	<b>Trial Pit No.:</b> WS16
<b>CLIENT:</b> Hickeys Fabrics Ltd.	<b>Sheet:</b> Sheet 2 of 2
<b>ENGINEER:</b> Arup Consulting Engineers	<b>Excavation Method:</b> Window Sampler
<b>CO-ORDINATES:</b> E 313705.45 N 234344.07	<b>Date Started:</b> 15/12/2002
	<b>Date Completed:</b> 15/12/2002
<b>HAMMER MASS (kg):</b> 50.0 <b>INCREMENT SIZE (mm):</b> 1000 <b>FALL HEIGHT (mm):</b> 500.00	<b>Ground Level (mOD):</b> 4.17

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water Strike (m)	Samples			Probe Type:DPH	
						Ref. No.	Type	Depth (m)	Blowcount	Window Sample Recovery
4.0	Final depth, 5.00 m									
5.0										
6.0										
7.0										
8.0										

**Groundwater Observations:**

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**Stability:**

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**Remarks:** Pipe installed at 4m

**APPENDIX V  
IN SITU MONITORING RESULTS**

**IV IS MISSING**

**APPENDIX V  
IN SITU MONITORING RESULTS**

### Gas Monitoring & Water Level Report

Client:	Hickeys Fabrics Ltd.	Consultant Engineers:	Anup Consulting Engineers	Contract No.:	8483
Location:	Parkgate Street, Dublin				
		Date:	25/2/03		

Borehole No.	METHANE % CH <sub>4</sub>	CARBON DIOXIDE % CO <sub>2</sub>	OXYGEN % O <sub>2</sub>	CARBON MONOXIDE CO (ppm)	HYDROGEN SULPHIDE H <sub>2</sub> S (ppm)	BAROMETRIC PRESSURE (mb)	RELATIVE PRESSURE (mb)	Water Level (m)	Hole Depth (m)
WS2	0.0	0.0	20.7	0.0	0.0	1012	-1.1	DRY	2.50
WS3	0.0	0.0	20.4	0.0	0.0	1012	-1.1	DRY	3.00
WS5	3.9	1.2	17.5	0.0	0.0	1012	-1.1	3.70	4.00
WS9	0.0	0.0	20.7	0.0	0.0	1012	-1.1	2.53	2.70
WS7	0.0	0.0	20.8	0.0	0.0	1012	-1.1	2.57	4.00
WS10	0.0	0.1	20.7	0.0	0.0	1012	-1.1	2.40	2.60
WS11	0.0	0.5	20.4	0.0	0.0	1012	-1.1	3.92	5.00
WS12	0.0	0.0	20.7	0.0	0.0	1012	-1.1	3.55	4.00
WS13	0.0	0.0	20.7	0.0	0.0	1012	-1.1	3.66	4.00
WS14	0.0	0.0	20.7	0.0	0.0	1012	-1.1	DRY	3.60
WS16	0.0	0.0	20.7	0.0	0.0	1012	-1.1	DRY	4.00
BH1	0.0	0.0	20.7	0.0	0.0	1012	-1.1	DRY	6.50
BH2	0.0	0.0	20.4	0.0	0.0	1012	-1.1	3.51	7.00
BH4	0.0	0.0	20.4	0.0	0.0	1012	-1.1	3.43	5.00
BH5	0.0	0.0	20.7	0.0	0.0	1012	-1.1	3.68	7.20
BH6	0.0	2.3	18.7	0.0	0.0	1012	-1.1	DRY	7.00
BH7	0.0	0.0	20.5	0.0	0.0	1012	-1.1	3.77	6.50

Gas detection employed by a GA2000 Landfill Gas Analyser which measures CH<sub>4</sub> and CO<sub>2</sub> in % by infra-red measurement, CO and H<sub>2</sub>S in ppm and O<sub>2</sub> in % by internal electrochemical cell measurement.

**IGSL**

### Gas Monitoring & Water Level Report

Client:	Hickeys Fabrics Ltd.	Consultant Engineers:	Anup Consulting Engineers	Contract No.:	8483
Location:	Parkgate Street, Dublin				
		Date:	3/3/03		

Borehole No.	METHANE % CH <sub>4</sub>	CARBON DIOXIDE % CO <sub>2</sub>	OXYGEN % O <sub>2</sub>	CARBON MONOXIDE CO (ppm)	HYDROGEN SULPHIDE H <sub>2</sub> S (ppm)	BAROMETRIC PRESSURE (mb)	RELATIVE PRESSURE (mb)	Water Level (m)	Hole Depth (m)
WS2	0.0	0.0	20.4	0.0	0.0	992	-1.1	DRY	2.50
WS3	0.0	0.0	20.1	0.0	0.0	992	-1.1	DRY	3.00
WS5	3.4	1.3	16.4	0.0	0.0	992	-1.1	3.50	4.00
WS8	0.0	0.0	20.2	0.0	0.0	992	-1.1	2.70	2.5
WS7	0.0	0.0	19.9	0.0	0.0	992	-1.1	2.5	4.00
WS10	0.0	0.1	19.7	0.0	0.0	992	-1.1	2.40	2.60
WS11	0.0	0.6	19.2	0.0	0.0	992	-1.1	3.87	5.00
WS12	0.0	0.0	20.4	0.0	0.0	992	-1.1	3.4	4.00
WS13	0.0	0.1	19.8	0.0	0.0	992	-1.1	3.60	4.00
WS14	0.0	0.0	20.1	0.0	0.0	992	-1.1	3.56	4.00
WS16	0.0	0.0	20.3	0.0	0.0	992	-1.1	DRY	4.00
BH1	0.0	0.0	20.1	0.0	0.0	992	-1.1	DRY	4.00
BH2	0.0	0.0	20.1	0.0	0.0	992	-1.1	3.59	6.50
BH4	0.0	0.2	19.7	0.0	0.0	992	-1.1	3.25	7.00
BH5	0.0	0.0	20.7	0.0	0.0	992	-1.1	3.54	5.00
BH6	0.0	2.1	18.9	0.0	0.0	992	-1.1	3.45	7.20
BH7	0.0	0.0	20.0	0.0	0.0	992	-1.1	DRY	7.00
								3.60	6.50

Gas detection employed by a GA2000 Landfill Gas Analyser which measures CH<sub>4</sub> and CO<sub>2</sub> in % by infra-red measurement, CO and H<sub>2</sub>S in ppm and O<sub>2</sub> in % by internal electrochemical cell measurement.

**IGSL**

### Gas Monitoring & Water Level Report

Client: Hickeys Fabrics Ltd. Consultant Engineers: Aug Consulting Engineers Contract No: 8483

Location: Parkgate Street, Dublin Date: 15/3/03

Borehole No.	METHANE % CH <sub>4</sub>	CARBON DIOXIDE % CO <sub>2</sub>	OXYGEN % O <sub>2</sub>	CARBON MONOXIDE CO (ppm)	HYDROGEN SULPHIDE H <sub>2</sub> S (ppm)	BAROMETRIC PRESSURE (mb)	RELATIVE PRESSURE (mb)	Water Level (m)	Hole Depth(m)
WS2	0.0	0.0	20.3	0.0	0.0	1015	-1.1	DRY	2.50
WS3	0.0	0.0	20.2	0.0	0.0	1015	-1.1	DRY	3.00
WS5	0.0	0.0	16.5	0.0	0.0	1015	-1.1	2.54	4.00
WS6	3.3	1.4	20.3	0.0	0.0	1015	-1.1	2.5	2.70
WS7	0.0	0.0	19.9	0.0	0.0	1015	-1.1	2.54	4.00
WS10	0.0	0.1	19.9	0.0	0.0	1015	-1.1	2.42	2.60
WS11	0.0	0.6	18.5	0.0	0.0	1015	-1.1	3.79	5.00
WS12	0.0	0.0	20.6	0.0	0.0	1015	-1.1	3.51	4.00
WS13	0.0	0.2	19.7	0.0	0.0	1015	-1.1	3.66	4.00
WS14	0.0	0.0	20.3	0.0	0.0	1015	-1.1	DRY	3.60
WS16	0.0	0.0	20.3	0.0	0.0	1015	-1.1	DRY	4.00
BH1	0.0	0.0	20.2	0.0	0.0	1015	-1.1	3.53	6.50
BH2	0.0	0.0	20.1	0.0	0.0	1015	-1.1	3.48	7.00
BH4	0.0	0.0	19.6	0.0	0.0	1015	-1.1	3.68	5.00
BH5	0.0	0.0	20.7	0.0	0.0	1015	-1.1	3.48	7.20
BH6	0.0	2.2	19.1	0.0	0.0	1015	-1.1	DRY	7.00
BH7	0.0	0.0	20.1	0.0	0.0	1015	-1.1	3.74	6.50

Gas detection employed by a GA2000 Landfill Gas Analyser which measures CH<sub>4</sub> and CO<sub>2</sub> in % by infra-red measurement, CO and H<sub>2</sub>S in ppm and O<sub>2</sub> in % by internal electrochemical cell measurement.

IGSL

Location Parkgate Street, Dublin

### Groundwater - Permeability Summary Sheet

Set 1

BOREHOLE	Date	Comments
Borehole 1	17.3.03	Poured 20 gallons of water ( 4 x =5 gallon drums ) into standpipe. Wtare flowing away instantly
	27.3.03	Rising Head Test Attempted - Bailed out 10 gallons of wate using Watterra tubing - Immediate recovery
	30.3.03	Pumped out water approx. 20gallons using 2" pump and section hose. Removed suction hose GW at same level
Borehole 5	17.3.03	Poured 20 gallons of water ( 4 x =5 gallon drums ) into standpipe. Wtare flowing away instantly
	27.3.03	Rising Head Test Attempted - Bailed out 10 gallons of wate using Watterra tubing - immediate recovery
	30.3.03	Pumped out water approx. 20gallons using 2" pump and section hose. Removed suction hose GW at same level
Borehole 7	17.3.03	Poured 20 gallons of water ( 4 x =5 gallon drums ) into standpipe. Wtare flowing away instantly
	27.3.03	Rising Head Test Attempted - Bailed out 10 gallons of wate using Watterra tubing - immediate recovery
	30.3.03	Pumped out water approx. 20gallons using 2" pump and section hose. Removed suction hose GW at same level

## APPENDIX VI LABORATORY TEST RECORDS ( GEOTECHNICAL )

<b>Determination of Moisture Content</b> BS1377:Part 2:1990, clauses 3.2				
BH/TP No.	Sample No.	Depth (m)	Sample Type	Moisture Content % Description
BH 1	7936	1.00	DB	10.9 Grey brown sandy gravelly SILTCLAY with broken red brick
BH 1	7938	3.00	DB	14.4 Brown clayey/silty very sandy GRAVEL
BH 1	7939	4.00	DB	10.8 Grey clayey/silty sandy GRAVEL with some cobbles
BH 1	7940	5.00	DB	4.1 Grey brown very sandy GRAVEL
BH 1	7941	6.00	DB	5.8 Grey brown sandy GRAVEL with some cobbles
BH 2	7942	0.00	DB	12.2 Grey clayey/silty sandy GRAVEL
BH 2	7943	1.00	DB	19.7 Grey sandy gravelly SILTCLAY with some shells
BH 2	7944	2.00	DB	27.7 Dark grey sandy gravelly SILTCLAY with broken red brick
BH 2	7945	3.00	DB	7.8 Grey brown very gravelly SAND
BH 2	7946	4.00	DB	5.0 Grey brown sandy GRAVEL with some cobbles
BH 2	7947	5.00	DB	1.2 COBBLES with grey brown slightly sandy gravel
BH 2	7948	6.00	DB	4.3 Grey brown sandy GRAVEL with some cobbles
BH 2	7949	7.00	DB	7.6 Grey brown slightly silty/clayey sandy GRAVEL with some cobbles
BH 4	7965	1.00	DB	10.8 Grey brown slightly silty/clayey sandy GRAVEL with some cobbles
BH 4	7966	2.00	DB	8.4 Grey clayey/silty sandy GRAVEL with many cobbles
BH 4	7967	3.00	DB	20.4 Brown slightly sandy slightly gravelly SILTCLAY
BH 4	7969	5.00	DB	7.6 Grey brown slightly clayey/silty very sandy GRAVEL
<b>IGSL</b>		Contract PARKGATE STREET DUBLIN		
		Contract No. 8483		
		Compiled By Date		
		D CONNOLLY 19/02/03		
		Page 1 of 2		

### Determination of Moisture Content

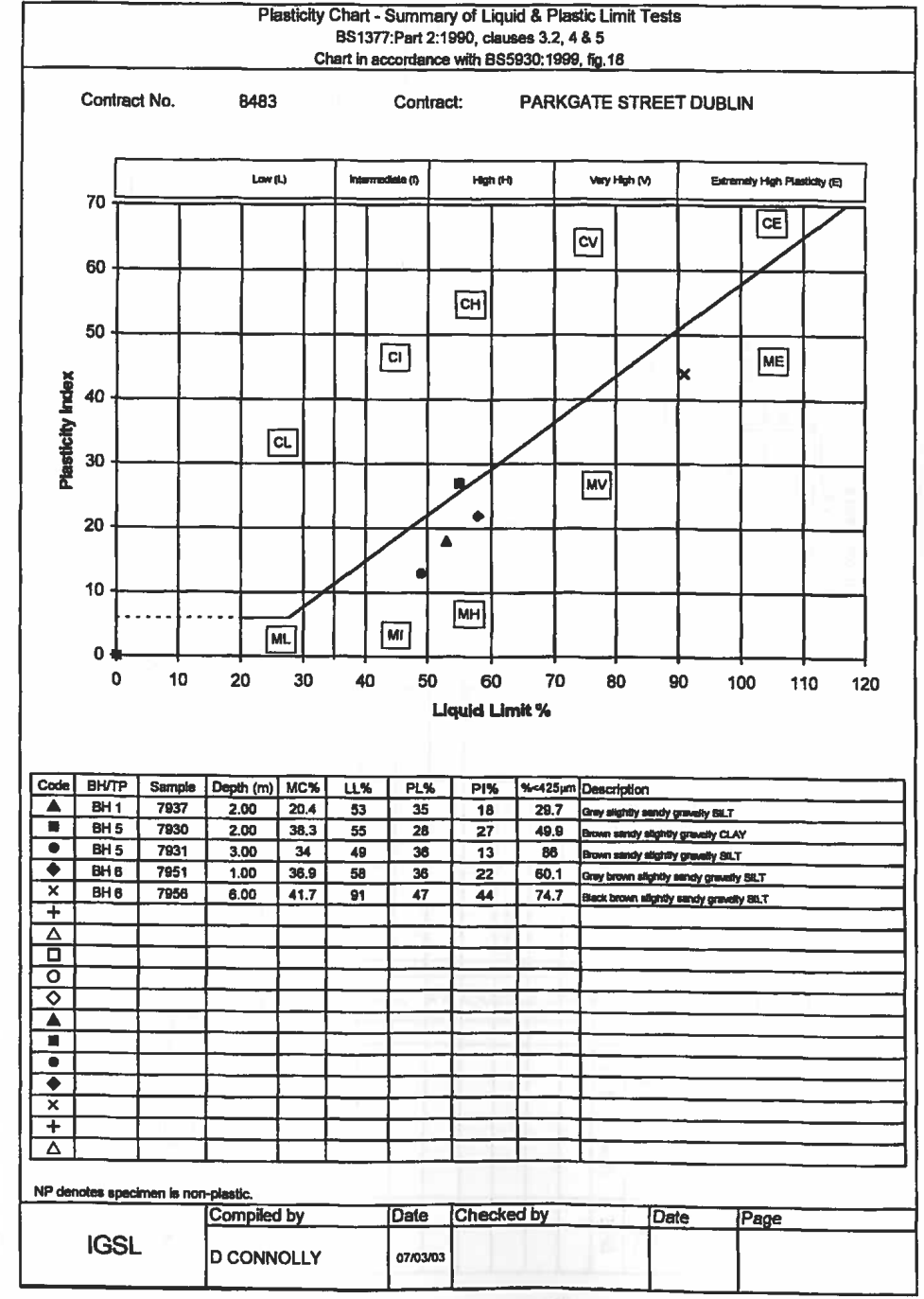
BS1377:Part 2:1990, clauses 3.2

BH/TP No.	Sample No.	Depth (m)	Sample Type	Moisture Content %	Description
BH 5	7929	1.00	DB	20.4	Grey brown slightly sandy gravelly SILT/CLAY with broken red brick
BH 5	7932	4.00	DB	14.0	Brown clayey/silty very sandy GRAVEL
BH 5	7933	5.00	DB	6.7	Grey brown very sandy GRAVEL
BH 5	7934	6.00	DB	6.2	Grey brown very sandy GRAVEL
BH 5	7935	7.00	DB	7.9	Grey brown very sandy GRAVEL
BH 6	7950	0.00	DB	28.2	Dark grey slightly sandy gravelly SILT/CLAY with broken concrete
BH 6	7952	1.00	DB	21.9	Brown black silty sandy gravelly SILT/CLAY with many cobbles & with broken red brick
BH 6	7953	2.00	DB	16.5	Brown clayey/silty very sandy GRAVEL
BH 6	7954	3.00	DB	5.9	Grey brown sandy GRAVEL with some cobbles
BH 6	7955	4.00	DB	6.2	Grey brown sandy GRAVEL
BH 7	7958	0.50	DB	10.1	Grey brown slightly silty/clayey sandy GRAVEL with red brick
BH 7	7959	1.50	DB	12.4	Grey brown slightly sandy gravelly SILT/CLAY with broken red brick
BH 7	7961	3.50	DB	4.8	Grey brown very sandy GRAVEL
BH 7	7962	4.50	DB	6.1	Grey brown very sandy GRAVEL
BH 7	7963	5.50	DB	3.9	Grey brown very sandy GRAVEL with many cobbles
BH 7	7964	6.50	DB	5.2	Grey brown clayey/silty slightly sandy GRAVEL
<b>IGSL</b>		Contract	PARKGATE STREET DUBLIN		
		Contract No.	8483		
		Compiled By	D CONNOLLY		
		Date	19/02/03		
		Page	2 of 2		

PI.Chart, Summary (lead)

MC PARKGATE

Irish Geotechnical Services Ltd Industrial Estate Newbridge Co. Kildare







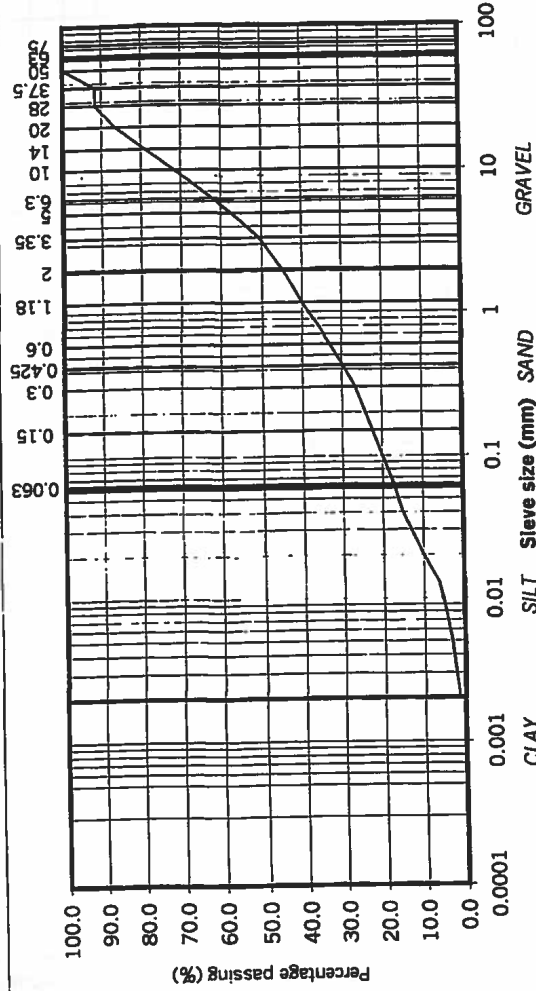
### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 1  
 SAMPLE No.: 7937  
 DEPTH (m): 2.00

TEST METHOD: Wet sieve and hydrometer  
 DESCRIPTION: Grey slightly sandy, gravelly, SILT

particle size	% passing	SOIL CLASSIFICATION
75	100.0	COBBLES
63	100.0	
50	100.0	
37.5	91.6	GRAVEL
28	91.6	
20	86.3	
14	78.8	
10	71.6	
6.3	62.1	
5	57.3	
3.35	50.6	
2	44.9	
1.18	40.1	
0.6	33.1	SAND
0.425	29.7	
0.3	26.6	
0.15	22.4	
0.063	17.3	
0.04	15.2	
0.03	13.1	
0.02	10.0	SILT/CLAY
0.013	6.3	
0.009	4.9	
0.005	3.1	
0.002	1.5	



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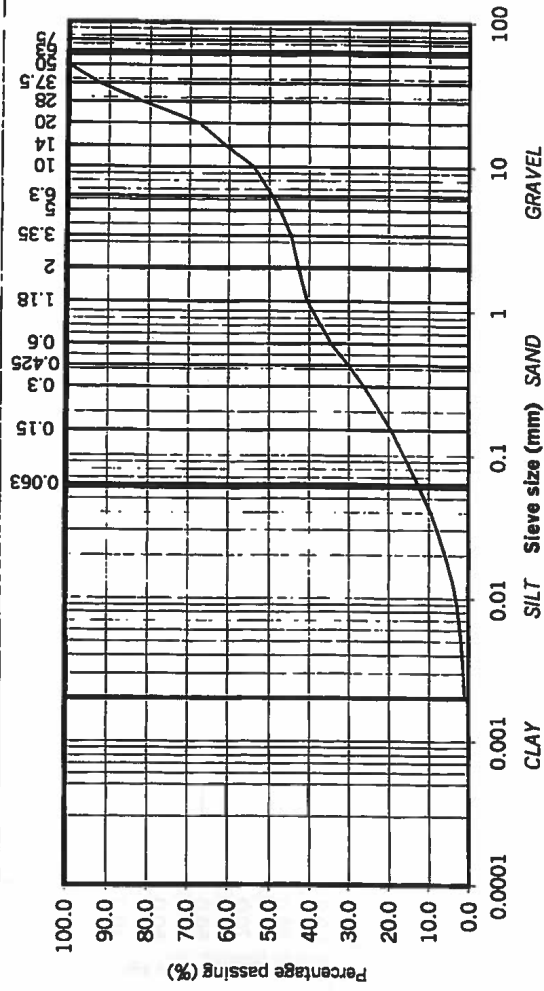
### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 1  
 SAMPLE No.: 7938  
 DEPTH (m): 3.00

TEST METHOD: Wet sieve and hydrometer  
 DESCRIPTION: Brown clayey/silty, very sandy, GRAVEL

particle size	% passing	SOIL CLASSIFICATION
75	100.0	COBBLES
63	100.0	
50	100.0	
37.5	92.5	GRAVEL
28	81.6	
20	67.5	
14	60.7	
10	53.9	
6.3	49.1	
5	47.2	
3.35	44.4	
2	42.7	
1.18	40.5	
0.6	34.5	SAND
0.425	30.2	
0.3	26.1	
0.15	19.3	
0.063	12.8	
0.04	9.6	
0.03	7.9	
0.02	5.9	SILT/CLAY
0.013	4.1	
0.009	3.1	
0.005	2.1	
0.002	1.1	



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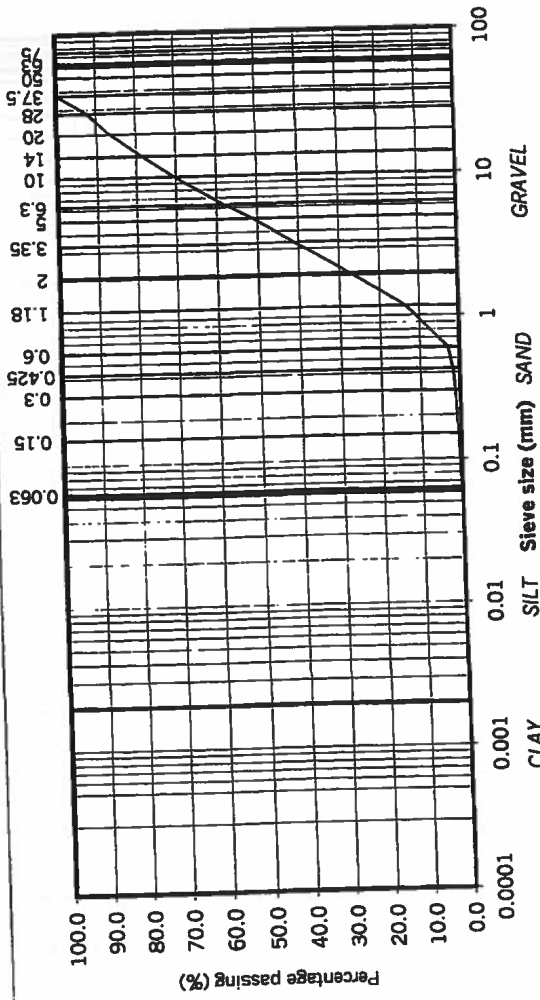
Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co Kildare

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 1  
 SAMPLE No.: 7940  
 DEPTH (m): 5.00  
 TEST METHOD: Wet sieve  
 DESCRIPTION: Grey brown very sandy, GRAVEL

particle size	% passing	COBBLES	GRAVEL	SAND	SILT/CLAY
75	100.0				
63	100.0				
50	100.0				
37.5	100.0				
28	92.2				
20	86.4				
14	78.4				
10	70.3				
6.3	58.2				
5	51.0				
3.35	41.2				
2	27.2				
1.18	13.5				
0.6	2.9				
0.425	1.8				
0.3	1.3				
0.15	0.8				
0.063	0.4				
0.04	#N/A				
0.03	#N/A				
0.02	#N/A				
0.013	#N/A				
0.009	#N/A				
0.005	#N/A				
0.002	#N/A				



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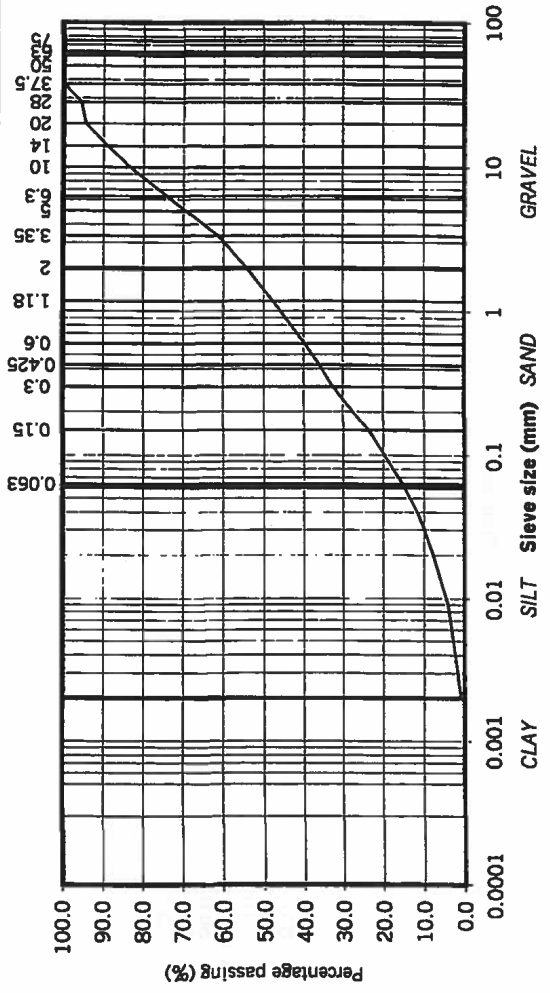
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### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 2  
 SAMPLE No.: 7943  
 DEPTH (m): 1.00  
 TEST METHOD: Wet sieve and hydrometer  
 DESCRIPTION: Grey sandy, gravelly, SILT/CLAY with some shells

particle size	% passing	COBBLES	GRAVEL	SAND	SILT/CLAY
75	100.0				
63	100.0				
50	100.0				
37.5	100.0				
28	95.5				
20	94.4				
14	89.0				
10	83.4				
6.3	74.1				
5	69.4				
3.35	61.2				
2	54.2				
1.18	47.6				
0.6	39.8				
0.425	36.1				
0.3	32.6				
0.15	23.6				
0.063	15.2				
0.04	11.6				
0.03	9.9				
0.02	7.7				
0.013	5.8				
0.009	4.1				
0.005	2.9				
0.002	0.9				



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### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483

Contract: PARKGATE STREET, DUBLIN

BH/TP No: BH 6

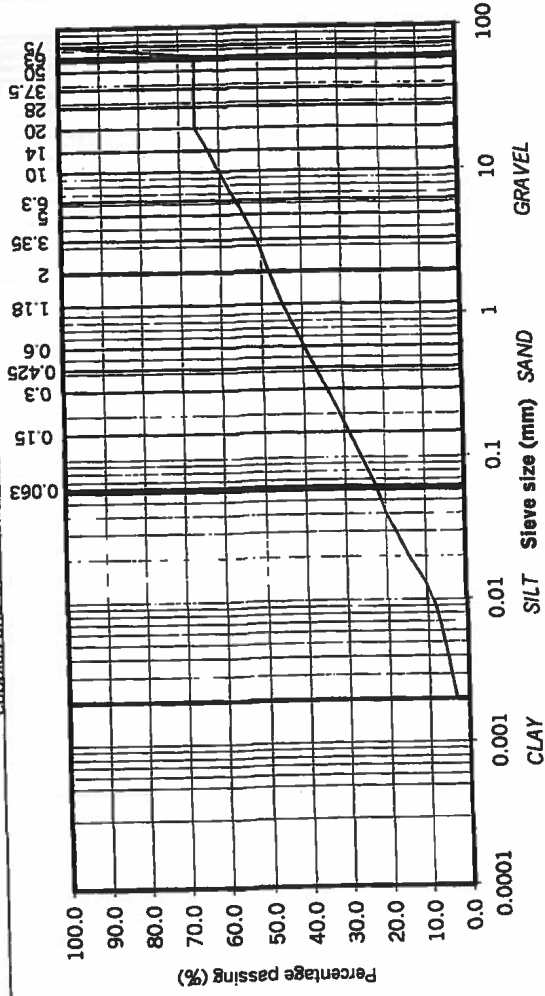
SAMPLE No.: 7952

DEPTH (m): 2.00

TEST METHOD: Wet sieve and hydrometer

DESCRIPTION: Brown/black slightly sandy, gravelly, SILT/CLAY with many cobbles and with broken red brick

particle size	% passing	COBBLES	GRAVEL	SAND	SILT/CLAY
75	100.0				
63	66.0				
50	66.0				
37.5	66.0				
28	66.0				
20	66.0				
14	62.5				
10	60.0				
6.3	56.3				
5	54.3				
3.35	51.1				
2	48.1				
1.18	44.8				
0.6	39.7				
0.425	37.1				
0.3	34.2				
0.15	28.9				
0.063	22.5				
0.04	19.9				
0.03	17.4				
0.02	14.4				
0.013	10.0				
0.009	8.1				
0.005	5.9				
0.002	3.2				



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### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483

Contract: PARKGATE STREET, DUBLIN

BH/TP No: BH 2

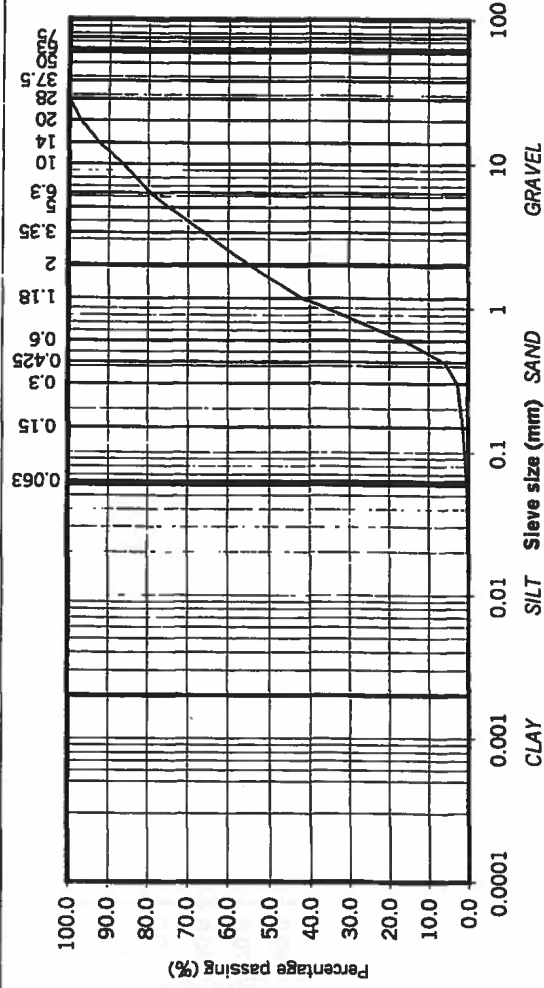
SAMPLE No.: 7945

DEPTH (m): 3.00

TEST METHOD: Wet sieve

DESCRIPTION: Grey brown very gravelly, SAND

particle size	% passing	COBBLES	GRAVEL	SAND	SILT/CLAY
75	100.0				
63	100.0				
50	100.0				
37.5	100.0				
28	100.0				
20	97.0				
14	92.4				
10	86.6				
6.3	79.5				
5	75.0				
3.35	66.0				
2	54.8				
1.18	42.0				
0.6	16.2				
0.425	6.0				
0.3	2.7				
0.15	1.5				
0.063	0.4				
0.04	#N/A				
0.03	#N/A				
0.02	#N/A				
0.013	#N/A				
0.009	#N/A				
0.005	#N/A				
0.002	#N/A				



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Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co Kildare

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483

Contract: PARKGATE STREET, DUBLIN

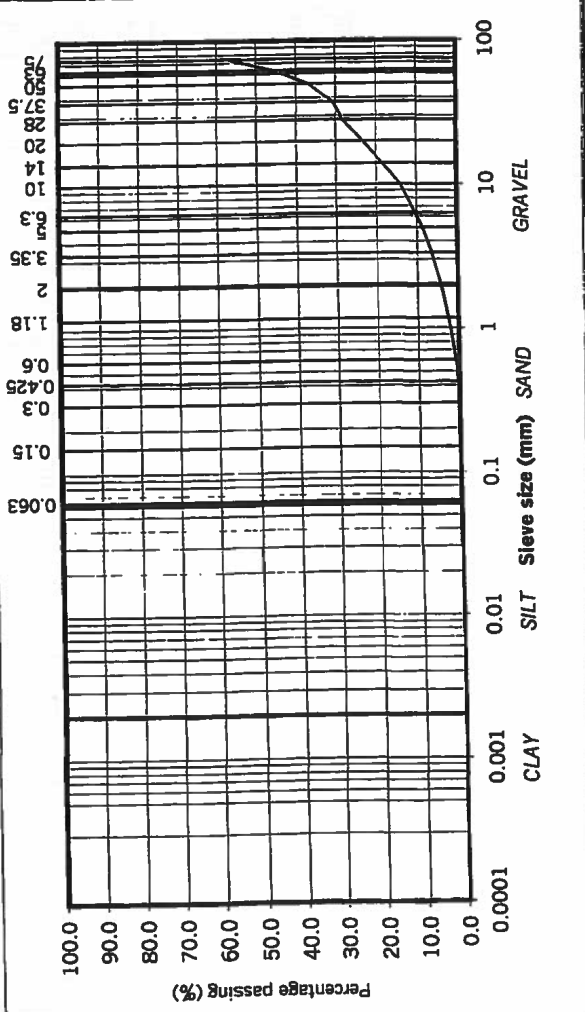
BH/TP No: BH 2

SAMPLE No.: 7947

DEPTH (m): 5.00

TEST METHOD: Wet sieve

DESCRIPTION: COBBLES with grey brown slightly sandy, gravel



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19/02/03

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Date:

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### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483

Contract: PARKGATE STREET, DUBLIN

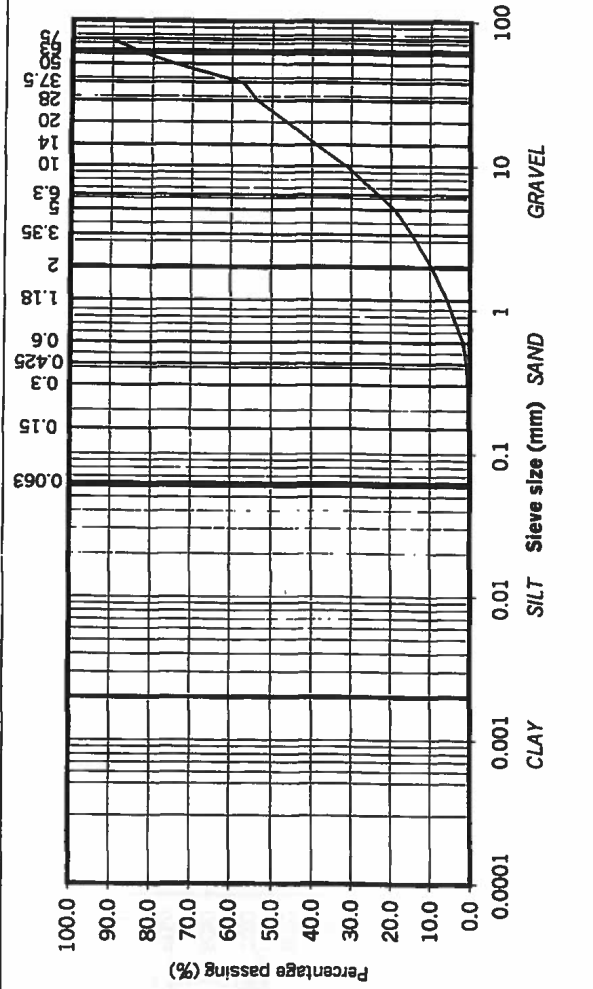
BH/TP No: BH 2

SAMPLE No.: 7948

DEPTH (m): 6.00

TEST METHOD: Wet sieve

DESCRIPTION: Grey brown sandy, GRAVEL with some cobbles



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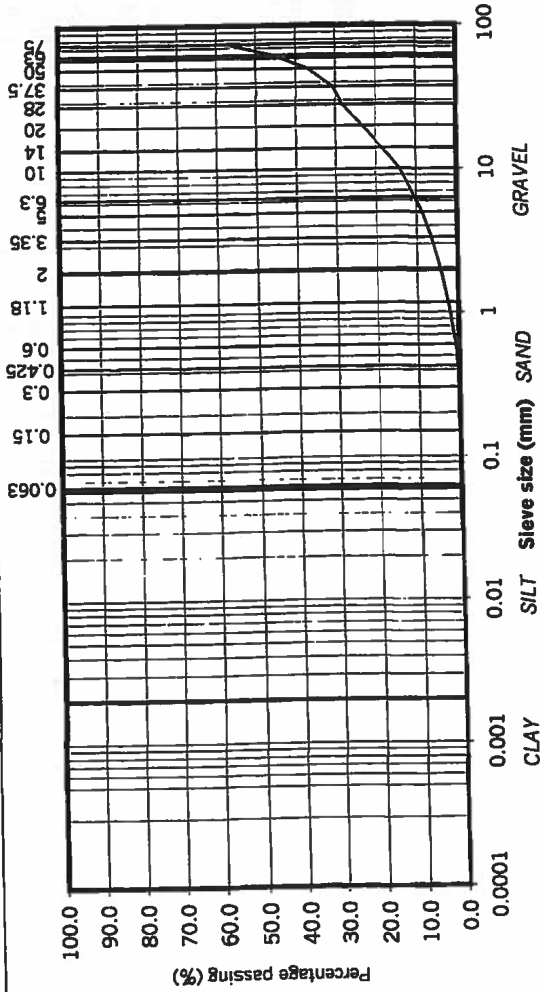
**IGSL**

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 2  
 SAMPLE No.: 7947  
 DEPTH (m): 5.00  
 TEST METHOD: Wet sieve  
 DESCRIPTION: COBBLES with grey brown slightly sandy, gravel

particle size	% passing	COBBLES	GRAVEL	SAND	SILT/CLAY
75	57.6				
63	46.1				
50	37.2				
37.5	30.8				
28	28.2				
20	23.3				
14	18.5				
10	14.2				
6.3	10.4				
5	8.6				
3.35	6.5				
2	4.2				
1.18	2.6				
0.6	0.8				
0.425	0.5				
0.3	0.3				
0.15	0.2				
0.063	0.1				
0.04	#N/A				
0.03	#N/A				
0.02	#N/A				
0.013	#N/A				
0.009	#N/A				
0.005	#N/A				
0.002	#N/A				



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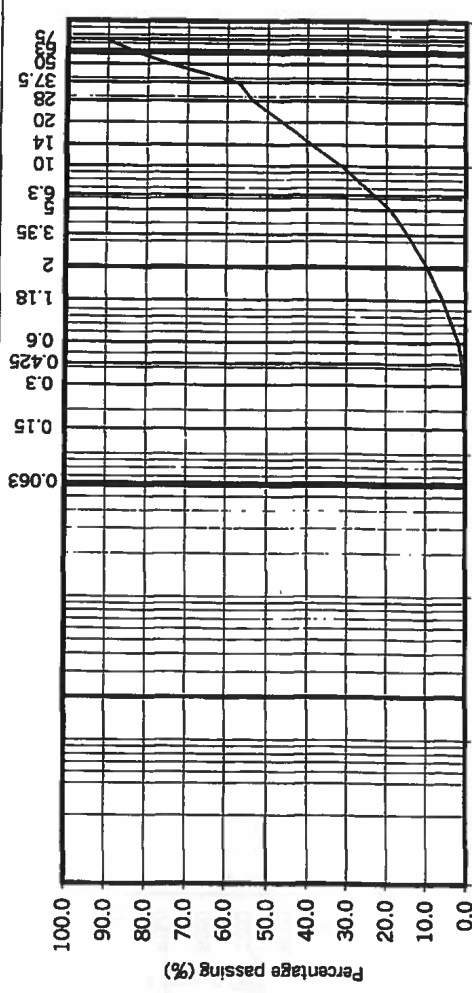
IGSL  
 Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co Kildare

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 2  
 SAMPLE No.: 7948  
 DEPTH (m): 6.00  
 TEST METHOD: Wet sieve  
 DESCRIPTION: Grey brown sandy, GRAVEL with some cobbles

particle size	% passing	COBBLES	GRAVEL	SAND	SILT/CLAY
75	90.6				
63	84.4				
50	74.6				
37.5	57.2				
28	53.6				
20	46.0				
14	38.9				
10	31.5				
6.3	23.0				
5	19.0				
3.35	14.5				
2	9.6				
1.18	5.8				
0.6	1.8				
0.425	0.9				
0.3	0.6				
0.15	0.4				
0.063	0.1				
0.04	#N/A				
0.03	#N/A				
0.02	#N/A				
0.013	#N/A				
0.009	#N/A				
0.005	#N/A				
0.002	#N/A				



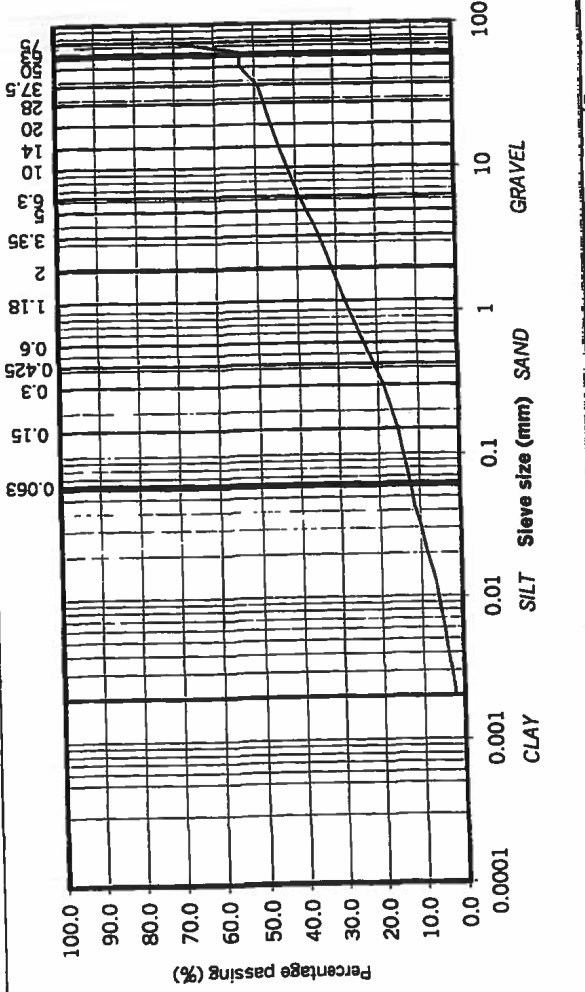
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IGSL  
 Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co Kildare

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 4  
 SAMPLE No.: 7966  
 DEPTH (m): 2.00  
 TEST METHOD: Wet sieve and hydrometer  
 DESCRIPTION: Grey clayey/silty, sandy, GRAVEL with many cobbles



particle size	% passing	COBBLES	GRAVEL	SAND	SILT/CLAY
75	70.3				
63	53.5				
50	53.5				
37.5	49.1				
28	47.7				
20	45.9				
14	44.0				
10	42.1				
6.3	39.2				
5	37.6				
3.35	34.4				
2	31.3				
1.18	27.9				
0.6	23.3				
0.425	21.1				
0.3	18.7				
0.15	15.3				
0.063	12.4				
0.04	11.2				
0.03	9.9				
0.02	8.5				
0.013	6.6				
0.009	5.6				
0.005	4.2				
0.002	2.3				

**IGSL**

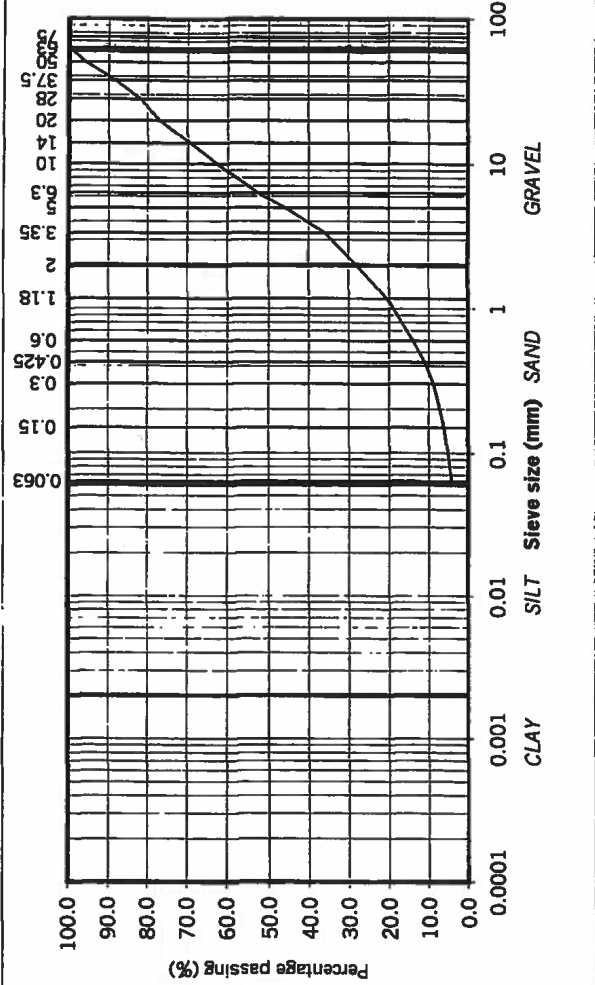
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 Date: 19/02/03  
 Checked by: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Page no: \_\_\_\_\_  
 PSD V3.1 12.01

Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co Kildare

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 4  
 SAMPLE No.: 7968  
 DEPTH (m): 4.00  
 TEST METHOD: Wet sieve  
 DESCRIPTION: Grey brown slightly clayey/silty, very sandy, GRAVEL



particle size	% passing	COBBLES	GRAVEL	SAND	SILT/CLAY
75	100.0				
63	100.0				
50	95.8				
37.5	88.3				
28	81.8				
20	77.0				
14	69.4				
10	62.6				
6.3	52.6				
5	45.9				
3.35	35.9				
2	28.0				
1.18	20.4				
0.6	14.0				
0.425	11.0				
0.3	8.7				
0.15	6.1				
0.063	4.3				
0.04	#N/A				
0.03	#N/A				
0.02	#N/A				
0.013	#N/A				
0.009	#N/A				
0.005	#N/A				
0.002	#N/A				

**IGSL**

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 Date: \_\_\_\_\_  
 Page no: \_\_\_\_\_  
 PSD V3.1 12.01

Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co Kildare

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

8483

Contract No:

PARKGATE STREET, DUBLIN

Contract:

BH 4

BH/TP No:

7969

SAMPLE No.:

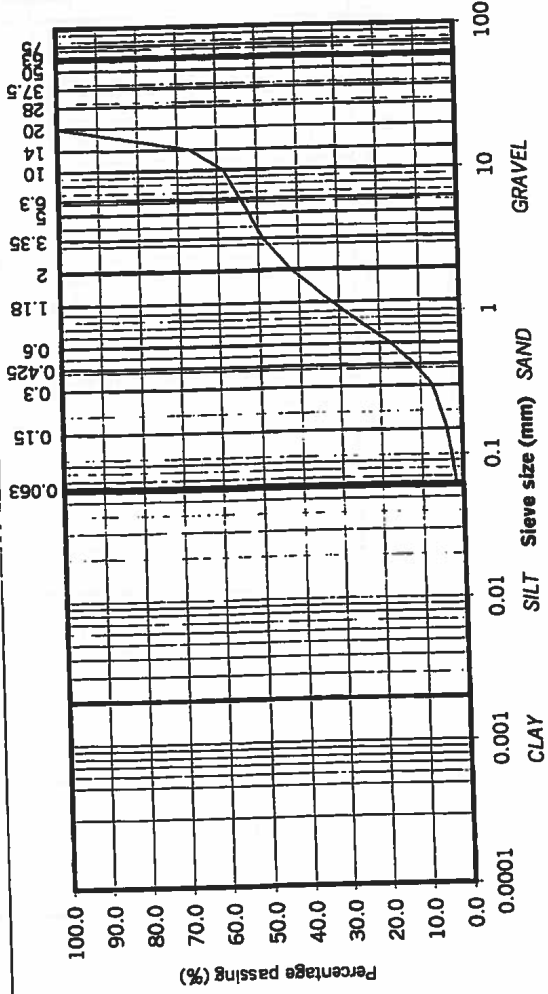
5.00

DEPTH (m):

Wet sieve

TEST METHOD:

DESCRIPTION: Grey brown slightly clayey/silty, very sandy, GRAVEL



Compiled by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Page no: \_\_\_\_\_

**IGSL**

Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co Kildare PSD V3.1 12.01

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

8483

Contract No:

PARKGATE STREET, DUBLIN

Contract:

BH 5

BH/TP No:

7929

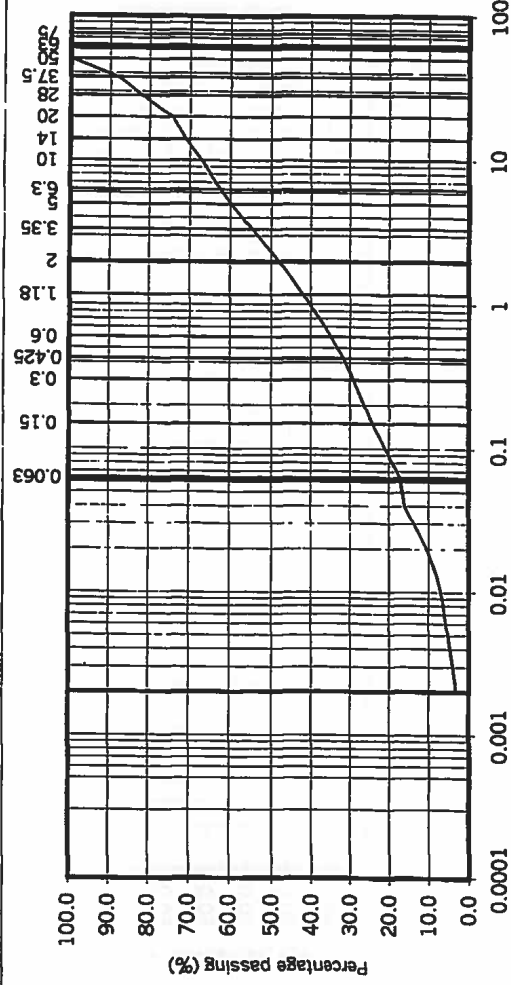
SAMPLE No.:

1.00

DEPTH (m):

TEST METHOD: Wet sieve and hydrometer

DESCRIPTION: Grey brown slightly sandy, gravelly, SILT/CLAY with broken red brick



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 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Page no: \_\_\_\_\_

**IGSL**

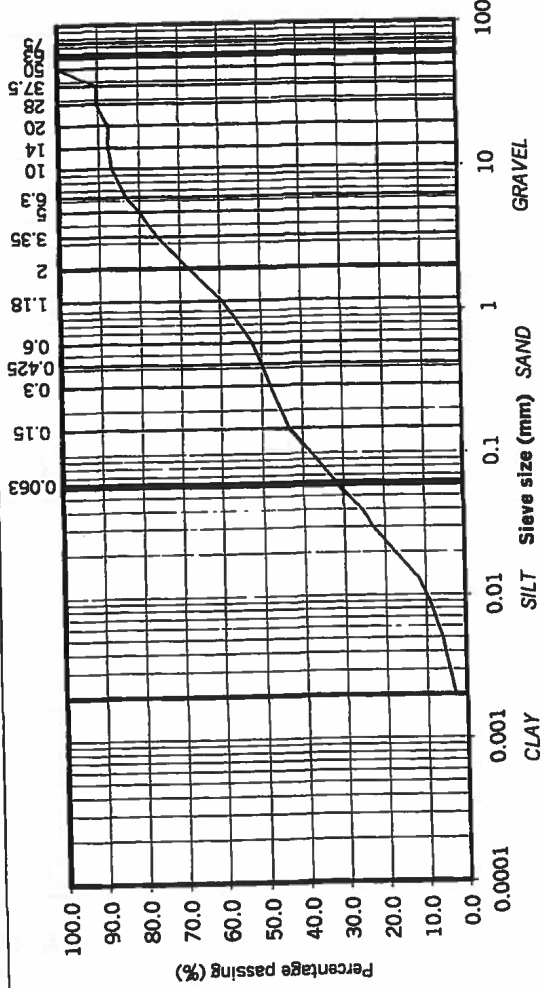
Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co Kildare PSD V3.1 12.01

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 5  
 SAMPLE No.: 7930  
 DEPTH (m): 2.00  
 TEST METHOD: Wet sieve and hydrometer  
 DESCRIPTION: Brown sandy, slightly gravelly, CLAY

particle size	% passing	COBBLES	GRAVEL	SAND	SILT/CLAY
75	100.0				
63	100.0				
50	100.0				
37.5	90.3				
28	90.3				
20	87.6				
14	87.6				
10	86.8				
6.3	83.3				
5	80.0				
3.35	75.7				
2	67.8				
1.18	59.3				
0.6	52.2				
0.425	49.9				
0.3	47.9				
0.15	43.3				
0.063	32.1				
0.04	25.6				
0.03	23.0				
0.02	17.6				
0.013	11.7				
0.009	9.1				
0.005	6.1				
0.002	3.0				



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 Date: \_\_\_\_\_  
 Page no: \_\_\_\_\_  
 PSD V3.1 12.01

**IGSL**

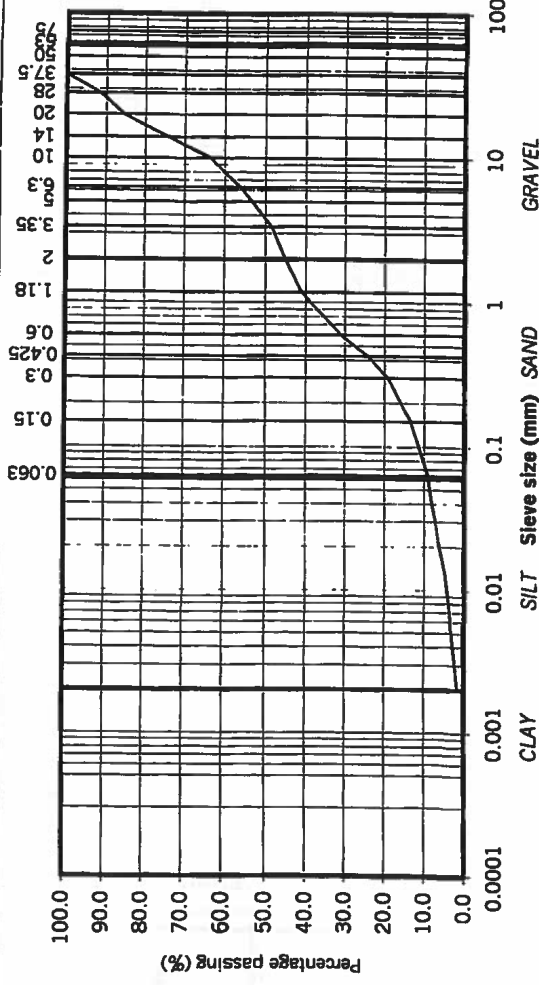
Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co Kildare

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 5  
 SAMPLE No.: 7932  
 DEPTH (m): 4.00  
 TEST METHOD: Wet sieve and hydrometer  
 DESCRIPTION: Brown clayey/silty, very sandy, GRAVEL

particle size	% passing	COBBLES	GRAVEL	SAND	SILT/CLAY
75	100.0				
63	100.0				
50	100.0				
37.5	100.0				
28	91.6				
20	85.4				
14	74.0				
10	63.4				
6.3	56.2				
5	53.2				
3.35	48.5				
2	45.1				
1.18	41.1				
0.6	31.2				
0.425	24.2				
0.3	19.1				
0.15	13.5				
0.063	8.9				
0.04	8.1				
0.03	7.1				
0.02	6.1				
0.013	4.8				
0.009	4.1				
0.005	3.1				
0.002	1.6				



Compiled by: D CONNOLLY  
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 Checked by: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Page no: \_\_\_\_\_  
 PSD V3.1 12.01

**IGSL**

Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co Kildare

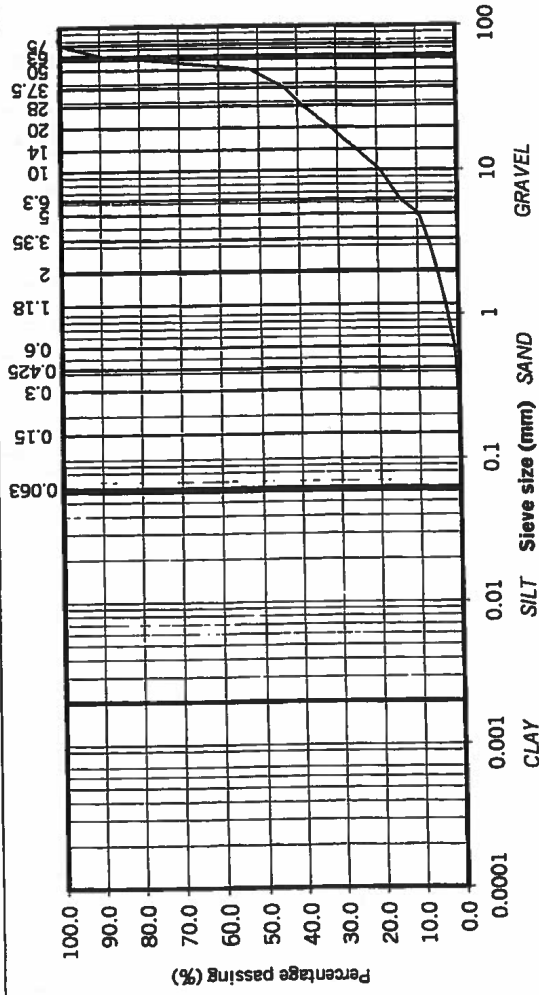


### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 5  
 SAMPLE No.: 7934  
 DEPTH (m): 6.00  
 TEST METHOD: Wet sieve  
 DESCRIPTION: Grey brown sandy, GRAVEL with some cobbles

particle size	% passing	
75	100.0	COBBLES
63	89.5	
50	52.0	
37.5	43.3	
28	38.8	GRAVEL
20	31.8	
14	25.2	
10	19.3	
6.3	14.4	
5	9.7	
3.35	7.4	
2	5.2	
1.18	3.2	
0.6	1.1	SAND
0.425	0.6	
0.3	0.4	
0.15	0.3	
0.063	0.1	
0.04	#N/A	
0.03	#N/A	
0.02	#N/A	SILT/CLAY
0.013	#N/A	
0.009	#N/A	
0.005	#N/A	
0.002	#N/A	



Compiled by:

D CONNOLLY

Date:

07/03/03

Page no:

Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co Kildare

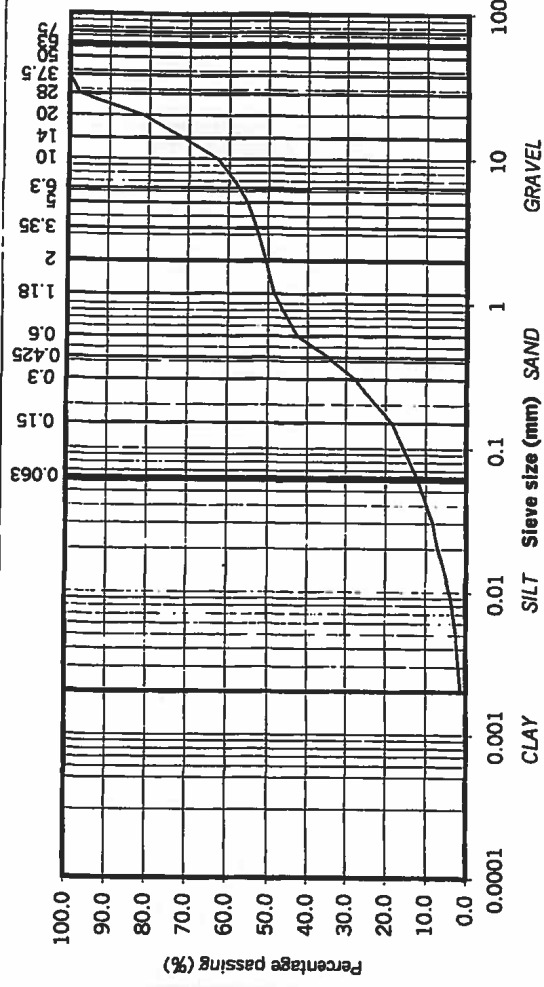
PSD V3.1 12.01

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 6  
 SAMPLE No.: 7953  
 DEPTH (m): 3.00  
 TEST METHOD: Wet sieve and hydrometer  
 DESCRIPTION: Brown clayey/silty, very sandy, GRAVEL

particle size	% passing	
75	100.0	COBBLES
63	100.0	
50	100.0	
37.5	100.0	
28	97.5	GRAVEL
20	81.5	
14	71.6	
10	62.8	
6.3	57.4	
5	55.2	
3.35	52.9	
2	50.5	
1.18	48.5	
0.6	42.5	SAND
0.425	34.8	
0.3	27.8	
0.15	18.4	
0.063	12.2	
0.04	9.8	
0.03	8.3	
0.02	7.0	SILT/CLAY
0.013	5.1	
0.009	3.8	
0.005	2.5	
0.002	1.3	



Compiled by:

D CONNOLLY

Date:

19/02/03

Checked by:

Date:

Page no:

Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co Kildare

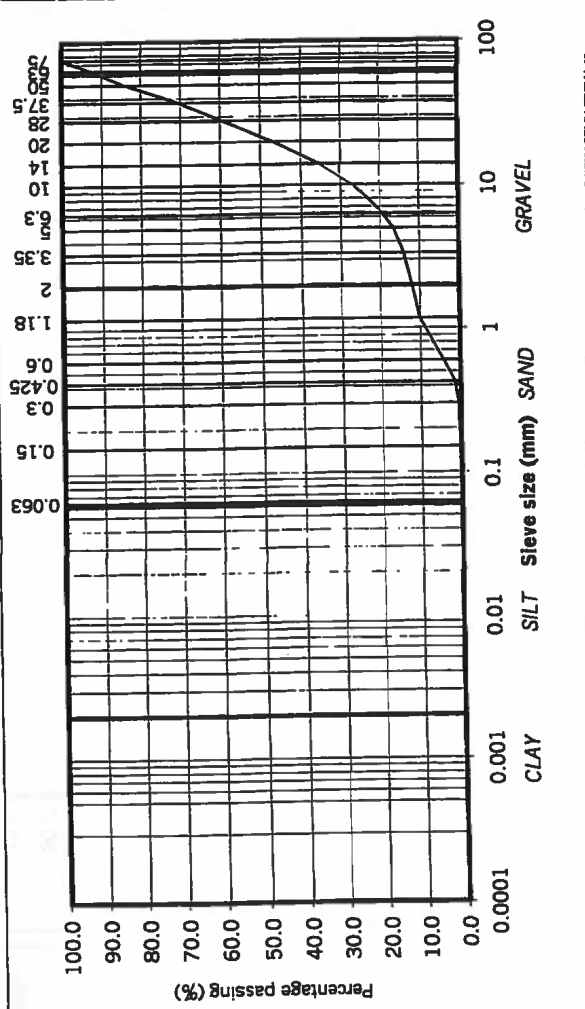
PSD V3.1 12.01

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 6  
 SAMPLE No.: 7954  
 DEPTH (m): 4.00  
 TEST METHOD: Wet sieve  
 DESCRIPTION: Grey brown sandy, GRAVEL with some cobbles

particle size	% passing	COBBLES	GRAVEL	SAND	SILT/CLAY
75	100.0				
63	92.5				
50	84.1				
37.5	70.3				
28	59.3				
20	46.8				
14	35.5				
10	27.1				
6.3	19.3				
5	16.6				
3.35	14.0				
2	12.0				
1.18	10.1				
0.6	4.2				
0.425	1.4				
0.3	0.6				
0.15	0.3				
0.063	0.1				
0.04	#N/A				
0.03	#N/A				
0.02	#N/A				
0.013	#N/A				
0.009	#N/A				
0.005	#N/A				
0.002	#N/A				



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 PSD V3.1 12.01

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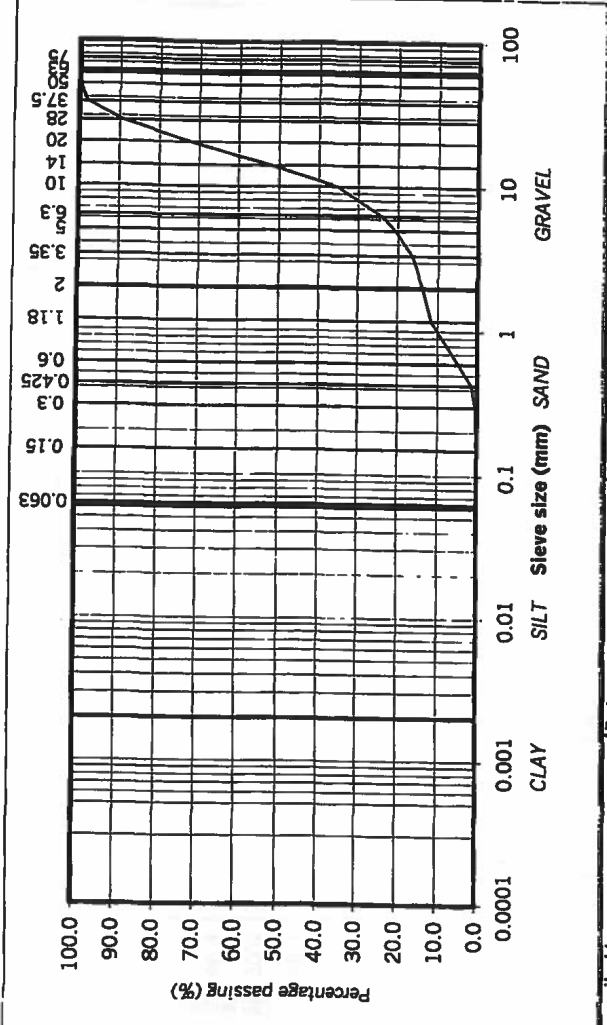
Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co kildare

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 6  
 SAMPLE No.: 7955  
 DEPTH (m): 5.00  
 TEST METHOD: Wet sieve  
 DESCRIPTION: Grey brown sandy, GRAVEL

particle size	% passing	COBBLES	GRAVEL	SAND	SILT/CLAY
75	100.0				
63	100.0				
50	100.0				
37.5	98.0				
28	89.1				
20	72.0				
14	52.0				
10	35.4				
6.3	24.0				
5	20.6				
3.35	16.5				
2	13.8				
1.18	11.6				
0.6	4.7				
0.425	1.5				
0.3	0.5				
0.15	0.2				
0.063	0.1				
0.04	#N/A				
0.03	#N/A				
0.02	#N/A				
0.013	#N/A				
0.009	#N/A				
0.005	#N/A				
0.002	#N/A				



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 PSD V3.1 12.01

IGSL

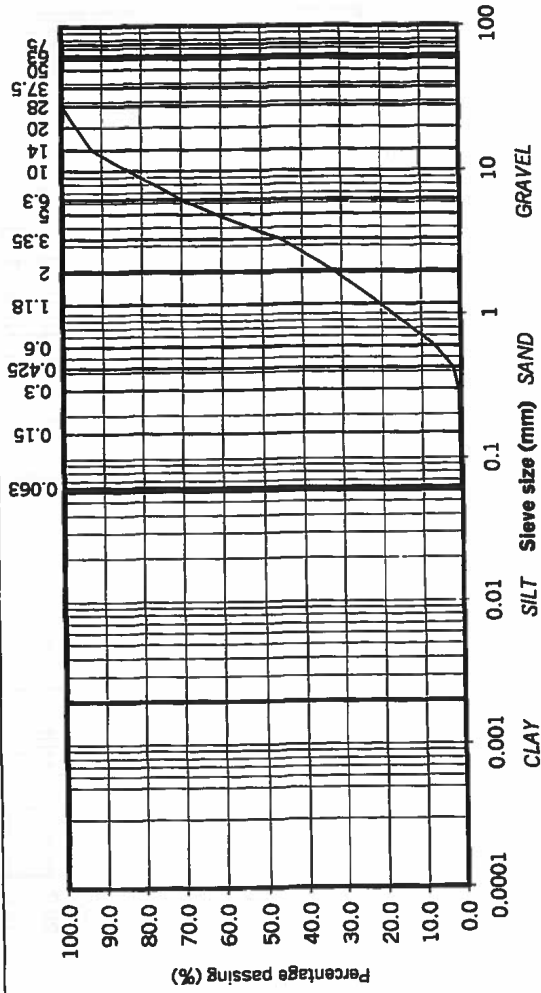
Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co kildare

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 7  
 SAMPLE No.: 7961  
 DEPTH (m): 3.50  
 TEST METHOD: Wet sieve  
 DESCRIPTION: Grey brown very sandy, GRAVEL

particle size	% passing	COBBLES	GRAVEL	SAND	SILT/CLAY
75	100.0				
63	100.0				
50	100.0				
37.5	100.0				
28	100.0				
20	96.4				
14	92.4				
10	83.1				
6.3	69.9				
5	61.3				
3.35	45.5				
2	31.9				
1.18	20.3				
0.6	6.8				
0.425	2.1				
0.3	0.6				
0.15	0.4				
0.063	0.3				
0.04	#N/A				
0.03	#N/A				
0.02	#N/A				
0.013	#N/A				
0.009	#N/A				
0.005	#N/A				
0.002	#N/A				



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 PSD V3.1 12.01

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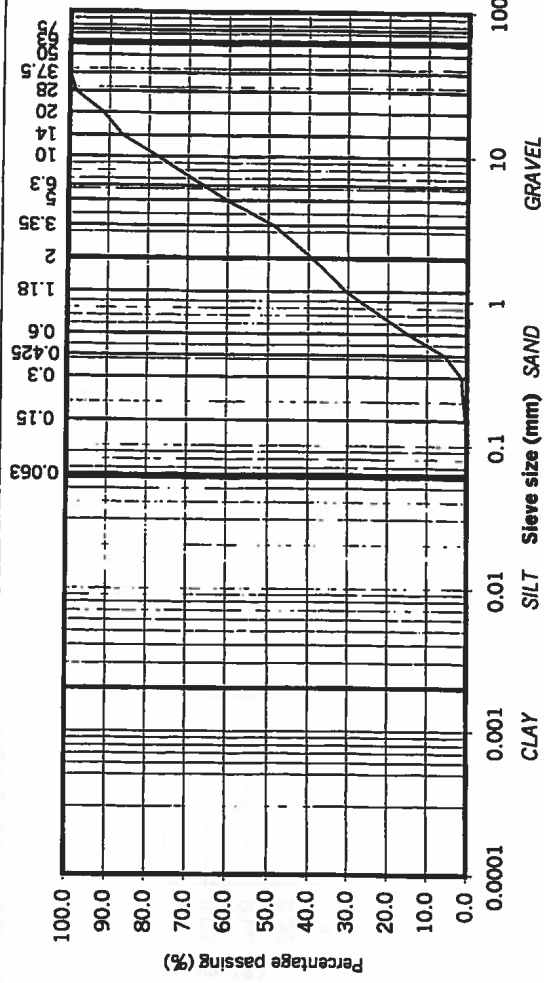
Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co Kildare

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 7  
 SAMPLE No.: 7962  
 DEPTH (m): 4.50  
 TEST METHOD: Wet sieve  
 DESCRIPTION: Grey brown very sandy, GRAVEL

particle size	% passing	COBBLES	GRAVEL	SAND	SILT/CLAY
75	100.0				
63	100.0				
50	100.0				
37.5	100.0				
28	98.5				
20	91.4				
14	86.7				
10	77.7				
6.3	66.2				
5	60.1				
3.35	48.6				
2	39.1				
1.18	30.5				
0.6	14.9				
0.425	5.6				
0.3	1.4				
0.15	0.3				
0.063	0.1				
0.04	#N/A				
0.03	#N/A				
0.02	#N/A				
0.013	#N/A				
0.009	#N/A				
0.005	#N/A				
0.002	#N/A				



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 PSD V3.1 12.01

**IGSL**

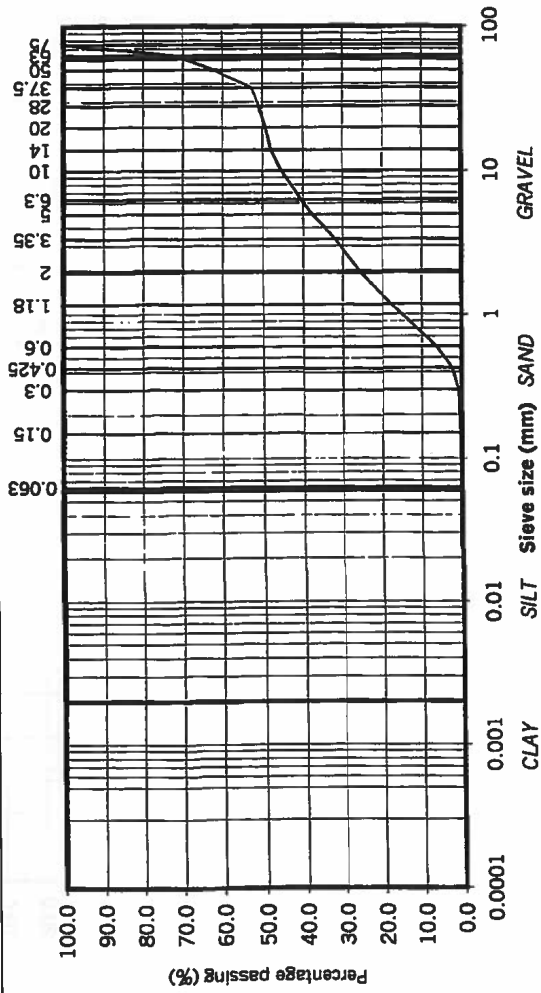
Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co Kildare

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 7  
 SAMPLE No.: 7963  
 DEPTH (m): 5.50  
 TEST METHOD: Wet sieve  
 DESCRIPTION: Grey brown very sandy, GRAVEL with many cobbles

particle size	% passing	
75	100.0	COBBLES
63	71.9	
50	62.2	
37.5	52.7	
28	50.9	GRAVEL
20	49.2	
14	47.9	
10	45.2	
6.3	40.5	
5	37.8	
3.35	32.0	
2	25.7	
1.18	17.9	
0.6	6.4	SAND
0.425	2.3	
0.3	0.8	
0.15	0.3	
0.063	0.2	
0.04	#N/A	
0.03	#N/A	
0.02	#N/A	SILT/CLAY
0.013	#N/A	
0.009	#N/A	
0.005	#N/A	
0.002	#N/A	



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 Date: \_\_\_\_\_  
 Page no: \_\_\_\_\_  
 PSD V3.1 12.01

Irish Geotechnical Services Ltd., Industrial Estate, Newbridge, Co Kildare

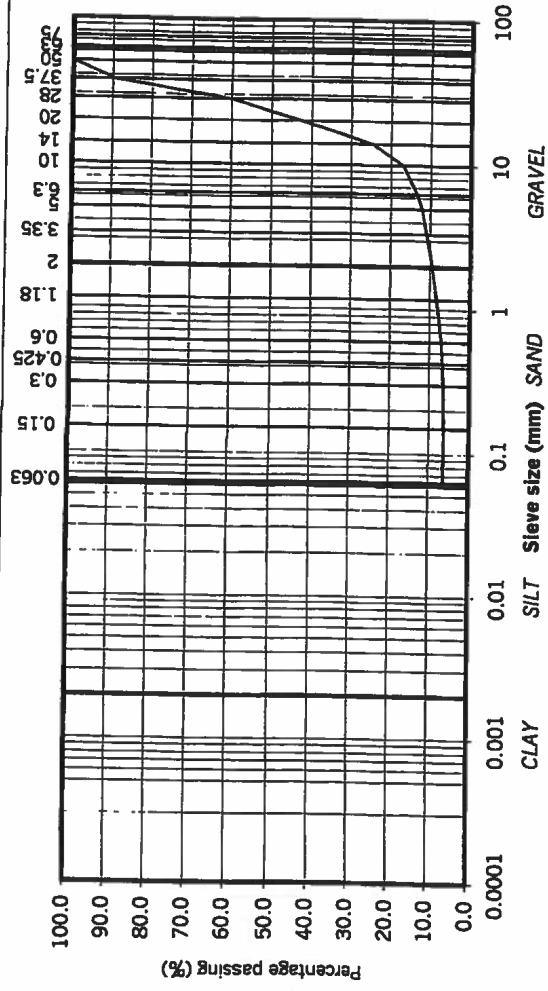
**IGSL**

### Determination of Particle Size Distribution

BS1377:Part2:1990, clauses 9.2

Contract No: 8483  
 Contract: PARKGATE STREET, DUBLIN  
 BH/TP No: BH 7  
 SAMPLE No.: 7964  
 DEPTH (m): 6.50  
 TEST METHOD: Wet sieve  
 DESCRIPTION: Grey brown clayey/silty, slightly sandy, GRAVEL

particle size	% passing	
75	100.0	COBBLES
63	100.0	
50	100.0	
37.5	89.5	
28	60.0	GRAVEL
20	42.5	
14	24.7	
10	17.0	
6.3	13.3	
5	12.0	
3.35	10.8	
2	9.4	
1.18	8.3	
0.6	7.1	SAND
0.425	6.7	
0.3	6.5	
0.15	6.4	
0.063	6.3	
0.04	#N/A	
0.03	#N/A	
0.02	#N/A	SILT/CLAY
0.013	#N/A	
0.009	#N/A	
0.005	#N/A	
0.002	#N/A	



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 Date: \_\_\_\_\_  
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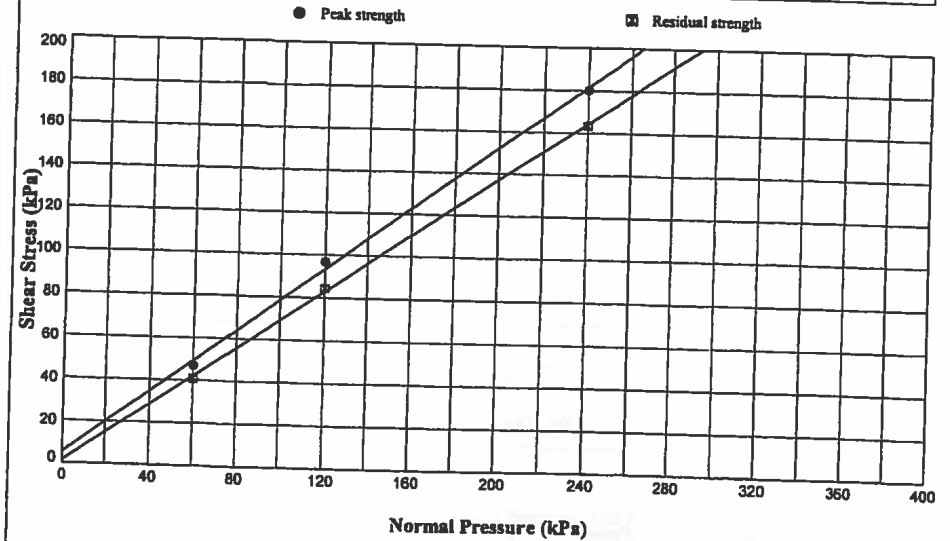
REPORT NO.		CHEMICAL ANALYSIS			IGSL	
CONTRACT: PARKGATE STREET DUBLIN						
BOREHOLE NO.	SAMPLE NO.	DEPTH (METRES)	SAMPLE TYPE	% PASSING 2mm	ORGANIC CONTENT OF MATERIAL PASSING 2 mm %	REMARKS
BH 5	7931	3.00	D	92.4	3.63	
BH 6	7956	6.00	D	88.1	9.41	
BH 7	7961	3.50	D	31.9	0.88	

## PEAK AND RESIDUAL SHEAR BOX TEST

In accordance with clause 4.5 of BS1377:Part 7:1990

Borehole : BH2      Sample Ref : 7946      Sample Type : D      Depth (m) : 4.00  
 Width x Length (mm) : 60 x 60      Sample Height (mm) : 20.0      S.G. (assumed) : 2.65  
 Description : Brown slightly gravelly silty SAND      Sample Condition : Recompactd

PROPERTIES	SPECIMEN NUMBER			
	1	2	3	
Initial Moisture Content (%)	8.2	8.2	8.2	
Initial Bulk Density (Mg/m <sup>3</sup> )	1.76	1.75	1.75	
Initial Dry Density (Mg/m <sup>3</sup> )	1.63	1.61	1.62	
Initial Voids Ratio	0.6278	0.6427	0.6407	
CONSOLIDATION	Normal Pressure (kPa)	60	120	240
	Initial Height (mm)	19.610	19.746	19.834
	Consolidated Height (mm)	17.318	18.582	17.577
SHEAR	Rate of Strain (mm/min)	0.0240	0.0240	0.0240
	Strain at Peak Shear Stress (%)	10.5	30.7	16.8
	Peak Shear Stress (kPa)	47	97	180
	Residual Shear Stress (kPa)	41	84	164
PEAK STRENGTH	Effective Cohesion (C') 5 (kPa)	Effective Angle of Friction (φ ')		36.5 (deg)
	Residual Cohesion (C) 1 (kPa)	Residual Angle of Friction (φ ')		34 (deg)



<b>STRUCTURAL SOILS</b> The Old School House Stillhouse Lane Bedminster Bristol BS3 4EB	Compiled By	Date	Checked By	Date
	A. D. Fe	26/03/03	Malone	27/3/03
	Contract Parkgate Street, Dublin		Job No 32307	
		Page 3 of 10		

# PEAK AND RESIDUAL SHEAR BOX - CONSOLIDATION GRAPH

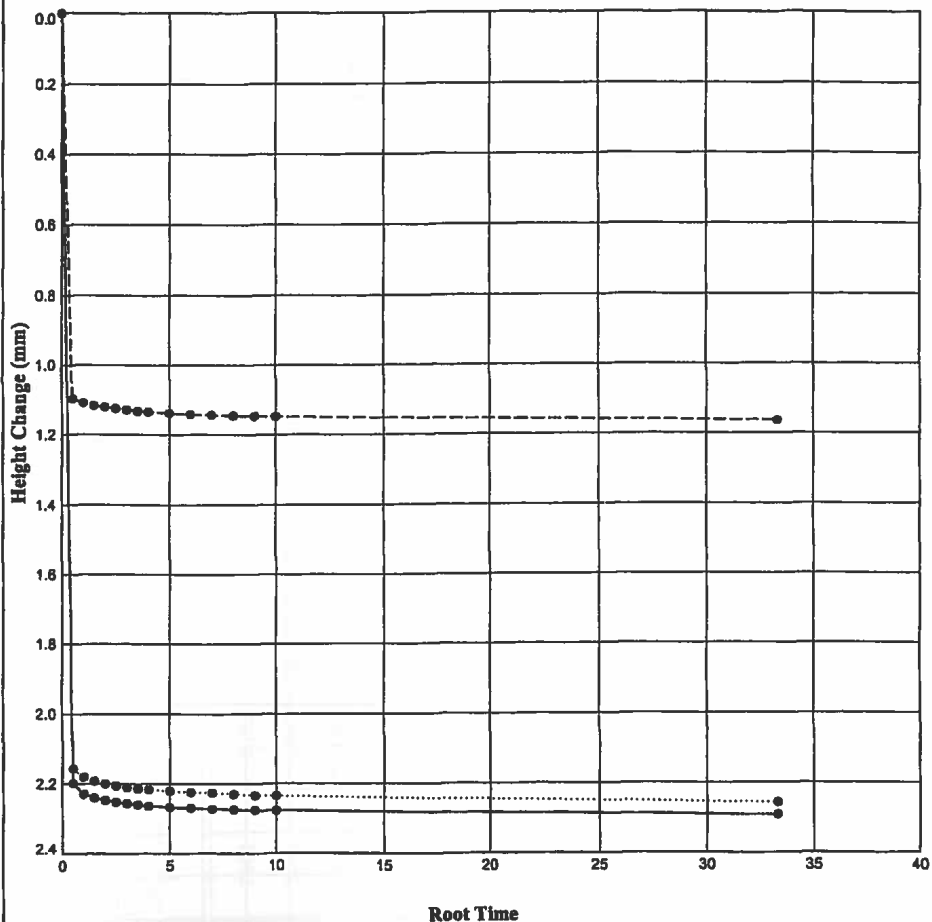
In accordance with clause 4.5 of BS1377:Part 7:1990

Borehole : BH2

Sample Ref : 7946

Sample Type : D

Depth (m) : 4.00



KEY :

Solid Line = Specimen 1 (60 kPa), Dashed Line = Specimen 2 (120 kPa), Dotted Line = Specimen 3 (240 kPa).

# PEAK AND RESIDUAL SHEAR BOX - HEIGHT CHANGE vs STRAIN

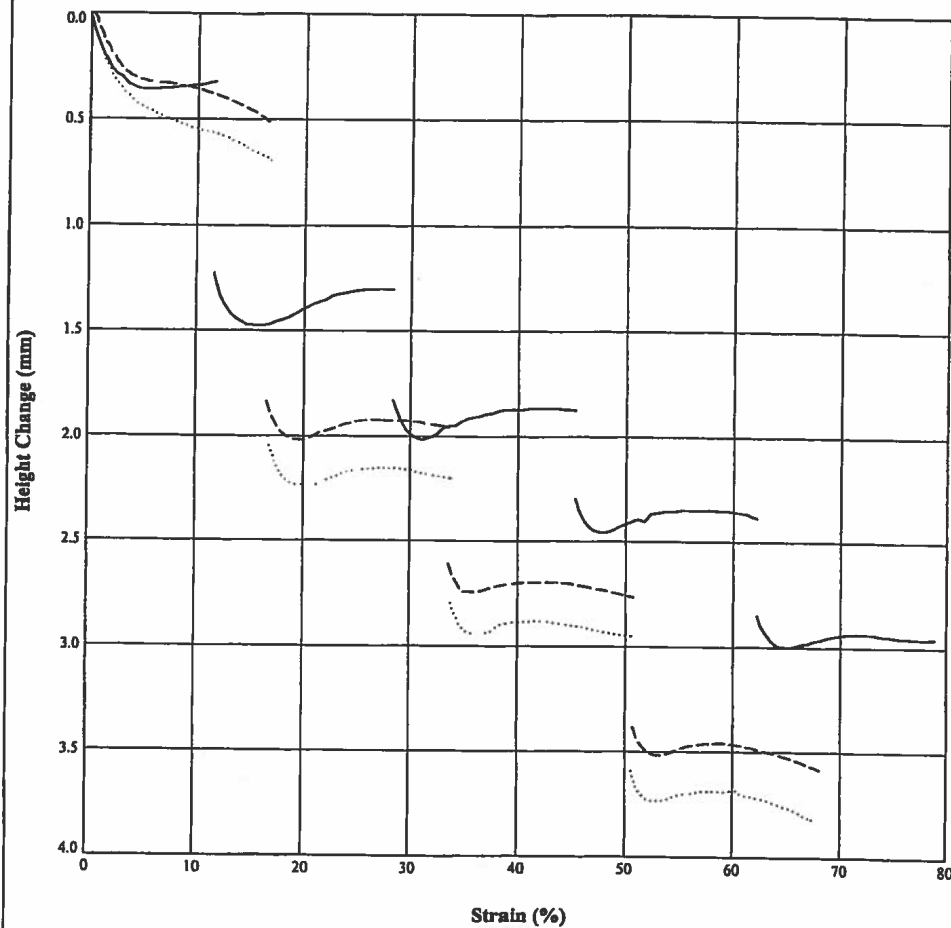
In accordance with clause 4.5 of BS1377:Part 7:1990

Borehole : BH2

Sample Ref : 7946


Sample Type : D


Depth (m) : 4.00



KEY :

Solid Line = Specimen 1 (60 kPa), Dashed Line = Specimen 2 (120 kPa), Dotted Line = Specimen 3 (240 kPa).

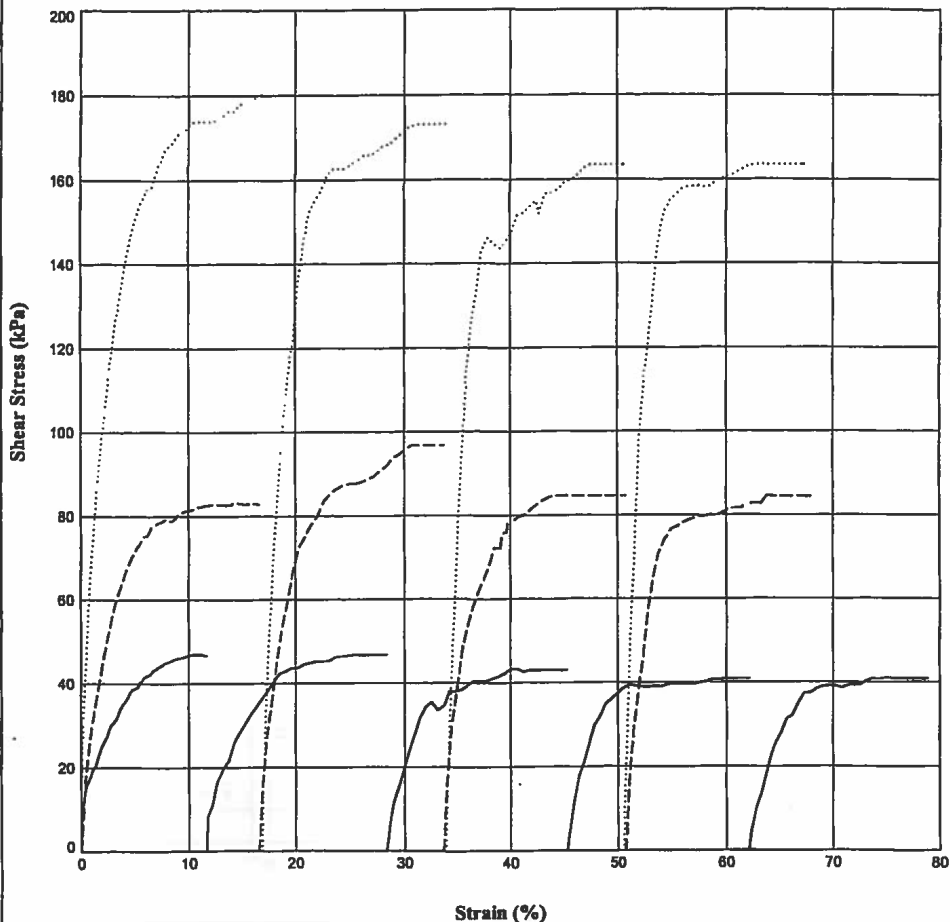
 <b>STRUCTURAL SOILS</b> The Old School House Stillhouse Lane Bedminster Bristol BS3 4EB	Compiled By	Date	Checked By	Date
	A. D. Fe	26/03/03	Dialone	27/3/03
	Contract	Job No		
	Parkgate Street, Dublin	32307		
		Page		4 of 10

 <b>STRUCTURAL SOILS</b> The Old School House Stillhouse Lane Bedminster Bristol BS3 4EB	Compiled By	Date	Checked By	Date
	A. D. Fe	26/03/03	Dialone	27/3/03
	Contract	Job No		
	Parkgate Street, Dublin	32307		
		Page		5 of 10

# PEAK AND RESIDUAL SHEAR BOX - SHEAR STRESS vs STRAIN


In accordance with clause 4.5 of BS1377:Part 7:1990

Borehole : BH2      Sample Ref : 7946      Sample Type : D      Depth (m) : 4.00



KEY :

Solid Line = Specimen 1 (60 kPa), Dashed Line = Specimen 2 (120 kPa), Dotted Line = Specimen 3 (240 kPa).

 <b>STRUCTURAL SOILS</b> The Old School House Stillhouse Lane Bedminster Bristol BS3 4EB	Compiled By	Date	Checked By	Date
	A. S. Tre	26/03/03	Dialoo	27/3/03
	Contract	Parkgate Street, Dublin		Job No 32307
				Page 6 of 10

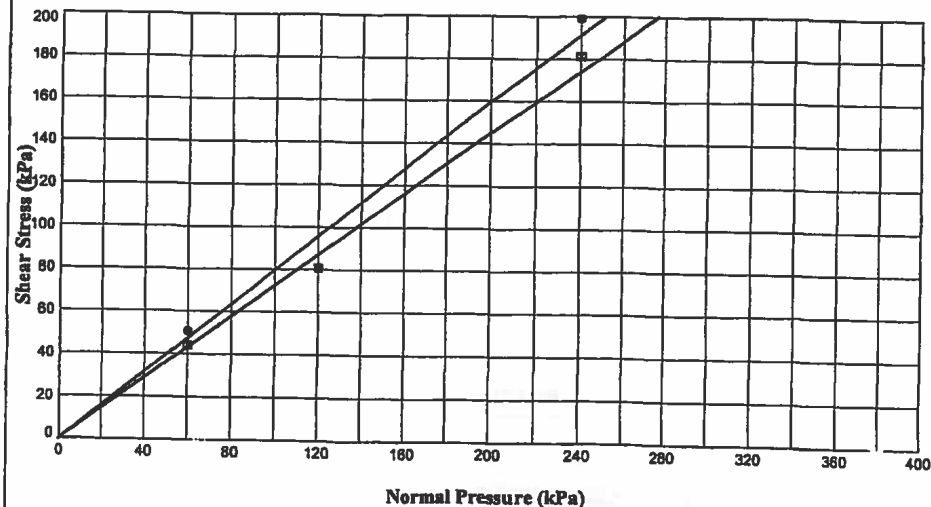
# PEAK AND RESIDUAL SHEAR BOX TEST


In accordance with clause 4.5 of BS1377:Part 7:1990

Borehole : BH4      Sample Ref : 7968      Sample Type : D      Depth (m) : 4.00  
 Width x Length (mm) : 60 x 60      Sample Height (mm) : 20.0      S.G. (assumed) : 2.65  
 Description : Brown slightly gravelly silty SAND      Sample Condition : Recompacted

		SPECIMEN NUMBER		
		1	2	3
PROPERTIES	Initial Moisture Content (%)	8.3	8.3	8.3
	Initial Bulk Density (Mg/m <sup>3</sup> )	1.72	1.83	1.79
	Initial Dry Density (Mg/m <sup>3</sup> )	1.59	1.69	1.65
	Initial Voids Ratio	0.6643	0.5657	0.6021
CONSOLIDATION	Normal Pressure (kPa)	60	120	240
	Initial Height (mm)	19.834	19.844	19.678
	Consolidated Height (mm)	17.467	17.706	16.288
SHEAR	Rate of Strain (mm/min)	0.0240	0.0240	0.0240
	Strain at Peak Shear Stress (%)	30.3	21.1	24.9
	Peak Shear Stress (kPa)	51	81	199
	Residual Shear Stress (kPa)	44	81	182
PEAK STRENGTH	Effective Cohesion (C) (kPa)	0	Effective Angle of Friction (φ) (deg)	39
	Residual Cohesion (C) (kPa)	0	Residual Angle of Friction (φ) (deg)	36.5

● Peak strength      □ Residual strength

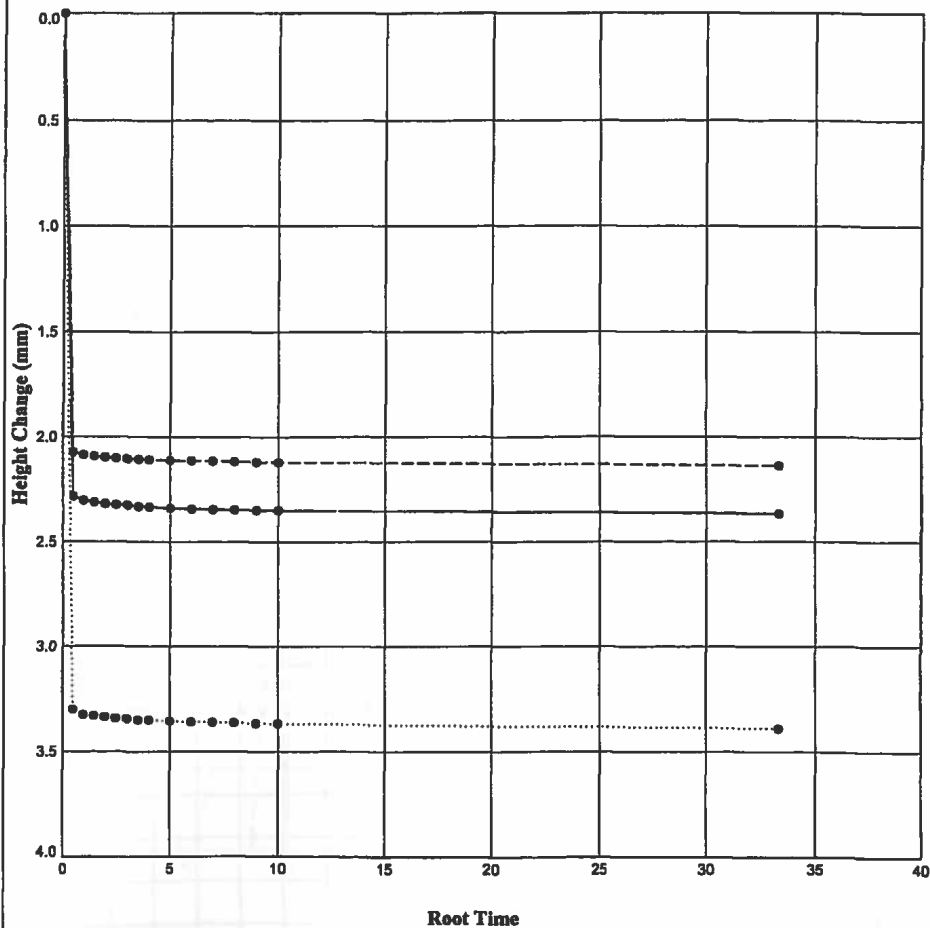


 <b>STRUCTURAL SOILS</b> The Old School House Stillhouse Lane Bedminster Bristol BS3 4EB	Compiled By	Date	Checked By	Date
	A. S. Tre	26/03/03	Dialoo	27/3/03
	Contract	Parkgate Street, Dublin		Job No 32307
				Page 7 of 10

# PEAK AND RESIDUAL SHEAR BOX - CONSOLIDATION GRAPH

In accordance with clause 4.5 of BS1377:Part 7:1990

Borehole : BH4      Sample Ref : 7968      Sample Type : D      Depth (m) : 4.00

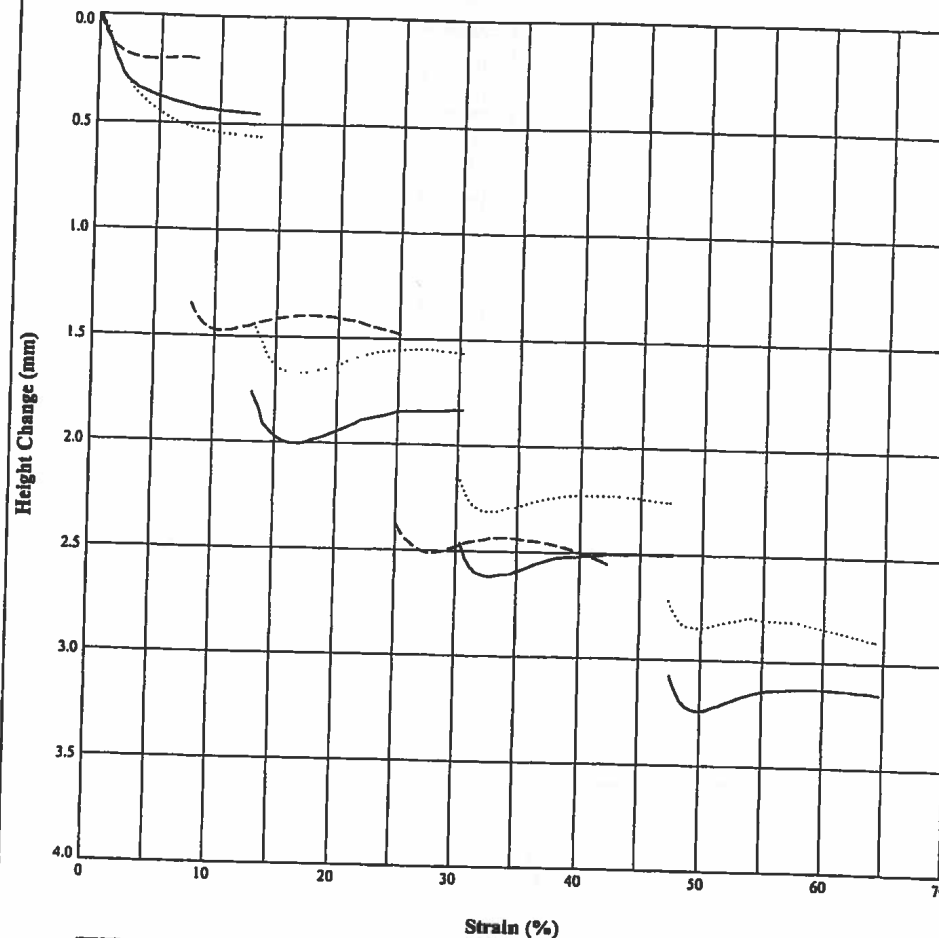


KEY :  
 Solid Line = Specimen 1 (60 kPa),    Dashed Line = Specimen 2 (120 kPa),    Dotted Line = Specimen 3 (240 kPa).


# PEAK AND RESIDUAL SHEAR BOX - HEIGHT CHANGE vs STRAIN


In accordance with clause 4.5 of BS1377:Part 7:1990

Borehole : BH4      Sample Ref : 7968      Sample Type : D      Depth (m) : 4.00



KEY :  
 Solid Line = Specimen 1 (60 kPa),    Dashed Line = Specimen 2 (120 kPa),    Dotted Line = Specimen 3 (240 kPa).

 <b>STRUCTURAL SOILS</b> The Old School House Stillhouse Lane Bedminster Bristol BS3 4EB	Compiled By	Date	Checked By	Date
	A. O. Fe	26/03/03	Dialone	27/3/03
	Contract		Job No	32307
Parkgate Street, Dublin		Page	8 of 10	

 <b>STRUCTURAL SOILS</b> The Old School House Stillhouse Lane Bedminster Bristol BS3 4EB	Compiled By	Date	Checked By	Date
	A. O. Fe	26/03/03	Dialone	27/3/03
	Contract		Job No	32307
Parkgate Street, Dublin		Page	9 of 10	



# PEAK AND RESIDUAL SHEAR BOX - SHEAR STRESS vs STRAIN

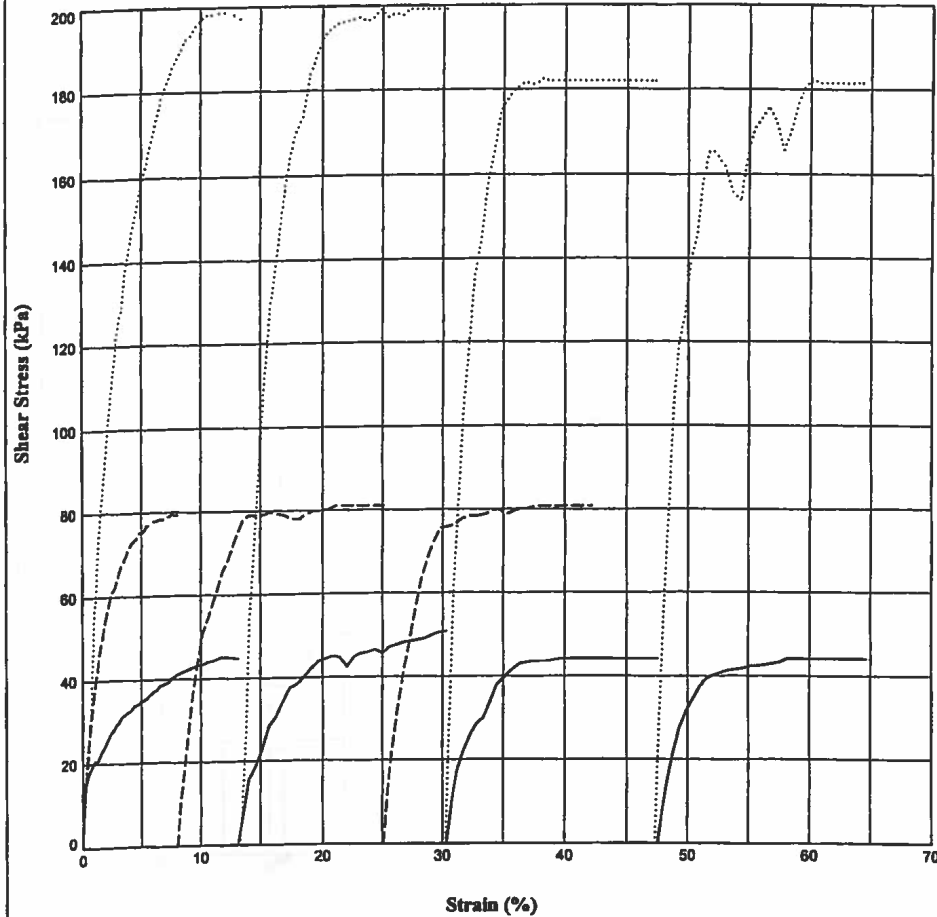
In accordance with clause 4.5 of BS1377:Part 7:1990

Borehole : BH4

Sample Ref : 7968

Sample Type : D

Depth (m) : 4.00



KEY :

Solid Line = Specimen 1 (60 kPa), Dashed Line = Specimen 2 (120 kPa), Dotted Line = Specimen 3 (180 kPa).

## POINT LOAD DATA SHEET

IGSL

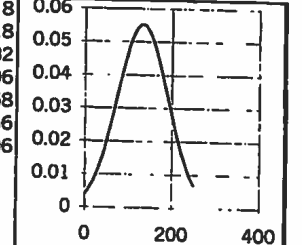
Contract: Hickeys Fabrics Ltd., Parkgate Street, Dublin.

DH No.	Depth m	D mm	P kN	F	Is MPa	Is(50) MPa	*UCS MPa
RC1	7.6	74	32	1.193	5.84	6.97	139
	9.8	74	45	1.193	8.22	9.80	196
RC2	8.5	73	32	1.186	6.00	7.12	142
	11.5	73	34	1.186	6.38	7.56	151
RC3	12	73	21	1.186	3.94	4.67	93
	12.55	73	4	1.186	0.75	0.89	18
RC4	9.9	74	45	1.193	8.22	9.80	196
	11.9	74	28	1.193	5.11	6.10	122

### Summary Data

	Is(50)	UCS*
Number of Samples Tested	8	8
Minimum	0.89	18
Average	6.62	132
Maximum	9.80	196
Standard Dev.	2.89	58
Upper 95% Confidence Limit	12.28	245.56
Lower 95% Confidence Limit	0.95	19.06

### \*UCS Normal Distribution Curve



### Comments:

\*UCS taken as k x Point Load Is(50): 20

## STRUCTURAL SOILS

The Old School House  
Stillhouse Lane  
Bedminster  
Bristol BS3 4EB

Compiled By

A. S. Fe

Date

26/03/03

Checked By

Diabolo 27/3/03

Date

Contract

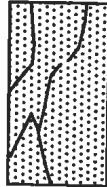
Parkgate Street, Dublin

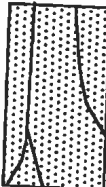
Job No

32307

Page

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Uniaxial Compression Test Report Sheet		I.G.S.L.
<b>Sample Identification</b>		
		Date Tested : 30/1/03 Technician : J.Langley
Contract	Hickey's Fabric Ltd	Job Number : 8483
Corehole No.	RC1	
Depth (m)	6.8-7.1m	
Sample Ref.	A03/0110	
<b>Sample Description</b>		
Colour	Grey/dark grey	
Grain size	Fine-grained	
Weathering Grade	Fresh to locally slightly weathered	
Rock Type	LIMESTONE	
<b>Weathering Grade Criteria</b>		
I. Fresh:	No discolouration	
II. Slightly weathered:	Discolouration on joint surfaces only	
III. Moderately weathered:	Discolouration penetrating into rock from joint surfaces	
IV. Highly weathered:	Complete discolouration of rock.	
<b>Sample Measurements</b>		<b>Sketch of Failure Surfaces</b>
Length	182.6 mm	
Diameter (Ø)	75.3 mm	
<b>Testing</b>		
Load Rate	0.915 kN/sec	
Load at Failure (P)	346 kN	
<b>Strength Calculations</b>		
Uniaxial Compressive Strength = $\frac{\text{Load at Failure}}{\text{Cross Sectional Area}}$ = $\frac{1000 \times P}{\pi \times (\text{Ø}/2)^2}$ = <span style="border: 1px solid black; padding: 2px;">78</span> ( Mpa )		
<b>Notes:</b> Bulk Density 2.64 (Mg/m <sup>3</sup> )		

Uniaxial Compression Test Report Sheet		I.G.S.L.
<b>Sample Identification</b>		
		Date Tested : 30/1/03 Technician : J.Langley
Contract	Hickey's Fabric Ltd	Job Number : 8483
Corehole No.	RC2	
Depth (m)	8.65-8.94m	
Sample Ref.	A03/0111	
<b>Sample Description</b>		
Colour	Grey/dark grey	
Grain size	Fine-grained	
Weathering Grade	Fresh to locally moderately/highly weathered	
Rock Type	LIMESTONE	
<b>Weathering Grade Criteria</b>		
I. Fresh:	No discolouration	
II. Slightly weathered:	Discolouration on joint surfaces only	
III. Moderately weathered:	Discolouration penetrating into rock from joint surfaces	
IV. Highly weathered:	Complete discolouration of rock.	
<b>Sample Measurements</b>		<b>Sketch of Failure Surfaces</b>
Length	155.2 mm	
Diameter (Ø)	75.7 mm	
<b>Testing</b>		
Load Rate	0.63166666 kN/sec	
Load at Failure (P)	236 kN	
<b>Strength Calculations</b>		
Uniaxial Compressive Strength = $\frac{\text{Load at Failure}}{\text{Cross Sectional Area}}$ = $\frac{1000 \times P}{\pi \times (\text{Ø}/2)^2}$ = <span style="border: 1px solid black; padding: 2px;">52</span> ( Mpa )		
<b>Notes:</b> Bulk Density 2.67 (Mg/m <sup>3</sup> )		

Uniaxial Compression Test Report Sheet

I.G.S.L.

Sample Identification

Date Tested : 30/1/03  
Technician : J.Langley

Contract Hickey's Fabric Ltd Job Number : 8483  
Corehole No. RC4  
Depth (m) 9.2-9.5m  
Sample Ref. A03/0112

Sample Description

Colour Grey/dark grey  
Grain size Fine-grained  
Weathering Grade Fresh to locally moderately/highly weathered  
Rock Type LIMESTONE

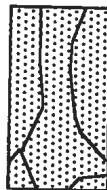
Weathering Grade Criteria

- I. Fresh: No discolouration
- II. Slightly weathered: Discolouration on joint surfaces only
- III. Moderately weathered: Discolouration penetrating into rock from joint surfaces
- IV. Highly weathered: Complete discolouration of rock.

Sample Measurements

Sketch of Failure Surfaces

Length 143.3 mm  
Diameter (Ø) 75.4 mm



Testing

Load Rate 0.986666 kN/sec  
Load at Failure (P) 363 kN

Strength Calculations

$$\begin{aligned} \text{Uniaxial Compressive Strength} &= \frac{\text{Load at Failure}}{\text{Cross Sectional Area}} \\ &= \frac{1000 \times P}{\pi \times (\text{Ø}/2)^2} \\ &= 81 \text{ (Mpa)} \end{aligned}$$

Notes: Bulk Density 2.67 (Mg/m<sup>3</sup>)

APPENDIX VII  
LABORATORY TEST RECORDS  
( ENVIRONMENTAL )

# ALcontrol Laboratories Ireland Test Schedule

**Ref Number:** 03-B00011 **Sample Type:** SOIL  
**Client:** Irish Geotechnical Services Ltd (Newbridge) **Location:**  
**Date of Receipt:** 02/01/2003 **Client Contact:** Neil Hannaway  
**Turnaround:** 10 days **Client Ref:** HICKEYS FABRIC

ALcontrol Reference	Sample Identity	Other ID	Detection Method UKAS Accredited	Client Ref: HICKEYS FABRIC																	
				CVAA	DR LANGE	DUCHISTD	GC	GC	GC	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	ICP USN					
03-B00011-0005-A01	BH1 1-1.5	UNKNOWN	Glass Bottle	X			X										X				
03-B00011-0005-A04	BH1 1-1.5	UNKNOWN	Glass Bottle	X			X										X				
03-B00011-0005-A03	BH1 1-1.5	UNKNOWN	Volatile Vial				X										X				
03-B00011-0005-A01	BH1 5-5.5	UNKNOWN	Glass Bottle	X			X										X				
03-B00011-0005-A04	BH1 5-5.5	UNKNOWN	Volatile Vial				X										X				

Notes: NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

Checked By

*David O'Neil*

# ALcontrol Laboratories Ireland Test Schedule

**Ref Number:** 03-B00011 **Sample Type:** SOIL  
**Client:** Irish Geotechnical Services Ltd (Newbridge) **Location:**  
**Date of Receipt:** 02/01/2003 **Client Contact:** Neil Hannaway  
**Turnaround:** 10 days **Client Ref:** HICKEYS FABRIC

ALcontrol Reference	Sample Identity	Other ID	Detection Method UKAS Accredited	Client Ref: HICKEYS FABRIC																						
				ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP		
03-B00011-0005-A01	BH1 1-1.5	UNKNOWN	Glass Bottle	X			X																			
03-B00011-0005-A04	BH1 1-1.5	UNKNOWN	Glass Bottle	X			X																			
03-B00011-0005-A03	BH1 1-1.5	UNKNOWN	Volatile Vial				X																			
03-B00011-0005-A01	BH1 5-5.5	UNKNOWN	Glass Bottle	X			X																			
03-B00011-0005-A04	BH1 5-5.5	UNKNOWN	Volatile Vial				X																			

Notes: NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

Checked By

*David O'Neil*

# ALcontrol Laboratories Ireland Test Schedule

**Ref Number: 03-B00011**      **Sample Type: SOIL**  
 Client: Irish Geotechnical Services Ltd (Newbridge)      Location:  
 Date of Receipt: 02/01/2003      Client Contact: Neil Hannaway  
 Turnaround: 10 days      Client Ref: HICKEYS FABRIC

ALcontrol Reference	Sample Identity	Other ID	Detection Method UKAS Accredited	ANALYSES														
				ICP USN	ICP USN	ICP USN	IR	KOYE	KOYE	KOYE	KOYE	KOYE	KOYE	METER	METER	NRA		
03-00011-20005-A01	BH1 1-1.5	UNKNOWN	Glass Bottle	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
03-00011-20005-A02	BH1 1-1.5	UNKNOWN	Glass Bottle															
03-00011-20005-A03	BH1 1-1.5	UNKNOWN	Voluatic Vial	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
03-00011-20005-A04	BH1 5-5.5	UNKNOWN	Glass Bottle															
03-00011-20005-A05	BH1 5-5.5	UNKNOWN	Glass Bottle	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
03-00011-20005-A06	BH1 5-5.5	UNKNOWN	Voluatic Vial															

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

Checked By Dad Old

# ALcontrol Laboratories Ireland Test Schedule

**Ref Number: 03-B00011**      **Sample Type: SOIL**  
 Client: Irish Geotechnical Services Ltd (Newbridge)      Location:  
 Date of Receipt: 02/01/2003      Client Contact: Neil Hannaway  
 Turnaround: 10 days      Client Ref: HICKEYS FABRIC

ALcontrol Reference	Sample Identity	Other ID	Detection Method UKAS Accredited	SPECTRO/SPECTRO		ANALYSES												
				✓		Free Cyanide in NRA Leachate	Chromium VI in NRA Leachate	ICP USN	ICP USN	ICP USN	IR	KOYE	KOYE	KOYE	KOYE	KOYE	METER	METER
03-00011-20005-A07	BH1 1-1.5	UNKNOWN	Glass Bottle	X		X	X	X	X	X	X	X	X	X	X	X	X	X
03-00011-20005-A08	BH1 1-1.5	UNKNOWN	Glass Bottle															
03-00011-20005-A09	BH1 5-5.5	UNKNOWN	Voluatic Vial	X		X	X	X	X	X	X	X	X	X	X	X	X	X
03-00011-20005-A10	BH1 5-5.5	UNKNOWN	Glass Bottle															
03-00011-20005-A11	BH1 5-5.5	UNKNOWN	Voluatic Vial	X		X	X	X	X	X	X	X	X	X	X	X	X	X

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

Checked By Dad Old

# ALcontrol Laboratories Ireland

## Test Schedule

**Ref Number: 03-B00011**

Client: Irish Geotechnical Services Ltd (Newbridge)

Date of Receipt: 02/01/2003

Turnaround: 10 days

**Sample Type: WATER**

Location:

Client Contact: Neil Harnaway

Client Ref: HICKEYS FABRIC

ALcontrol Reference	Sample Identity	Detection Method UKAS Accredited	P/V	DRO + Mineral Oil by GC	PRO, BTX & MTBE	PAH EPA (16)	Semi Volatile Organics	Total PCB**	Volatile Organic Compounds	Dissolved Arsenic Low Level**	Dissolved Boron	Dissolved Cadmium Low Level	Dissolved Chromium Low Level	Dissolved Copper Low Level	Dissolved Lead Low Level	Dissolved Molybdenum Low Level	ICP	ICP USN	ICP USN	ICP USN
																	ICP	ICP USN	ICP USN	ICP USN
	BH7 3.5	UNKNOWN		X	X	X	X	X	X	X	X	X	X	X	X	X				
	BH5 3.4	UNKNOWN		X	X	X	X	X	X	X	X	X	X	X	X	X				
	BH2 3.1	UNKNOWN		X	X	X	X	X	X	X	X	X	X	X	X	X				

**Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING**

Checked By David Clark

# ALcontrol Laboratories Ireland

## Test Schedule

**Ref Number: 03-B00011**

Client: Irish Geotechnical Services Ltd (Newbridge)

Date of Receipt: 02/01/2003

Turnaround: 10 days

**Sample Type: WATER**

Location:

Client Contact: Neil Harnaway

Client Ref: HICKEYS FABRIC

ALcontrol Reference	Sample Identity	Detection Method UKAS Accredited	P/V	Dissolved Nickel Low Level	Dissolved Zinc Low Level	ICP USN	ICP USN	ICP USN	ICP USN	ICP USN	ICP USN	ICP USN	ICP USN	ICP USN	ICP USN	ICP USN

**Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING**

Checked By David Clark

**Geotechnical Analytical Services**

Diesel Range Organics

by  
G.C.

Client Name IGSL

Client Ref Hickeys Fabric

Sample Matrix Leachate

Job Number 03-B00011

Date Extracted/Prepared 22/1/03

Date Analysed 23/1/03

Separatory Funnel Ext Yes

Soxtec Extraction No

Column Extraction Yes

Sample number	Sample Identity	Depth	Diesel Range Hydrocarbons (µg/litre)	Interpretation
005	BH1	1.0-1.5	< 10	No Identification Possible
006	BH1	5.0-5.5	< 10	No Identification Possible

Checked by *[Signature]*

**Geotechnical Analytical Services**

Diesel Range Organics

by  
G.C.

Client Name Irish Geotechnical Services Ltd

Client Ref Hickeys Fabrics

Sample Matrix Soil

Job Number 03-B00011

Date Extracted/Prepared 16/01/03

Date Analysed 17/01/03

Separatory Funnel Ext No

Soxtec Extraction No

Column Extraction No

Sample number	Sample Identity	Depth	Diesel Range Hydrocarbons (ng/kg)	Interpretation
S0005	BH1	1.0-1.5	< 1	No Identification Possible
S0006	BH1	5.0-5.5	< 1	No Identification Possible

Checked by *[Signature]*

**Geotechnical Analytical Services**

Mineral Oil

by  
G.C.

Client Name IGSL

Client Ref Hickeys Fabric

Sample Matrix Leachate

Job Number 03-B00011

Date Extracted/Prepared 22/1/03

Date Analysed 23/1/03

Separatory Funnel Ext Yes

Soxtec Extraction No

Column Extraction Yes

Sample number	Sample Identity	Depth	Mineral Oil (µg/litre)	Interpretation
005	BH1	1.0-1.5	< 10	No Identification Possible
006	BH1	5.0-5.5	< 10	No Identification Possible

Checked by *A. H. H. H.*

Client Name Irish Geotechnical Services Ltd

Client Ref Hickeys Fabric

Sample Matrix Soil

Job Number 03-B00011

Date Extracted/Prepared 16/01/03

Date Analysed 17/01/03

Separatory Funnel Ext No

Soxtec Extraction No

Column Extraction No

Sample number	Sample Identity	Depth	Mineral Oil (mg/kg)	Interpretation
S0005	BH1	1.0-1.5	< 1	No Identification Possible
S0006	BH1	5.0-5.5	< 1	No Identification Possible

Checked by *A. H. H. H.*



**Geotechnical Analytical Services**

Diesel Range Organics

by  
G.C.

Client Name IGSL  
Client Ref Hickeys Fabric  
Sample Matrix Water

Job Number 02-B00011  
Date Extracted/Prepared 10/1/03  
Date Analysed 13/1/03

Separatory Funnel Ext Yes  
Soxtec Extraction No  
Column Extraction Yes

Sample number	Sample Identity	Depth	Diesel Range Hydrocarbons (µg/litre)	Interpretation
007	BH7	3.50	< 10	No Identification Possible
008	BH5	3.40	< 10	No Identification Possible
009	BH2	3.10	< 10	No Identification Possible

Checked by D. Williams

**Geotechnical Analytical Services**

Mineral Oil

by  
G.C.

Client Name IGSL  
Client Ref Hickeys Fabric  
Sample Matrix Water

Job Number 02-B00011  
Date Extracted/Prepared 10/1/03  
Date Analysed 13/1/03

Separatory Funnel Ext Yes  
Soxtec Extraction No  
Column Extraction Yes

Sample number	Sample Identity	Depth	Mineral Oil (µg/litre)	Interpretation
007	BH7	3.50	< 10	No Identification Possible
008	BH5	3.40	< 10	No Identification Possible
009	BH2	3.10	< 10	No Identification Possible

Checked by D. Williams

Volatile Organic Compounds (EPA 624/8260)

Sample Identity - B00011-S0005 BH1 1.0-1.5m  
 Client / Sample matrix - Irish Geotechnical Services Ltd/Soil  
 Units - µg/kg  
 Date Acquired - 14 Jan 2003 18:56  
 Instrument Name - Instrumen

CAS No	Compound	Conc.	CAS No	Compound	Conc.
75-71-8	Dichlorodifluoromethane	<1	106-93-4	1,2-Dibromoethane	<1
74-87-3	Chloromethane	<1	127-18-4	Tetrachloroethene	<1
75-01-4	Vinyl Chloride	<1	630-20-6	1,1,1,2-Tetrachloroethane	<1
74-83-9	Bromomethane	<1	108-90-7	Chlorobenzene	<1
75-00-3	Chloroethane	<1	100-41-4	Ethylbenzene	<1
75-69-4	Trichlorofluoromethane	<1	108-38-3*	p/m-Xylene	<1
156-60-5	trans-1,2-Dichloroethene	<1	75-25-2	Bromoform	<1
75-09-2	Dichloromethane	<1	100-42-5	Styrene	<1
75-15-0	Carbon disulphide	<1	79-34-5	1,1,2,2-Tetrachloroethane	<1
75-35-4	1,1-Dichloroethene	<1	95-47-6	o-Xylene	<1
75-34-3	1,1-Dichloroethane	<1	96-18-4	1,2,3-Trichloropropane	<1
1634-04-4	(tert-butyl) methyl ether	<1	98-82-8	Isopropylbenzene	<1
156-59-2	cis-1,2-Dichloroethene	<1	108-86-1	Bromobenzene	<1
74-97-5	Bromochloromethane	<1	95-49-8	2-Chlorotoluene	<1
67-66-3	Chloroform	<1	103-65-1	Propylbenzene	<1
594-20-7	2,2-Dichloropropane	<1	106-43-4	4-Chlorotoluene	<1
107-06-2	1,2-Dichloroethane	<1	95-63-6	1,2,4-Trimethylbenzene	<1
71-55-6	1,1,1-Trichloroethane	<1	99-87-6	4-Isopropyltoluene	<1
563-58-6	1,1-Dichloropropene	<1	108-67-8	1,3,5-Trimethylbenzene	<1
71-43-2	Benzene	<1	541-73-1	1,3-Dichlorobenzene	<1
56-23-5	Carbontetrachloride	<1	106-46-7	1,4-Dichlorobenzene	<1
74-95-3	Dibromomethane	<1	135-98-8	sec-Butylbenzene	<1
78-87-5	1,2-Dichloropropane	<1	98-06-6	tert-Butylbenzene	<1
75-27-4	Bromodichloromethane	<1	95-50-1	1,2-Dichlorobenzene	<1
79-01-6	Trichloroethene	<1	104-51-8	n-Butylbenzene	<1
10061-01-5	cis-1,3-Dichloropropene	<1	96-12-8	1,2-Dibromo-3-chloropropane	<1
10061-02-6	trans-1,3-Dichloropropene	<1	120-82-1	1,2,4-Trichlorobenzene	<1
79-00-5	1,1,2-Trichloroethane	<1	91-20-3	Naphthalene	<1
108-88-3	Toluene	<1	87-61-6	1,2,3-Trichlorobenzene	<1
142-28-9	1,3-Dichloropropane	<1	87-68-3	Hexachlorobutadiene	<1
124-48-1	Dibromochloromethane	<1			

N.B. \* also CAS No. 106-42-3

\*\* Water blank subtracted

Volatile Organic Compounds (EPA 624/8260)

Sample Identity - B00011-S0006 BH1 5.0-5.5m  
 Client / Sample matrix - Irish Geotechnical Services Ltd/Soil  
 Units - µg/kg  
 Date Acquired - 14 Jan 2003 18:21  
 Instrument Name - Instrumen

CAS No	Compound	Conc.	CAS No	Compound	Conc.
75-71-8	Dichlorodifluoromethane	<1	106-93-4	1,2-Dibromoethane	<1
74-87-3	Chloromethane	<1	127-18-4	Tetrachloroethene	<1
75-01-4	Vinyl Chloride	<1	630-20-6	1,1,1,2-Tetrachloroethane	<1
74-83-9	Bromomethane	<1	108-90-7	Chlorobenzene	<1
75-00-3	Chloroethane	<1	100-41-4	Ethylbenzene	<1
75-69-4	Trichlorofluoromethane	<1	108-38-3*	p/m-Xylene	<1
156-60-5	trans-1,2-Dichloroethene	<1	75-25-2	Bromoform	<1
75-09-2	Dichloromethane	<1	100-42-5	Styrene	<1
75-15-0	Carbon disulphide	<1	79-34-5	1,1,2,2-Tetrachloroethane	<1
75-35-4	1,1-Dichloroethane	<1	95-47-6	o-Xylene	<1
75-34-3	1,1-Dichloroethene	<1	96-18-4	1,2,3-Trichloropropane	<1
1634-04-4	(tert-butyl) methyl ether	<1	98-82-8	Isopropylbenzene	<1
156-59-2	cis-1,2-Dichloroethene	<1	108-86-1	Bromobenzene	<1
74-97-5	Bromochloromethane	<1	95-49-8	2-Chlorotoluene	<1
67-66-3	Chloroform	<1	103-65-1	Propylbenzene	<1
594-20-7	2,2-Dichloropropane	<1	106-43-4	4-Chlorotoluene	<1
107-06-2	1,2-Dichloroethane	<1	95-63-6	1,2,4-Trimethylbenzene	<1
71-55-6	1,1,1-Trichloroethane	<1	99-87-6	4-Isopropyltoluene	<1
563-58-6	1,1-Dichloropropene	<1	108-67-8	1,3,5-Trimethylbenzene	<1
71-43-2	Benzene	<1	541-73-1	1,3-Dichlorobenzene	<1
56-23-5	Carbontetrachloride	<1	106-46-7	1,4-Dichlorobenzene	<1
74-95-3	Dibromomethane	<1	135-98-8	sec-Butylbenzene	<1
78-87-5	1,2-Dichloropropane	<1	98-06-6	tert-Butylbenzene	<1
75-27-4	Bromodichloromethane	<1	95-50-1	1,2-Dichlorobenzene	<1
79-01-6	Trichloroethene	<1	104-51-8	n-Butylbenzene	<1
10061-01-5	cis-1,3-Dichloropropene	<1	96-12-8	1,2-Dibromo-3-chloropropane	<1
10061-02-6	trans-1,3-Dichloropropene	<1	120-82-1	1,2,4-Trichlorobenzene	<1
79-00-5	1,1,2-Trichloroethane	<1	91-20-3	Naphthalene	<1
108-88-3	Toluene	<1	87-61-6	1,2,3-Trichlorobenzene	<1
142-28-9	1,3-Dichloropropane	<1	87-68-3	Hexachlorobutadiene	<1
124-48-1	Dibromochloromethane	<1			

N.B. \* also CAS No. 106-42-3

\*\* Water blank subtracted

Volatile Organic Compounds (EPA 624/8260)

Sample Identity - B00011-S0009 BH5 3.1m  
 Client / Sample matrix - Irish Geotechnical Services Ltd/Water  
 Units - µg/l  
 Date Acquired - 14 Jan 2003 20:42  
 Instrument Name - Instrumen

CAS No	Compound	Conc.	CAS No	Compound	Conc.
75-71-3	Dichlorodifluoromethane	<1	106-93-4	1,2-Dibromoethane	<1
74-87-3	Chloromethane	<1	127-18-4	Tetrachloroethene	<1
75-01-4	Vinyl Chloride	<1	630-20-6	1,1,1,2-Tetrachloroethane	<1
74-83-9	Bromomethane	<1	108-90-7	Chlorobenzene	<1
75-00-3	Chloroethane	<1	100-41-4	Ethylbenzene	<1
75-69-4	Trichlorofluoromethane	<1	108-38-3*	p/m-Xylene	<1
156-60-5	trans-1,2-Dichloroethene	<1	75-25-2	Bromoform	<1
75-09-2	Dichloromethane	<1	100-42-5	Styrene	<1
75-15-0	Carbon disulphide	<1	79-34-5	1,1,2,2-Tetrachloroethane	<1
75-35-4	1,1-Dichloroethene	<1	95-47-6	o-Xylene	<1
75-34-3	1,1-Dichloroethane	<1	96-18-4	1,2,3-Trichloropropane	<1
1634-04-4	tert-butyl methyl ether	<1	98-82-8	Isopropylbenzene	<1
156-59-2	cis-1,2-Dichloroethene	<1	108-86-1	Bromobenzene	<1
74-97-5	Bromochloromethane	<1	95-49-8	2-Chlorotoluene	<1
67-66-3	Chloroform	<1	103-65-1	Propylbenzene	<1
594-20-7	2,2-Dichloropropane	<1	106-43-4	4-Chlorotoluene	<1
107-06-2	1,2-Dichloroethane	<1	95-63-6	1,2,4-Trimethylbenzene	<1
71-55-6	1,1,1-Trichloroethane	<1	99-87-6	4-Isopropyltoluene	<1
563-58-6	1,1-Dichloropropene	<1	108-67-8	1,3,5-Trimethylbenzene	<1
71-43-2	Benzene	<1	541-73-1	1,3-Dichlorobenzene	<1
56-23-5	Carbontetrachloride	<1	106-46-7	1,4-Dichlorobenzene	<1
74-95-3	Dibromomethane	<1	135-98-8	sec-Butylbenzene	<1
78-87-5	1,2-Dichloropropane	<1	98-06-6	tert-Butylbenzene	<1
75-27-4	Bromodichloromethane	<1	95-50-1	1,2-Dichlorobenzene	<1
79-01-6	Trichloroethene	<1	104-51-8	n-Butylbenzene	<1
10061-01-5	cis-1,3-Dichloropropene	<1	96-12-8	1,2-Dibromo-3-chloropropane	<1
10061-02-6	trans-1,3-Dichloropropene	<1	120-82-1	1,2,4-Trichlorobenzene	<1
79-00-5	1,1,2-Trichloroethane	<1	91-20-3	Naphthalene	<1
108-88-3	Toluene	<1	87-61-6	1,2,3-Trichlorobenzene	<1
142-28-9	1,3-Dichloropropane	<1	87-68-3	Hexachlorobutadiene	<1
124-48-1	Dibromochloromethane	<1			

N.B. \* also CAS No. 106-42-3

\*\* Water blank subtracted

Volatile Organic Compounds (EPA 624/8260)

Sample Identity - B00011-S0008 BH5 3.4m  
 Client / Sample matrix - Irish Geotechnical Services Ltd/Water  
 Units - µg/l  
 Date Acquired - 14 Jan 2003 20:06  
 Instrument Name - Instrumen

CAS No	Compound	Conc.	CAS No	Compound	Conc.
75-71-8	Dichlorodifluoromethane	<1	106-93-4	1,2-Dibromoethane	<1
74-87-3	Chloromethane	<1	127-18-4	Tetrachloroethene	<1
75-01-4	Vinyl Chloride	<1	630-20-6	1,1,1,2-Tetrachloroethane	<1
74-83-9	Bromomethane	<1	108-90-7	Chlorobenzene	<1
75-00-3	Chloroethane	<1	100-41-4	Ethylbenzene	<1
75-69-4	Trichlorofluoromethane	<1	108-38-3*	p/m-Xylene	<1
156-60-5	trans-1,2-Dichloroethene	<1	75-25-2	Bromoform	<1
75-09-2	Dichloromethane	<1	100-42-5	Styrene	<1
75-15-0	Carbon disulphide	<1	79-34-5	1,1,2,2-Tetrachloroethane	<1
75-35-4	1,1-Dichloroethene	<1	95-47-6	o-Xylene	<1
75-34-3	1,1-Dichloroethane	<1	96-18-4	1,2,3-Trichloropropane	<1
1634-04-4	tert-butyl methyl ether	<1	98-82-8	Isopropylbenzene	<1
156-59-2	cis-1,2-Dichloroethene	<1	108-86-1	Bromobenzene	<1
74-97-5	Bromochloromethane	<1	95-49-8	2-Chlorotoluene	<1
67-66-3	Chloroform	<1	103-65-1	Propylbenzene	<1
594-20-7	2,2-Dichloropropane	<1	106-43-4	4-Chlorotoluene	<1
107-06-2	1,2-Dichloroethane	<1	95-63-6	1,2,4-Trimethylbenzene	<1
71-55-6	1,1,1-Trichloroethane	<1	99-87-6	4-Isopropyltoluene	<1
563-58-6	1,1-Dichloropropene	<1	108-67-8	1,3,5-Trimethylbenzene	<1
71-43-2	Benzene	<1	541-73-1	1,3-Dichlorobenzene	<1
56-23-5	Carbontetrachloride	<1	106-46-7	1,4-Dichlorobenzene	<1
74-95-3	Dibromomethane	<1	135-98-8	sec-Butylbenzene	<1
78-87-5	1,2-Dichloropropane	<1	98-06-6	tert-Butylbenzene	<1
75-27-4	Bromodichloromethane	<1	95-50-1	1,2-Dichlorobenzene	<1
79-01-6	Trichloroethene	<1	104-51-8	n-Butylbenzene	<1
10061-01-5	cis-1,3-Dichloropropene	<1	96-12-8	1,2-Dibromo-3-chloropropane	<1
10061-02-6	trans-1,3-Dichloropropene	<1	120-82-1	1,2,4-Trichlorobenzene	<1
79-00-5	1,1,2-Trichloroethane	<1	91-20-3	Naphthalene	<1
108-88-3	Toluene	<1	87-61-6	1,2,3-Trichlorobenzene	<1
142-28-9	1,3-Dichloropropane	<1	87-68-3	Hexachlorobutadiene	<1
124-48-1	Dibromochloromethane	<1			

N.B. \* also CAS No. 106-42-3

\*\* Water blank subtracted

### Volatile Organic Compounds (EPA 624/8260)

Sample Identity - B00011-S0007 BH7 3.5m  
 Client / Sample matrix - Irish Geotechnical Services Ltd/Water  
 Units - µg/l  
 Date Acquired - 14 Jan 2003 19:31  
 Instrument Name - Instrumen

CAS No	Compound	Conc.	CAS No	Compound	Conc.
75-71-8	Dichlorodifluoromethane	<1	106-93-4	1,2-Dibromoethane	<1
74-87-3	Chloromethane	<1	127-18-4	Tetrachloroethene	<1
75-01-4	Vinyl Chloride	<1	630-20-6	1,1,1,2-Tetrachloroethane	<1
74-83-9	Bromomethane	<1	108-90-7	Chlorobenzene	<1
75-00-3	Chloroethane	<1	100-41-4	Ethylbenzene	<1
75-69-4	Trichlorofluoromethane	<1	108-38-3*	p/m-Xylene	<1
156-60-5	trans-1,2-Dichloroethene	<1	75-25-2	Bromoform	<1
75-09-2	Dichloromethane	<1	100-42-5	Styrene	<1
75-15-0	Carbon disulphide	<1	79-34-5	1,1,2,2-Tetrachloroethane	<1
75-35-4	1,1-Dichloroethane	<1	95-47-6	o-Xylene	<1
75-34-3	1,1-Dichloroethane	<1	96-18-4	1,2,3-Trichloropropane	<1
1634-04-4	tert-butyl methyl ether	<1	98-82-8	Isopropylbenzene	<1
156-59-2	cis-1,2-Dichloroethene	<1	108-86-1	Bromobenzene	<1
74-97-5	Bromochloromethane	<1	95-49-8	2-Chlorotoluene	<1
67-66-3	Chloroform	<1	103-65-1	Propylbenzene	<1
594-20-7	2,2-Dichloropropane	<1	106-43-4	4-Chlorotoluene	<1
107-06-2	1,2-Dichloroethane	<1	95-63-6	1,2,4-Trimethylbenzene	<1
71-55-6	1,1,1-Trichloroethane	<1	99-87-6	4-Isopropyltoluene	<1
563-58-6	1,1-Dichloropropane	<1	108-67-8	1,3,5-Trimethylbenzene	<1
71-43-2	Benzene	<1	541-73-1	1,3-Dichlorobenzene	<1
56-23-5	Carbontetrachloride	<1	106-46-7	1,4-Dichlorobenzene	<1
74-95-3	Dibromomethane	<1	135-98-8	sec-Butylbenzene	<1
78-87-5	1,2-Dichloropropane	<1	98-06-6	tert-Butylbenzene	<1
75-27-4	Bromodichloromethane	<1	95-50-1	1,2-Dichlorobenzene	<1
79-01-6	Trichloroethene	<1	104-51-8	n-Butylbenzene	<1
10061-01-5	cis-1,3-Dichloropropene	<1	96-12-8	1,2-Dibromo-3-chloropropane	<1
10061-02-6	trans-1,3-Dichloropropene	<1	120-82-1	1,2,4-Trichlorobenzene	<1
79-00-5	1,1,2-Trichloroethane	<1	91-20-3	Naphthalene	<1
108-88-3	Toluene	<1	87-61-6	1,2,3-Trichlorobenzene	<1
142-28-9	1,3-Dichloropropane	<1	87-68-3	Hexachlorobutadiene	<1
124-48-1	Dibromochloromethane	<1			

N.B. \* also CAS No. 106-42-3

\*\* Water blank subtracted

### ALcontrol Geochem

#### Semivolatiles

Sample Identity - DUB-03-B00011-S0005 BH1 1.0-1.5  
 Client / Sample matrix - Irish Geotechnical Services Ltd/Soil  
 Units - µg/kg

CAS No	Compound	Conc.	CAS No	Compound	Conc.
108-95-2	Phenol	<100	207-08-9	Benzo(k)fluoranthrene	<100
95-57-8	2-Chlorophenol	<100	50-32-8	Benzo(a)pyrene	<100
95-48-7	2-Methylphenol	<100	193-39-5	Indeno(1,2,3-cd)pyrene	<100
106-44-5	4-Methylphenol	<100	53-70-3	Dibenzo(a,h)anthracene	<100
88-75-5	2-Nitrophenol	<100	191-24-2	Benzo(ghi)perylene	<100
100-02-7	4-Nitrophenol	<100	91-58-7	2-Chloronaphthalene	<100
120-83-2	2,4-Dichlorophenol	<100	91-57-6	2-Methylnaphthalene	<100
105-67-9	2,4-Dimethylphenol	<100	86-74-8	Carbazole	<100
59-50-7	4-Chloro-3-methylphenol	<100	78-59-1	Isophorone	<100
88-06-2	2,4,6-Trichlorophenol	<100	132-64-9	Dibenzofuran	<100
95-95-4	2,4,5-Trichlorophenol	<100	131-11-3	Dimethyl phthalate	<100
87-86-5	Pentachlorophenol	<100	84-66-2	Diethyl phthalate	<100
541-73-1	1,3-Dichlorobenzene	<100	84-74-2	Di-n-butylphthalate	<100
106-46-7	1,4-Dichlorobenzene	<100	117-84-0	Di-n-octylphthalate	<100
95-50-1	1,2-Dichlorobenzene	<100	117-81-7	Bis(2-ethylhexyl)phthalate	<100
120-82-1	1,2,4-Trichlorobenzene	<100	85-68-7	Butylbenzylphthalate	<100
98-95-3	Nitrobenzene	<100	106-47-8	4-Chloroaniline	<100
103-33-3	Azobenzene	<100	88-74-4	2-Nitroaniline	<100
118-74-1	Hexachlorobenzene	<100	99-09-2	3-Nitroaniline	<100
91-20-3	Naphthalene	<100	100-01-6	4-Nitroaniline	<100
208-96-8	Acenaphthylene	<100	121-14-2	2,4-Dinitrotoluene	<100
83-32-9	Acenaphthene	<100	606-20-2	2,6-Dinitrotoluene	<100
86-73-7	Fluorene	<100	111-44-4	Bis(2-chloroethyl)ether	<100
85-01-8	Phenanthrene	<100	101-55-3	4-Bromophenylphenylether	<100
120-12-7	Anthracene	<100	7005-72-3	4-Chlorophenylphenylether	<100
206-44-0	Fluoranthrene	<100	67-72-1	Hexachloroethane	<100
129-00-0	Pyrene	<100	87-68-3	Hexachlorobutadiene	<100
56-55-3	Benzo(a)anthracene	<100	77-47-4	Hexchlorocyclopentadiene	<100
218-01-9	Chrysene	<100	111-91-1	Bis(2-chloroethoxy)methane	<100
205-99-2	Benzo(b)fluoranthrene	<100	621-64-7	N-nitrosodip-n-propylamine	<100

## ALcontrol Geochem

### Semivolatiles

Sample Identity - DUB-03-B00011-S0006 BH1 5.0-5.5  
 Client / Sample matrix - Irish Geotechnical Services Ltd/Soil  
 Units - µg/kg

CAS No	Compound	Conc.	CAS No	Compound	Conc.
108-95-2	Phenol	<100	207-08-9	Benzo(k)fluoranthrene	<100
95-57-8	2-Chlorophenol	<100	50-32-8	Benzo(a)pyrene	<100
95-48-7	2-Methylphenol	<100	193-39-5	Indeno(1,2,3-cd)pyrene	<100
106-44-5	4-Methylphenol	<100	53-70-3	Dibenzo(a,h)anthracene	<100
88-75-5	2-Nitrophenol	<100	191-24-2	Benzo(ghi)perylene	<100
100-02-7	4-Nitrophenol	<100	91-58-7	2-Chloronaphthalene	<100
120-83-2	2,4-Dichlorophenol	<100	91-57-6	2-Methylnaphthalene	<100
105-67-9	2,4-Dimethylphenol	<100	86-74-8	Carbazole	<100
59-50-7	4-Chloro-3-methylphenol	<100	78-59-1	Isophorone	<100
88-06-2	2,4,6-Trichlorophenol	<100	132-64-9	Dibenzofuran	<100
95-95-4	2,4,5-Trichlorophenol	<100	131-11-3	Dimethyl phthalate	<100
87-86-5	Pentachlorophenol	<100	84-66-2	Diethyl phthalate	<100
541-73-1	1,3-Dichlorobenzene	<100	84-74-2	Di-n-butylphthalate	<100
106-46-7	1,4-Dichlorobenzene	<100	117-84-0	Di-n-octylphthalate	<100
95-50-1	1,2-Dichlorobenzene	<100	117-81-7	Bis(2-ethylhexyl)phthalate	<100
120-82-1	1,2,4-Trichlorobenzene	<100	85-68-7	Butylbenzylphthalate	<100
98-95-3	Nitrobenzene	<100	106-47-8	4-Chloroaniline	<100
103-33-3	Azobenzene	<100	88-74-4	2-Nitroaniline	<100
118-74-1	Hexachlorobenzene	<100	99-09-2	3-Nitroaniline	<100
91-20-3	Naphthalene	<100	100-01-6	4-Nitroaniline	<100
208-96-8	Acenaphthylene	<100	121-14-2	2,4-Dinitrotoluene	<100
83-32-9	Acenaphthene	<100	606-20-2	2,6-Dinitrotoluene	<100
86-73-7	Fluorene	<100	111-44-4	Bis(2-chloroethyl)ether	<100
85-01-8	Phenanthrene	<100	101-55-3	4-Bromophenylphenylether	<100
120-12-7	Anthracene	<100	7005-72-3	4-Chlorophenylphenylether	<100
206-44-0	Fluoranthrene	<100	67-72-1	Hexachloroethane	<100
129-00-0	Pyrene	<100	87-68-3	Hexachlorobutadiene	<100
56-55-3	Benzo(a)anthracene	<100	77-47-4	Hexachlorocyclopentadiene	<100
218-01-9	Chrysene	<100	111-91-1	Bis(2-chloroethoxy)methane	<100
205-99-2	Benzo(b)fluoranthrene	<100	621-64-7	Nitrosodi-n-propylamine	<100

## Geochem Analytical Services

Polychlorinated Biphenyls  
 by  
 GCMS

Sample Matrix : Water  
 Our Reference: 03/00341 011  
 Date Sample Received: 13/01/2003  
 Date Extracted/Prepared: N/A  
 Extraction procedure: SPE  
 Column Extraction: Yes  
 Date Analysed: 14/01/2003  
 GC-MS Mode: SIM  
 Internal Standard: External

Sample No.	001	002	003	004	
Client Ref.	0011-07	0011-08	0011-09	BLK EXT	
P.Q.L.	1	1	1	1	
Units	µg/l	µg/l	µg/l	µg/l	
12674-11-2	Aroclor 1016				
11104-28-2	Aroclor 1221				
11141-16-5	Aroclor 1232				
53469-21-9	Aroclor 1242				
12672-29-6	Aroclor 1248				
11097-69-1	Aroclor 1254				
11096-82-5	Aroclor 1260				
	Total	<1	<1	<1	<1

Calculated against Aroclor 1254.

ALcontrol Geochem

Semivolatiles

Sample Identity - DUB-03-B00011-S0009 BH2 3.1  
 Client / Sample matrix - Irish Geotechnical Services Ltd/Water  
 Units - µg/l

CAS No	Compound	Conc.	CAS No	Compound	Conc.
108-95-2	Phenol	<1	207-08-9	Benzo(k)fluoranthrene	<1
95-57-8	2-Chlorophenol	<1	50-32-8	Benzo(a)pyrene	<1
95-48-7	2-Methylphenol	<1	193-39-5	Indeno(1,2,3-cd)pyrene	<1
106-44-5	4-Methylphenol	<1	53-70-3	Dibenzo(a,h)anthracene	<1
88-75-5	2-Nitrophenol	<1	191-24-2	Benzo(ghi)perylene	<1
100-02-7	4-Nitrophenol	<1	91-58-7	2-Chloronaphthalene	<1
120-83-2	2,4-Dichlorophenol	<1	91-57-6	2-Methylnaphthalene	<1
105-67-9	2,4-Dimethylphenol	<1	86-74-8	Carbazole	<1
59-50-7	4-Chloro-3-methylphenol	<1	78-59-1	Isophorone	<1
88-06-2	2,4,6-Trichlorophenol	<1	132-64-9	Dibenzofuran	<1
95-95-4	2,4,5-Trichlorophenol	<1	131-11-3	Dimethyl phthalate	<1
87-86-5	Pentachlorophenol	<1	84-66-2	Diethyl phthalate	<1
541-73-1	1,3-Dichlorobenzene	<1	84-74-2	Di-n-butylphthalate	<1
106-46-7	1,4-Dichlorobenzene	<1	117-84-0	Di-n-octylphthalate	<1
95-50-1	1,2-Dichlorobenzene	<1	117-81-7	Bis(2-ethylhexyl)phthalate	<1
120-82-1	1,2,4-Trichlorobenzene	<1	85-68-7	Butylbenzylphthalate	<1
98-95-3	Nitrobenzene	<1	106-47-8	4-Chloroaniline	<1
103-33-3	Azobenzene	<1	88-74-4	2-Nitroaniline	<1
118-74-1	Hexachlorobenzene	<1	99-09-2	3-Nitroaniline	<1
91-20-3	Naphthalene	<1	100-01-6	4-Nitroaniline	<1
208-96-8	Acenaphthylene	<1	121-14-2	2,4-Dinitrotoluene	<1
83-32-9	Acenaphthene	<1	606-20-2	2,6-Dinitrotoluene	<1
86-73-7	Fluorene	<1	111-44-4	Bis(2-chloroethyl)ether	<1
85-01-8	Phenanthrene	<1	101-55-3	4-Bromophenylphenylether	<1
120-12-7	Anthracene	<1	7005-72-3	4-Chlorophenylphenylether	<1
206-44-0	Fluoranthrene	<1	67-72-1	Hexachloroethane	<1
129-00-0	Pyrene	<1	87-68-3	Hexachlorobutadiene	<1
56-55-3	Benzo(u)anthracene	<1	77-47-4	Hexachlorocyclopentadiene	<1
218-01-9	Chrysene	<1	111-91-1	Bis(2-chloroethoxy)methane	<1
205-99-2	Benzo(b)fluoranthrene	<1	621-64-7	N-nitrosodipropylamine	<1

ALcontrol Geochem

Semivolatiles

Sample Identity - DUB-03-B00011-S0008 BH5 3.4  
 Client / Sample matrix - Irish Geotechnical Services Ltd/Water  
 Units - µg/l

CAS No	Compound	Conc.	CAS No	Compound	Conc.
108-95-2	Phenol	<1	207-08-9	Benzo(k)fluoranthrene	<1
95-57-8	2-Chlorophenol	<1	50-32-8	Benzo(a)pyrene	<1
95-48-7	2-Methylphenol	<1	193-39-5	Indeno(1,2,3-cd)pyrene	<1
106-44-5	4-Methylphenol	<1	53-70-3	Dibenzo(a,h)anthracene	<1
88-75-5	2-Nitrophenol	<1	191-24-2	Benzo(ghi)perylene	<1
100-02-7	4-Nitrophenol	<1	91-58-7	2-Chloronaphthalene	<1
120-83-2	2,4-Dichlorophenol	<1	91-57-6	2-Methylnaphthalene	<1
105-67-9	2,4-Dimethylphenol	<1	86-74-8	Carbazole	<1
59-50-7	4-Chloro-3-methylphenol	<1	78-59-1	Isophorone	<1
88-06-2	2,4,6-Trichlorophenol	<1	132-64-9	Dibenzofuran	<1
95-95-4	2,4,5-Trichlorophenol	<1	131-11-3	Dimethyl phthalate	<1
87-86-5	Pentachlorophenol	<1	84-66-2	Diethyl phthalate	<1
541-73-1	1,3-Dichlorobenzene	<1	84-74-2	Di-n-butylphthalate	<1
106-46-7	1,4-Dichlorobenzene	<1	117-84-0	Di-n-octylphthalate	<1
95-50-1	1,2-Dichlorobenzene	<1	117-81-7	Bis(2-ethylhexyl)phthalate	<1
120-82-1	1,2,4-Trichlorobenzene	<1	85-68-7	Butylbenzylphthalate	<1
98-95-3	Nitrobenzene	<1	106-47-8	4-Chloroaniline	<1
103-33-3	Azobenzene	<1	88-74-4	2-Nitroaniline	<1
118-74-1	Hexachlorobenzene	<1	99-09-2	3-Nitroaniline	<1
91-20-3	Naphthalene	<1	100-01-6	4-Nitroaniline	<1
208-96-8	Acenaphthylene	<1	121-14-2	2,4-Dinitrotoluene	<1
83-32-9	Acenaphthene	<1	606-20-2	2,6-Dinitrotoluene	<1
86-73-7	Fluorene	<1	111-44-4	Bis(2-chloroethyl)ether	<1
85-01-8	Phenanthrene	<1	101-55-3	4-Bromophenylphenylether	<1
120-12-7	Anthracene	<1	7005-72-3	4-Chlorophenylphenylether	<1
206-44-0	Fluoranthrene	<1	67-72-1	Hexachloroethane	<1
129-00-0	Pyrene	<1	87-68-3	Hexachlorobutadiene	<1
56-55-3	Benzo(u)anthracene	<1	77-47-4	Hexachlorocyclopentadiene	<1
218-01-9	Chrysene	<1	111-91-1	Bis(2-chloroethoxy)methane	<1
205-99-2	Benzo(b)fluoranthrene	<1	621-64-7	N-nitrosodipropylamine	<1

# ALcontrol Geochem

## Semivolatiles

Sample Identity - DUB-03-B00011-S0007 BH7 3.5  
 Client / Sample matrix - Irish Geotechnical Services Ltd/Water  
 Units - µg/l

# ALcontrol Laboratories Ireland

## Test Schedule Summary

Ref Number: 03-B00011      Sample Type: WATER  
 Client: Irish Geotechnical Services Ltd (Newbridge)      Location:  
 Date of Receipt: 02/01/2003      Client Contact: Nell Hannaway  
 Turnaround: 10 days      Client Ref: HICKEYS FABRIC  
 \* SUBCONTRACTED TO OTHER LABORATORY / \*\* SUBCONTRACTED TO ALCONTROL CHESTER

CAS No	Compound	Conc.	CAS No	Compound	Conc.
108-95-2	Phcnol	<1	207-08-9	Benzo(k)fluoranthrene	<1
95-57-8	2-Chlorophenol	<1	50-32-8	Benzo(a)pyrene	<1
95-48-7	2-Methylphenol	<1	193-39-5	Indeno(1,2,3-cd)pyrene	<1
106-44-5	4-Methylphenol	<1	53-70-3	Dibenzo(a,h)anthracene	<1
88-75-5	2-Nitrophenol	<1	191-24-2	Benzo(ghi)perylene	<1
100-02-7	4-Nitrophenol	<1	91-58-7	2-Chloronaphthalene	<1
120-83-2	2,4-Dichlorophenol	<1	91-57-6	2-Methylnaphthalene	<1
105-67-9	2,4-Dimethylphenol	<1	86-74-8	Carbazole	<1
59-50-7	4-Chloro-3-methylphenol	<1	78-59-1	Isophorone	<1
88-06-2	2,4,6-Trichlorophenol	<1	132-64-9	Dibenzofuran	<1
95-95-4	2,4,5-Trichlorophenol	<1	131-11-3	Dimethyl phthalate	<1
87-86-5	Pentachlorophenol	<1	84-66-2	Diethyl phthalate	<1
541-73-1	1,3-Dichlorobenzene	<1	84-74-2	Di-n-butylphthalate	<1
106-46-7	1,4-Dichlorobenzene	<1	117-84-0	Di-n-octylphthalate	<1
95-50-1	1,2-Dichlorobenzene	<1	117-81-7	Bis(2-ethylhexyl)phthalate	<1
120-82-1	1,2,4-Trichlorobenzene	<1	85-68-7	Butylbenzylphthalate	<1
98-95-3	Nitrobenzene	<1	106-47-8	4-Chloroaniline	<1
103-33-3	Azobenzene	<1	88-74-4	2-Nitroaniline	<1
118-74-1	Hexachlorobenzene	<1	99-09-2	3-Nitroaniline	<1
91-20-3	Naphthalene	<1	100-01-6	4-Nitroaniline	<1
208-96-8	Acenaphthylene	<1	121-14-2	2,4-Dinitrotoluene	<1
83-32-9	Acenaphthene	<1	606-20-2	2,6-Dinitrotoluene	<1
86-73-7	Fluorene	<1	111-44-4	Bis(2-chloroethyl)ether	<1
85-01-8	Phenanthrene	<1	101-55-3	4-Bromophenylphenylether	<1
120-12-7	Anthracene	<1	7005-72-3	4-Chlorophenylphenylether	<1
206-44-0	Fluoranthrene	<1	67-72-1	Hexachloroethane	<1
129-00-0	Pyrene	<1	87-68-3	Hexachlorobutadiene	<1
56-55-3	Benzo(a)anthracene	<1	77-47-4	Hexachlorocyclopentadiene	<1
218-01-9	Chrysene	<1	111-91-1	Bis(2-chloroethoxy)methane	<1
205-99-2	Benzo(b)fluoranthrene	<1	621-64-7	N-nitrosodi-n-propylamine	<1

SCHEDULE	METHOD	TEST NAME	TOTAL
X	CV AA	Dissolved Mercury Low Level**	3
X	GC	DRO + Mineral Oil by GC	3
X	GC	PRO, BTEX & MTBE	3
X	GCMS	PAH EPA (18)	3
X	GCMS	Semi Volatile Organics	3
X	GCMS	Total PCB**	3
X	GCMS	Volatile Organic Compounds	3
X	Hydride AA	Dissolved Arsenic Low Level**	3
X	ICP	Dissolved Boron	3
X	ICP USN	Dissolved Cadmium Low Level	3
X	ICP USN	Dissolved Chromium Low Level	3
X	ICP USN	Dissolved Copper Low Level	3
X	ICP USN	Dissolved Lead Low Level	3
X	ICP USN	Dissolved Molybdenum Low Level	3
X	ICP USN	Dissolved Nickel Low Level	3
X	ICP USN	Dissolved Zinc Low Level	3

## ALcontrol Laboratories Ireland Test Schedule Summary

Ref Number: 03-B00011

Sample Type: SOIL

Client: Irish Geotechnical Services Ltd (Newbridge) Location:

Date of Receipt: 02/01/2003

Client Contact: Neil Hannaway

Turnaround: 10 days

Client Ref: HICKEYS FABRIC

\* SUBCONTRACTED TO OTHER LABORATORY / \*\* SUBCONTRACTED TO ALCONTROL CHESTER

SCHEDULE	METHOD	TEST NAME	TOTAL
X	CV AA	Dissolved Mercury Low Level in NRA Leachate**	2
X	DR LANGE	Surfactants in NRA Leachate	2
X	DUTCH STD	EOX in NRA Leachate*	2
X	GC	DRO + Mineral Oil by GC	2
X	GC	DRO + Mineral Oil by GC in NRA Leachate	2
X	GC	PRO, BTEX & MTBE	2
X	GCMS	PAH EPA (10)	2
X	GCMS	PAH EPA (10) in NRA Leachate	2
X	GCMS	Semi Volatile Organics	2
X	GCMS	Volatile Organic Compounds	2
X	GRAVIMETRIC	Moisture Content	2
X	GRAVIMETRIC	Total Dissolved Solids in NRA Leachate	2
X	Hydride AA	Dissolved Arsenic Low Level in NRA Leachate**	2
X	ICP	Arsenic Low Level	2
X	ICP	Cadmium Low Level	2
X	ICP	Chromium	2
X	ICP	Copper	2
X	ICP	Lead	2
X	ICP	Mercury Low Level	2
X	ICP	Molybdenum	2
X	ICP	Nickel	2
X	ICP	Water Soluble Boron	2
X	ICP	Zinc	2
X	ICP	Dissolved Boron in NRA Leachate	2
X	ICP USN	Dissolved Cadmium Low Level in NRA Leachate	2
X	ICP USN	Dissolved Chromium Low Level in NRA Leachate	2
X	ICP USN	Dissolved Copper Low Level in NRA Leachate	2
X	ICP USN	Dissolved Lead Low Level in NRA Leachate	2
X	ICP USN	Dissolved Molybdenum Low Level in NRA Leachate	2
X	ICP USN	Dissolved Nickel Low Level in NRA Leachate	2
X	ICP USN	Dissolved Zinc Low Level in NRA Leachate	2
X	IR	Total Organic Carbon in NRA Leachate	2
X	KONE	Ammoniacal Nitrogen in NRA Leachate	2
X	KONE	Chloride in NRA Leachate	2
X	KONE	Fluoride in NRA Leachate**	2
X	KONE	Nitrate in NRA Leachate	2
X	KONE	Nitrite in NRA Leachate	2
X	KONE	ortho Phosphate in NRA Leachate	2
X	KONE	Sulphate in NRA Leachate	2
X	METER	Conductivity in NRA Leachate	2
X	METER	pH of NRA Leachate	2

Printed at 12:02 on 03/01/2003

## ALcontrol Laboratories Ireland Test Schedule Summary

Ref Number: 03-B00011

Sample Type: SOIL

Client: Irish Geotechnical Services Ltd (Newbridge) Location:

Date of Receipt: 02/01/2003

Client Contact: Neil Hannaway

Turnaround: 10 days

Client Ref: HICKEYS FABRIC

\* SUBCONTRACTED TO OTHER LABORATORY / \*\* SUBCONTRACTED TO ALCONTROL CHESTER

SCHEDULE	METHOD	TEST NAME	TOTAL
X	NRA	NRA Leachate Test	2
X	SPECTRO	Chromium VI in NRA Leachate	2
X	SPECTRO	Free Cyanide in NRA Leachate	2

Printed at 12:02 on 03/01/2003









# ALcontrol Laboratories Irp and

## Test Schedule

Ref Number: 02-B02182

Sample Type: SOIL

Client: Irish Geotechnical Services Ltd (Newbridge)

Location:

Date of Receipt: 16/01/2003

Client Contact: Neil Hannaway

Turnaround: 5 days

Client Ref: Hickeys Fabrics

ALcontrol Reference	Sample Identity	Other ID	Detection Method UKAS Accredited	ICP																	
				ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP							
02-802182-50033-A01	WS5 2.0m	P / V	Volatile Vial	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
02-802182-50033-A02	WS5 2.0m	UNKNOWN	Amber Jar																		
02-802182-50034-A01	WS5 4.5-5.0m	UNKNOWN	Amber Jar																		
02-802182-50035-A01	WS5 4.5-5.0m	UNKNOWN	Amber Jar	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
02-802182-50035-A08	WS5 4.5-5.0m	UNKNOWN	Volatile Vial																		
02-802182-50036-A01	WS6 1.5-2.0m	UNKNOWN	Amber Jar																		
02-802182-50036-A02	WS6 1.5-2.0m	UNKNOWN	Volatile Vial																		
02-802182-50038-A01	WS7 1.0-1.5m	UNKNOWN	Amber Jar																		
02-802182-50038-A08	WS7 1.0-1.5m	UNKNOWN	Volatile Vial																		
02-802182-50039-A01	WS7 3.5-4.0m	UNKNOWN	Amber Jar																		
02-802182-50039-A02	WS7 4.0m	UNKNOWN	On Hold																		
02-802182-50031-A01	WS7 4.0m	UNKNOWN	On Hold																		
02-802182-50031-A02	WS7 4.0m	UNKNOWN	On Hold																		
02-802182-50032-A01	WS10 0.5-1.0m	UNKNOWN	Volatile Vial																		
02-802182-50032-A08	WS10 0.5-1.0m	UNKNOWN	Volatile Vial																		
02-802182-50033-A01	WS10 3.0m	UNKNOWN	Amber Jar																		
02-802182-50035-A01	WS10 4.0m	UNKNOWN	Volatile Vial																		
02-802182-50035-A02	WS10 4.0m	UNKNOWN	On Hold																		
02-802182-50036-A01	WS11 0.5-1.0m	UNKNOWN	Amber Jar																		
02-802182-50036-A02	WS11 0.5-1.0m	UNKNOWN	On Hold																		
02-802182-50036-A01	WS11 0.5-1.0m	UNKNOWN	Amber Jar																		
02-802182-50036-A02	WS11 0.5-1.0m	UNKNOWN	Volatile Vial																		
02-802182-50038-A01	WS11 3.5-4.0m	UNKNOWN	Amber Jar																		

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

Checked By \_\_\_\_\_

# ALcontrol Laboratories Irp and

## Test Schedule

Ref Number: 02-B02182

Sample Type: SOIL

Client: Irish Geotechnical Services Ltd (Newbridge)

Location:

Date of Receipt: 16/01/2003

Client Contact: Neil Hannaway

Turnaround: 5 days

Client Ref: Hickeys Fabrics

ALcontrol Reference	Sample Identity	Other ID	Detection Method UKAS Accredited	ICP																	
				ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP							
02-802182-50038-A08	WS11 3.5-4.0m	P / V	Volatile Vial	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
02-802182-50039-A01	WS11 4.5-5.0m	UNKNOWN	Amber Jar																		
02-802182-50039-A01	WS12 0.5-1.0m	UNKNOWN	Amber Jar																		
02-802182-50040-A01	WS12 0.5-1.0m	UNKNOWN	Volatile Vial																		
02-802182-50040-A02	WS12 0.5-1.0m	UNKNOWN	Volatile Vial																		
02-802182-50042-A01	WS12 3.5-4.0m	UNKNOWN	Amber Jar																		
02-802182-50042-A02	WS12 3.5-4.0m	UNKNOWN	Volatile Vial																		
02-802182-50043-A01	WS12 4.5-5.0m	UNKNOWN	Amber Jar																		
02-802182-50044-A01	WS13 0.5-1.0m	UNKNOWN	Amber Jar																		
02-802182-50044-A08	WS13 0.5-1.0m	UNKNOWN	Volatile Vial																		
02-802182-50045-A01	WS13 3.5-2.0m	UNKNOWN	Amber Jar																		
02-802182-50046-A01	WS13 3.5-4.0m	UNKNOWN	On Hold																		
02-802182-50046-A02	WS13 3.5-4.0m	UNKNOWN	On Hold																		
02-802182-50046-A01	WS13 4.5-5.0m	UNKNOWN	Volatile Vial																		
02-802182-50046-A01	WS14 0.5-1.0m	UNKNOWN	Amber Jar																		
02-802182-50046-A01	WS14 0.5-1.0m	UNKNOWN	On Hold																		
02-802182-50049-A08	WS14 2.5-3.0m	UNKNOWN	Amber Jar																		
02-802182-50050-A01	WS14 2.5-3.0m	UNKNOWN	Volatile Vial																		
02-802182-50050-A02	WS14 2.5-3.0m	UNKNOWN	Amber Jar																		
02-802182-50051-A01	WS15 0.5-1.0m	UNKNOWN	Volatile Vial																		
02-802182-50051-A08	WS15 0.5-1.0m	UNKNOWN	Volatile Vial																		

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

Checked By \_\_\_\_\_



# ALcontrol Laboratories Ir<sup>e</sup> and Test Schedule

Ref Number: 02-B02182  
 Client: Irish Geotechnical Services Ltd (Newbridge)  
 Date of Receipt: 16/01/2003  
 Turnaround: 5 days

Sample Type: SOIL  
 Location:  
 Client Contact: Neil Hannaway  
 Client Ref: Hickeys Fabrics

ALcontrol Reference	Sample Identity	Other ID	Detection Method UKAS Accredited	Detection Method																	
				ICP USN	ICP USN	ICP USN	IR	KONE	KONE	KONE	KONE	KONE	KONE	METER	METER	NRA					
02-802182-50023-401	WS5 2.0m	P / V	Volatle Vial	X																	
02-802182-50033-407	WS5 2.0m	UNKNOWN	Amber Jar																		
02-802182-50024-401	WS5 4.5-5.0m	UNKNOWN	Amber Jar																		
02-802182-50025-401	WS5 4.5-5.0m	UNKNOWN	Amber Jar																		
02-802182-50025-408	WS5 4.5-5.0m	UNKNOWN	Volatle Vial																		
02-802182-50026-401	WS6 1.5-2.0m	UNKNOWN	Amber Jar																		
02-802182-50026-402	WS6 1.5-2.0m	UNKNOWN	Volatle Vial	On Hold																	
02-802182-50028-401	WS7 1.0-1.5m	UNKNOWN	Amber Jar																		
02-802182-50028-408	WS7 1.0-1.5m	UNKNOWN	Volatle Vial																		
02-802182-50030-401	WS7 3.5-4.0m	UNKNOWN	Amber Jar																		
02-802182-50031-401	WS7 4.0m	UNKNOWN	Amber Jar																		
02-802182-50031-402	WS7 4.0m	UNKNOWN	Volatle Vial	On Hold																	
02-802182-50032-401	WS10 0.5-1.0m	UNKNOWN	Amber Jar																		
02-802182-50032-408	WS10 0.5-1.0m	UNKNOWN	Volatle Vial																		
02-802182-50034-401	WS10 3.0m	UNKNOWN	Amber Jar																		
02-802182-50035-401	WS10 4.0m	UNKNOWN	Volatle Vial	On Hold																	
02-802182-50035-402	WS10 4.0m	UNKNOWN	Amber Jar																		
02-802182-50036-401	WS11 0.5-1.0m	UNKNOWN	Amber Jar																		
02-802182-50036-402	WS11 0.5-1.0m	UNKNOWN	Volatle Vial																		
02-802182-50038-401	WS11 3.5-4.0m	UNKNOWN	Amber Jar																		

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

Checked By \_\_\_\_\_

# ALcontrol Laboratories Ir<sup>e</sup> and Test Schedule

Ref Number: 02-B02182  
 Client: Irish Geotechnical Services Ltd (Newbridge)  
 Date of Receipt: 16/01/2003  
 Turnaround: 5 days

Sample Type: SOIL  
 Location:  
 Client Contact: Neil Hannaway  
 Client Ref: Hickeys Fabrics

ALcontrol Reference	Sample Identity	Other ID	Detection Method UKAS Accredited	Detection Method																	
				ICP USN	ICP USN	ICP USN	IR	KONE	KONE	KONE	KONE	KONE	KONE	METER	METER	NRA					
02-802182-50038-408	WS11 3.5-4.0m	P / V	Volatle Vial	X																	
02-802182-50039-401	WS11 4.5-5.0m	UNKNOWN	Amber Jar																		
02-802182-50040-401	WS12 0.5-1.0m	UNKNOWN	Amber Jar																		
02-802182-50040-402	WS12 0.5-1.0m	UNKNOWN	Volatle Vial																		
02-802182-50042-402	WS12 3.5-4.0m	UNKNOWN	Amber Jar																		
02-802182-50043-401	WS12 4.5-5.0m	UNKNOWN	Volatle Vial																		
02-802182-50044-401	WS13 0.5-1.0m	UNKNOWN	Amber Jar																		
02-802182-50045-408	WS13 1.5-2.0m	UNKNOWN	Volatle Vial																		
02-802182-50046-401	WS13 3.5-4.0m	UNKNOWN	Amber Jar																		
02-802182-50046-402	WS13 3.5-4.0m	UNKNOWN	Volatle Vial																		
02-802182-50047-401	WS13 4.5-5.0m	UNKNOWN	Amber Jar																		
02-802182-50048-401	WS14 0.5-1.0m	UNKNOWN	Amber Jar																		
02-802182-50049-408	WS14 0.5-1.0m	UNKNOWN	Amber Jar																		
02-802182-50050-401	WS14 0.5-1.0m	UNKNOWN	Amber Jar																		
02-802182-50050-402	WS14 2.5-3.0m	UNKNOWN	Volatle Vial																		
02-802182-50051-401	WS14 2.5-3.0m	UNKNOWN	Amber Jar																		
02-802182-50051-408	WS15 0.5-1.0m	UNKNOWN	Volatle Vial																		

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

Checked By \_\_\_\_\_

# ALcontrol Laboratories Irr<sup>®</sup> and Test Schedule

Ref Number: 02-B02182

Sample Type: SOIL

Client: Irish Geotechnical Services Ltd (Newbridge)

Location:

Date of Receipt: 16/01/2003

Client Contact: Neil Hannaway

Turnaround: 5 days

Client Ref: Hickeys Fabrics

ALcontrol Reference	Sample Identity	Other ID	ICP USN		IR	KONE		KONE	KONE	KONE	KONE	METER	METER	NRA						
			Dissolved Molybdenum Low Level in NRA Leachate	Dissolved Nickel Low Level in NRA Leachate		Dissolved Zinc Low Level in NRA Leachate	Total Organic Carbon in NRA Leachate								Ammoniacal Nitrogen in NRA Leachate	Chloride in NRA Leachate	Fluoride in NRA Leachate**	Nitrate in NRA Leachate	Nitrite in NRA Leachate	ortho Phosphate in NRA Leachate
02-802182-50053-A01	WS15 3.5-4.0m	UNKNOWN	Amber Jar																	
02-802182-50053-A02	WS15 3.5-4.0m	UNKNOWN	Volatile Vial																	
02-802182-50054-A01	WS16 0.5-1.0m	UNKNOWN	Amber Jar																	
02-802182-50054-A02	WS16 0.5-1.0m	UNKNOWN	Volatile Vial																	
02-802182-50055-A01	WS16 1.5-2.0m	UNKNOWN	Amber Jar	X		X					X									
02-802182-50055-A02	WS16 1.5-2.0m	UNKNOWN	Amber Jar																	
02-802182-50056-A01	WS16 3.5-4.0m	UNKNOWN	Volatile Vial	X		X					X									
02-802182-50056-A02	WS16 3.5-4.0m	UNKNOWN	Volatile Vial	On Hold																
02-802182-50057-A01	WS8 1.5-2.0m	UNKNOWN	Amber Jar																	
02-802182-50057-A02	WS8 1.5-2.0m	UNKNOWN	Volatile Vial	On Hold																

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

Checked By \_\_\_\_\_

# ALcontrol Laboratories Irr<sup>®</sup> and Test Schedule

Ref Number: 02-B02182

Sample Type: SOIL

Client: Irish Geotechnical Services Ltd (Newbridge)

Location:

Date of Receipt: 16/01/2003

Client Contact: Neil Hannaway

Turnaround: 5 days

Client Ref: Hickeys Fabrics

ALcontrol Reference	Sample Identity	Other ID	P / V	SPECTRO / SPECTRO		Free Cyanide in NRA Leachate	Chromium VI in NRA Leachate
				Detection Method UKAS Accredited	✓		
02-802182-50007-A01	WS1 0.5m	UNKNOWN	Amber Jar				
02-802182-50008-A24	WS1 1.5m	UNKNOWN	Amber Jar			X	
02-802182-50009-A01	WS1 2.5m	UNKNOWN	Amber Jar				
02-802182-50010-A01	WS1 3.5m	UNKNOWN	Amber Jar				
02-802182-50011-A01	WS2 0.5-1.0m	UNKNOWN	Amber Jar				
02-802182-50013-A01	WS2 1.5-2.0m	UNKNOWN	Amber Jar				
02-802182-50013-A02	WS2 1.5-2.0m	UNKNOWN	Amber Jar			On Hold	
02-802182-50014-A01	WS2 3.0m	UNKNOWN	Amber Jar				
02-802182-50015-A01	WS2 4.0m	UNKNOWN	Glass Bottle			X	
02-802182-50015-A02	WS2 4.0m	UNKNOWN	Glass Bottle				
02-802182-50016-A01	WS3 0.5m	UNKNOWN	Amber Jar				
02-802182-50016-A02	WS3 0.5m	UNKNOWN	Glass Bottle				
02-802182-50017-A01	WS3 1.5-2.0m	UNKNOWN	Amber Jar				
02-802182-50017-A02	WS3 1.5-2.0m	UNKNOWN	Glass Bottle				
02-802182-50018-A01	WS3 3.5-4.0m	UNKNOWN	Amber Jar				
02-802182-50018-A02	WS3 3.5-4.0m	UNKNOWN	Glass Bottle				
02-802182-50019-A01	WS4 1.5-2.0	UNKNOWN	Amber Jar				
02-802182-50019-A02	WS4 1.5-2.0	UNKNOWN	Glass Bottle				
02-802182-50021-A01	WS5 0.5-1.0m	UNKNOWN	Amber Jar			X	
02-802182-50021-A02	WS5 0.5-1.0m	UNKNOWN	Volatile Vial				
02-802182-50022-A01	WS5 1.5-2.0m	UNKNOWN	Amber Jar				
02-802182-50022-A02	WS5 1.5-2.0m	UNKNOWN	Amber Jar			X	

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

Checked By \_\_\_\_\_



# ALcontrol Laboratories Ir and Test Schedule

**Ref Number: 02-B02182**      **Sample Type: SOIL**  
 Client: Irish Geotechnical Services Ltd (Newbridge)      Location:  
 Date of Receipt: 16/01/2003      Client Contact: Neil Hannaway  
 Turnaround: 5 days      Client Ref: Hickeys Fabrics

ALcontrol Reference	Sample Identity	Other ID	P / V	Chromium VI in NRA Leachate	Free Cyanide in NRA Leachate
02-802182-50023-A01	WS5 2.0m	UNKNOWN	Volatile Vial		
02-802182-50023-A07	WS5 7.0m	UNKNOWN	Amber Jar		
02-802182-50024-A01	WS5 4.5-5.0m	UNKNOWN	Amber Jar	X	
02-802182-50025-A01	WS5 4.5-5.0m	UNKNOWN	Amber Jar		
02-802182-50025-A08	WS5 4.5-5.0m	UNKNOWN	Volatile Vial		
02-802182-50026-A01	WS6 1.5-2.0m	UNKNOWN	Amber Jar	On Hold	
02-802182-50026-A02	WS6 1.5-2.0m	UNKNOWN	Volatile Vial	On Hold	
02-802182-50028-A01	WS7 1.0-1.5m	UNKNOWN	Amber Jar	On Hold	
02-802182-50028-A08	WS7 1.0-1.5m	UNKNOWN	Volatile Vial	On Hold	
02-802182-50030-A01	WS7 3.5-4.0m	UNKNOWN	Amber Jar	On Hold	
02-802182-50031-A01	WS7 4.0m	UNKNOWN	Amber Jar	On Hold	
02-802182-50031-A02	WS7 4.0m	UNKNOWN	Volatile Vial	On Hold	
02-802182-50032-A01	WS10 0.5-1.0m	UNKNOWN	Amber Jar	On Hold	
02-802182-50032-A08	WS10 0.5-1.0m	UNKNOWN	Volatile Vial	On Hold	
02-802182-50034-A01	WS10 3.0m	UNKNOWN	Amber Jar		
02-802182-50035-A01	WS10 4.0m	UNKNOWN	Volatile Vial	On Hold	
02-802182-50035-A02	WS10 4.0m	UNKNOWN	Amber Jar	On Hold	
02-802182-50036-A01	WS11 0.5-1.0m	UNKNOWN	Amber Jar		
02-802182-50036-A02	WS11 0.5-1.0m	UNKNOWN	Volatile Vial		
02-802182-50038-A01	WS11 3.5-4.0m	UNKNOWN	Amber Jar		

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

Checked By \_\_\_\_\_

# ALcontrol Laboratories Ir and Test Schedule

**Ref Number: 02-B02182**      **Sample Type: SOIL**  
 Client: Irish Geotechnical Services Ltd (Newbridge)      Location:  
 Date of Receipt: 16/01/2003      Client Contact: Neil Hannaway  
 Turnaround: 5 days      Client Ref: Hickeys Fabrics

ALcontrol Reference	Sample Identity	Other ID	P / V	Chromium VI in NRA Leachate	Free Cyanide in NRA Leachate
02-802182-50038-A08	WS11 3.5-4.0m	UNKNOWN	Volatile Vial		
02-802182-50039-A01	WS11 4.5-5.0m	UNKNOWN	Amber Jar		
02-802182-50040-A01	WS12 0.5-1.0m	UNKNOWN	Amber Jar		
02-802182-50040-A02	WS12 0.5-1.0m	UNKNOWN	Volatile Vial		
02-802182-50042-A02	WS12 3.5-4.0m	UNKNOWN	Amber Jar		
02-802182-50043-A01	WS12 4.5-5.0m	UNKNOWN	Volatile Vial		
02-802182-50044-A01	WS13 0.5-1.0m	UNKNOWN	Amber Jar		
02-802182-50044-A08	WS13 0.5-1.0m	UNKNOWN	Volatile Vial		
02-802182-50045-A01	WS13 1.5-2.0m	UNKNOWN	Amber Jar	X	
02-802182-50046-A01	WS13 3.5-4.0m	UNKNOWN	Amber Jar		
02-802182-50046-A02	WS13 3.5-4.0m	UNKNOWN	Volatile Vial	On Hold	
02-802182-50047-A01	WS13 4.5-5.0m	UNKNOWN	Amber Jar	On Hold	
02-802182-50048-A01	WS14 0.5-1.0m	UNKNOWN	Amber Jar	X	
02-802182-50049-A01	WS14 0.5-1.0m	UNKNOWN	Amber Jar		
02-802182-50049-A08	WS14 0.5-1.0m	UNKNOWN	Volatile Vial		
02-802182-50050-A01	WS14 2.5-3.0m	UNKNOWN	Amber Jar		
02-802182-50050-A02	WS14 2.5-3.0m	UNKNOWN	Volatile Vial		
02-802182-50051-A01	WS15 0.5-1.0m	UNKNOWN	Amber Jar		
02-802182-50051-A08	WS15 0.5-1.0m	UNKNOWN	Volatile Vial		

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

Checked By \_\_\_\_\_



# ALcontrol Laboratories Irr'and Test Schedule

**Ref Number: 02-B02182**  
 Client: Irish Geotechnical Services Ltd (Newbridge)  
 Date of Receipt: 16/01/2003  
 Turnaround: 5 days

**Sample Type: SOIL**  
 Location:  
 Client Contact: Neil Hannaway  
 Client Ref: Hickeys Fabrics

Detection Method UKAS Accredited	Sample Identity	Other ID	P / V	Free Cyanide In NRA Leachate	Chromium VI In NRA Leachate	SPECTRO / SPECTRO
02-802182-50053-A01	WS15 3.5-4.0m	UNKNOWN	Amber Jar			
02-802182-50053-A02	WS15 3.5-4.0m	UNKNOWN	Volatile Vial			
02-802182-50054-A01	WS16 0.5-1.0m	UNKNOWN	Amber Jar			
02-802182-50054-A08	WS16 0.5-1.0m	UNKNOWN	Volatile Vial			
02-802182-50055-A01	WS16 1.5-2.0m	UNKNOWN	Amber Jar	X		
02-802182-50056-A01	WS16 3.5-4.0m	UNKNOWN	Amber Jar	On Hold		
02-802182-50056-A02	WS16 3.5-4.0m	UNKNOWN	Volatile Vial	On Hold		
02-802182-50057-A01	WS8 1.5-2.0m	UNKNOWN	Amber Jar			
02-802182-50057-A02	WS8 1.5-2.0m	UNKNOWN	Volatile Vial			

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

Checked By \_\_\_\_\_

# ALcontrol Laboratories Irr'and Test Schedule

**Ref Number: 02-B02182**  
 Client: Irish Geotechnical Services Ltd (Newbridge)  
 Date of Receipt: 16/01/2003  
 Turnaround: 5 days

**Sample Type: WATER**  
 Location:  
 Client Contact: Neil Hannaway  
 Client Ref: Hickeys Fabrics

Detection Method UKAS Accredited	Sample Identity	Other ID	P / V	Dissolved Mercury Low Level**	DRO + Mineral Oil by GC	PRO, BTEX & MTBE	PAH EPA (16)	Semi Volatile Organics	Total PCB**	Volatile Organic Compounds	Dissolved Arsenic Low Level**	Dissolved Boron	Dissolved Cadmium Low Level	Dissolved Chromium Low Level	Dissolved Copper Low Level	Dissolved Lead Low Level	Dissolved Molybdenum Low Level
				CYAA	GC	GC	GCMS	GCMS	GCMS	GCMS	Hydride AA	ICP	ICP USN	ICP USN	ICP USN	ICP USN	ICP USN
02-802182-50056-A01	BH1 3.5m	UNKNOWN	Glass Bottle	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

Checked By \_\_\_\_\_

# ALcontrol Laboratories Ireland

## Test Schedule

**Ref Number: 02-B02182**

Client: Irish Geotechnical Services Ltd (Newbridge)

Date of Receipt: 16/01/2003

Turnaround: 5 days

**Sample Type: WATER**

Location:

Client Contact: Neil Hannaway

Client Ref: Hickeys Fabrics

Detection Method UKAS Accredited		ICP USN	ICP USN														
Alcontrol Reference	Sample Identity	Other ID	P / V	Dissolved Nickel Low Level	Dissolved Zinc Low Level												
02-B02182-50006-A01	BH1 3.5m	UNKNOWN	Glass Bottle	X	X												

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

Checked By \_\_\_\_\_

215M  
W312

LSM  
W317

215M  
W314

W313

W311

W318

RIVER LIFFEY

215M  
W313

215M  
W315

W310

217  
W317

W316

217  
W316

215M  
W317

215M  
W316

215  
W315

215  
W312

216  
W316

213  
W313

W314

215M  
W315

214  
W314

212  
W312

W311

PARKGATE STREET

211  
W311

A3 2420N

234400N

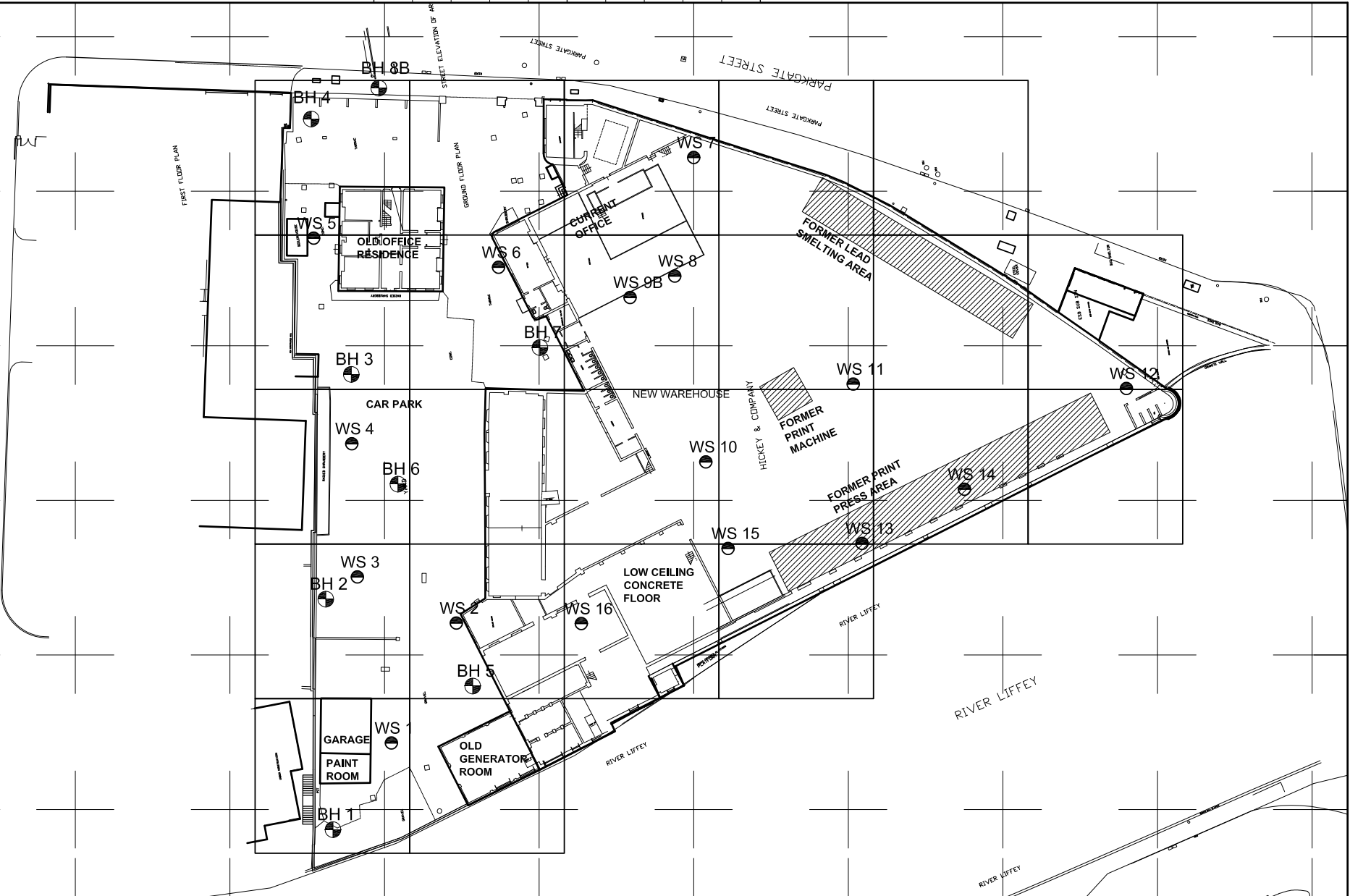
234380N

234360N



234340N

234320N

10cm



**LEGEND**

- WS 4  - WINDOW SAMPLE
- BH 6  - BOREHOLE

Rev.	Date	By	Description	Chd By

Job Title  
**HICKEYS FABRIC & CO. LTD.**  
 NO 43 PARKGATE HOUSE  
 PARKGATE STREET  
 DUBLIN 8

Drawing Title  
**BOREHOLE/WINDOW SAMPLE  
 LOCATIONS AND EXTENT  
 OF HISTORICAL OPERATIONS**

Drawing Status  
**FOR INFORMATION ONLY**

**ARUP**  
 10 Wellington Road Dublin 4  
 Tel 01-6144200 Fax 01-6683169  
 Email dublin@arup.com

DUBLIN CORK LIMERICK  
 Scales NTS  
 Checked Approved Date

Job No. Drawing No. Rev.  
**D3586.11** **FIGURE 2**