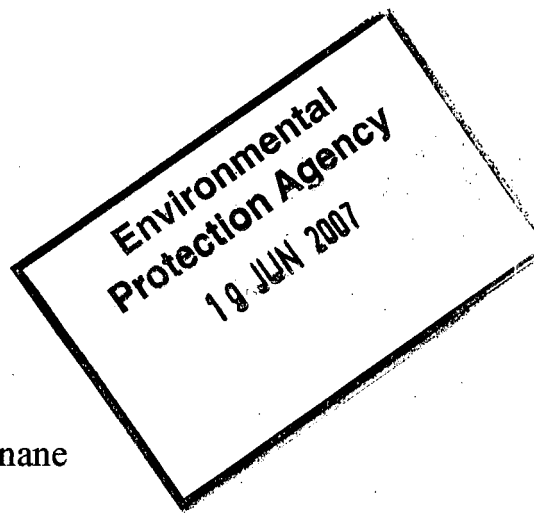


Office file



Sub 92

Hand's Lane
Rush
Co. Dublin
17/06/2007

Dr. Ian Marnane
EPA
CO Wexford

Ref: Application for a Landfill Waste Licence at Nevitt, Co Dublin
by Fingal County Council

Dear Dr Marnane,

Please find attached borehole data on the Annsbrook landfill study area as received last week from Fingal County Council.

We now wish to make the following observations on the Annsbrook data.

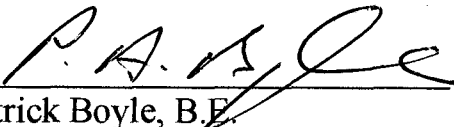
- The site is underlain by gravels of thickness 0.5 meters to 3.5 metres
- The gravels are generally at a depth of approximately 10 meters below ground level, and would appear to form a continuous stratum above underlying clays.
- This formation together with the overlying clays, and pattern of parallel streams, would appear to be a classic example of a gravel outwash plain and therefore a groundwater resource in it's own right.
- The information provided by Mr John Landy of Corduff during our well survey, that his horticultural well was sunk into relatively shallow gravel to a depth of approx. "45 feet" is thus confirmed.
- The gravels at the southern end of the Courtlough Valley immediately to the north of Annsbrook are generally of the same depth and thickness and thus a continuous north-south connection appears to exist between both gravel deposits.
- This being the case then the gravels beneath the proposed landfill site would most probably form part of the recharge area of the existing horticultural wellfield giving an R4 response on the Groundwater Protection Responses for Landfill matrix.
- The more southerly potential public water supply supplied by RPS in answer to the recent EPA query would more than likely also depend on gravels beneath the proposed landfill site for some of it's recharge.

- The Annsbrook site is also connected hydrogeologically with the Courtlough Valley through the North/ South highly fractured rock fault zone making an R4 response with the horticultural water sources doubly certain.

May we also make the following additional observations

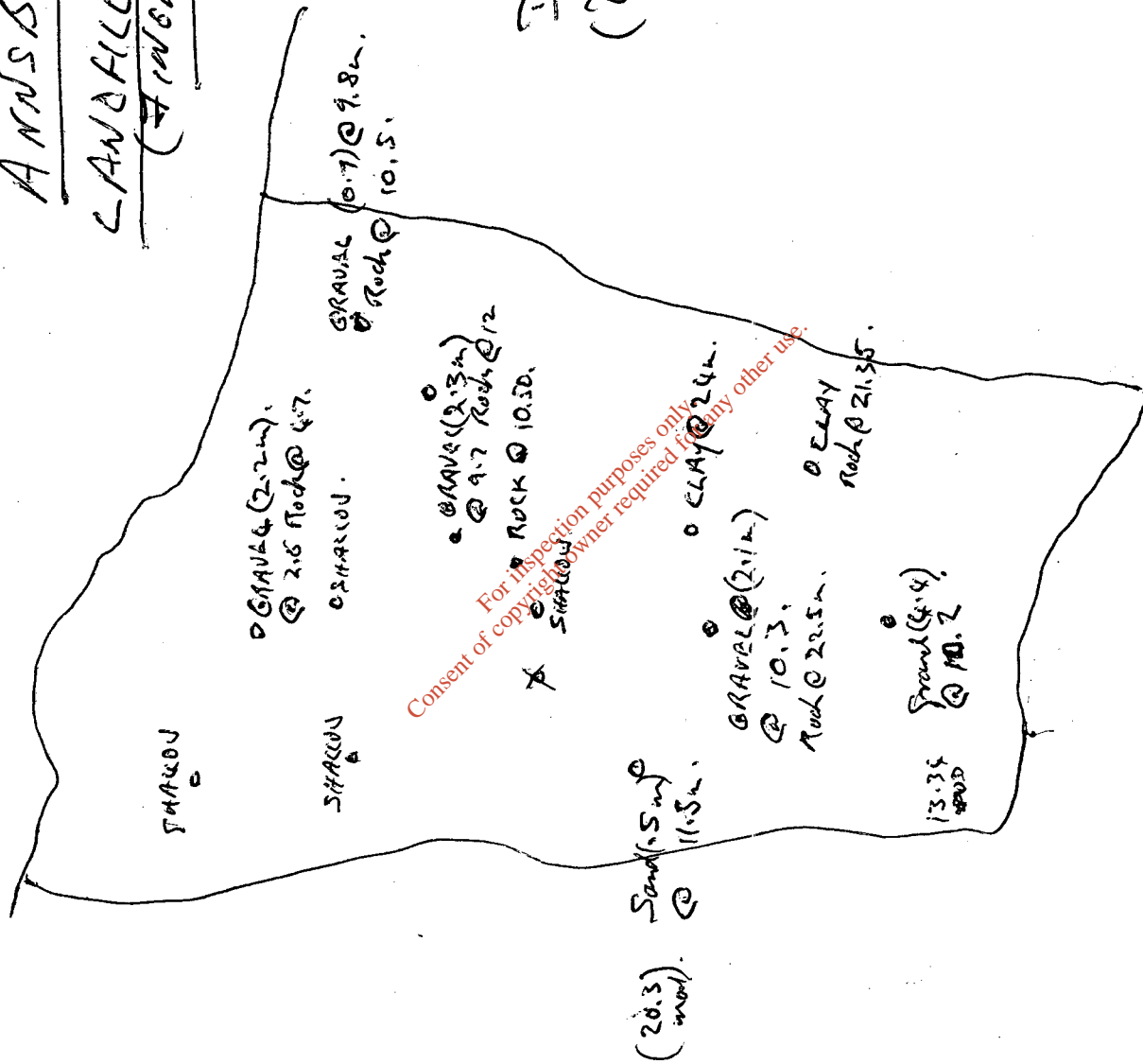
- We note that the GSI have given the opinion that a water divide within the Courtlough Valley cannot be determined from the borehole data provided in the EIS due to insufficient borehole data for a critical area between The Five Roads and Rowans Little.
- May we make the observation once more that the "Depth of Gravel" computerized model map provided by RPS at the An Bord Pleanala hearing indicates a gravel filled valley sloping downhill from beneath the upper north-eastern end of the landfill site towards the Bog of Ring Water Supply., which would constitute a separate R4 response on the Matrix.
- Whereas the concept of an inward water pressure landfill liner design would appear to work well in the short term, the eventual breakdown of the liner due to either accident or degradation over time will result in the inevitable pollution of both ground and surface water. The proposal is therefore an unsustainable development.
- The adjacent Hedgestown National School has recently been granted approval by the Department of Education for a new school. The site of this school is the present playing field situated just 400 meters due east of the proposed landfill boundary. Noxious emissions and smells from the landfill, particularly during periods of prevailing westerly winds, is a matter of grave concern, as is the additional health hazard to the children posed by increased vermin concentrations.

Yours truly,
On behalf of the Nevitt Lusk Action Group


Patrick Boyle, B.E.

ANNALSROOK

CANAL STUDY AREA (FINANCIAL CO. COUNCIL)

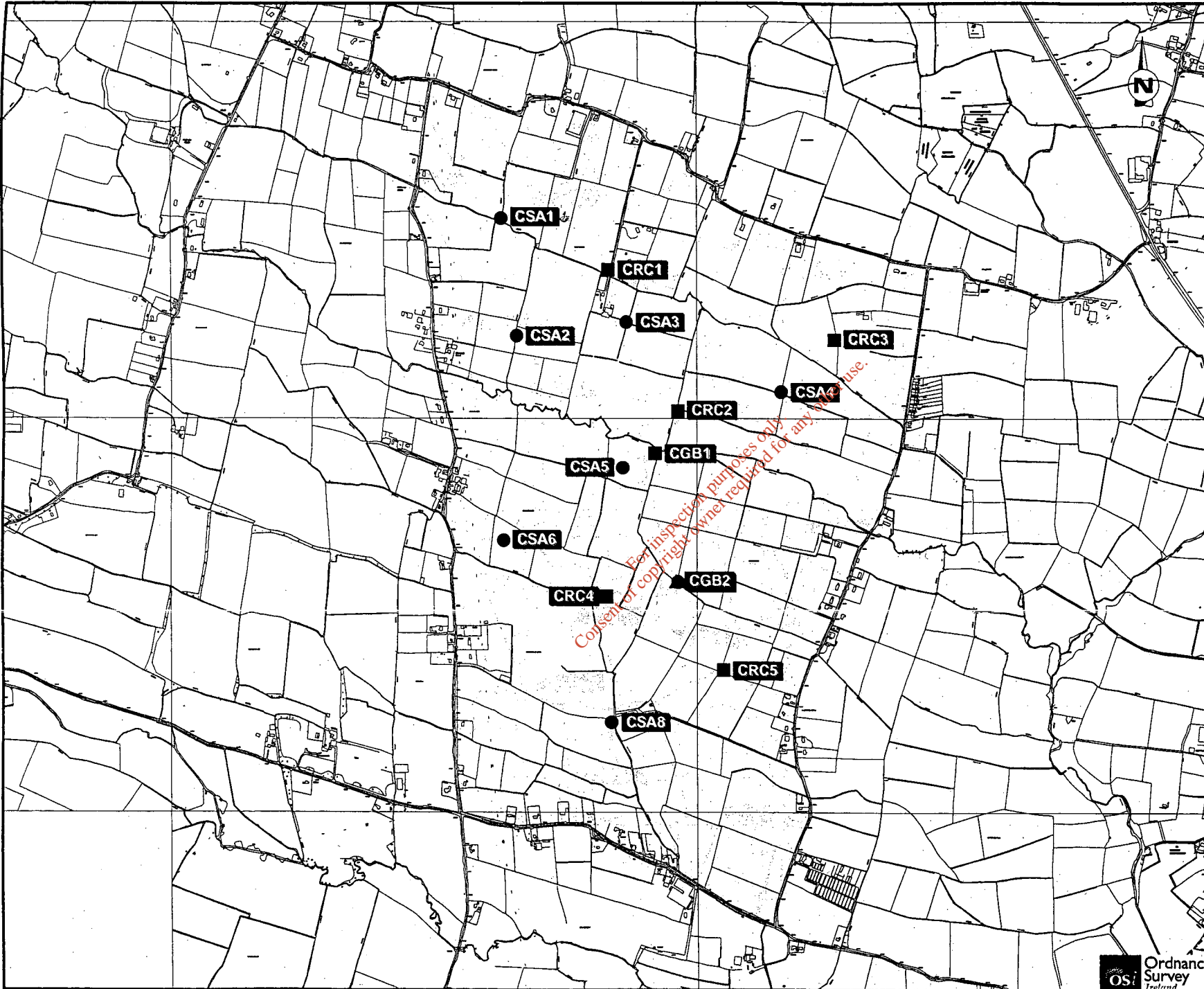


Depth to Gravel
(Depth of gravel)

P. A. Le 3K
12/06/07

Notes

All gravel is
estimated from



Legend

- Rotary Core (RC)
- Shell & Auger (SA)
- ▲ Geo-Bore (GB)
- Site



Project
Dublin Landfill Siting Study

Title
Borehole Locations Site C

Figure **H**

RPS mcos

Carnegie House
Library Road
Dun Laoghaire
Co. Dublin
Phone: 01-2020870
Fax: 01-2020707
rpsmcos@rpsmcos.ie

Drawn: SK	Project No. 074508001
Checked: CW	File Ref.
Approved: LOT	074508001M0132F01
Scale: NTS	Drawing No. Rev.
Date: 30/09/2004	M0132 F01

Notes

1. This drawing is the property of RPS-mcos Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.
2. All levels are referred to Ordnance Datum, Mean Tread.
3. NOT TO SCALE, use spaced dimensions only, all in double end.
4. Ordnance Survey Ireland Licence No. EN 000504 Copyright Government of Ireland.



For inspection purposes only.
 Consent of copyright owner required for any reuse.

GROUNDWATER MONITORING DATA

IGSL

Contract: Dublin Landfill Sitting Scheme
 Number: 9716
 Client: Fingal County Council
 Engineer: RPS-MCOS Ltd.

Borehole/ Drillhole	Standpipe Response Zone	Water Level (m bgl) (30.7.04)					
ARC1	11 to 20	4					
ARC4	12 to 20.85	2.62					
ASA2	3.9 to 7.7m	1.42					
ASA3	2.7 to 3.7m	1.52					
ASA4	3.6 to 5.6m	2.51					
ASASA	12 to 13m	3.18					
	3.6 to 5.6m	1.46					
	8 to 14m	1.4					
BRC1	27 to 34	4.67					
BRC2	9.7 to 18.7	3.64					
BRC3	11 to 18.4	3.84					
		4.03					
BRC4	7.6 to 11.3	0.41					
BGB1	22 to 24m	artesian					
BGB2	8.5 to 17.6	7.57					
	2 to 6.5	6.19					
BGB3	14 to 24m	3.84					
	2 to 12m	4.03					
BSA1	16.5 to 17.5m	2.18					
BSA2	5.4 to 7.4m	2.85					
BSA3A	16 to 17m	9.29					
BSA4	2 to 12.3m	2.51					
BSA5	6.4 to 6.9m	4.13					
CRC1	6.75 to 14.75	1.05					
CRC2	13.35 to 23.35	5.68					
CRC3	11.5 to 24.2	2.2					
CRC4	23 to 32.05	11.27					
CRC5	23.4 to 32.4	14.2					
CSA1	2 to 6m	2.2					
CSA2	2 to 7.4m	1.75					
CSA4	1.7 to 7.7m	1.73					
	23 to 32.05	1.75					
CSA6	10.4 to 15m	3.5					
CSA8	10.2 to 13.5	9.16					
	14.5 to 16.5m	9.16					
CGB2	2 to 10	2.85					
	15.2 to 18.2	4.49					
CGB1	2 to 5.5m	8.4					
	7 to 10.5m	14.12					
DGB1	16.5 to 24m	1					
	2 to 10m	0.65					
DRC2	2 to 17.6	Artesian					
DRC3	12.5 to 21.5m	0.51					
DRC4	6.7 to 9.0m	1.79					
		8.84					
DRC5	4 to 40m	5.6					
DRC6	6.3 to 15.3m	0.49					
DGB2	2 to 10m	2.03					
	13 to 22m	4.99					
DSA1	10.5 to 14.7m	Artesian					
DSA2	1 to 2m	1.31					
DSA3	7.7 to 10.9	Artesian					
DSA4	5 to 9.95m	4.25					
DSASA	1.5 to 5.8m	1.87					
DSAG	4 to 10m	Artesian					
DSA7	3 to 11.5m	10					

For inspection purposes only.
 Consent of copyright owner required for any other use.

Notes:

AS BUILT SURVEY DUBLIN LANDFILL SITTING SCHEME

24/8/04

BH NO.	EASTING	NORTHING	RL
ARC1	259636.177	320839.326	78.662
ARC4	258466.580	322120.622	70.008
ASA2	259507.278	321152.801	76.786
ASA3	258792.845	321268.993	82.280
ASA4	258036.207	321750.532	74.563
ASA6	321751.589	258031.700	73.523
ASA5	258591.153	322181.447	67.734
ASA7	258364.467	322060.692	73.487
ASA7A	258358.654	322061.344	73.367
BGB1	257899.744	318109.860	43.919
BGB2	257277.005	318138.248	40.053
BGB3	257144.704	317314.900	62.184
BRC1	257838.276	317476.680	59.340
BRC2	256749.851	316994.349	56.151
BRC3	256495.916	317838.752	38.224
BRC4	256513.260	318174.240	30.056
BRC5	257260.770	317526.491	56.889
BSA1	257564.181	317457.546	59.186
BSA2	256666.825	317542.890	48.760
BSA3	256309.515	317589.259	41.704
BSA4	256616.663	317972.022	34.171
BSA5	257143.291	317309.718	62.251
BSA6	257391.254	317736.974	49.926
CGB1	254358.537	317841.967	30.222
CGB2	254358.547	317841.833	30.208
CRC1	255056.667	317663.026	34.021
CRC2	254525.782	317933.560	31.852
CRC3	254784.153	318527.493	27.870
CRC4	253823.821	317592.859	27.647
CRC5	253553.997	318092.919	28.641
CSA1	255251.755	317249.481	37.074
CSA2	254725.700	317302.946	37.610
CSA2A	254731.246	317304.944	37.499
CSA3	254853.839	317726.595	33.705
CSA3A	254854.900	317731.600	33.800
CSA4	254598.486	318333.526	28.093
CSA5	254301.113	317662.862	32.165
CSA5A	254294.073	317663.839	32.079
CSA6	254110.491	317226.118	34.513
CSA7	253904.790	317913.804	28.742
CSA7A	253910.872	317917.265	28.784
CSA8	253344.783	317666.766	23.537
DGB1	258091.782	313479.683	98.715
DGB2	256022.598	312817.939	77.290
DRC2	257009.653	313547.747	77.982
DRC3	257997.726	313027.103	99.885
DRC4	256241.373	313687.302	75.040
DRC5	256228.790	312776.950	81.081
DRC6	256604.649	312492.390	81.328
DSA1	258825.773	313060.321	109.372
DSA2	258931.268	313709.188	99.029
DSA3	255925.300	312155.402	78.461
DSA4	255925.268	312155.384	78.468
DSA5	256914.292	312794.852	84.650
DSA6	256402.978	313219.620	75.946
DSA7	256298.635	314141.319	68.225
DSA8	258310.811	312874.250	113.449

Variable Head Permeability Test Report Sheet

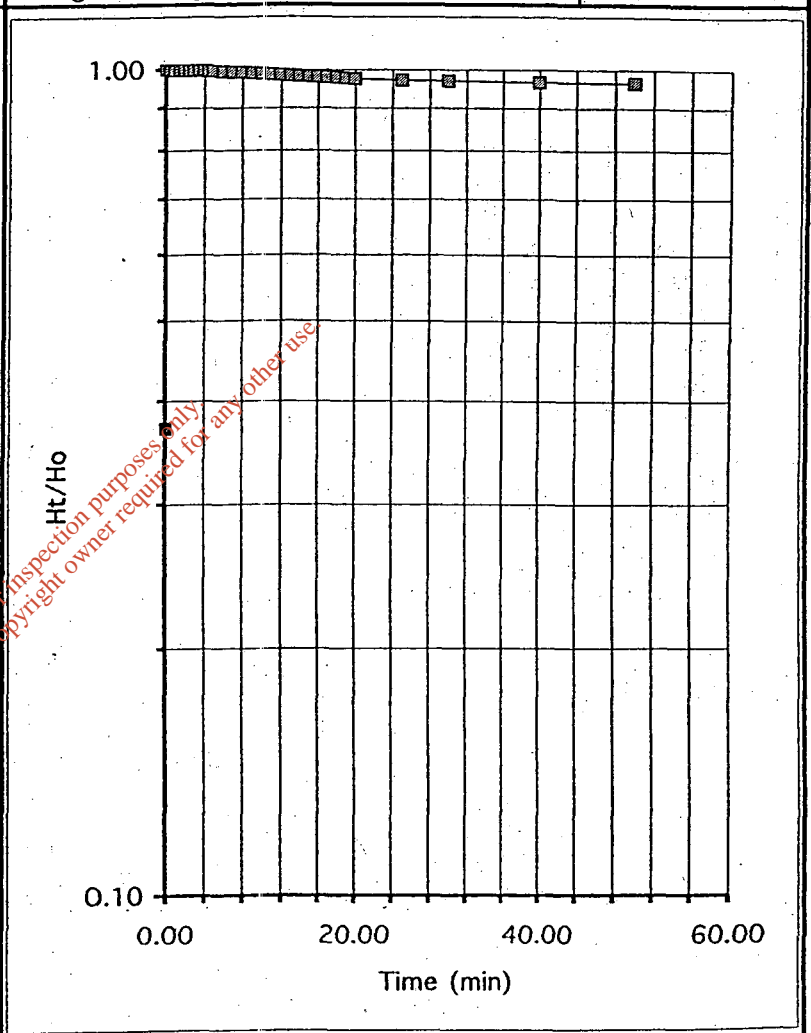
IGSL(F4B)

Contract: Dublin Landfill
Number: 9716
Client: Fingal County Council
Engineer: RPS-MCOS Ltd.
Location: Site C
Hole No.: CSA1
Test No.: 1

TEST RESPONSE ZONE DETAILS:

Top (mbgl):	3.00
Bottom (mbgl):	3.50
Length (m):	0.50
*** Diameter (m):	0.200
Initial Standing Water Level (m below top of casing):	3.50
Height of casing or standpipe : above ground level (m)	0.00
Falling or Rising Head Test?	

Elapsed Time (mins)	Depth to Water* (m)	Ht/Ho
0.00	0.000	1.00
0.5	0.000	1.00
1	0.010	1.00
1.5	0.010	1.00
2	0.010	1.00
2.5	0.012	1.00
3	0.012	1.00
3.5	0.015	1.00
4	0.015	1.00
4.5	0.018	0.99
5	0.018	0.99
6	0.025	0.99
7	0.029	0.99
8	0.034	0.99
9	0.038	0.99
10	0.044	0.99
11	0.049	0.99
12	0.054	0.98
13	0.059	0.98
14	0.065	0.98
15	0.069	0.98
16	0.074	0.98
17	0.078	0.98
18	0.083	0.98
19	0.087	0.98
20	0.093	0.97
25	0.102	0.97
30	0.112	0.97
40	0.121	0.97
50	0.131	0.96



**Diameter of standpipe/borehole (m)	0.2
** X-sectional area of BH/Standpipe	A= 0.03142
Shape Factor (note 5)	F= 2.12502
Time to reach Ht/Ho = 0.37 (sec)	T= #DIV/0!
Extrapolated Yes/No	
Coefficient of Permeability (A/FT) (m/s)	K= #DIV/0!

Notes

- * Depth of water below top of casing/standpipe
 - ** 'A' is calculated from the standpipe or piezometer tube, or the borehole casing diameter if the test is carried out during the course of boring operations.
 - *** This is normally the diameter of the borehole since the response zone includes the gravel surround
- Time lag is taken as the elapsed time corresponding to a value of H/Ho = 0.37. If H/Ho does not reach 0.37, it will be necessary to extrapolate the graph and assess the time.

Variable Head Permeability Test Report Sheet

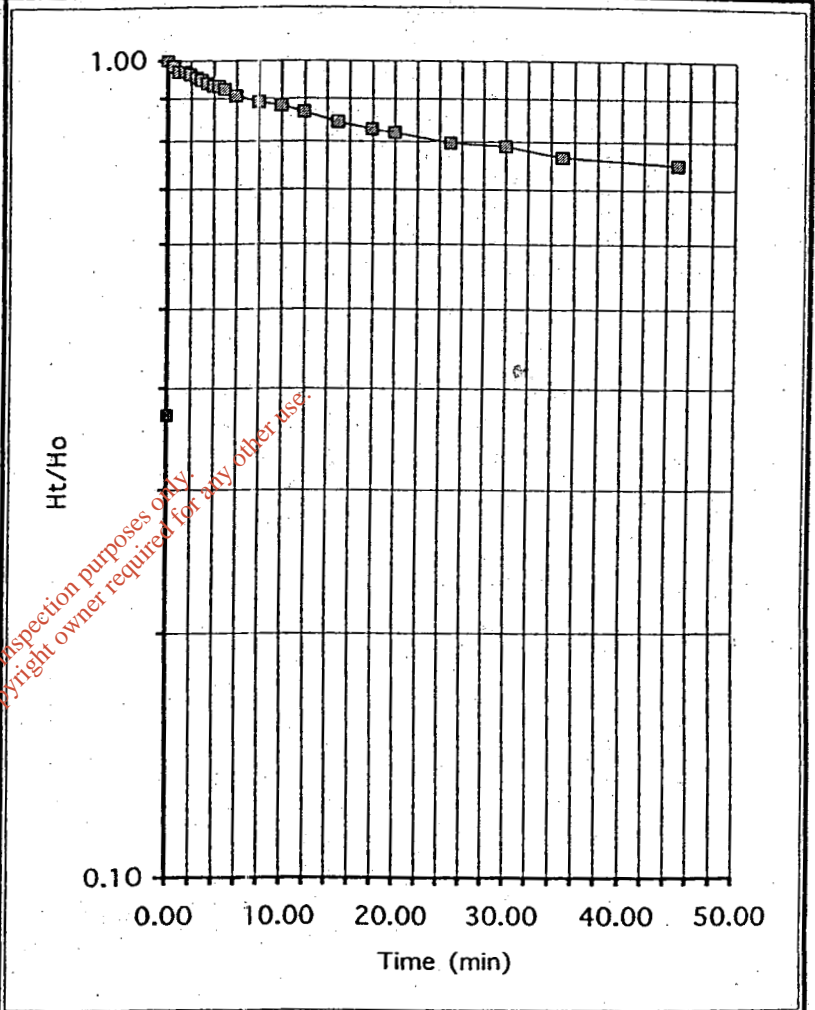
IGSL(F4B)

Contract: Dublin Landfill
Number: 9716
Client: Fingal County Council
Engineer: RPS-MCOS Ltd.
Location: Site C
Hole No.: CSA2A
Test No.: 2

TEST RESPONSE ZONE DETAILS:

Top (mbgl):	2.00
Bottom (mbgl):	7.40
Length (m):	5.40
*** Diameter (m):	0.200
Initial Standing Water Level (m below top of casing):	2.10
Height of casing or standpipe : above ground level (m)	0.32
Falling or Rising Head Test?	FALLING

Elapsed Time (mins)	Depth to Water* (m)	Ht/Ho
0.0	0.83	1.00
0.5	0.85	0.98
1.0	0.87	0.97
1.5	0.87	0.97
2.0	0.88	0.96
2.5	0.89	0.95
3.0	0.90	0.94
3.5	0.91	0.94
4.0	0.92	0.93
4.5	0.92	0.93
5.0	0.93	0.92
6.0	0.95	0.91
8.0	0.97	0.89
10.0	0.98	0.88
12.0	1.00	0.87
15.0	1.03	0.84
18.0	1.05	0.83
20.0	1.06	0.82
25.0	1.09	0.80
30.0	1.10	0.79
35.0	1.13	0.76
45.0	1.15	0.75



**Diameter of standpipe/borehole (m)	0.05
** X-sectional area of BH/Standpipe	A= 0.00196
Shape Factor (note 5)	F= 9.69154
Time to reach Ht/Ho = 0.37 (sec)	T= #DIV/0!
Extrapolated Yes/No	
Coefficient of Permeability (A/FT) (m/s)	K= #DIV/0!

Notes

- * Depth of water below top of casing/standpipe
 - ** 'A' is calculated from the standpipe or piezometer tube, or the borehole casing diameter if the test is carried out during the course of boring operations.
 - *** This is normally the diameter of the borehole since the response zone includes the gravel surround
- Time lag is taken as the elapsed time corresponding to a value of H/Ho = 0.37. If H/Ho does not reach 0.37, it will be necessary to extrapolate the graph and assess the time.

TEST UNDERTAKEN IS A PARTIALLY SATURATED SOIL

Variable Head Permeability Test Report Sheet

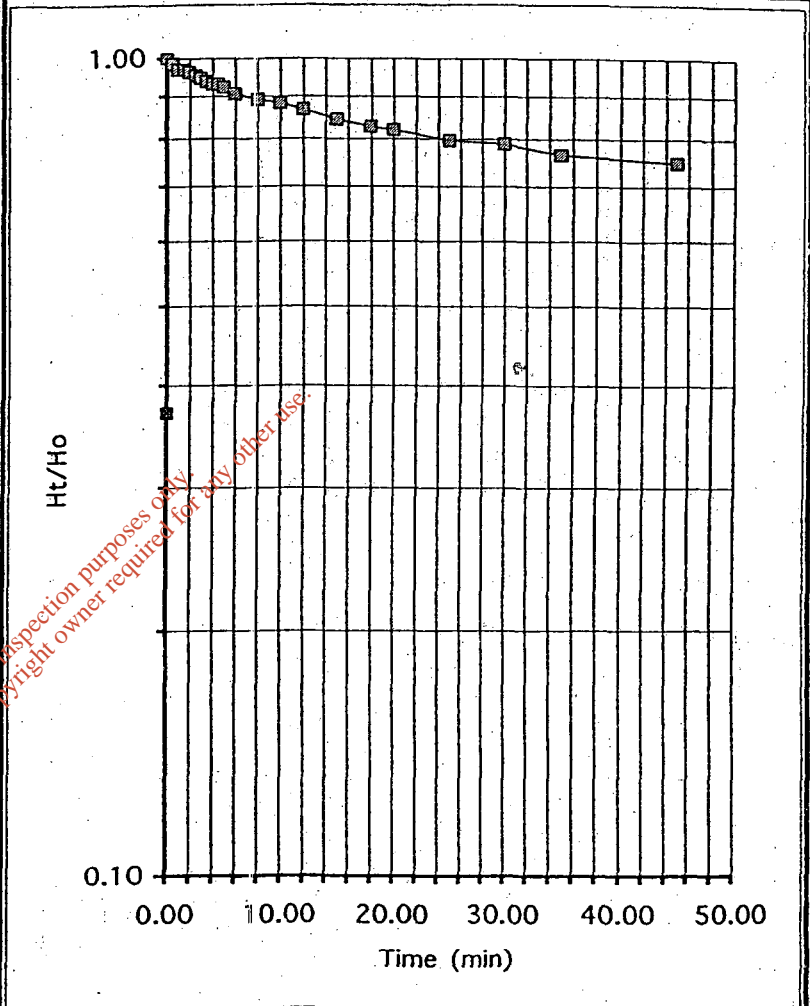
IGSL(F4B)

Contract: Dublin Landfill
 Number: 9716
 Client: Fingal County Council
 Engineer: RPS-MCOS Ltd.
 Location: Site C
 Hole No.: CSA2A
 Test No.: 2

TEST RESPONSE ZONE DETAILS:

Top (mbgl):	2.00
Bottom (mbgl):	7.40
Length (m):	5.40
*** Diameter (m):	0.200
Initial Standing Water Level (m below top of casing):	2.10
Height of casing or standpipe : above ground level (m)	0.32
Falling or Rising Head Test?	FALLING

Elapsed Time (mins)	Depth to Water* (m)	Ht/Ho
0.0	0.83	1.00
0.5	0.85	0.98
1.0	0.87	0.97
1.5	0.87	0.97
2.0	0.88	0.96
2.5	0.89	0.95
3.0	0.90	0.94
3.5	0.91	0.94
4.0	0.92	0.93
4.5	0.92	0.93
5.0	0.93	0.92
6.0	0.95	0.91
8.0	0.97	0.89
10.0	0.98	0.88
12.0	1.00	0.87
15.0	1.03	0.84
18.0	1.05	0.83
20.0	1.06	0.82
25.0	1.09	0.80
30.0	1.10	0.79
35.0	1.13	0.76
45.0	1.15	0.75



**Diameter of standpipe/borehole (m)	0.05
** X-sectional area of BH/Standpipe	A= 0.00196
Shape Factor (note 5)	F= 9.69154
Time to reach Ht/Ho = 0.37 (sec)	T= #DIV/0!
Extrapolated Yes/No	
Coefficient of Permeability (A/FT) (m/s)	K= #DIV/0!

Notes

* Depth of water below top of casing/standpipe

** 'A' is calculated from the standpipe or piezometer tube, or the borehole casing diameter if the test is carried out during the course of boring operations.

*** This is normally the diameter of the borehole since the response zone includes the gravel surround

Time lag is taken as the elapsed time corresponding to a value of H/Ho = 0.37. If H/Ho does not reach 0.37, it will be necessary to extrapolate the graph and assess the time.

TEST UNDERTAKEN IS A PARTIALLY SATURATED SOIL

Variable Head Permeability Test Report Sheet

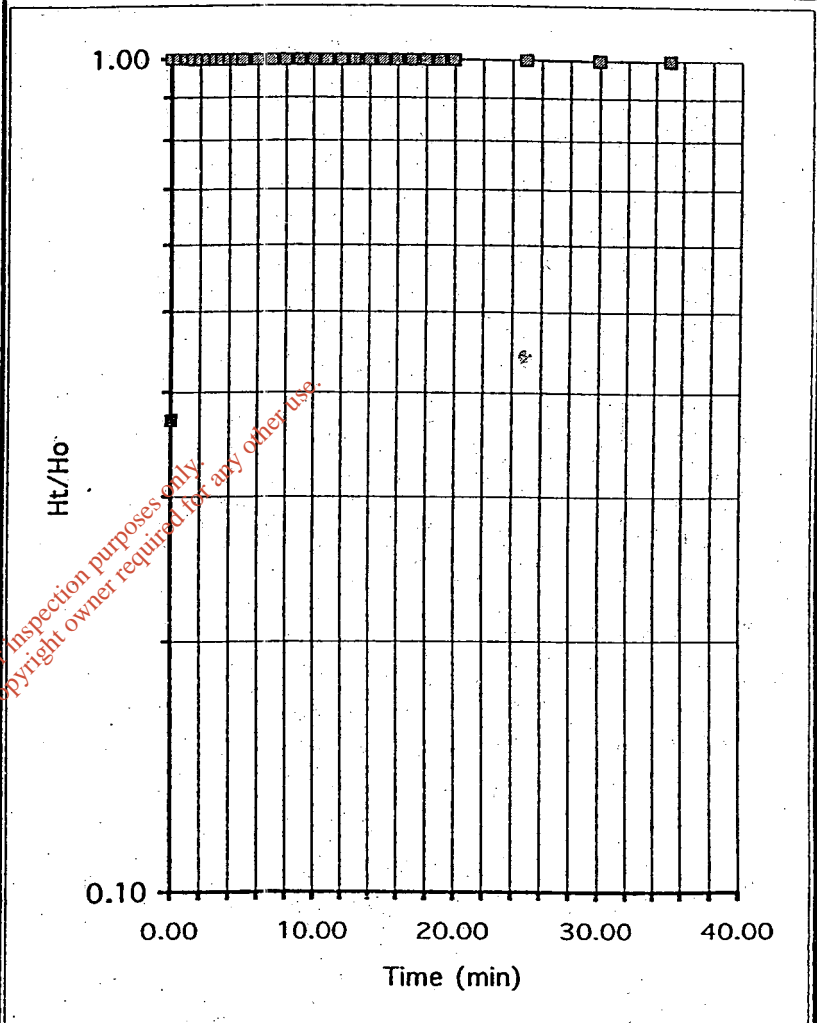
IGSL(F4B)

Contract: Dublin Landfill
Number: 9716
Client: Fingal County Council
Engineer: RPS-MCOS Ltd.
Location: Site C
Hole No.: CSA6
Test No.: 4

TEST RESPONSE ZONE DETAILS:

Top (mbgl):	3.20
Bottom (mbgl):	10.00
Length (m):	6.80
*** Diameter (m):	0.200
Initial Standing Water Level (m below top of casing):	9.60
Height of casing or standpipe : above ground level (m)	0.45
Falling or Rising Head Test?	Falling

Elapsed Time (mins)	Depth to Water* (m)	Ht/Ho
0.00	0.46	1.00
0.5	0.46	1.00
1	0.46	1.00
1.5	0.47	1.00
2	0.47	1.00
2.5	0.47	1.00
3	0.47	1.00
3.5	0.47	1.00
4	0.47	1.00
4.5	0.47	1.00
5	0.47	1.00
6	0.47	1.00
7	0.47	1.00
8	0.47	1.00
9	0.47	1.00
10	0.47	1.00
11	0.47	1.00
12	0.47	1.00
13	0.48	1.00
14	0.48	1.00
15	0.48	1.00
16	0.48	1.00
17	0.48	1.00
18	0.48	1.00
19	0.48	1.00
20	0.48	1.00
25	0.48	1.00
30	0.49	1.00
35	0.49	1.00



**Diameter of standpipe/borehole (m)	0.2
** X-sectional area of BH/Standpipe	A= 0.03142
Shape Factor (note 5)	F= 11.54891
Time to reach Ht/Ho = 0.37 (sec)	T= #DIV/0!
Extrapolated Yes/No	
Coefficient of Permeability (A/FT) (m/s)	K= #DIV/0!

Notes

- * Depth of water below top of casing/standpipe
 - ** 'A' is calculated from the standpipe or piezometer tube, or the borehole casing diameter if the test is carried out during the course of boring operations.
 - *** This is normally the diameter of the borehole since the response zone includes the gravel surround
- Time lag is taken as the elapsed time corresponding to a value of H/Ho = 0.37. If H/Ho does not reach 0.37, it will be necessary to extrapolate the graph and assess the time.

Variable Head Permeability Test Report Sheet

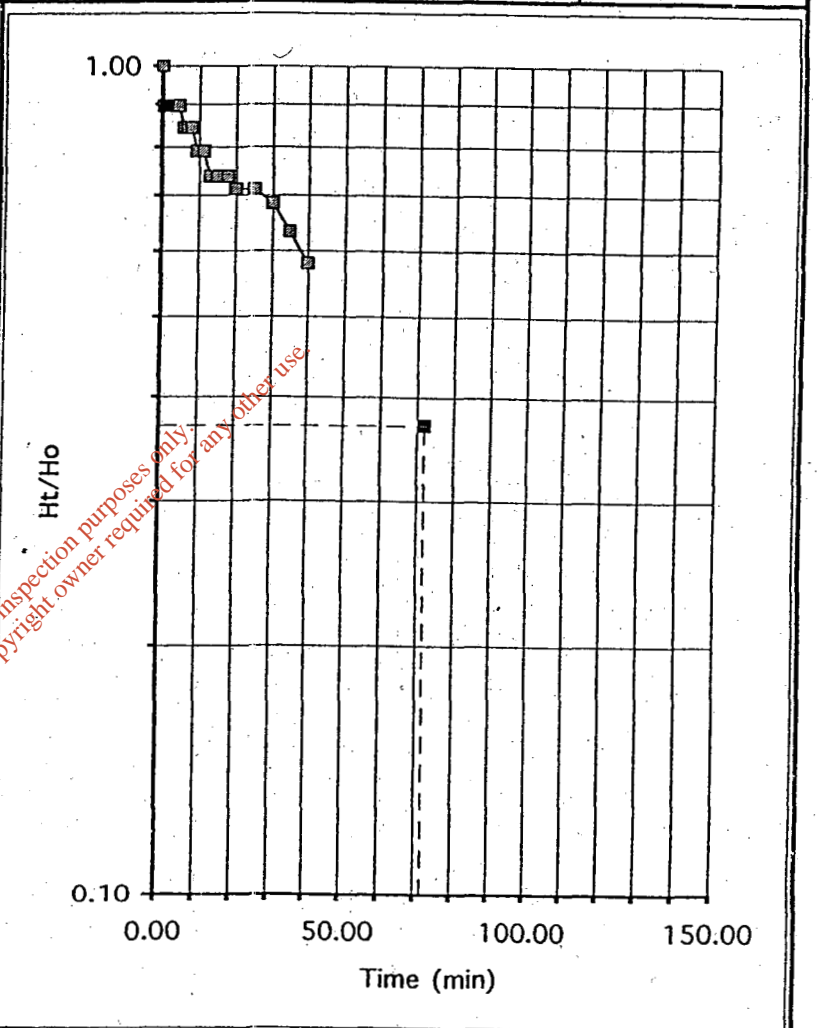
IGSL(F4B)

Contract: Dublin Landfill
 Number: 9716
 Client: Fingal County Council
 Engineer: RPS-MCOS Ltd.
 Location: Site C
 Hole No.: CSA8
 Test No.: 5

TEST RESPONSE ZONE DETAILS:

Top (mbgl):	10.20
Bottom (mbgl):	12.20
Length (m):	2.00
*** Diameter (m):	0.200
Initial Standing Water Level (m below top of casing):	9.66
Height of casing or standpipe : above ground level (m)	0.52
Falling or Rising Head Test?	RISING

Elapsed Time (mins)	Depth to Water* (m)	Ht/Ho
0.0	9.47	1.00
0.5	9.49	0.89
1.0	9.49	0.89
1.5	9.49	0.89
2.0	9.49	0.89
2.5	9.49	0.89
3.0	9.49	0.89
3.5	9.49	0.89
4.0	9.49	0.89
4.5	9.49	0.89
6.0	9.50	0.84
7.0	9.50	0.84
8.0	9.50	0.84
9.5	9.51	0.79
11.5	9.51	0.79
13.0	9.52	0.74
15.0	9.52	0.74
18.0	9.52	0.74
20.0	9.53	0.71
25.0	9.53	0.71
30.0	9.53	0.68
35.0	9.54	0.63
40.0	9.55	0.58



**Diameter of standpipe/borehole (m)	0.05
** X-sectional area of BH/Standpipe	A= 0.00196
Shape Factor (note 5)	F= 4.74865
Time to reach Ht/Ho = 0.37 (sec)	T= 4320
Extrapolated Yes/No	YES
Coefficient of Permeability (A/FT) (m/s)	K= 9.57E-08

Notes

- * Depth of water below top of casing/standpipe
 - ** 'A' is calculated from the standpipe or piezometer tube, or the borehole casing diameter if the test is carried out during the course of boring operations.
 - *** This is normally the diameter of the borehole since the response zone includes the gravel surround
- Time lag is taken as the elapsed time corresponding to a value of H/Ho = 0.37. If H/Ho does not reach 0.37, it will be necessary to extrapolate the graph and assess the time.

PACKER TEST RESULT SHEET

IGSL (F13)

JOB NO.	9716	GROUND LEVEL (mOD)	
CONTRACT	Dublin Landfill	BOTTOM OF HOLE (m)	10.00
LOCATION	Site C	TOP OF TEST SECTION (m)	9.00
		BOTTOM OF TEST SECTION (m)	10.00
BOREHOLE NO.	CRC1	CENTRE OF TEST SECTION (m)	9.50
TEST NO.	1	GAUGE HEIGHT ABOVE GROUND LEVEL (m)	1.00
		INITIAL GROUND WATER LEVEL (m)	2.40

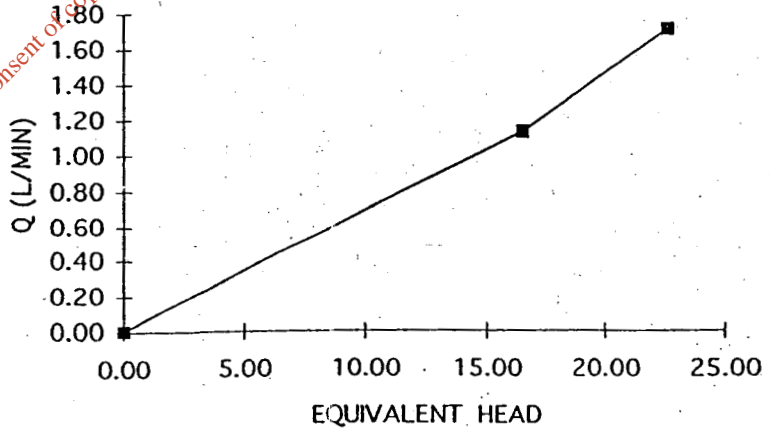
FLOW METER READINGS

RUN NUMBER	PRESSURE (BAR)	0 MIN (LITRES)	5 MIN (LITRES)	10 MIN (LITRES)	15 MIN (LITRES)
1	1.31	8277	8282.2	8288.4	8294
2	1.93	8298	8306.7	8315	8323.6
3	1.31	8322	8326.5	8332.1	8338.9
4					
5					

WATER TAKEN

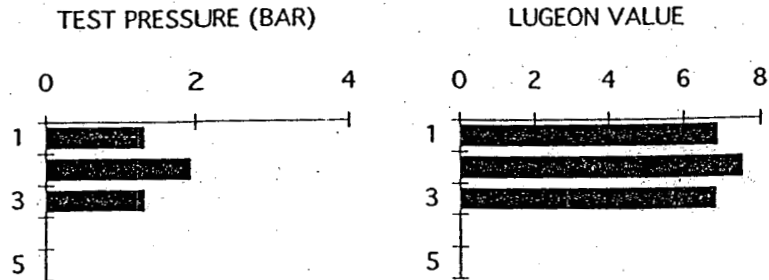
RUN NUMBER	0-5 MIN (LITRES)	5-10 MIN (LITRES)	10-15 MIN (LITRES)	0-15 MIN (LITRES)	Q (L/MIN)
1	5.20	6.20	5.60	17.00	1.13
2	8.70	8.30	8.60	25.60	1.71
3	4.50	5.60	6.80	16.90	1.13

EQUIVALENT HEAD (M)	Q (L/MIN/METRE)
0.00	0.00
16.50	1.13
22.70	1.71
16.50	1.13
0.00	0.00



AVERAGE LUGEON 7.1

Analysis by Houltsbey Method



PACKER TEST RESULT SHEET

IGSL (F13)

JOB NO.	9716	GROUND LEVEL (mOD)	
CONTRACT	Dublin Landfill	BOTTOM OF HOLE (m)	13.50
LOCATION	Site C	TOP OF TEST SECTION (m)	12.50
		BOTTOM OF TEST SECTION (m)	13.50
BOREHOLE NO.	CRC1	CENTRE OF TEST SECTION (m)	13.00
TEST NO.	2	GAUGE HEIGHT ABOVE GROUND LEVEL (m)	1.00
		INITIAL GROUND WATER LEVEL (m)	4.10

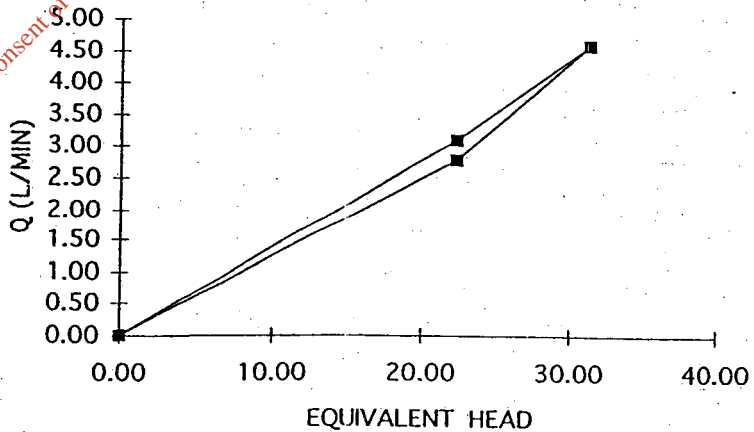
FLOW METER READINGS

RUN NUMBER	PRESSURE (BAR)	0 MIN (LITRES)	5 MIN (LITRES)	10 MIN (LITRES)	15 MIN (LITRES)
1	1.724	8353	8368.5	8384	8399.2
2	2.62	8404	8427.5	8449.8	8472.5
3	1.724	8474	8486.5	8501.2	8515.6
4					
5					

WATER TAKEN

RUN NUMBER	0-5 MIN (LITRES)	5-10 MIN (LITRES)	10-15 MIN (LITRES)	0-15 MIN (LITRES)	Q (L/MIN)
1	15.50	15.50	15.20	46.20	3.08
2	23.50	22.30	22.70	68.50	4.57
3	12.50	14.70	14.40	41.60	2.77

EQUIVALENT HEAD (M)	Q (L/MIN/METRE)
0.00	0.00
22.34	3.08
31.30	4.57
22.34	2.77
0.00	0.00



AVERAGE LUGEON 13.6

Analysis by Holsbey Method



PACKER TEST RESULT SHEET

IGSL (F13)

JOB NO.	9716	GROUND LEVEL (mOD)	
CONTRACT	Dublin Landfill	BOTTOM OF HOLE (m)	16.00
LOCATION	Site C	TOP OF TEST SECTION (m)	15.00
		BOTTOM OF TEST SECTION (m)	16.00
BOREHOLE NO.	CRC2	CENTRE OF TEST SECTION (m)	15.50
TEST NO.	1	GAUGE HEIGHT ABOVE GROUND LEVEL (m)	1.00
		INITIAL GROUND WATER LEVEL (m)	5.60

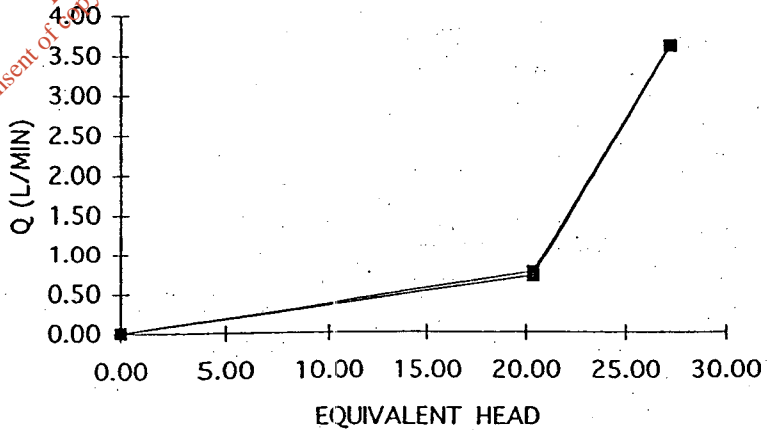
FLOW METER READINGS

RUN NUMBER	PRESSURE (BAR)	0 MIN (LITRES)	5 MIN (LITRES)	10 MIN (LITRES)	15 MIN (LITRES)
1	1.379	9762.5	9766.4	9770.1	9773.7
2	2.068	9777	9793.5	9811.6	9831
3	1.379	9830	9833.2	9836.8	9840.5
4					
5					

WATER TAKEN

RUN NUMBER	0-5 MIN (LITRES)	5-10 MIN (LITRES)	10-15 MIN (LITRES)	0-15 MIN (LITRES)	Q (L/MIN)
1	3.90	3.70	3.60	11.20	0.75
2	16.50	18.10	19.40	54.00	3.60
3	3.20	3.60	3.70	10.50	0.70

EQUIVALENT HEAD (M)	Q (L/MIN/METRE)
0.00	0.00
20.39	0.75
27.28	3.60
20.39	0.70
0.00	0.00



AVERAGE LUGEON 6.8

Analysis by Houlsebey Method



PACKER TEST RESULT SHEET

IGSL (F13)

JOB NO.	9716	GROUND LEVEL (mOD)	
CONTRACT	Dublin Landfill	BOTTOM OF HOLE (m)	21.00
LOCATION	Site C	TOP OF TEST SECTION (m)	20.00
		BOTTOM OF TEST SECTION (m)	21.00
BOREHOLE NO.	CRC2	CENTRE OF TEST SECTION (m)	20.50
TEST NO.	2	GAUGE HEIGHT ABOVE GROUND LEVEL (m)	1.00
		INITIAL GROUND WATER LEVEL (m)	5.75

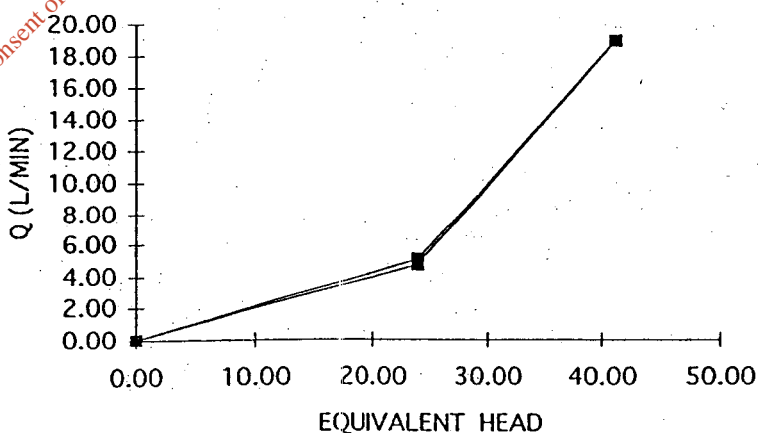
FLOW METER READINGS

RUN NUMBER	PRESSURE (BAR)	0 MIN (LITRES)	5 MIN (LITRES)	10 MIN (LITRES)	15 MIN (LITRES)
1	1.724	9884	9907.8	9931.2	9954.2
2	3.448	9965	10057.5	10150.5	10247.5
3	1.724	10249	10273.8	10298.7	10323.7
4					
5					

WATER TAKEN

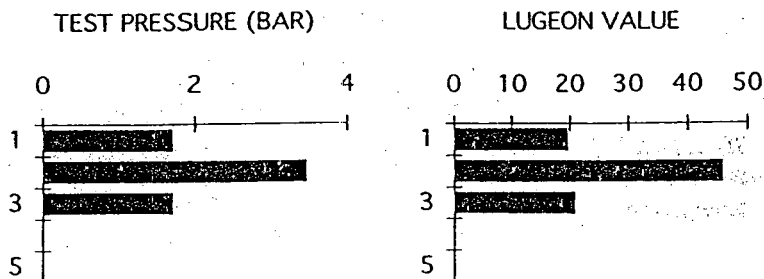
RUN NUMBER	0-5 MIN (LITRES)	5-10 MIN (LITRES)	10-15 MIN (LITRES)	0-15 MIN (LITRES)	Q (L/MIN)
1	23.80	23.40	23.00	70.20	4.68
2	92.50	93.00	97.00	282.50	18.83
3	24.80	24.90	25.00	74.70	4.98

EQUIVALENT HEAD (M)	Q (L/MIN/METRE)
0.00	0.00
23.99	4.68
41.23	18.83
23.99	4.98
0.00	0.00



AVERAGE LUGEON 28.6

Analysis by Houlsey Method



PACKER TEST RESULT SHEET

IGSL (F13)

JOB NO.	9716	GROUND LEVEL (mOD)	
CONTRACT	Dublin Landfill	BOTTOM OF HOLE (m)	26.50
LOCATION	Site C	TOP OF TEST SECTION (m)	25.50
		BOTTOM OF TEST SECTION (m)	26.50
BOREHOLE NO.	CRC4	CENTRE OF TEST SECTION (m)	26.00
TEST NO.	1	GAUGE HEIGHT ABOVE GROUND LEVEL (m)	1.00
		INITIAL GROUND WATER LEVEL (m)	12.10

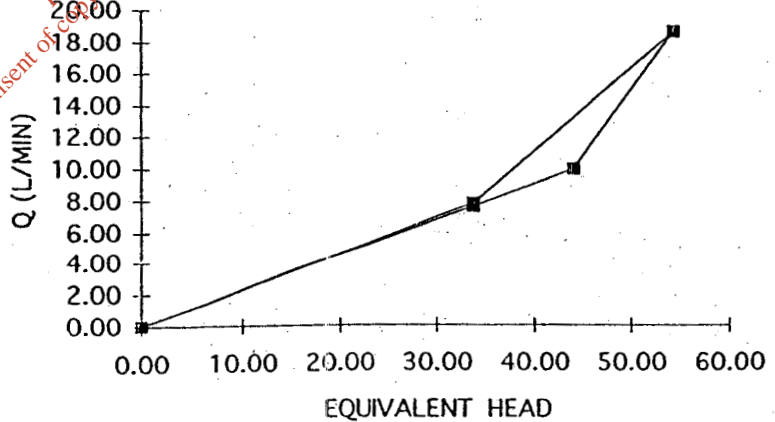
FLOW METER READINGS

RUN NUMBER	PRESSURE (BAR)	0 MIN (LITRES)	5 MIN (LITRES)	10 MIN (LITRES)	15 MIN (LITRES)
1	2.068	8555	8598.4	8634.8	8670.8
2	4.138	8695	8831	8971	
3	3.103	9035	9084.5	9134	9182.6
4	2.068	9184	9221.3	9258.4	9296.2
5					

WATER TAKEN

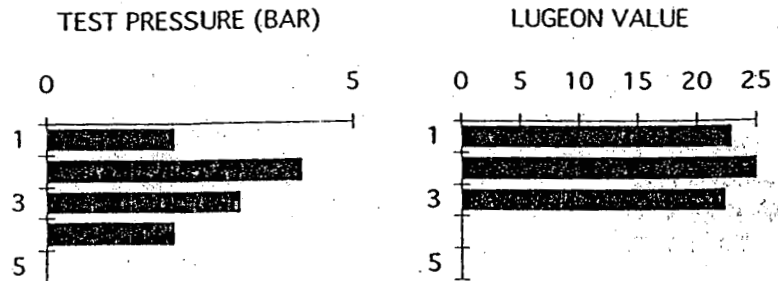
RUN NUMBER	0-5 MIN (LITRES)	5-10 MIN (LITRES)	10-15 MIN (LITRES)	0-15 MIN (LITRES)	Q (L/MIN)
1	43.40	36.40	36.00	115.80	7.72
2	136.00	140.00		276.00	18.40
3	49.50	49.50	48.60	147.60	9.84
4	37.30	37.10	37.80	112.20	7.48

EQUIVALENT HEAD (M)	Q (L/MIN/METRE)
0.00	0.00
33.78	7.72
54.48	18.40
44.13	9.84
33.78	7.48
0.00	0.00



AVERAGE LUGEON 25.3

Analysis by Houlsey Method



PACKER TEST RESULT SHEET

IGSL (F13)

JOB NO.	9716	GROUND LEVEL (mOD)	
CONTRACT	Dublin Landfill	BOTTOM OF HOLE (m)	30.50
LOCATION	Site C	TOP OF TEST SECTION (m)	29.50
		BOTTOM OF TEST SECTION (m)	30.50
BOREHOLE NO.	CRC4	CENTRE OF TEST SECTION (m)	30.00
TEST NO.	2	GAUGE HEIGHT ABOVE GROUND LEVEL (m)	1.00
		INITIAL GROUND WATER LEVEL (m)	11.70

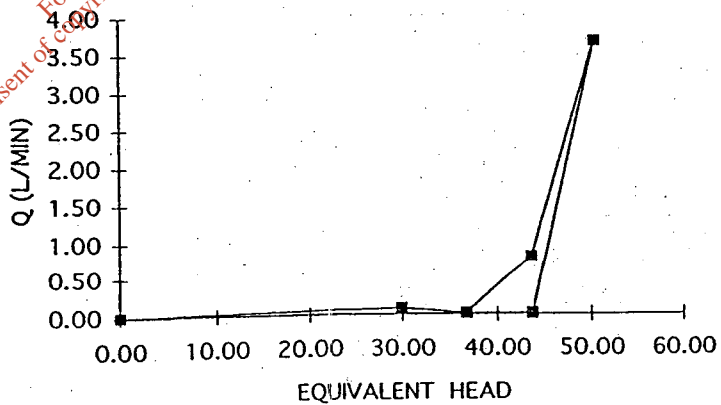
FLOW METER READINGS

RUN NUMBER	PRESSURE (BAR)	0 MIN (LITRES)	5 MIN (LITRES)	10 MIN (LITRES)	15 MIN (LITRES)
1	1.724	9354.5	9355.4	9355.7	
2	2.413	9360	9360.2	9360.3	
3	3.1	9363	9366	9370	9374.7
4	3.79	9508	9525	9542.5	9562.5
5	3.103	9725	9725.1	9725.1	

WATER TAKEN

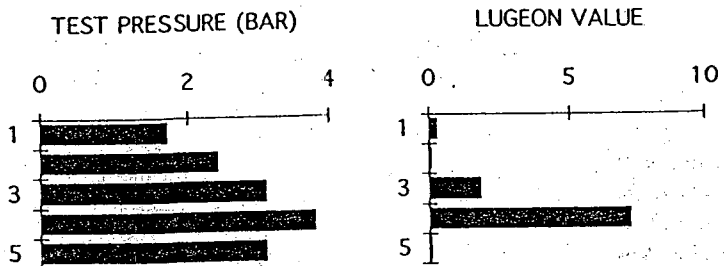
RUN NUMBER	0-5 MIN (LITRES)	5-10 MIN (LITRES)	10-15 MIN (LITRES)	0-15 MIN (LITRES)	Q (L/MIN)
1	0.90	0.30		1.20	0.08
2	0.20	0.10		0.30	0.02
3	3.00	4.00	4.70	11.70	0.78
4	17.00	17.50	20.00	54.50	3.63
5	0.10	0.00		0.10	0.01

EQUIVALENT HEAD (M)	Q (L/MIN/METRE)
0.00	0.00
29.94	0.08
36.83	0.02
43.70	0.78
50.60	3.63
43.73	0.01
0.00	0.00



AVERAGE LUGEON 1.9

Analysis by Houlbsey Method



NOTE: Leakage occurred at 4.48bar after 3minutes, pressure reduced

PACKER TEST RESULT SHEET

IGSL (F13)

JOB NO.	9716	GROUND LEVEL (mOD)	
CONTRACT LOCATION	Dublin Landfill	BOTTOM OF HOLE (m)	25.00
	Site C	TOP OF TEST SECTION (m)	24.00
BOREHOLE NO.	CRC5	BOTTOM OF TEST SECTION (m)	25.00
		CENTRE OF TEST SECTION (m)	24.50
TEST NO.	1	GUAGE HEIGHT ABOVE GROUND LEVEL (m)	1.00
		INITIAL GROUND WATER LEVEL (m)	17.55

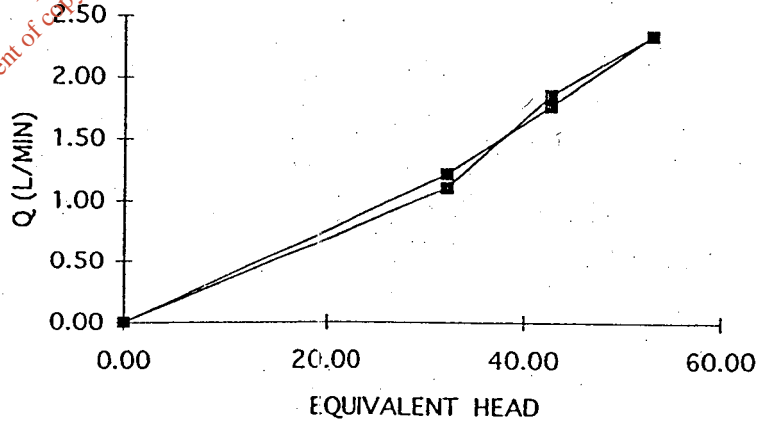
FLOW METER READINGS

RUN NUMBER	PRESSURE (BAR)	0 MIN (LITRES)	5 MIN (LITRES)	10 MIN (LITRES)	15 MIN (LITRES)
1	1.379	10358	10362.5	10368.6	10374.6
2	2.413	10384.5	10394.2	10403.2	10412.2
3	3.448	10420.2	10432	10443.8	10455.2
4	2.413	10452.8	10462	10470.4	10479.2
5	1.379	10476	10481.4	10487.9	10494.2

WATER TAKEN

RUN NUMBER	0-5 MIN (LITRES)	5-10 MIN (LITRES)	10-15 MIN (LITRES)	0-15 MIN (LITRES)	Q (L/MIN)
1	4.50	6.10	6.00	16.60	1.11
2	9.70	9.00	9.00	27.70	1.85
3	11.80	11.80	11.40	35.00	2.33
4	9.20	8.40	8.80	26.40	1.76
5	5.40	6.50	6.30	18.20	1.21

EQUIVALENT HEAD (M)	Q (L/MIN/METRE)
0.00	0.00
32.34	1.11
42.68	1.85
53.03	2.33
42.68	1.76
32.34	1.21
0.00	0.00

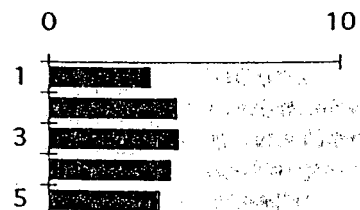
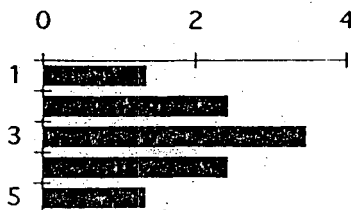


AVERAGE LUGEON 4.0

Analysis by Housley Method

TEST PRESSURE (BAR)

LUGEON VALUE



TEST REPORT

Determination of Particle Size Distribution

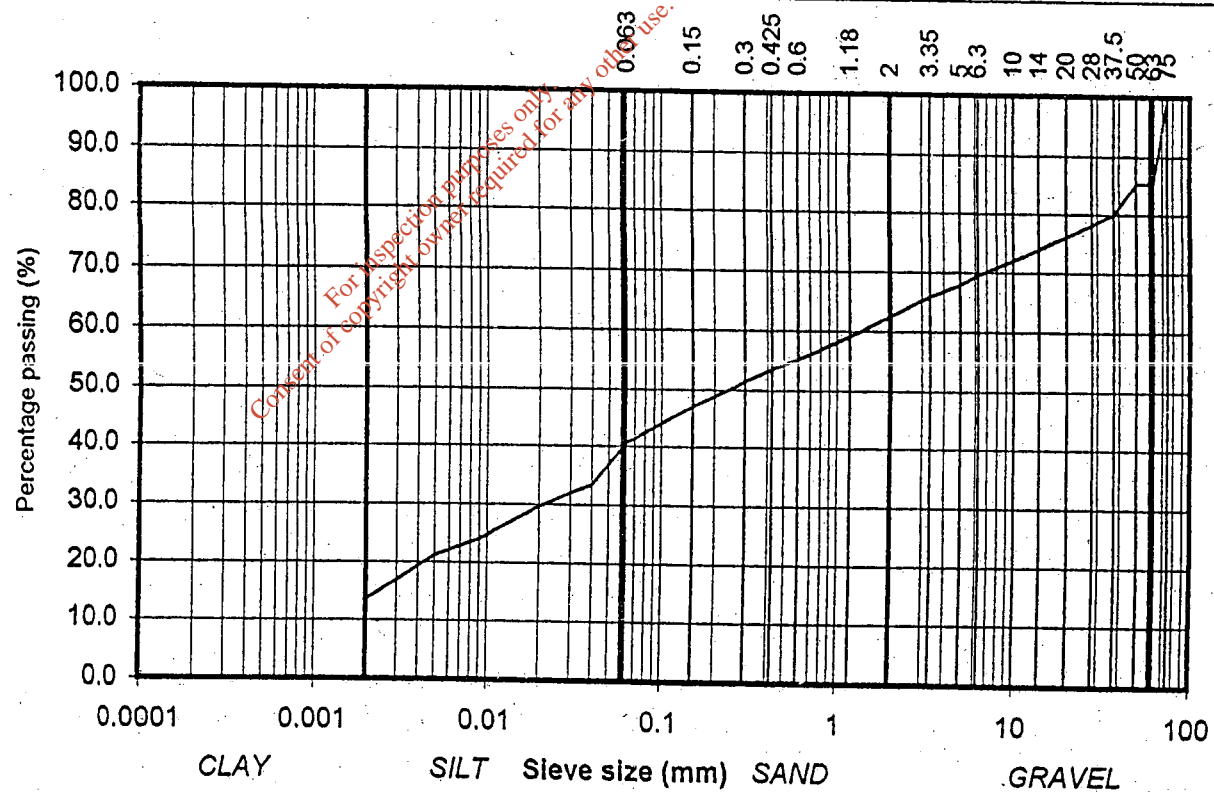
Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5

(note: Sedimentation stage not accredited)



particle size	% passing	
75	100.0	COBBLES
63	85.3	
50	85.3	
37.5	80.1	
28	78.1	
20	76.1	
14	73.9	
10	72.0	
6.3	69.6	
5	67.9	
3.35	65.9	GRAVEL
2	62.5	
1.18	59.1	
0.6	55.2	
0.425	53.4	
0.3	51.4	SAND
0.15	46.9	
0.063	40.7	
0.04	33.4	
0.03	32.1	
0.02	29.7	SILT/CLAY
0.013	26.6	
0.009	24.0	
0.005	21.2	
0.002	13.5	

Contract No: M279 Report No. R6888
 Contract: RPS-MCOS, Dublin Landfill
 BH: CSA1
 Sample No. L1471 Lab. Sample No. A04/1307
 Depth (m): 5.00
 Date Received 28/07/2004 Date Tested 28/07/2004
 Description: Grey slightly sandy, gravelly, CLAY with some cobbles



IGSL	Compiled by:	Date:	Checked by:	Date:	Page no:
	JS	20/08/2004	<i>J. Lanley</i>	20/08/2004	1 of 1

IGSL Ltd Unit 2 Newbridge Industrial Estate, Newbridge, Co. Kildare Approved Signatories: J Barrett (Technical Manager) J Lanley (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

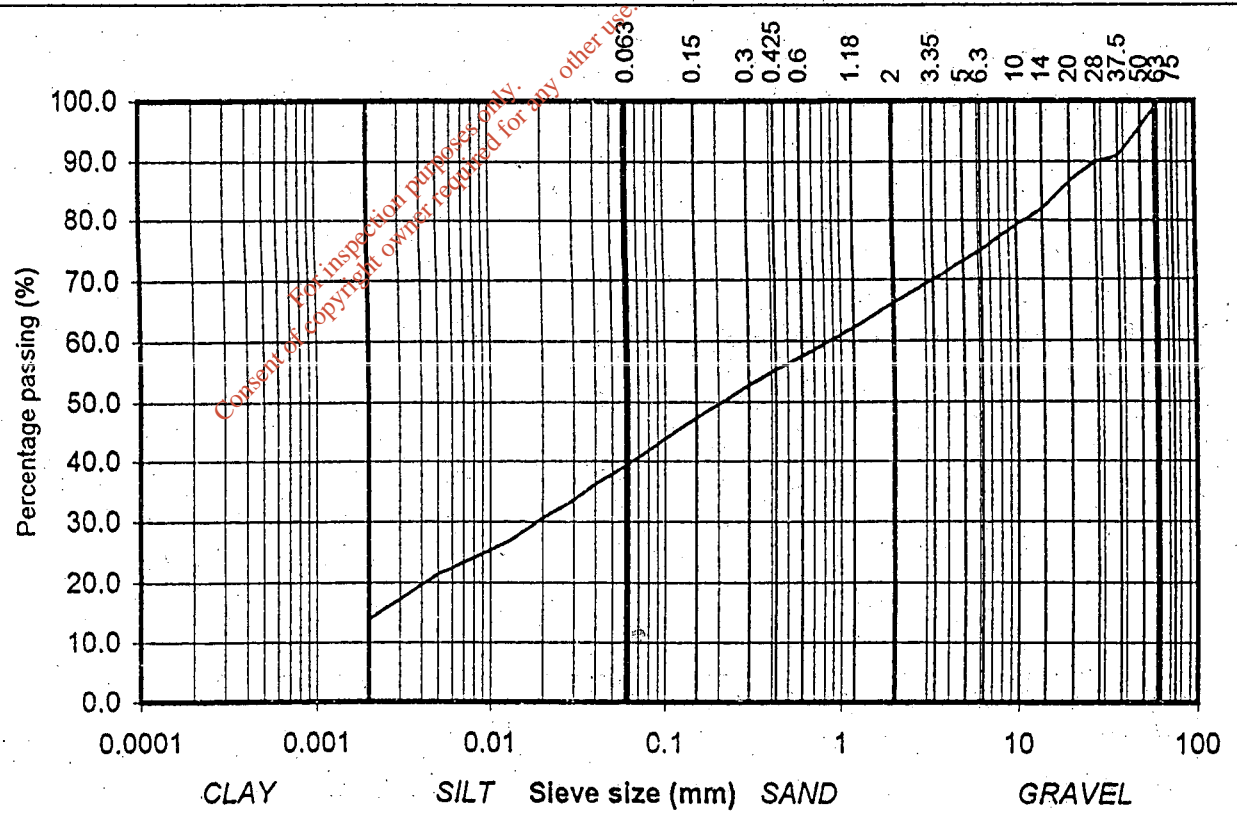
Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5

(note: Sedimentation stage not accredited)



particle size	% passing	
75	100.0	COBBLES
63	100.0	
50	95.7	
37.5	90.9	
28	90.0	
20	86.7	
14	82.0	
10	79.2	
6.3	75.0	
5	73.1	
3.35	70.1	GRAVEL
2	66.3	
1.18	62.1	
0.6	57.5	
0.425	55.3	
0.3	52.7	SAND
0.15	47.3	
0.063	39.7	
0.04	36.1	
0.03	33.5	
0.02	30.6	
0.013	26.9	
0.009	24.8	
0.005	21.4	
0.002	13.8	
		SILT/CLAY

Contract No: M279 Report No. R6882
 Contract: RPS-MCOS, Dublin Landfill
 BH: CSA2
 Sample No. L1455 Lab. Sample No. A04/1300
 Depth (m): 3.00
 Date Received 28/07/2004 Date Tested 28/07/2004
 Description: Grey slightly sandy, slightly gravelly, CLAY



IGSL	Compiled by:	Date:	Checked by:	Date:	Page no:
	JS	20/08/2004	<i>J. Lanley</i>	20/08/2004	1 of 1

TEST REPORT

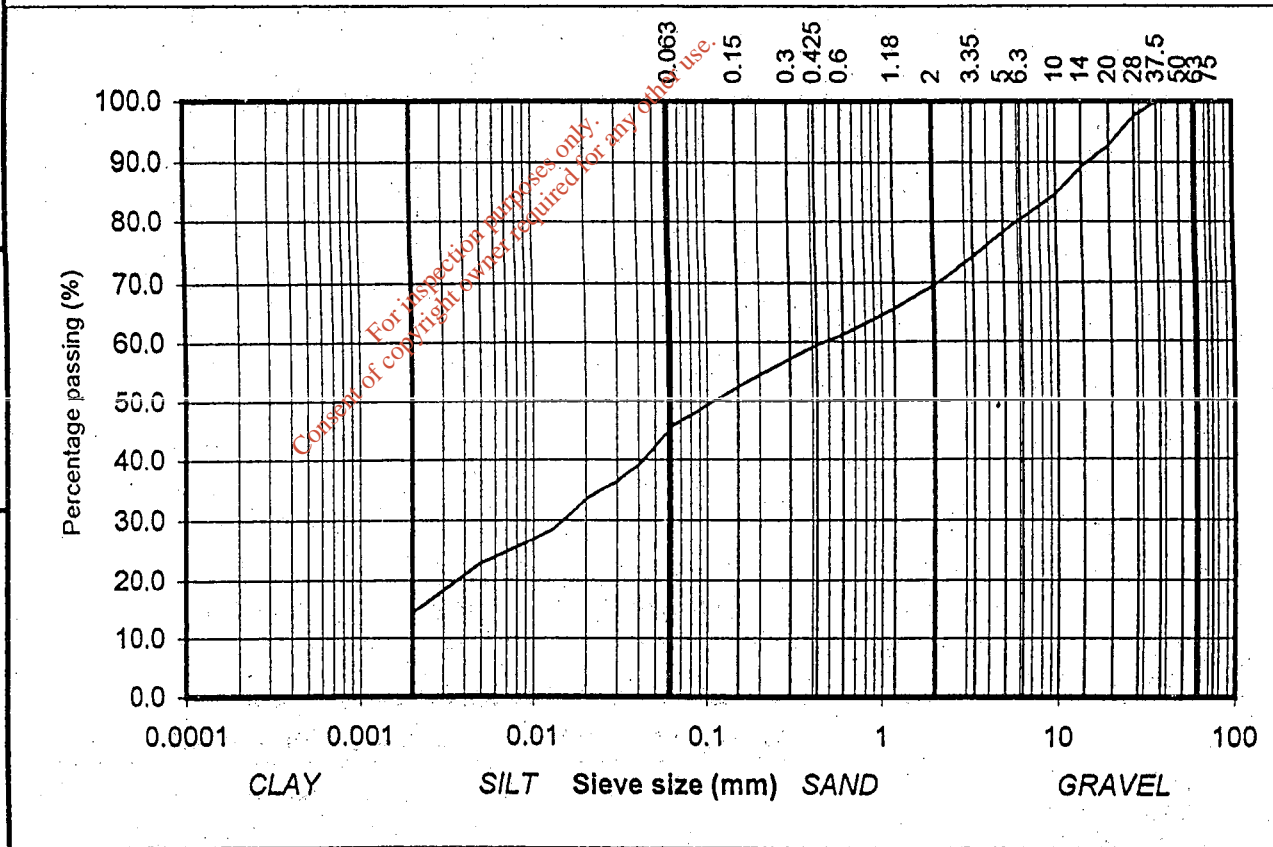
Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5
(note: Sedimentation stage not accredited)



particle size	% passing		
75	100.0	COBBLES	
63	100.0		
50	100.0		
37.5	100.0		
28	97.6		
20	92.7		
14	89.2		GRAVEL
10	84.7		
6.3	80.5		
5	78.3		
3.35	74.2		
2	69.5		
1.18	65.6		
0.6	61.2	SAND	
0.425	59.4		
0.3	57.1		
0.15	52.4		
0.063	45.6		
0.04	39.1		
0.03	36.4		
0.02	33.4		SILT/CLAY
0.013	28.5		
0.009	26.3		
0.005	22.9		
0.002	14.4		

Contract No: M279 Report No. R6883
 Contract: RPS-MCOS, Dublin Landfill
 BH: CSA2
 Sample No. L1458 Lab. Sample No. A04/1301
 Depth (m): 5.00
 Date Received 28/07/2004 Date Tested 28/07/2004
 Description: Grey slightly sandy, slightly gravelly, CLAY



IGSL	Compiled by:	Date:	Checked by:	Date:	Page no:
	JS	20/08/2004	<i>[Signature]</i>	20/08/2004	1 of 1

IGSL Ltd Unit 2 Newbridge Industrial Estate, Newbridge, Co.Kildare. Approved Signatories: J Barrett (Technical Manager) J Langlev (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

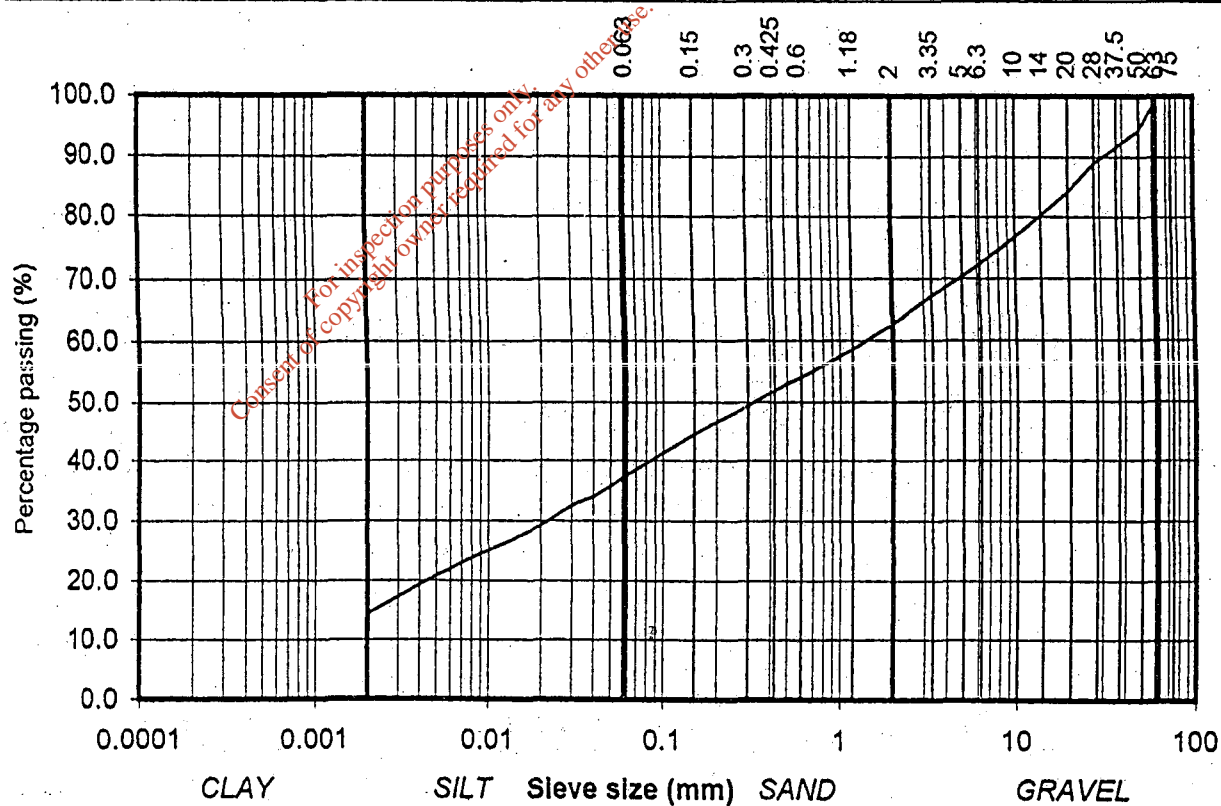
Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5

(note: Sedimentation stage not accredited)



particle size	% passing		
75	100.0	COBBLES	
63	100.0		
50	94.4		
37.5	91.6		
28	89.0		
20	84.2		
14	80.2		
10	76.7		
6.3	72.4		
5	70.4		GRAVEL
3.35	67.3		
2	62.6		
1.18	58.5		
0.6	54.1		
0.425	51.8		
0.3	49.4		
0.15	44.5		
0.063	37.6		
0.04	34.0		
0.03	32.5	SAND	
0.02	29.2		
0.013	26.5		
0.009	24.5		
0.005	20.9		
0.002	14.3		
			SILT/CLAY

Contract No: M279 Report No. R6891
 Contract: RPS-MCOS, Dublin Landfill
 BH: CSA3
 Sample No. K7831 Lab. Sample No. A04/1310
 Depth (m): 4.00
 Date Received 28/07/2004 Date Tested 28/07/2004
 Description: Grey slightly sandy, gravelly, CLAY



IGSL	Compiled by:	Date:	Checked by:	Date:	Page no:
	JS	20/08/2004	J. Langan	20/08/2004	1 of 1

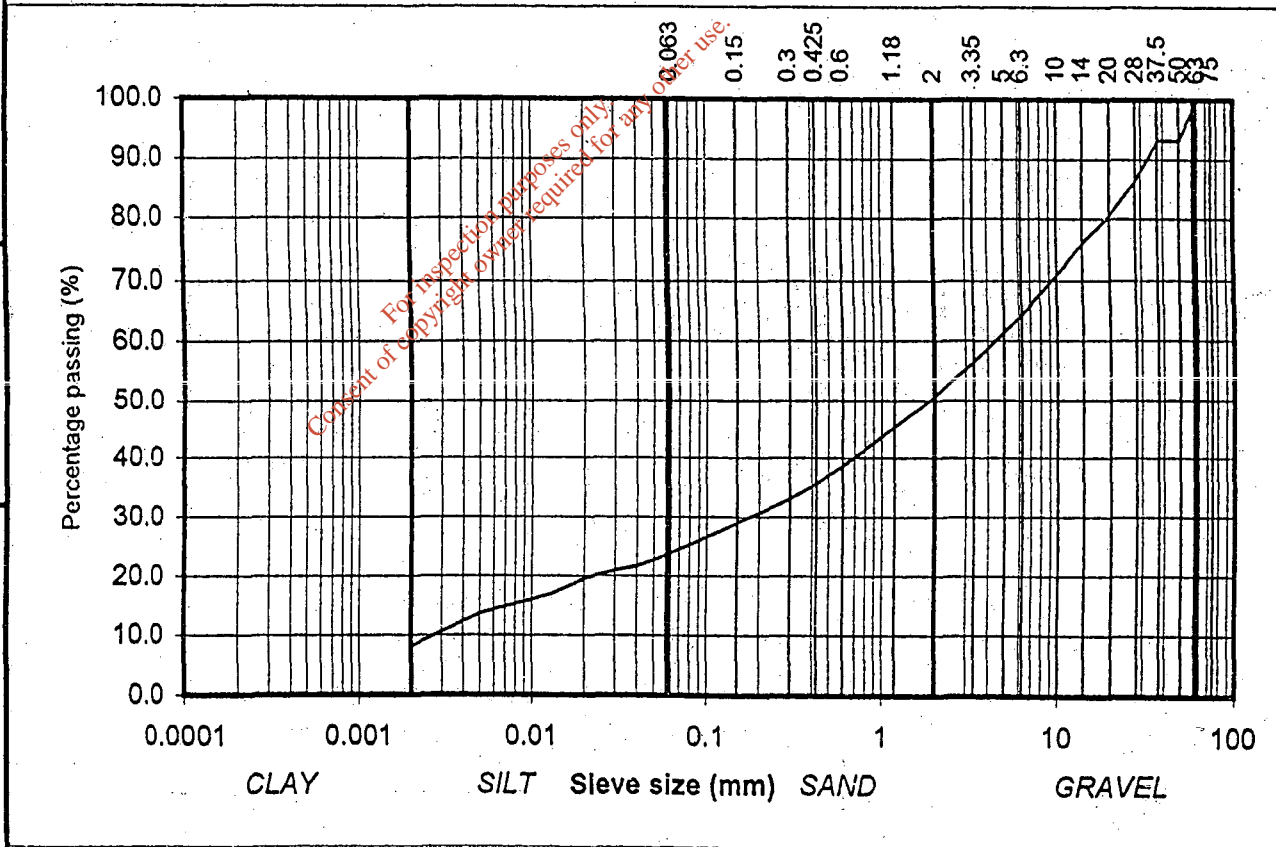
TEST REPORT

Determination of Particle Size Distribution
 Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
 (note: Sedimentation stage not accredited)



particle size	% passing	
75	100.0	COBBLES
63	100.0	
50	93.0	
37.5	93.0	
28	86.3	
20	80.5	
14	76.1	
10	71.0	
6.3	64.2	
5	61.4	
3.35	56.4	GRAVEL
2	50.7	
1.18	45.4	
0.6	38.6	
0.425	35.7	
0.3	33.1	SAND
0.15	29.0	
0.063	23.8	
0.04	21.7	
0.03	21.0	
0.02	19.5	SILT/CLAY
0.013	16.9	
0.009	15.7	
0.005	13.6	
0.002	8.1	

Contract No: M279 Report No. R6892
 Contract: RPS-MCOS, Dublin Landfill
 BH: CSA3A
 Sample No. K7834 Lab. Sample No. A04/1311
 Depth (m): 2.00
 Date Received 28/07/2004 Date Tested 28/07/2004
 Description: Brown slightly sandy, gravelly, CLAY



IGSL	Compiled by:	Date:	Checked by:	Date:	Page no:
	JS	20/08/2004	<i>J Langley</i>	20/08/2004	1 of 1



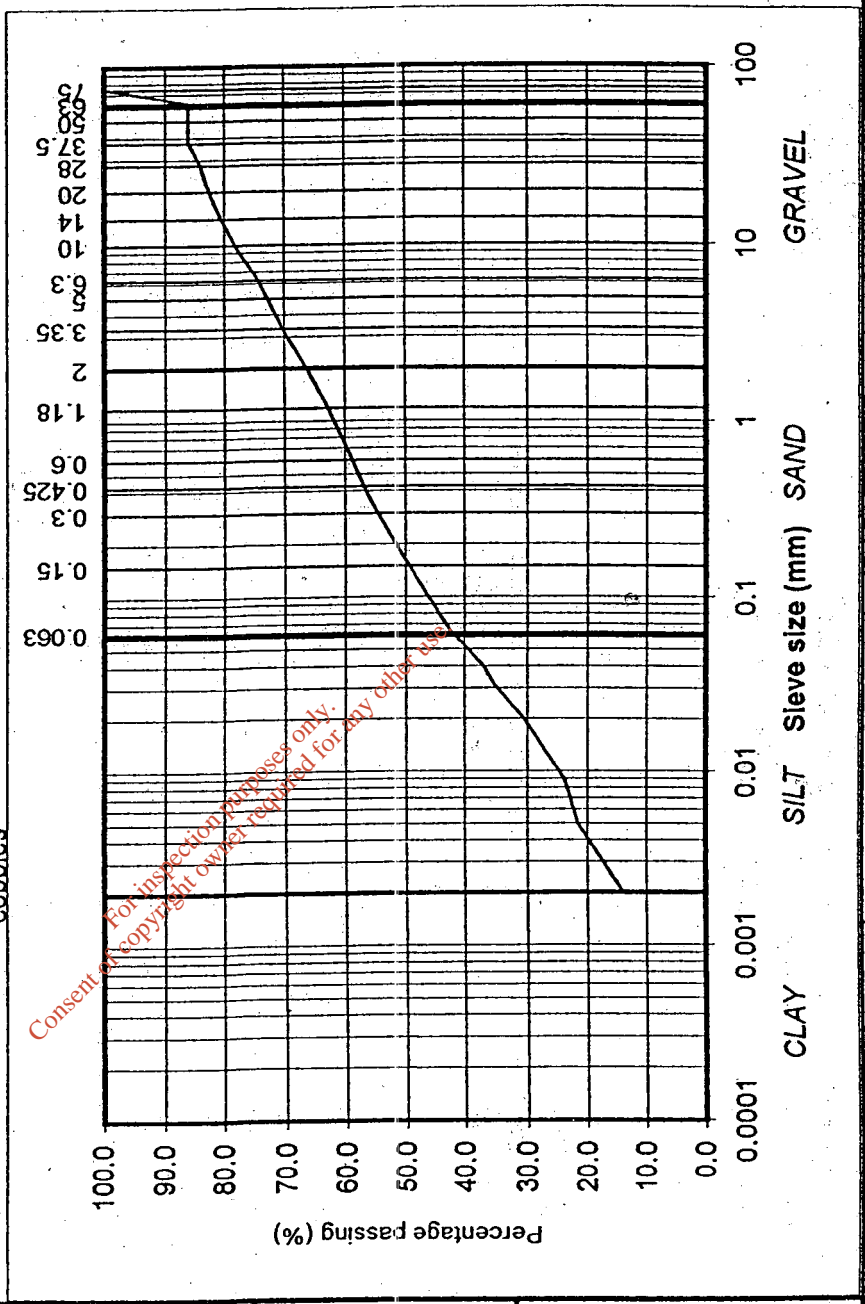
TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5

(note: Sedimentation stage not accredited)

Contract No: M279 Report No. R6889
 Contract: RPS-MCOS, Dublin Landfill
 BH: CSA5
 Sample No: K7820 Lab. Sample No. A04/1308
 Depth (m): 5.00
 Date Received: 28/07/2004 Date Tested: 28/07/2004
 Description: Grey slightly sandy, slightly gravelly, CLAY with some cobbles



particle size	% passing	SOIL CLASSIFICATION
75	100.0	COBBLES
63	86.2	
50	86.2	GRAVEL
37.5	86.2	
28	84.1	
20	82.6	
14	80.6	
10	78.2	
6.3	74.4	
5	72.8	
3.35	70.4	
2	66.4	
1.18	62.9	SAND
0.6	58.7	
0.425	56.9	
0.3	54.5	
0.15	49.4	
0.063	42.3	
0.04	36.9	
0.03	34.9	
0.02	30.6	
0.013	27.0	
0.009	23.9	SILT/CLAY
0.005	21.6	
0.002	14.0	

Compiled by: JS Date: 20/08/2004 Checked by: J. Carver Date: 20/08/2004 Page no: 1 of 1
 Approved Signatories: J. Barrett (Technical Manager), J. Landley (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

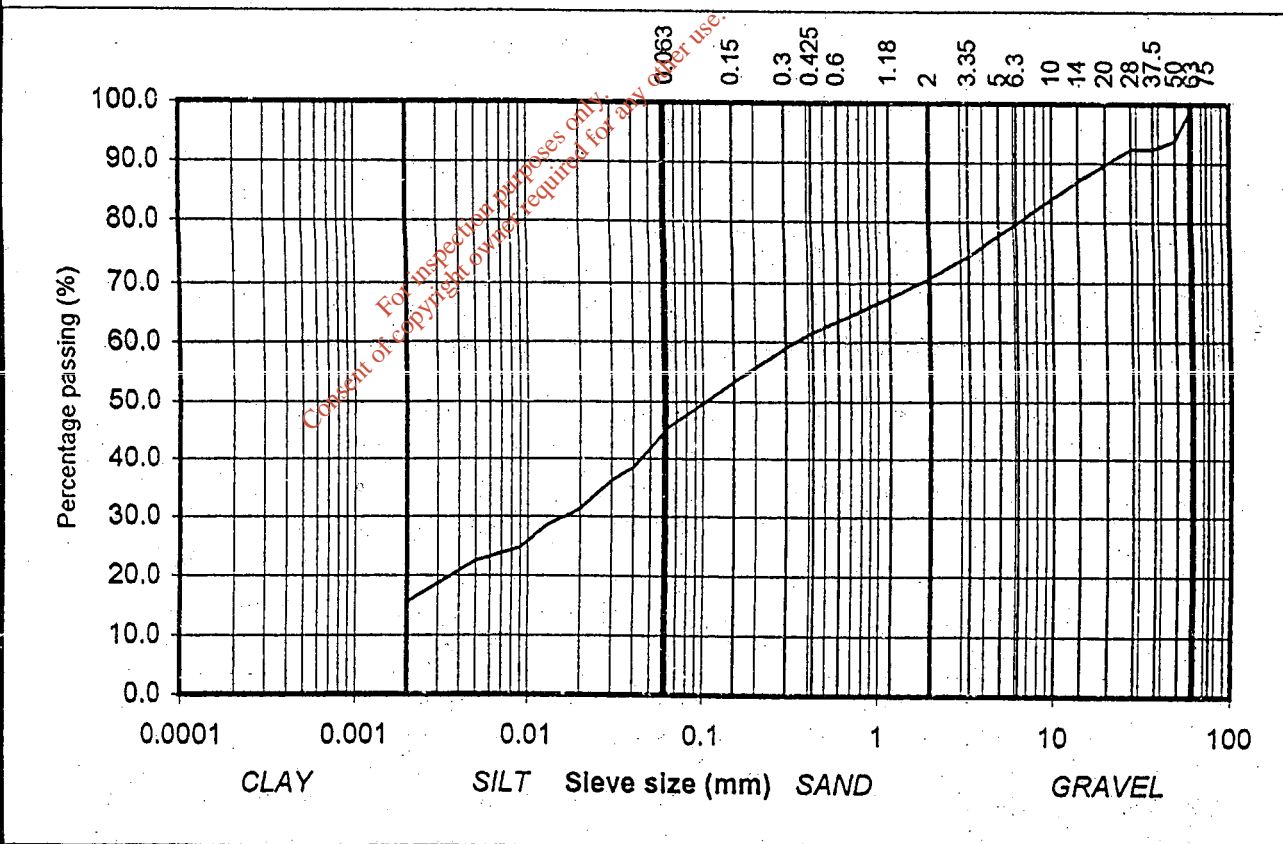
Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5

(note: Sedimentation stage not accredited)



particle size	% passing	
75	100.0	COBBLES
63	100.0	
50	93.7	
37.5	92.3	
28	92.3	
20	89.7	
14	86.9	
10	83.9	
6.3	79.8	
5	77.8	
3.35	74.5	GRAVEL
2	70.8	
1.18	67.5	
0.6	63.5	
0.425	61.6	
0.3	59.0	SAND
0.15	53.4	
0.063	45.3	
0.04	38.4	
0.03	36.2	
0.02	31.3	SILT/CLAY
0.013	28.6	
0.009	24.8	
0.005	22.5	
0.002	15.6	

Contract No: M279 Report No. R6884
 Contract: RPS-MCOS, Dublin Landfill
 BH: CSA6
 Sample No. A5895 Lab. Sample No. A04/1303
 Depth (m): 5.00
 Date Received 28/07/2004 Date Tested 28/07/2004
 Description: Grey slightly sandy, slightly gravelly, CLAY



IGSL	Compiled by:	Date:	Checked by:	Date:	Page no:
	JS	20/08/2004	J Langley	20/08/2004	1 of 1

TEST REPORT

Determination of Particle Size Distribution

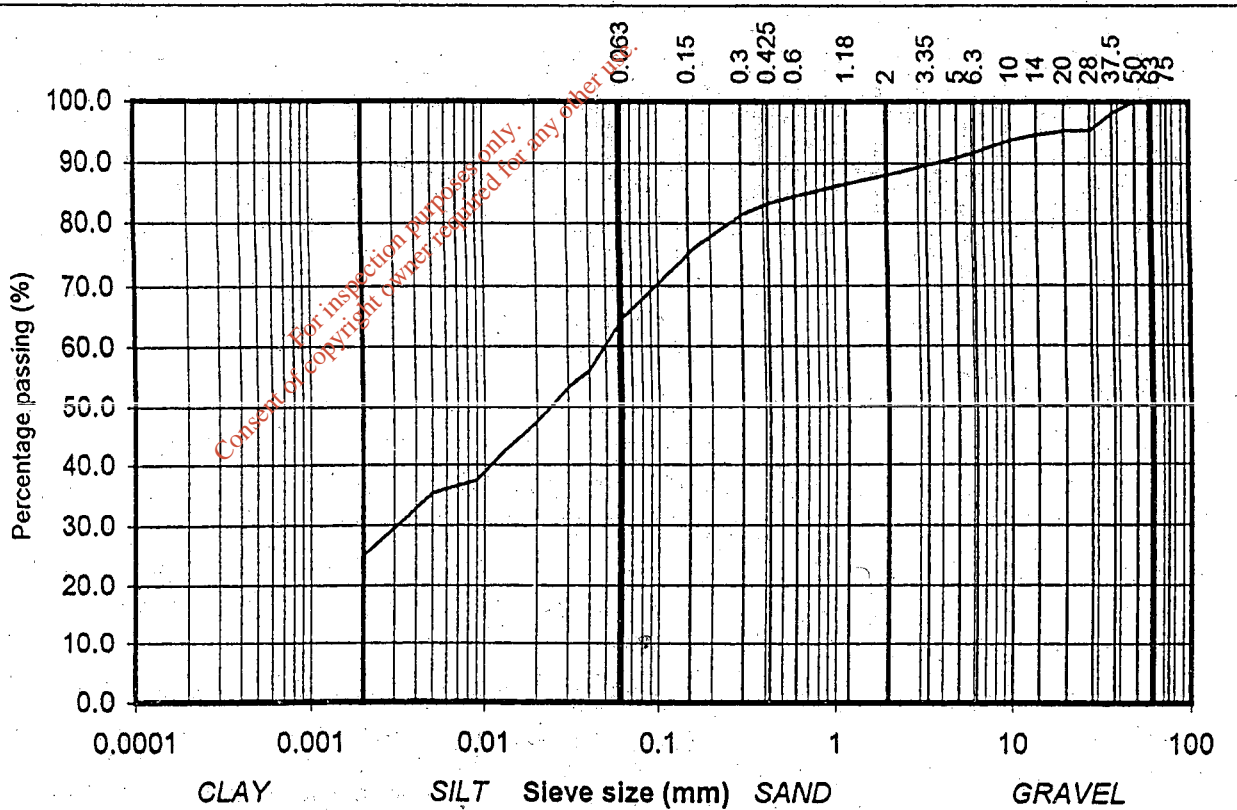
Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5

(note: Sedimentation stage not accredited)



particle size	% passing	
75	100.0	COBBLES
63	100.0	
50	100.0	
37.5	98.1	GRAVEL
28	95.3	
20	95.3	
14	94.6	
10	93.7	
6.3	91.7	
5	90.9	
3.35	89.7	SAND
2	88.0	
1.18	86.5	
0.6	84.5	
0.425	83.3	
0.3	81.4	SILT/CLAY
0.15	75.3	
0.063	64.7	
0.04	55.9	
0.03	53.1	
0.02	47.3	
0.013	42.3	
0.009	37.5	
0.005	35.3	
0.002	24.9	

Contract No: M279 Report No. R6885
 Contract: RPS-MCOS, Dublin Landfill
 BH: CSA6
 Sample No. M0309 Lab. Sample No. A04/1304
 Depth (m): 11.00
 Date Received 28/07/2004 Date Tested 28/07/2004
 Description: Grey slightly sandy, slightly gravelly, CLAY



IGSL	Compiled by:	Date:	Checked by:	Date:	Page no:
	JS	20/08/2004	J. Langley	20/08/2004	1 of 1



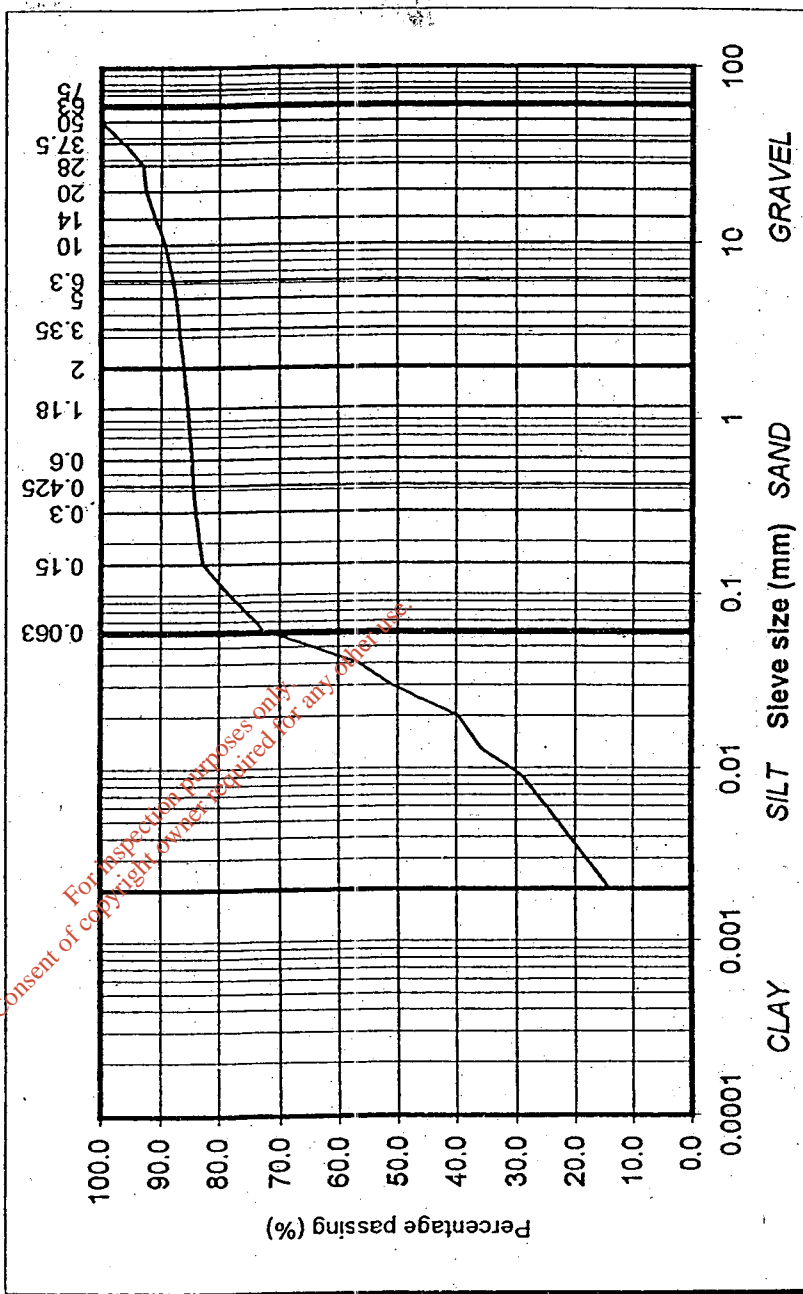
TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5
 (note: Sedimentation stage not accredited)

Contract No: M279 Report No. R6886
 Contract: RPS-MCOS, Dublin Landfill
 BH: CSA6
 Sample No. M0313 Lab. Sample No. A04/1305
 Depth (m): 12.00
 Date Received 28/07/2004 Date Tested 28/07/2004
 Description: Grey slightly sandy, slightly gravelly, SILT

particle size	% passing	
75	100.0	COBBLES
63	100.0	
50	100.0	
37.5	96.3	
28	93.0	
20	92.5	GRAVEL
14	90.9	
10	89.4	
6.3	88.0	
5	87.4	
3.35	86.9	
2	86.1	
1.18	85.5	
0.6	84.9	SAND
0.425	84.5	
0.3	84.1	
0.15	82.9	
0.063	72.9	
0.04	56.4	
0.03	50.9	
0.02	39.7	SILT/CLAY
0.013	35.9	
0.009	28.9	
0.005	23.2	
0.002	14.1	



Compiled by: JS Date: 20/08/2004
 Checked by: J. Landley Date: 20/08/2004
 Page no: 1 of 1

IGSL

IGSL 1st Flt 2 Naushridge Industrial Estate, Naushridge Co. Kildare. Approved Signatories: J. Barratt (Technical Manager) J. Landley (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

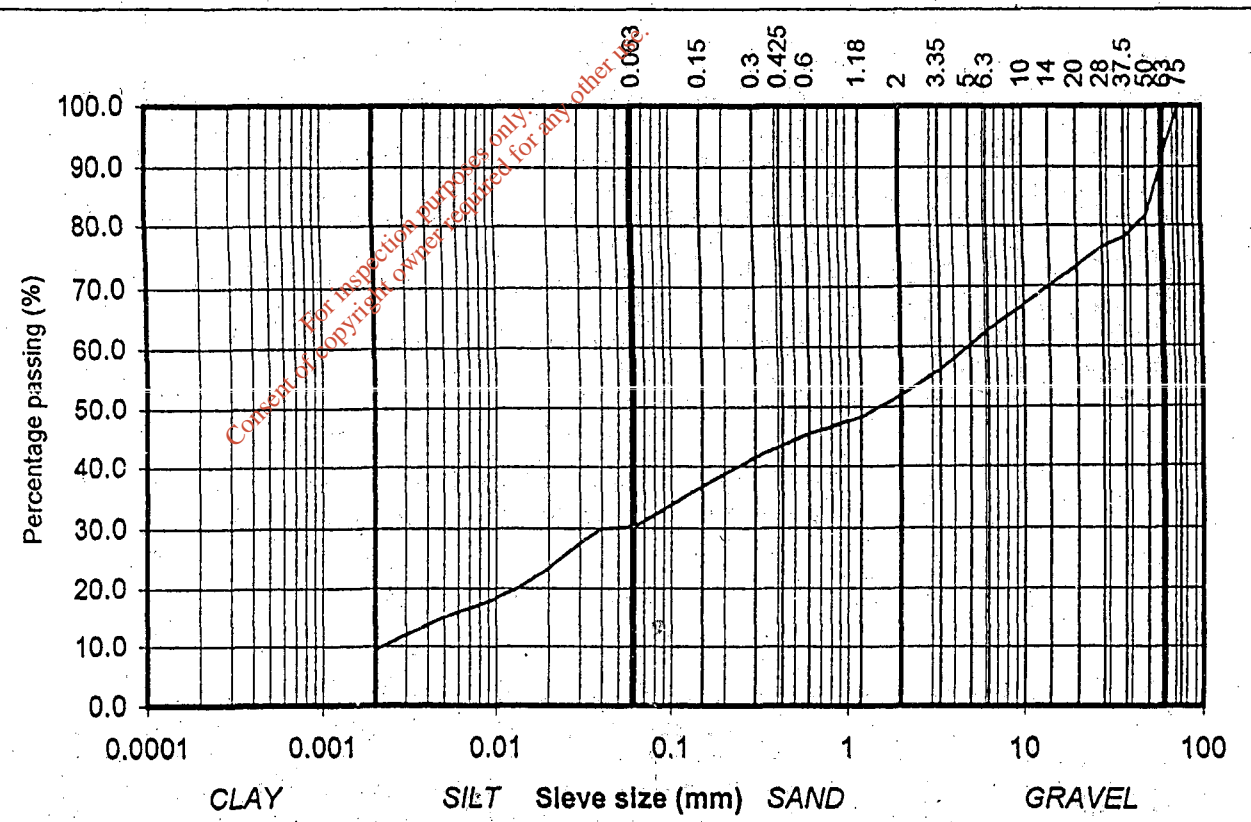
Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5

(note: Sedimentation stage not accredited)



particle size	% passing	
75	100.0	COBBLES
63	92.7	
50	81.9	GRAVEL
37.5	78.2	
28	76.4	
20	73.4	
14	70.1	
10	67.0	
6.3	62.7	
5	60.2	
3.35	56.2	
2	51.9	
1.18	48.3	
0.6	45.5	
0.425	43.6	
0.3	41.6	SILT/CLAY
0.15	36.7	
0.063	30.4	
0.04	29.9	
0.03	27.5	
0.02	23.4	
0.013	19.9	
0.009	17.8	
0.005	15.1	
0.002	9.5	

Contract No: M279 Report No. R6887
 Contract: RPS-MCOS, Dublin Landfill
 BH: CSA6
 Sample No. M0315 Lab. Sample No. A04/1306
 Depth (m): 13.00
 Date Received 28/07/2004 Date Tested 28/07/2004
 Description: Brown slightly sandy, gravelly, CLAY with some cobbles



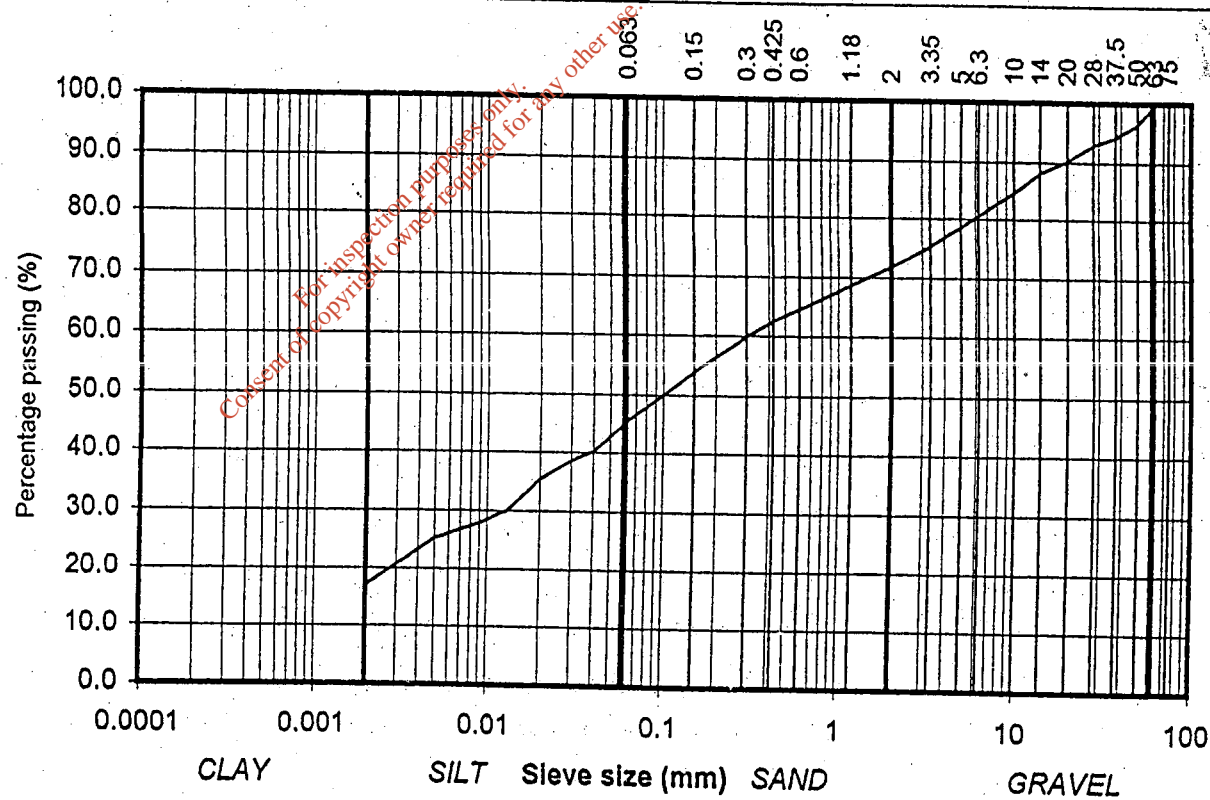
IGSL	Compiled by:	Date:	Checked by:	Date:	Page no:
	JS	20/08/2004	J Langley	20/08/2004	1 of 1

TEST REPORT
Determination of Particle Size Distribution
 Tested in accordance with: BS1377:Part2:1990, clause 9.2 & 9.5
 (note: Sedimentation stage not accredited)



particle size	% passing	
75	100.0	COBBLES
63	100.0	
50	96.4	
37.5	94.3	
28	92.9	
20	90.2	
14	88.1	
10	84.7	
6.3	80.6	
5	78.5	
3.35	75.3	GRAVEL
2	71.9	
1.18	68.6	
0.6	64.5	
0.425	62.5	
0.3	59.9	SAND
0.15	54.0	
0.063	45.4	
0.04	40.2	
0.03	38.6	
0.02	35.4	SILT/CLAY
0.013	30.0	
0.009	27.9	
0.005	25.2	
0.002	17.0	

Contract No: M279 Report No. R6890
 Contract: RPS-MCOS, Dublin Landfill
 BH: CSA7
 Sample No. 7321 Lab. Sample No. A04/1309
 Depth (m): 4.0-4.2
 Date Received 28/07/2004 Date Tested 28/07/2004
 Description: Grey slightly sandy, slightly gravelly, CLAY



IGSL

Compiled by:	Date:	Checked by:	Date:	Page no:
JS	20/08/2004	J Langley	20/08/2004	1 of 1



Determination of Permeability in a Triaxial Cell

BS1377:Part 8:1990, Clause 6

Contract: Dublin Landfill

Contract No. 9716

Location: CSA6 @ 8.0m

Sample No. A5900

Method of Preparation: Remoulded (4.5kg rammer)

Description: Greyish brown sandy gravelly CLAY

Specimen Dimensions: Height (mm) 105.7 Diameter (mm) 100.7

Specimen Conditions:	Initial	Final
Moisture Content (%)	9.6	12
Bulk Density (Mg/m ³)	2.27	2.41
Dry Density (Mg/m ³)	2.07	2.15

Saturation Stage

Method: Cell & back pressure stages

Final B Value: 0.99

Duration of Stage (days): 9

Consolidation Stage

Cell Pressure (kPa) 480

Back Pressure (kPa) 300

Volume change (ml) 29.49

Duration of Stage (days) 7

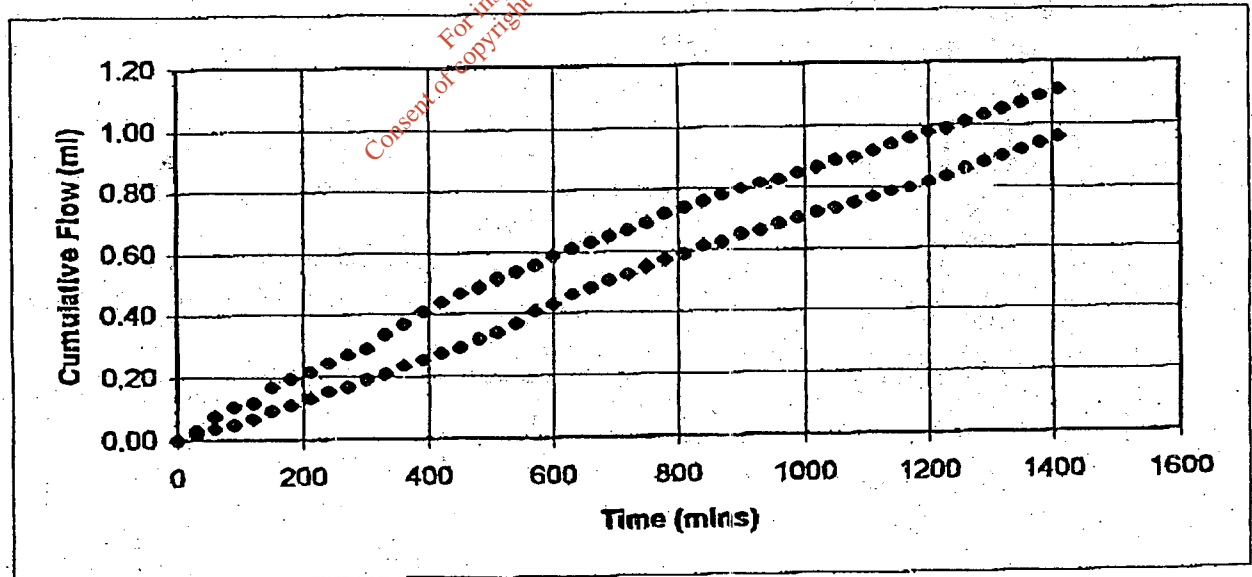
Permeability Stage

Mean Effective Stress 165

Hydraulic gradient 29

Coefficient of Permeability (m/s) $4.38E-11$

Duration of Stage (days) 1



Total duration of test (days) 17

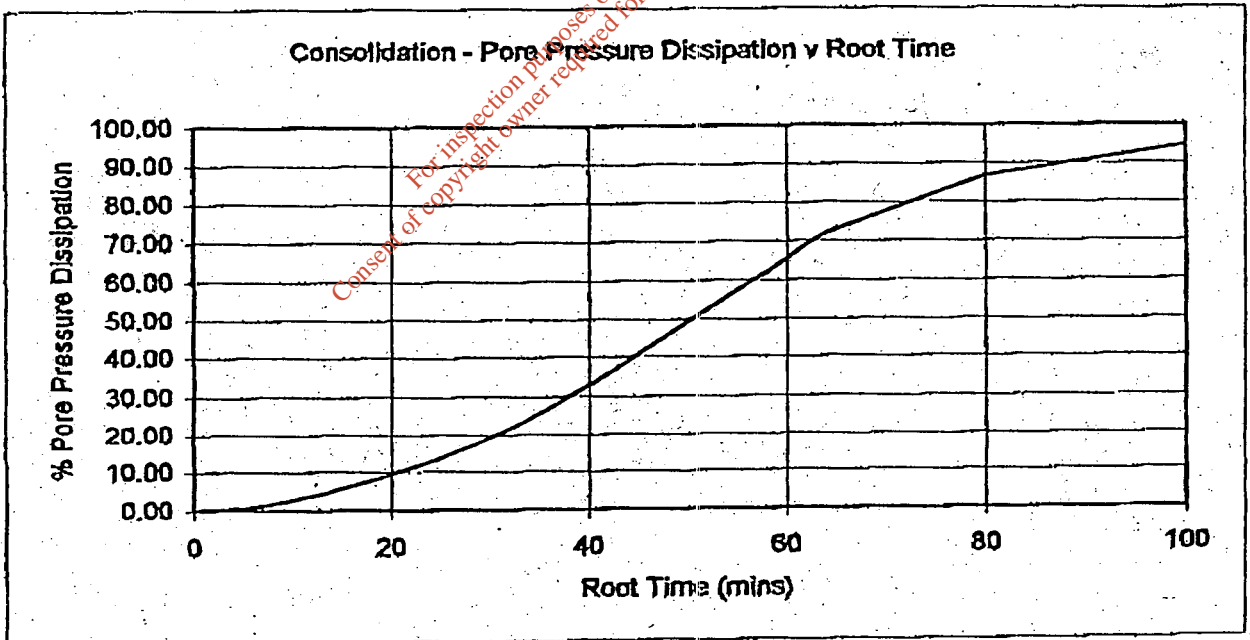
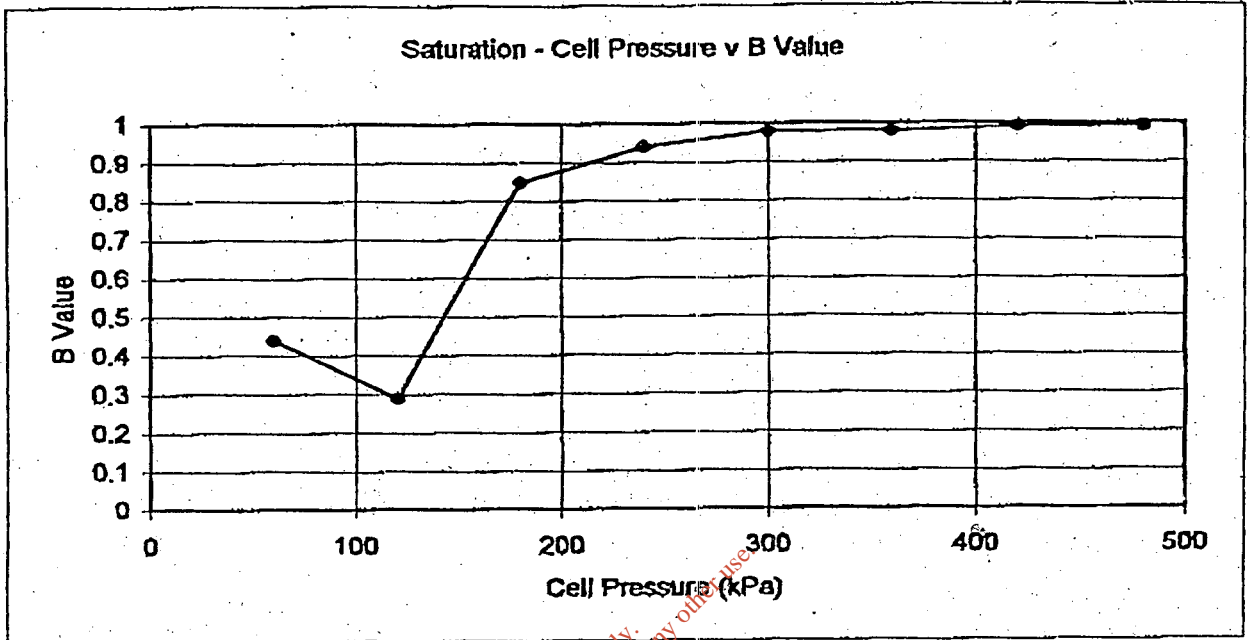


Determination of Permeability in a Triaxial Cell

BS1377:Part 6:1990, Clause 6

Location: CSA6 @ 8.0m

Sample No. A5900



Compiled by	Date	Checked by	Date	Page 2 of 2
<i>[Signature]</i>	7/19/04			

REPORT NO.		9716		GEOTECHNICAL CORE LOG RECORD				IGSL Ltd.					
CONTRACT: Dublin Landfill Siting Study						DRILLHOLE NO: CRC5		SHEET: Sheet 3 of 4					
CLIENT: Fingal County Council ENGINEER: RPS-MCOS				CORE DIAMETER (mm): 74		GROUND LEVEL (mOD): 28.64		DATE STARTED: 16/06/2004 DATE COMPLETED: 18/06/2004					
CO-ORDINATES: 253554.00 318092.92				INCLINATION (Degrees): 90		FLUSH: Air/Mist		DRILLED BY: IGSL LOGGED BY: DO'S					
DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
19													OPEN HOLE DRILLING: No recovery, observed by driller as returns of sandy gravelly clay.
20													
21													
22	21.90								7.29	21.35			OPEN HOLE DRILLING: No recovery, observed by driller as returns of weathered rock
23	23.30	96	80	42					6.74	21.90			Strong to moderately strong, medium to thinly bedded to locally thinly laminated, grey/dark grey/black, fine-grained, LIMESTONE (Predominantly Argillaceous with light grey, stronger, less argillaceous layers at 21.9-22.55m, 22.9-23.84m, 24.0-24.1m, 24.33-24.4m, 24.7-24.95m, 25.15-25.4m, 26.0-27.2m, 27.5-27.62m, 28.0-28.5m, 28.9-29.05m, 30.5-30.6m, 30.9-31.25m & 32.2-32.4m) fresh, intersected by smooth, planar, tight to narrow, locally calcite-filled fractures of sub-horizontal & locally sub-vertical dip.
24		100	87	42									
25	24.65												
26	26.20	100	86	8									
REMARKS: Water encountered at 10.0m, water at 14.0m at end of drilling. Packer tests carried out - see packer result sheet.							INSTALLATION DETAILS Installation Type : SP Depth to Response Zone top (m) : 23.40 Depth to Response Zone bottom (m) : 32.40 Comments : Gravel 32.4-23.4m, seal 23.4-21.4m, headworks.						

Continued next sheet

REPORT NO.

9716

GEOTECHNICAL CORE LOG RECORD

IGSL Ltd.

CONTRACT: Dublin Landfill Siting Study

DRILLHOLE NO: CRC5
SHEET: Sheet 4 of 4

CLIENT: Fingal County Council
ENGINEER: RPS-MCOS

CORE DIAMETER (mm): 74
GROUND LEVEL (mOD): 28.64

DATE STARTED: 16/06/2004
DATE COMPLETED: 18/06/2004

CO-ORDINATES: 253554.00
318092.92

INCLINATION (Degrees): 90
FLUSH: Air/Mist

DRILLED BY: IGSL
LOGGED BY: DO'S

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
28	27.75	100	86	50									Strong to moderately strong, medium to thinly bedded to locally thinly laminated, grey/dark grey/black, fine-grained, LIMESTONE (Predominantly Argillaceous with light grey, stronger, less argillaceous layers at 21.9-22.55m, 22.9-23.84m, 24.0-24.1m, 24.33-24.4m, 24.7-24.95m, 25.15-25.4m, 26.0-27.2m, 27.5-27.62m, 28.0-28.5m, 28.9-29.05m, 30.5-30.6m, 30.9-31.25m & 32.2-32.4m) fresh, intersected by smooth, planar, tight to narrow, locally calcite-filled fractures of sub-horizontal & locally sub-vertical dip.
29		100	90	37									
30	29.30												
31	30.85	100	86	27									
32		100	75	37									
33	32.40								-3.76	32.40			End of Borehole at 32.40 m
34													

REMARKS: Water encountered at 10.0m, water at 14.0m at end of drilling. Packer tests carried out - see packer result sheet.

INSTALLATION DETAILS
 Installation Type : SP
 Depth to Response Zone top (m) : 23.40
 Depth to Response Zone bottom (m) : 32.40
 Comments : Gravel 32.4-23.4m, seal 23.4-21.4m, headworks.

REPORT NO.

9716

GEOTECHNICAL CORE LOG RECORD

IGSL Ltd.

CONTRACT: Dublin Landfill Siting Study

DRILLHOLE NO: CRC5
SHEET: Sheet 2 of 4

CLIENT: Fingal County Council
ENGINEER: RPS-MCOS

CORE DIAMETER (mm): 74
GROUND LEVEL (mCD): 28.64

DATE STARTED: 16/06/2004
DATE COMPLETED: 18/06/2004

CO-ORDINATES: 253554.00
318092.92

INCLINATION (Degrees): 90
FLUSH: Air/Mist

DRILLED BY: IGSL
LOGGED BY: DO'S

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
10									18.64	10.00			OPEN HOLE DRILLING: No recovery, observed by driller as returns of sandy gravelly clay with occasional cobbles..
11		0	0	0									OPEN HOLE DRILLING: No recovery, observed by driller as returns of sandy gravelly clay.
12													
13													
14													
15													
16													

For inspection purposes only.
Consent of copyright owner required for any other use.

Continued next sheet

REMARKS: Water encountered at 10.0m, water at 14.0m at end of drilling. Packer tests carried out - see packer result sheet.

INSTALLATION DETAILS
Installation Type : SP
Depth to Response Zone top (m) : 23.40
Depth to Response Zone bottom (m) : 32.40
Comments : Gravel 32.4-23.4m, seal 23.4-21.4m, headworks.

REPORT NO.	9716	GEOTECHNICAL CORE LOG RECORD	IGSL Ltd.
-------------------	------	-------------------------------------	------------------

CONTRACT: Dublin Landfill Siting Study

DRILLHOLE NO: CRC5
SHEET: Sheet 1 of 4

CLIENT: Fingal County Council
ENGINEER: RPS-MCOS

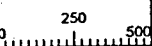

CORE DIAMETER (mm): 74
GROUND LEVEL (mOD): 28.64

DATE STARTED: 16/06/2004
DATE COMPLETED: 18/06/2004

CO-ORDINATES: 253554.00
318092.92

INCLINATION (Degrees): 90
FLUSH: Air/Mist

DRILLED BY: IGSL
LOGGED BY: DO'S

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
													<p>OPEN HOLE DRILLING: No recovery, observed by driller as returns of sandy gravelly clay with occasional cobbles..</p>
1													
2													
3													
4													
5													
6													
7													

Consent of IGSL Ltd. for non purposes only. No consent required for any other use.

Continued next sheet .

REMARKS: Water encountered at 10.0m, water at 14.0m at end of drilling. Packer tests carried out - see packer result sheet

INSTALLATION DETAILS
 Installation Type : SP
 Depth to Response Zone top (m) : 23.40
 Depth to Response Zone bottom (m) : 32.40
 Comments : Gravel 32.4-23.4m, seal 23.4-21.4m, headworks.

REPORT NO.

9716

GEOTECHNICAL CORE LOG RECORD

IGSL Ltd.

CONTRACT: Dublin Landfill Siting Study

DRILLHOLE NO: CRC4
SHEET: Sheet 4 of 4

CLIENT: Fingal County Council
ENGINEER: RPS-MCOS

CORE DIAMETER (mm): 74
GROUND LEVEL (mCD): 27.65

DATE STARTED: 05/06/2004
DATE COMPLETED: 07/06/2004

CO-ORDINATES: 253823.82
317592.86

INCLINATION (Degrees): 90
FLUSH: Air/Mist

DRILLED BY: IGSL
LOGGED BY: DO'S

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
28	27.70	100	55	35									Very strong to locally moderately strong, medium to thinly bedded to locally thinly laminated, grey/blue/black, fine-grained, LIMESTONE (Argillaceous layers at 22.5-22.86m, 23.5-23.88m, 23.96-24.02m, 25.25-25.36m, 26.3-26.6m, 28.2-28.42m, 29.0-29.2m, 29.55-29.72m, 29.55-29.72m, 29.96-30.23m & 30.79-30.92m) fresh to locally slightly weathered, intersected by smooth, planar, tight to narrow, locally clay-smearred, locally calcite-filled fractures of sub-horizontal & very locally sub-vertical dip.
29	29.20	97	55	13									
30	30.65	100	79	52									
31	32.05	100	74	29					-4.40	32.05			
32													End of Borehole at 32.05 m
33													
34													

For inspection purposes only.
Consent of copyright holder required for any other use.

REMARKS: Water encountered at 3m, water at 11.75m at end of drilling. Packer tests carried out - see packer result sheet.

INSTALLATION DETAILS
Installation Type: SP
Depth to Response Zone top (m): 23.00
Depth to Response Zone bottom (m): 32.05
Comments: Gravel 32.05-23.0m, seal 23.0-20.0m, headworks.

REPORT NO.	9716	GEOTECHNICAL CORE LOG RECORD		IGSL Ltd.
CONTRACT: Dublin Landfill Siting Study			DRILLHOLE NO: CRC4	SHEET: Sheet 3 of 4
CLIENT: Fingal County Council ENGINEER: RPS-MCOS		CORE DIAMETER (mm): 74 GROUND LEVEL (mOD): 27.65	DATE STARTED: 05/06/2004 DATE COMPLETED: 07/06/2004	
CO-ORDINATES: 253823.82 317592.86		INCLINATION (Degrees): 90 FLUSH: Air/Mist	DRILLED BY: IGSL LOGGED BY: DO'S	

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
18.60		100	0	0									Stiff, brown/grey, sandy gravelly clay with occasional cobbles.
20.20		100	0	0									
21.70		100	0	0									
23.20		87	37	13					5.15	22.50			Very strong to locally moderately strong, medium to thinly bedded to locally thinly laminated, grey/blue/black, fine-grained, LIMESTONE (Argillaceous layers at 22.5-22.86m, 23.5-23.88m, 23.96-24.02m, 25.25-25.36m, 26.3-26.6m, 28.2-28.42m, 29.0-29.2m, 29.55-29.72m, 29.55-29.72m, 29.96-30.23m & 30.79-30.92m) fresh to locally slightly weathered, intersected by smooth, planar, tight to narrow, locally clay-smearred, locally calcite-filled fractures of sub-horizontal & very locally sub-vertical dip.
24.70		100	77	54									
26.20		100	83	25									

Consent of the copyright owner is required for any other use.

REMARKS: Water encountered at 3m, water at 11.75m at end of drilling. Packer tests carried out - see packer result sheet.	INSTALLATION DETAILS Installation Type : SP Depth to Response Zone top (m) : 23.00 Depth to Response Zone bottom (m) : 32.05 Comments : Gravel 32.05-23.0m, seal 23.0-20.0m, headworks.
--	--

Continued next sheet

REPORT NO.

9716

GEOTECHNICAL CORE LOG RECORD

IGSL Ltd.

CONTRACT: Dublin Landfill Siting Study

DRILLHOLE NO: CRC4
SHEET: Sheet 2 of 4

CLIENT: Fingal County Council
ENGINEER: RPS-MCOS

CORE DIAMETER (mm): 74
GROUND LEVEL (mOD): 27.65

DATE STARTED: 05/06/2004
DATE COMPLETED: 07/06/2004

CO-ORDINATES: 253823.82
317592.86

INCLINATION (Degrees): 90
FLUSH: Air/Mist

DRILLED BY: IGSL
LOGGED BY: DO'S

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
10									17.35	10.30			OPEN HOLE DRILLING: No recovery, observed by driller as returns of brown sandy gravelly clay with occasional cobbles.
11									15.25	12.40			OPEN HOLE DRILLING: No recovery, observed by driller as returns of gravel.
12													
13													OPEN HOLE DRILLING: No recovery, observed by driller as returns of brown sandy gravelly clay with occasional cobbles.
14													
15													
16													
17.30									10.35	17.30			Stiff, brown/grey, sandy gravelly clay with occasional cobbles. Continued next sheet

For inspection purposes only.
Consent of copyright owner required for any other use.

REMARKS: Water encountered at 3m, water at 11.75m at end of drilling. Packer tests carried out - see packer result sheet.

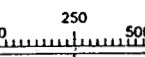
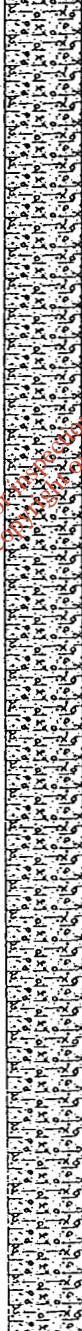
INSTALLATION DETAILS
Installation Type : SP
Depth to Response Zone top (m) : 23.00
Depth to Response Zone bottom (m) : 32.05
Comments : Gravel 32.05-23.0m, seal 23.0-20.0m, headworks.

REPORT NO.	9716	GEOTECHNICAL CORE LOG RECORD	IGSL Ltd.
-------------------	------	-------------------------------------	------------------

CONTRACT: Dublin Landfill Siting Study	DRILLHOLE NO : CRC4 SHEET: Sheet 1 of 4
---	--

CLIENT: Fingal County Council ENGINEER: RPS-MCOS	CORE DIAMETER (mm): 74 GROUND LEVEL (mOD): 27.65	DATE STARTED: 05/06/2004 DATE COMPLETED: 07/06/2004
---	---	--

CO-ORDINATES: 253823.82 317592.86	INCLINATION (Degrees): 90 FLUSH: Air/Mist	DRILLED BY: IGSL LOGGED BY: DO'S
---	--	---

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(60) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
1 2 3 4 5 6 7		0	0	0									<p>OPEN HOLE DRILLING: No recovery, observed by driller as returns of brown sandy gravelly clay with occasional cobbles.</p> <p style="text-align: right;">Continued next sheet</p>

For client's use only.
 Consent of copyright owner required for any other use.

REMARKS: Water encountered at 3m, water at 11.75m at end of drilling. Packer tests carried out - see packer result sheet.	INSTALLATION DETAILS Installation Type : SP Depth to Response Zone top (m) : 23.00 Depth to Response Zone bottom (m) : 32.05 Comments : Gravel 32.05-23.0m, seal 23.0-20.0m, headworks.
--	--

REPORT NO.

9716

GEOTECHNICAL CORE LOG RECORD

IGSL Ltd.

CONTRACT: Dublin Landfill Siting Study

DRILLHOLE NO: CRC3
SHEET: Sheet 3 of 3

CLIENT: Fingal County Council
ENGINEER: RPS-MCOS

CORE DIAMETER (mm): 74
GROUND LEVEL (mOD): 27.87

DATE STARTED: 08/06/2004
DATE COMPLETED: 08/06/2004

CO-ORDINATES: 254784.15
318527.49

INCLINATION (Degrees): 90
FLUSH: Air/Mist

DRILLED BY: IGSL
LOGGED BY: DO'S

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
19	18.70	30	0	0									Moderately strong to moderately weak, thinly bedded to thinly laminated, grey/black, fine-grained, LIMESTONE (predominantly argillaceous), moderately to locally highly weathered intersected by closely spaced, irregular, clay-smearred fractures of irregular dip.
20	20.20	57	0	0									
21	21.70	57	0	0									
22	23.20	53	6	0									
23	24.70	50	7	0									
24	24.70								3.17	24.70			End of Borehole at 24.70 m

For inspection purposes only.
 Consent of copyright owner required for any other use.

REMARKS: Water encountered in rock, water at 15.4m at end of drilling. 0.5hr extra over move.

INSTALLATION DETAILS
 Installation Type : SP
 Depth to Response Zone top (m) : 11.50
 Depth to Response Zone bottom (m) : 24.20
 Comments : Gravel 24.7-11.5m, seal 11.5-9.0m, headworks.

CONTRACT: Dublin Landfill Siting Study	DRILLHOLE NO: CRC3 SHEET: Sheet 2 of 3
---	---

CLIENT: Fingal County Council ENGINEER: RPS-MCOS	CORE DIAMETER (mm): 74 GROUND LEVEL (mOD): 27.87	DATE STARTED: 08/06/2004 DATE COMPLETED: 08/06/2004
---	---	--

CO-ORDINATES: 254784.15 318527.49	INCLINATION (Degrees): 90 FLUSH: Air/Mist	DRILLED BY: IGSL LOGGED BY: DO'S
---	--	---

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
10								[Symbolic Log Pattern]	18.07	9.80			OPEN HOLE DRILLING: No recovery, observed by driller as returns of brown sandy gravelly clay with occasional cobbles.
11								[Symbolic Log Pattern]	17.37	10.50			OPEN HOLE DRILLING: No recovery, observed by driller as returns of gravel.
11.20								[Symbolic Log Pattern]	16.67	11.20			OPEN HOLE DRILLING: No recovery, observed by driller as returns of weathered rock
12		36	0	0				[Symbolic Log Pattern]					Moderately strong to moderately weak, thinly bedded to thinly laminated, grey/black, fine-grained, LIMESTONE (predominantly argillaceous), moderately to locally highly weathered intersected by closely spaced, irregular, clay-smearred fractures of irregular dip.
12.60		31	0	0				[Symbolic Log Pattern]					
14		47	0	0				[Symbolic Log Pattern]					
15.70		50	0	0				[Symbolic Log Pattern]					
16								[Symbolic Log Pattern]					
17.20								[Symbolic Log Pattern]					

For all special purposes only. Consent of copyright owner required for any other use.

Continued next sheet

REMARKS: Water encountered in rock, water at 15.4m at end of drilling. 0.5hr extra over move.	INSTALLATION DETAILS Installation Type : SP Depth to Response Zone top (m) : 11.50 Depth to Response Zone bottom (m) : 24.20 Comments : Gravel 24.7-11.5m, seal 11.5-9.0m, headworks.
--	--

REPORT NO.

9716

GEOTECHNICAL CORE LOG RECORD

IGSL Ltd.

CONTRACT: Dublin Landfill Siting Study

DRILLHOLE NO: CRC3
SHEET: Sheet 1 of 3

CLIENT: Fingal County Council
ENGINEER: RPS-MCOS

CORE DIAMETER (mm): 74
GROUND LEVEL (mOD): 27.87

DATE STARTED: 08/06/2004
DATE COMPLETED: 08/06/2004

CO-ORDINATES: 254784.15
318527.49

INCLINATION (Degrees): 90
FLUSH: Air/Mist

DRILLED BY: IGSL
LOGGED BY: DO'S

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R. %	S.C.R. %	R.Q.D. %	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
0					0 250 500								OPEN HOLE DRILLING: No recovery, observed by driller as returns of brown sandy gravelly clay with occasional cobbles.
1													
2													
3													
4													
5		0	0	0									
6													
7													

For inspection purposes only.
Consent of copyright owner required for any other use.

Continued next sheet

REMARKS: Water encountered in rock, water at 15.4m at end of drilling. 0.5hr extra over move.

INSTALLATION DETAILS
Installation Type : SP
Depth to Response Zone top (m) : 11.50
Depth to Response Zone bottom (m) : 24.20
Comments : Gravel 24.7-11.5m, seal 11.5-9.0m, headworks.

REPORT NO.	9716	GEOTECHNICAL CORE LOG RECORD	IGSL Ltd.
-------------------	------	-------------------------------------	------------------

CONTRACT: Dublin Landfill Siting Study	DRILLHOLE NO: CRC2 SHEET: Sheet 3 of 3
---	---

CLIENT: Fingal County Council ENGINEER: RPS-MCOS	CORE DIAMETER (mm): 74 GROUND LEVEL (mOD): 31.85	DATE STARTED: 14/06/2004 DATE COMPLETED: 16/06/2004
---	---	--

CO-ORDINATES: 254525.78 317933.56	INCLINATION (Degrees): 90 FLUSH: Air/Mist	DRILLED BY: IGSL LOGGED BY: DO'S
---	--	---

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION	
19	18.75	100	83	59									Strong to very strong (to locally moderately strong), medium to thinly bedded to locally thinly laminated, grey/blue to locally black, fine-grained, LIMESTONE, (Argillaceous layers at 15.13-15.5m, 16.3-6.4m, 16.55-16.7m, 17.73-17.86m, 18.39-18.46m, 18.92-18.99m, 20.39-20.53m, 20.75-21.0m & 22.21-22.35m) fresh to locally slightly/moderately weathered (see argillaceous layers above) intersected by smooth to locally rough, planar, tight to narrow, locally calcite-filled fractures of 45° & very locally sub-vertical dip.	
20	20.25	100	70	49										
21	21.35	100	67	50										
22	22.65	100	65	45						9.20	22.65			
23														
24														
25														

REMARKS: Water encountered at 9.7m, water at 5.45m at end of drilling. Packer tests carried out - see packer result sheet. 1hr extra over move.	INSTALLATION DETAILS Installation Type : SP Depth to Response Zone top (m) : 13.35 Depth to Response Zone bottom (m) : 22.35 Comments : Gravel 22.35-13.35m, seal 13.35-11.0m, headworks.
--	--

REPORT NO.

9716

GEOTECHNICAL CORE LOG RECORD

IGSL Ltd.

CONTRACT: Dublin Landfill Siting Study

DRILLHOLE NO : CRC2
SHEET: Sheet 2 of 3

CLIENT: Fingal County Council
ENGINEER: RPS-MCOS

CORE DIAMETER (mm): 74
GROUND LEVEL (mOD): 31.85

DATE STARTED: 14/06/2004
DATE COMPLETED: 16/06/2004

CO-ORDINATES: 254525.78
317933.56

INCLINATION (Degrees): 90
FLUSH: Air/Mist

DRILLED BY: IGSL
LOGGED BY: DO'S

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
9.70									22.15	9.70			OPEN HOLE DRILLING: No recovery, observed by driller as returns of sandy gravelly clay with occasional cobbles..
10.20									21.65	10.20			OPEN HOLE DRILLING: No recovery, observed by driller as returns of gravel.
10.65									21.20	10.65			OPEN HOLE DRILLING: No recovery, observed by driller as returns of sandy gravelly clay with occasional cobbles..
12.00									19.85	12.00			OPEN HOLE DRILLING: No recovery, observed by driller as returns of gravel.
12.75									19.10	12.75			OPEN HOLE DRILLING: No recovery, observed by driller as returns of weathered rock.
13.35		97	89	43									Strong to very strong (to locally moderately strong), medium to thinly bedded to locally thinly laminated, grey/blue to locally black, fine-grained, LIMESTONE, (Argillaceous layers at 15.13-15.5m, 16.3-6.4m, 16.55-16.7m, 17.73-17.86m, 18.39-18.46m, 18.92-18.99m, 20.39-20.53m, 20.75-21.0m & 22.21-22.35m) fresh to locally slightly/moderately weathered (see argillaceous layers above) intersected by smooth to locally rough, planar, tight to narrow, locally calcite-filled fractures of 45° & very locally sub-vertical dip.
14.25													
15.16		100	71	16									
15.75													
17.25		97	63	0									

For inspection purposes only. Consent of copyright owner required for any other use.

Continued next sheet

REMARKS: Water encountered at 9.7m, water at 5.45m at end of drilling. Packer tests carried out - see packer result sheet. 1hr extra over move.

INSTALLATION DETAILS
Installation Type : SP
Depth to Response Zone top (m) : 13.35
Depth to Response Zone bottom (m) : 22.35
Comments : Gravel 22.35-13.35m, seal 13.35-11.0m, headworks.

REPORT NO.

9716

GEOTECHNICAL CORE LOG RECORD

IGSL LTD.

CONTRACT: Dublin Landfill Siting Study

DRILLHOLE NO: CRC1
SHEET: Sheet 2 of 2

CLIENT: Fingal County Council
ENGINEER: RPS-MCOS

CORE DIAMETER (mm): 74
GROUND LEVEL (mOD): 34.02

DATE STARTED: 03/06/2004
DATE COMPLETED: 05/06/2004

CO-ORDINATES: 255056.67
317663.03

INCLINATION (Degrees): 90
FLUSH: Air/Mist

DRILLED BY: IGSL
LOGGED BY: DO'S

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
10	9.90	93	53	21									<p>Strong to locally weak, medium to thinly bedded to locally thinly laminated, grey/blue/black, fine-grained, LIMESTONE (Argillaceous layers at 7.77-7.83m, 7.92-8.06m, 8.95-9.06m, 9.38-9.56m, 9.8-10.0m, 10.25-10.7m, 10.94-11.14m, 11.28-11.34m, 11.6-11.77m, 12.07-12.14m, 12.2-12.3m, 12.67-12.8m, 13.04-13.16m, 13.56-13.75m, 13.94-13.99m, 14.06-14.12m & 14.47-14.63m) fresh to locally moderately/highly weathered (at 7.77-7.83m, 9.38-9.56m, 10.25-10.7m & 11.28-11.34m), intersected by smooth to locally rough, planar, tight to narrow, locally clay-smearred, locally calcite-filled, locally slightly iron-oxide stained fractures of 45° & locally irregular dip.</p>
11	11.40	100	46	32									
12	12.40	100	65	0									
13	13.55	100	65	35									
14	14.75	100	67	12					19.27	14.75			
15													End of Borehole at 14.75 m

REMARKS: Water encountered at 2.5m, water at 1.02m at end of drilling. Packer tests carried out - see packer result sheet. 1hr extra over move.

INSTALLATION DETAILS
 Installation Type: SP
 Depth to Response Zone top (m): 6.75
 Depth to Response Zone bottom (m): 14.75
 Comments: Gravel 14.75-6.75m, seal 6.75-0.4m, headworks.

CONTRACT: Dublin Landfill Siting Study	DRILLHOLE NO : CRC1 SHEET: Sheet 1 of 2
---	--

CLIENT: Fingal County Council ENGINEER: RPS-MCOS	CORE DIAMETER (mm): 74 GROUND LEVEL (mOD): 34.02	DATE STARTED: 03/06/2004 DATE COMPLETED: 05/06/2004
---	---	--

CO-ORDINATES: 255056.67 317663.03	INCLINATION (Degrees): 90 FLUSH: Air/Mist	DRILLED BY: IGSL LOGGED BY: DO'S
---	--	---

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
1													OPEN HOLE DRILLING: No recovery, observed by driller as returns of brown sandy gravelly clay with occasional cobbles.
2													OPEN HOLE DRILLING: No recovery, observed by driller as returns of gravel.
3		0	0	0					31.52	2.50			OPEN HOLE DRILLING: No recovery, observed by driller as returns of weathered rock
4									29.32	4.70			Strong to locally weak, medium to thinly bedded to locally thin laminated, grey/blue/black, fine-grained, LIMESTONE (Argillaceous layers at 7.77-7.83m, 7.92-8.06m, 8.95-9.06m, 9.38-9.56m, 9.8-10.0m, 10.25-10.7m, 10.94-11.14m, 11.28-11.34m, 11.6-11.77m, 12.07-12.14m, 12.2-12.3m, 12.67-12.8m, 13.04-13.16m, 13.56-13.75m, 13.94-13.99m, 14.06-14.12m & 14.47-14.63m) fresh to locally moderately/highly weathered (at 7.77-7.83m, 9.38-9.56m, 10.25-10.7m & 11.28-11.34m), intersected by smooth to locally rough, planar, tight to narrow, locally clay-smearred, locally calcite-filled, locally slightly iron-oxide stained fractures of 45° & locally irregular dip.
5	5.25	100	46	29					28.77	5.25			
6	5.60	67	37	0									
7	5.90	75	0	0									
8	6.30	71	30	0									
9	7.00	85	50	35									
10	8.30	100	70	0									
11	8.50												

REMARKS: Water encountered at 2.5m, water at 1.02m at end of drilling. Packer tests carried out - see packer result sheet. 1hr extra over move.	INSTALLATION DETAILS Installation Type : SP Depth to Response Zone top (m) : 6.75 Depth to Response Zone bottom (m) : 14.75 Comments : Gravel 14.75-6.75m, seal 6.75-0.4m, headworks.
--	--

Continued next sheet

REPORT NO.

9716

GEOTECHNICAL CORE LOG RECORD

IGSL Ltd.

CONTRACT: Dublin Landfill Siting Study

DRILLHOLE NO: CGB2
SHEET: Sheet 3 of 3

CLIENT: Fingal County Council
ENGINEER: RPS-MCOS

CORE DIAMETER (mm): 102
GROUND LEVEL (mOD): 30.21

DATE STARTED: 21/06/2004
DATE COMPLETED: 22/06/2004

CO-ORDINATES: 254358.55
317841.83

INCLINATION (Degrees): 90
FLUSH: Polymer Gel

DRILLED BY: MILLENIUM
LOGGED BY: DO'S

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
18.00									12.21	18.00			Angular gravel-sized returns of limestone with sandy clay
19		100	0	0									Firm to stiff, black, sandy gravelly CLAY with very occasional cobbles.
19.50													
20		100	0	0									
21													
21.00													
22		100	0	0									
22.50													
23		100	0	0									
24									6.21	24.00			End of Borehole at 24.00 m
25													

REMARKS: Second standpipe installed at 18.2m : Gravel 18.2-15.2m, seal 24.0-18.2m & 15.2-10.0m.

INSTALLATION DETAILS
Installation Type : SP
Depth to Response Zone top (m) : 2.00
Depth to Response Zone bottom (m) : 10.00
Comments : Gravel 10.0-2.0m, seal 2.0-0.0m, headworks.

REPORT NO.	9716	GEOTECHNICAL CORE LOG RECORD		IGSL Ltd.
CONTRACT: Dublin Landfill Siting Study			DRILLHOLE NO : CGB2	SHEET: Sheet 2 of 3
CLIENT: Fingal County Council		CORE DIAMETER (mm): 102		DATE STARTED: 21/06/2004
ENGINEER: RPS-MCOS		GROUND LEVEL (mOD): 30.21		DATE COMPLETED: 22/06/2004
CO-ORDINATES: 254358.55		INCLINATION (Degrees): 90		DRILLED BY: MILLENIUM
317841.83		FLUSH: Polymer Gel		LOGGED BY: DO'S

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
9.00													
10.00	100	0	0										Firm to stiff, brown sandy gravelly CLAY with occasional cobbles.
10.50													
11.00	100	0	0										
12.00									18.21	12.00			Firm to stiff, light brown, sandy slightly gravelly CLAY with very occasional cobbles.
13.00	100	0	0										
13.50													
14.00	29	0	0										
14.20									16.01	14.20			Angular gravel-sized returns of limestone with sandy clay
15.00	7	0	0										
15.70													
16.00	38	0	0										
16.50													
	7	0	0										

For internal use only. Consent of copyright owner required for any other use.

REMARKS: Second standpipe installed at 18.2m : Gravel 18.2-15.2m, seal 24.0-18.2m & 15.2-10.0m.

INSTALLATION DETAILS
 Installation Type : SP
 Depth to Response Zone top (m) : 2.00
 Depth to Response Zone bottom (m) : 10.00
 Comments : Gravel 10.0-2.0m, seal 2.0-0.0m, headworks.

Continued next sheet

REPORT NO.

9716

GEOTECHNICAL CORE LOG RECORD

IGSL Ltd.

CONTRACT: Dublin Landfill Siting Study

DRILLHOLE NO : CGB2
SHEET: Sheet 1 of 3

CLIENT: Fingal County Council
ENGINEER: RPS-MCOS

CORE DIAMETER (mm): 102
GROUND LEVEL (mOD): 30.21

DATE STARTED: 21/06/2004
DATE COMPLETED: 22/06/2004

CO-ORDINATES: 254358.55
317841.83

INCLINATION (Degrees): 90
FLUSH: Polymer Gel

DRILLED BY: MILLENIUM
LOGGED BY: DO'S

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
		0	0	0					29.91	0.30			OPEN HOLE DRILLING: No recovery, observed by driller as returns of topsoil.
1	1.00								29.21	1.00			OPEN HOLE DRILLING: No recovery, observed by driller as returns of gravelly clay.
	1.50	100	0	0									Soft, light brown, sandy slightly gravelly CLAY with very occasional cobbles.
2													
	3.00	47	0	0					27.21	3.00			Firm to stiff, brown sandy gravelly CLAY with occasional cobbles.
3													
	4.50	100	0	0									
4													
	6.00	100	0	0									
5													
	7.50	100	0	0									
6													
		100	0	0									
7													

For information purposes only. Consent of copyright holder is required for any other use.

Continued next sheet

REMARKS: Second standpipe installed at 18.2m : Gravel 18.2-15.2m, seal 24.0-18.2m & 15.2-10.0m.

INSTALLATION DETAILS
Installation Type : SP
Depth to Response Zone top (m) : 2.00
Depth to Response Zone bottom (m) : 10.00
Comments : Gravel 10.0-2.0m, seal 2.0-0.0m, headworks.

CONTRACT: Dublin Landfill Siting Study	DRILLHOLE NO: CGB1 SHEET: Sheet 3 of 3
---	---

CLIENT: Fingal County Council ENGINEER: RPS-MCOS	CORE DIAMETER (mm): 102 GROUND LEVEL (mOD): 30.22	DATE STARTED: 17/06/2004 DATE COMPLETED: 18/06/2004
---	--	--

CO-ORDINATES: 254358.54 317841.97	INCLINATION (Degrees): 90 FLUSH: Polymer Gel	DRILLED BY: MILLENIUM LOGGED BY: DO'S
---	---	--

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
18.10													Strong to very strong (to locally moderately strong), grey/blue to locally dark grey, fine-grained, LIMESTONE (Moderately strong, dark grey, argillaceous layers at 12.75-13.3m, 15.54-15.57m, 18.16-18.24m, 18.47-18.54m & 19.67-19.78m), fresh to locally slightly weathered intersected by smooth to locally rough, planar, tight to open, locally clay-smearred, slightly iron-oxide stained fractures of sub-horizontal & locally 45° dip.
19		75	65	47									
19.50		100	100	80									
20.00									10.22	20.00			
21													End of Borehole at 20.00 m
22													
23													
24													
25													

REMARKS: Second standpipe installed at 10.5m : Gravel 10.5-7.0m, seal 20.0-10.5m & 7.0-5.5m.	INSTALLATION DETAILS Installation Type : SP Depth to Response Zone top (m) : 2.00 Depth to Response Zone bottom (m) : 5.50 Comments : Gravel 5.5-2.0m, seal 2.0-0.0m, headworks.
---	---

For inspection purposes only. Consent of copyright owner required for any other use.

CONTRACT: Dublin Landfill Siting Study

DRILLHOLE NO: CGB1
SHEET: Sheet 2 of 3

CLIENT: Fingal County Council
ENGINEER: RPS-MCOS

CORE DIAMETER (mm): 102
GROUND LEVEL (mOD): 30.22

DATE STARTED: 17/06/2004
DATE COMPLETED: 18/06/2004

CO-ORDINATES: 254358.54
317841.97

INCLINATION (Degrees): 90
FLUSH: Polymer Gel

DRILLED BY: MILLENIUM
LOGGED BY: DO'S

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
10.00	67	0	0										Firm to stiff, brown/black, sandy, locally very gravelly CLAY with occasional cobbles.
10.50	100	0	0						19.72	10.50			Strong to very strong (to locally moderately strong), grey/blue to locally dark grey, fine-grained, LIMESTONE (Moderately strong, dark grey, argillaceous layers at 12.75-13.3m, 15.54-15.57m, 18.16-18.24m, 18.47-18.54m & 19.67-19.78m), fresh to locally slightly weathered intersected by smooth to locally rough, planar, tight to open, locally clay-smearred, slightly iron-oxide stained fractures of sub-horizontal & locally 45° dip.
11.50	80	56	22										
12.00	80	80	62										
13.50	100	84	58										
15.00	93	80	37										
16.50	62	48	38										

For inspection purposes only. Consent of copyright owner required for any other use.

Continued next sheet

REMARKS: Second standpipe installed at 10.5m : Gravel 10.5-7.0m, seal 20.0-10.5m & 7.0-5.5m.

INSTALLATION DETAILS

Installation Type : SP
Depth to Response Zone top (m) : 2.00
Depth to Response Zone bottom (m) : 5.50
Comments : Gravel 5.5-2.0m, seal 2.0-0.0m, headworks.

CONTRACT: Dublin Landfill Siting Study	DRILLHOLE NO.: CGB1 SHEET: Sheet 1 of 3
---	--

CLIENT: Fingal County Council ENGINEER: RPS-MCOS	CORE DIAMETER (mm): 102 GROUND LEVEL (mOD): 30.22	DATE STARTED: 17/06/2004 DATE COMPLETED: 18/06/2004
---	--	--

CO-ORDINATES: 254358.54 317841.97	INCLINATION (Degrees): 90 FLUSH: Polymer Gel	DRILLED BY: MILLENIUM LOGGED BY: DO'S
---	---	--

DOWNHOLE DEPTH (m)	CORE RUN DEPTH (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing (mm)	UCS (MPa)	POINT LOAD Is(50) MPa	SYMBOLIC LOG	ELEVATION (mOD)	DEPTH (m)	SPT (N value)	STANDPIPE DETAILS	GEOTECHNICAL DESCRIPTION
		0	0	0					29.22	1.00			OPEN HOLE DRILLING: No recovery, observed by driller as returns of clay.
1	1.00												Soft to firm, light brown, sandy gravelly CLAY with occasional cobbles.
2	2.50	100	0	0					28.12	2.10			Firm to stiff, brown/black, sandy, locally very gravelly CLAY with occasional cobbles.
3													
4	4.00												
5	5.50	100	0	0									
6													
7	7.00	100	0	0									
	7.80	100	0	0									
	8.50												

For information purposes only. Consent of copyright holder required for any other use.

REMARKS: Second standpipe installed at 10.5m : Gravel 10.5-7.0m, seal 20.0-10.5m & 7.0-5.5m.	INSTALLATION DETAILS Installation Type : SP Depth to Response Zone top (m) : 2.00 Depth to Response Zone bottom (m) : 5.50 Comments : Gravel 5.5-2.0m, seal 2.0-0.0m, headworks.
---	---

Continued next sheet

REPORT NO: 9716	GEOTECHNICAL BORING RECORD	IGSL Ltd.
CONTRACT : Dublin Landfill Siting Study		BOREHOLE NO: CSA8 Sheet 2 of 2
CLIENT : Fingal County Council	GROUND LEVEL (mOD) 23.54	DATE STARTED: 14/06/2004
ENGINEER : RPS-MCOS	BOREHOLE DIAMETER (mm) 200	DATE COMPLETED: 17/06/2004
CO-ORDINATES : E 253344.78 N 317666.77	BOREHOLE DEPTH (m) 16.50	BORED BY: M Collins
	CASING DEPTH (m) 16.00	

DEPTH (M)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	BLOWS / RECOVERY	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)			
10	Very stiff brown sandy gravelly CLAY with occasional cobbles	[Pattern]	13.34	10.20	371					[Pattern]
	Dense fine to medium sandy GRAVEL				372 373	B	10.50	C=35		
11	Dense coarse sandy GRAVEL with occasional cobbles		12.54	11.00	386 387	W	11.00			
					374 375	B	11.50			
12	Very dense coarse sandy GRAVEL		11.54	12.00						
					376 377	B	12.50	C=64		
13										
	Very dense coarse sandy GRAVEL with bands of brown clay		10.04	13.50	378 379	B	13.50			
14										
	Hard black sandy gravelly CLAY		8.94	14.60	380	B	14.60	C=67/ 160mm		
15										
				382	B	15.50				
16										
	End of Borehole at 16.50 m		7.04	16.50	384	B	16.50			
17										
18										
19										
20										

Consent of EPA in connection with this report is required for any other use.

From (m)	To (m)	Hours	Comments
9.00	9.50	1.00	
9.50	10.00	1.50	
16.00	16.50	2.00	

Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments

Date	Tip Depth	RZ Top	RZ Base	Type
17/06/2004	13.50	10.20	12.20	SP
17/06/2004	16.50	14.50	16.50	SP

Date	Hole Depth	Casing Depth	Depth to Water	Comments
17/04/2006	16.50	0.00	9.50	End of boring

GEO TECHNICAL BORING RECORD

IGSL LTD.

CONTRACT : Dublin Landfill Siting Study		BOREHOLE NO: CSA8 Sheet 1 of 2	
CLIENT : Fingal County Council	ENGINEER : RPS-MCOS	GROUND LEVEL (mOD) 23.54	DATE STARTED: 14/06/2004
CO-ORDINATES : E 253344.78 N 317666.77		BOREHOLE DIAMETER (mm) 200	DATE COMPLETED: 17/06/2004
		BOREHOLE DEPTH (m) 16.50	BORED BY: M Collins
		CASING DEPTH (m) 16.00	

DEPTH (M)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	BLOWS / RECOVERY	STAND PIPE DETAILS	
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)				
0	TOPSOIL										
0.40	Brown sandy CLAY with occasional cobbles		23.14	0.40							
1.20	Very stiff to hard black sandy gravelly CLAY with occasional cobbles		22.34	1.20	349	B	1.00				
350											
351					B	2.00	C=47				
352											
353					U				100%		
4.00					356	B	4.00				
357											
5.00					358	B	5.00	C=79/ 245mm			
359											
360					B	6.00			100%		
6.00					361	U					
362											
7.00	Very stiff brown sandy gravelly CLAY with occasional cobbles		16.54	7.00	363	B	7.00	C=45/ 95mm			
364											
8.00					365	B	8.00				
366											
9.00					368	B	9.00				
369											
10.00	Continued next sheet				370	B	10.00	C=50/ 123mm			

For information purposes only.
Consent of copyright owner required for any other use.

From (m)	To (m)	Hours	Comments
9.00	9.50	1.00	
9.50	10.00	1.50	
16.00	16.50	2.00	

Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments

Date	Tip Depth	RZ Top	RZ Base	Type
17/06/2004	13.50	10.20	12.20	SP
17/06/2004	16.50	14.50	16.50	SP

Date	Hole Depth	Casing Depth	Depth to Water	Comments
17/04/2006	16.50	0.00	9.50	End of boring

Remarks:

REPORT NO: 9716

GEOTECHNICAL BORING RECORD

IGSL Ltd.

CONTRACT: Dublin Landfill Siting Study

BOREHOLE NO: CSA7A
Sheet 1 of 1

CLIENT: Fingal County Council
ENGINEER: RPS-MCOS

GROUND LEVEL (mOD) 28.78
BOREHOLE DIAMETER (mm) 200
BOREHOLE DEPTH (m) 4.00
CASING DEPTH (m) 4.00

DATE STARTED: 16/06/2004
DATE COMPLETED: 17/06/2004

CO-ORDINATES: E 253910.87
N 317917.27

BORED BY: P Thomas

DEPTH (M)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	BLOWS / RECOVERY	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)			
0	TOPSOIL		28.58	0.20						
1	Firm to stiff brown sandy gravelly CLAY									
2	Very stiff black sandy gravelly CLAY		26.88	1.90						
3										
4	End of Borehole at 4.00 m		24.78	4.00						
5										
6										
7										
8										
9										
10										

For inspection purposes only.
Consent of copyright owner required for any other use.

Hard Strata Boring / Chiselling

From (m)	To (m)	Hours	Comments
2.20	2.40	1.00	NO PROGRESS
4.00	4.00	2.00	

Water Strike Details

Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments

Standpipe Installation Details

Date	Tip Depth	RZ Top	RZ Base	Type

Groundwater Observations

Date	Hole Depth	Casing Depth	Depth to Water	Comments

CONTRACT : Dublin Landfill Siting Study

BOREHOLE NO: CSA7
Sheet 1 of 1

CLIENT : Fingal County Council
ENGINEER : RPS-MCOS

GROUND LEVEL (mOD) 28.74
BOREHOLE DIAMETER (mm) 200
BOREHOLE DEPTH (m) 4.50
CASING DEPTH (m) 4.50

DATE STARTED: 15/06/2004
DATE COMPLETED: 16/06/2004

CO-ORDINATES : E 253904.79
N 317913.80

BORED BY: P Thomas

DEPTH (M)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	BLOWS / RECOVERY	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)			
0	TOPSOIL		28.54	0.20						
1	Firm to stiff grey black SILT	XXXXXX			7318	D	1.00	C=17		
2	Stiff black grey CLAY with occasional cobbles	XXXXXX	27.24	1.50						
3	Very stiff black slightly sandy slightly gravelly CLAY with occasional cobbles	XXXXXX	26.74	2.00	7319	D	2.00	C=46		
4					7320	D	3.00	C=54		
5					7321	D	4.00	C=57		
5	Obstruction - possible boulder End of Borehole at 4.50 m		24.24	4.50						

For inspection purposes only.
Consent of copyright owner required for any other use.

Hard Strata Boring / Chiselling

From (m)	To (m)	Hours	Comments
2.50	3.00	0.75	NO PROGRESS
4.50	4.50	1.00	

Water Strike Details

Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments

Standpipe Installation Details

Date	Tip Depth	RZ Top	RZ Base	Type

Groundwater Observations

Date	Hole Depth	Casing Depth	Depth to Water	Comments

Remarks:

REPORT NO: 9716 **GEOTECHNICAL BORING RECORD** **IGSL Ltd.**

CONTRACT : Dublin Landfill Siting Study BOREHOLE NO: CSA6
 Sheet 2 of 2

CLIENT : Fingal County Council GROUND LEVEL (mOD) 34.51 DATE STARTED: 28/05/2004
 ENGINEER : RPS-MCOS BOREHOLE DIAMETER (mm) 200 DATE COMPLETED: 04/06/2004

CO-ORDINATES : E 254110.49 BOREHOLE DEPTH (m) 15.00 BORED BY: M Collins
 N 317226.12 CASING DEPTH (m) 13.50

DEPTH (M)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	BLOWS / RECOVERY	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)			
0	Very stiff dark brown slightly sandy slightly gravelly CLAY with cobbles and boulders				M0308			C=63		
10					M0309 M0310 M0311	B U	11.00			
11.50	Brown silty SAND		23.01	11.50						
12	Hard grey slightly sandy slightly gravelly CLAY with pockets of silt, cobbles and boulders				M0313 M0314	B	12.00	C=60/ 160mm		
12.51			22.51	12.00						
13					M0315 M0316	B	13.00			
14					M0317 M0318	B	14.00	C=24/ 10mm		
15	End of Borehole at 15.00 m				19.51	15.00				

For inspection purposes only. Consent of copyright owner required for any other use.

Hard Strata Boring / Chiselling

From (m)	To (m)	Hours	Comments
-2.50	3.00	0.50	
10.00	12.00	2.00	
12.00	14.00	3.00	
14.00	15.00	3.50	

Water Strike Details

Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments

Standpipe Installation Details

Date	Tip Depth	RZ Top	RZ Base	Type
04/06/2004	15.00	10.40	15.00	SP

Groundwater Observations

Date	Hole Depth	Casing Depth	Depth to Water	Comments
01/06/2004	10.00	-	4.50	Start of day
03/06/2004	14.00	-	6.80	Start of day
31/05/2004	6.00	3.00	4.50	Start of day

CONTRACT : Dublin Landfill Siting Study

BOREHOLE NO: CSA6
Sheet 1 of 2

CLIENT : Fingal County Council
ENGINEER : RPS-MCOS

GROUND LEVEL (mOD) 34.51
BOREHOLE DIAMETER (mm) 200
BOREHOLE DEPTH (m) 15.00
CASING DEPTH (m) 13.50

DATE STARTED: 28/05/2004
DATE COMPLETED: 04/06/2004

CO-ORDINATES : E 254110.49
N 317226.12

BORED BY: M.Collins

DEPTH (M)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	BLOWS / RECOVERY	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)			
0	TOPSOIL	[Pattern]	34.11	0.40						
1	Brown slightly gravelly CLAY	[Pattern]	33.51	1.00	A5887 A5888 A5884	B U	1.00	90%		
2	Stiff brown sandy gravelly CLAY with cobbles	[Pattern]	32.01	2.50	A5889 A5890	B	2.00	C=21		
3	Very stiff black slightly sandy slightly gravelly CLAY with cobbles and boulders	[Pattern]			A5891 A5892	B	3.00	C=58		
4		[Pattern]			A5893 A5894 A5886 A5885	B D U	4.00	90%		
5		[Pattern]			A5895 A5896	B	5.00	C=69		
6		[Pattern]			A5897	U	6.00	90%		
7		[Pattern]			M0318 M0301 M0302	W B	6.80 7.00	C=57		
8	Very stiff dark brown slightly sandy slightly gravelly CLAY with cobbles and boulders	[Pattern]	27.11	7.40	M0303 M0304 A5900	B U	8.00	100%		
9		[Pattern]			M0305 M0306	B	9.00	C=59		
10	Continued next sheet.	[Pattern]			M0307	B	10.00			

Consent of copyright owner required for any reuse.
For inspection purposes only.

Hard Strata Boring / Chiselling

From (m)	To (m)	Hours	Comments
2.50	3.00	0.50	
10.00	12.00	2.00	
12.00	14.00	3.00	
14.00	15.00	3.50	

Water Strike Details

Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments

Groundwater Observations

Date	Hole Depth	Casing Depth	Depth to Water	Comments
01/06/2004	10.00	-	4.50	Start of day
03/06/2004	14.00	-	6.80	Start of day
31/05/2004	6.00	3.00	4.50	Start of day

Standpipe Installation Details

Date	Tip Depth	RZ Top	RZ Base	Type
04/06/2004	15.00	10.40	15.00	SP

Remarks:

REPORT NO: 9716		GEOTECHNICAL BORING RECORD		IGSL Ltd.	
CONTRACT : Dublin Landfill Siting Study			BOREHOLE NO: CSA5A Sheet 1 of 1		
CLIENT : Fingal County Council		GROUND LEVEL (mOD) 32.08		DATE STARTED: 10/06/2004	
ENGINEER : RPS-MCOS		BOREHOLE DIAMETER (mm) 200		DATE COMPLETED: 14/06/2004	
CO-ORDINATES : E 254294.07 N 317663.84		BOREHOLE DEPTH (m) 7.20		BORED BY: J O'Toole	
		CASING DEPTH (m) 6.50			

DEPTH (M)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	BLOWS / RECOVERY	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)			
0	TOPSOIL		31.88	0.20						
1	Very stiff brown sandy gravelly CLAY									
2			29.88	2.20						
3	Hard black sandy gravelly CLAY with occasional boulders									
4										
5										
6										
7					7317	D	6.80	C=R		
7	End of Borehole at 7.20 m		24.88	7.20						
8										
9										
10										

Consent of the copyright owner required for any other use.

From (m)	To (m)	Hours	Comments
2.40	3.50	2.00	
3.50	5.80	1.00	
6.30	6.40	1.00	
6.80	7.20	2.50	

Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments

Date	Hole Depth	Casing Depth	Depth to Water	Comments

Date	Tip Depth	RZ Top	RZ Base	Type

CONTRACT : Dublin Landfill Siting Study

BOREHOLE NO: CSA5
Sheet 1 of 1

CLIENT : Fingal County Council
ENGINEER : RPS-MCOS

GROUND LEVEL (mOD) 32.17
BOREHOLE DIAMETER (mm) 200
BOREHOLE DEPTH (m) 6.20
CASING DEPTH (m) 6.00

DATE STARTED: 03/06/2004
DATE COMPLETED: 10/06/2004

CO-ORDINATES : E 254301.11
N 317662.86

BORED BY: P Thomas

DEPTH (M)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	BLOWS / RECOVERY	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)			
0	TOPSOIL									
0.20	Very stiff brown sandy gravelly CLAY		31.97	0.20	K7812	U	1.00		45/100%	
					K7813	D	1.50			
					K7814	D	2.00	C=40		
2.10	Hard black slightly sandy slightly gravelly CLAY with some cobbles		30.07	2.10	K7815	D	2.50			
					K7816	D	3.00			
					K7817	U	3.50		125/100%	
					K7818	D	4.00	C=44/ 150mm		
					K7819	D	4.50			
					K7820	D	5.00			
5.50					K7821	D	5.50	C=25/ 75mm		
6.20	End of Borehole at 6.20 m		25.97	6.20				C=R		

For information purposes only.
Consent of copyright owner required for any other use.

Hard Strata Boring / Chiselling

From (m)	To (m)	Hours	Comments
3.30	3.40	0.33	
4.30	4.50	0.75	
5.70	6.00	1.00	
6.00	6.20	0.50	
6.20	6.20	2.00	NO PROGRESS

Water Strike Details

Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments

Groundwater Observations

Date	Hole Depth	Casing Depth	Depth to Water	Comments

Standpipe Installation Details

Date	Tip Depth	RZ Top	RZ Base	Type

Remarks:

REPORT NO: 9716

GEOTECHNICAL BORING RECORD

IGSL Ltd.

CONTRACT : Dublin Landfill Siting Study

BOREHOLE NO: CSA4
Sheet 1 of 1

CLIENT : Fingal County Council
ENGINEER : RPS-MCOS

GROUND LEVEL (mOD) 28.09
BOREHOLE DIAMETER (mm) 200
BOREHOLE DEPTH (m) 9.30
CASING DEPTH (m) 9.30

DATE STARTED: 09/06/2004
DATE COMPLETED: 11/06/2004

CO-ORDINATES : E 254598.49
N 318333.53

BORED BY: M Collins

DEPTH (M)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	BLOWS / RECOVERY	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)			
0	TOPSOIL	[Pattern]	27.69	0.40						
1	Brown sandy CLAY	[Pattern]	27.29	0.80						
1	Stiff brown sandy gravelly CLAY with occasional cobbles	[Pattern]			324 325	E	1.00			
2		[Pattern]			326 327	E	2.00	C=28		
2	Hard black sandy gravelly CLAY with occasional cobbles	[Pattern]	25.69	2.40						
3		[Pattern]			329 330 331	B U	3.00		80%	
4		[Pattern]						C=60/ 195mm		
5		[Pattern]			334 335	B	5.00	C=58/ 85mm		
6		[Pattern]			337 338 342	B U	6.00		100%	
7		[Pattern]			339 340	B	7.00	C=29/ 45mm		
8		[Pattern]			341 342	B	8.00	C=43/ 120mm		
9		[Pattern]								
9.30	End of Borehole at 9.30 m		18.79	9.30						

Consent of EPA for inspection purposes only. Payment required for any other use.

From (m)	To (m)	Hours	Comments
4.30	4.70	1.00	
8.80	9.00	1.50	
9.00	9.30	0.75	

Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments

Date	Tip Depth	RZ Top	RZ Base	Type
11/06/2004	7.70	1.70	7.90	SP
11/06/2004	9.30	9.00	9.30	SP

Date	Hole Depth	Casing Depth	Depth to Water	Comments

CONTRACT : Dublin Landfill Siting Study

BOREHOLE NO: CSA3A
Sheet 1 of 1

CLIENT : Fingal County Council
ENGINEER : RPS-MCOS

GROUND LEVEL (mOD) 33.80
BOREHOLE DIAMETER (mm) 200

DATE STARTED: 21/06/2004
DATE COMPLETED: 21/06/2004

CO-ORDINATES : E 254854.90
N 317731.60

BOREHOLE DEPTH (m) 4.30
CASING DEPTH (m) 4.30

BORED BY: P Thomas

DEPTH (M)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	BLOWS / RECOVERY	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)			
0	TOPSOIL		33.60	0.20						
1	Stiff brown slightly sandy gravelly CLAY with cobbles				K7833	U	1.00		60/100%	
2	Dense brown grey fine to coarse GRAVEL		32.30	1.50	K7834	D	2.00			
3	Stiff brown sandy gravelly CLAY		31.30	2.50	K7835	U	3.00		68/100%	
4					K7836	D	3.50			
4					K7837	D	4.00			
4.30	End of Borehole at 4.30 m		29.50	4.30						

For inspection purposes only.
Consent of copyright owner required for any other use.

Hard Strata Boring / Chiselling

From (m)	To (m)	Hours	Comments
2.10	2.20	0.33	
4.20	4.30	1.50	

Water Strike Details

Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments

Groundwater Observations

Date	Hole Depth	Casing Depth	Depth to Water	Comments

Standpipe Installation Details

Date	Tip Depth	RZ Top	RZ Base	Type

Remarks:

REPORT NO: 9716		GEOTECHNICAL BORING RECORD		IGSL Ltd.	
CONTRACT : Dublin Landfill Siting Study				BOREHOLE NO: CSA3 Sheet 1 of 1	
CLIENT : Fingal County Council		GROUND LEVEL (mOD) 33.71		DATE STARTED: 17/06/2004	
ENGINEER : RPS-MCOS		BOREHOLE DIAMETER (mm) 200		DATE COMPLETED: 18/06/2004	
CO-ORDINATES : E 254853.84 N 317726.60		BOREHOLE DEPTH (m) 4.80		BORED BY: P Thomas	
		CASING DEPTH (m) 4.80			

DEPTH (m)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	BLOWS / RECOVERY	STAND PIPE DETAILS	
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)				
0	TOPSOIL		33.51	0.20							
1	Stiff brown sandy gravelly CLAY with cobbles				K7826	D	1.00				
2					K7827	D	1.50	C=28			
3	Very stiff black slightly sandy gravelly CLAY with occasional cobbles		31.61	2.10	K7828	D	2.00				
4					K7829	D	2.50				
5										C=36	
6					K7830	D	3.50				
7					K7831	D	4.00			C=R	
8	End of Borehole at 4.80 m		28.91	4.80	K7832	D	4.50				
9										C=R	
10											

For inspection purposes only
Consent of copyright owner required for any other use

From (m)	To (m)	Hours	Comments
1.20	2.50	0.75	
2.50	3.10	1.50	
4.00	4.80	2.00	
4.80	4.80	2.00	NO PROGRESS

Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments

Date	Hole Depth	Casing Depth	Depth to Water	Comments

Date	Tip Depth	RZ Top	RZ Base	Type

CONTRACT : Dublin Landfill Siting Study

BOREHOLE NO: CSA2A
Sheet 1 of 1

CLIENT : Fingal County Council
ENGINEER : RPS-MCOS

GROUND LEVEL (mOD) 37.50
BOREHOLE DIAMETER (mm) 200
BOREHOLE DEPTH (m) 7.40
CASING DEPTH (m) 3.00

DATE STARTED: 27/05/2004
DATE COMPLETED: 27/05/2004

CO-ORDINATES : E 254731.25
N 317304.94

BORED BY: G Roberts

DEPTH (M)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	BLOWS / RECOVERY	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)			
0	TOPSOIL	[Pattern]								
0.50	Brown/grey sandy gravelly CLAY	[Pattern]	37.00	0.50						
1.00	Stiff grey slightly sandy slightly gravelly CLAY with occasional cobbles and boulders	[Pattern]	36.50	1.00						
6.00					L1460 L1461	B	6.00			
6.50	OBSTRUCTION - possible boulder	[Pattern]	31.00	6.50						
7.00					740	B	7.00	C=51/ 135mm		
7.40	End of Borehole at 7.40 m		30.10	7.40				C=50/ 45mm		

For information purposes only.
Consent of copyright owner required for any other use.

Hard Strata Boring / Chiselling

From (m)	To (m)	Hours	Comments
4.70	5.10	0.75	
6.50	6.80	1.00	
6.80	7.00	1.00	
7.00	7.40	2.50	

Water Strike Details

Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments

Groundwater Observations

Date	Hole Depth	Casing Depth	Depth to Water	Comments
27/05/2004	7.00	-	-	Damp at end of day
28/05/2004	7.00	-	1.90	Start of day

Standpipe Installation Details

Date	Tip Depth	RZ Top	RZ Base	Type
28/05/2004	7.40	2.00	7.40	SP

Remarks:

REPORT NO: 9716	GEOTECHNICAL BORING RECORD	IGSL Ltd.
CONTRACT : Dublin Landfill Siting Study.		BOREHOLE NO: CSA2 Sheet 1 of 1
CLIENT : Fingal County Council	GROUND LEVEL (mOD) 37.61	DATE STARTED: 26/05/2004
ENGINEER : RPS-MCOS	BOREHOLE DIAMETER (mm) 200	DATE COMPLETED: 26/05/2004
CO-ORDINATES : E 254725.70 N 317302.95	BOREHOLE DEPTH (m) 6.00	BORED BY: G Roberts
	CASING DEPTH (m) 4.50	

DEPTH (M)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	BLOWS / RECOVERY	STAND PIPE DETAILS		
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)					
0	TOPSOIL											
	Brown/grey sandy gravelly CLAY		37.11	0.50	L1447	B	0.50					
1	Stiff grey slightly sandy slightly gravelly CLAY with occasional cobbles and boulders		36.61	1.00	L1448	B	1.00					
					L1450							
					L1451							
					L1449	U	1.55			100%		
2					L1452	B	2.00			C=19		NR
					L1453	U						
3					L1454	B	3.00		C=26			
					L1455							
4					L1456	B	4.00		C=26			
					L1457							
5					L1458	B	5.00		C=25			
					L1459							
	OBSTRUCTION - possible boulder		32.11	5.50								
6	End of Borehole at 6.00 m		31.61	6.00					C=22			

Consent of copyright owner required for further use.

Hard Strata Boring / Chiselling <table border="1"> <thead> <tr> <th>From (m)</th> <th>To (m)</th> <th>Hours</th> <th>Comments</th> </tr> </thead> <tbody> <tr> <td>5.50</td> <td>6.00</td> <td>1.00</td> <td></td> </tr> </tbody> </table>				From (m)	To (m)	Hours	Comments	5.50	6.00	1.00		Water Strike Details <table border="1"> <thead> <tr> <th>Water Strike</th> <th>Casing Depth</th> <th>Sealed At</th> <th>Rise To</th> <th>Time</th> <th>Comments</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments						
From (m)	To (m)	Hours	Comments																								
5.50	6.00	1.00																									
Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments																						
Standpipe Installation Details <table border="1"> <thead> <tr> <th>Date</th> <th>Tip Depth</th> <th>RZ Top</th> <th>RZ Base</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				Date	Tip Depth	RZ Top	RZ Base	Type						Groundwater Observations <table border="1"> <thead> <tr> <th>Date</th> <th>Hole Depth</th> <th>Casing Depth</th> <th>Depth to Water</th> <th>Comments</th> </tr> </thead> <tbody> <tr> <td>26/05/2004</td> <td>6.00</td> <td>4.50</td> <td>-</td> <td>Dry at end of day</td> </tr> </tbody> </table>				Date	Hole Depth	Casing Depth	Depth to Water	Comments	26/05/2004	6.00	4.50	-	Dry at end of day
Date	Tip Depth	RZ Top	RZ Base	Type																							
Date	Hole Depth	Casing Depth	Depth to Water	Comments																							
26/05/2004	6.00	4.50	-	Dry at end of day																							

REPORT NO: 9716

GEOTECHNICAL BORING RECORD

IGSL Ltd.

CONTRACT: Dublin Landfill Siting Study

BOREHOLE NO: CSA1
Sheet 1 of 1

CLIENT: Fingal County Council
ENGINEER: RPS-MCOS

GROUND LEVEL (mOD) 37.07
BOREHOLE DIAMETER (mm) 200
BOREHOLE DEPTH (m) 6.10
CASING DEPTH (m) 4.50

DATE STARTED: 01/06/2004
DATE COMPLETED: 02/06/2004

CO-ORDINATES: E 255251.76
N 317249.48

BORED BY: G Roberts

DEPTH (M)	DESCRIPTION	LEGEND	ELEVATION (mOD)	DEPTH (m)	SAMPLES			FIELD TEST RESULTS	BLOWS / RECOVERY	STAND PIPE DETAILS
					REF. NUMBER	SAMPLE TYPE	DEPTH (m)			
0	TOPSOIL									
0.20	Brown slightly sandy gravelly CLAY	[Pattern]	36.87	0.20	L1462	B	0.20			
					L1463					
1.00					L1464	B	1.00			
					L1465					
2.00	Stiff grey sandy gravelly CLAY	[Pattern]	35.07	2.00	L1466	B	2.00	C=19		
3.00	Very stiff grey slightly sandy gravelly CLAY with some cobbles	[Pattern]	34.07	3.00	L1467	B	3.00			
3.50					L1468	B	3.50			
4.00					L1469	B	4.00			
					L1470					
5.00					L1471	B	5.00	C=51/ 255mm		
6.10	End of Borehole at 6.10 m		30.97	6.10				C=25/ 35mm		

For inspection purposes only. Consent of copyright owner required for any other use.

Hard Strata Boring / Chiselling

From (m)	To (m)	Hours	Comments
2.60	3.00	1.50	
3.50	3.90	1.00	
4.60	5.00	1.50	
5.00	5.40	1.25	
5.90	6.10	1.75	

Water Strike Details

Water Strike	Casing Depth	Sealed At	Rise To	Time	Comments

Standpipe Installation Details

Date	Tip Depth	RZ Top	RZ Base	Type
02/06/2004	6.10	2.00	6.10	SP

Groundwater Observations

Date	Hole Depth	Casing Depth	Depth to Water	Comments
01/06/2004	0.00			Damp at end of day

Remarks: