



# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

PC9030

Borehole / Pit No

BH03

Location

Bantry Bay Inner Harbour

Sample No

1

Soil Description

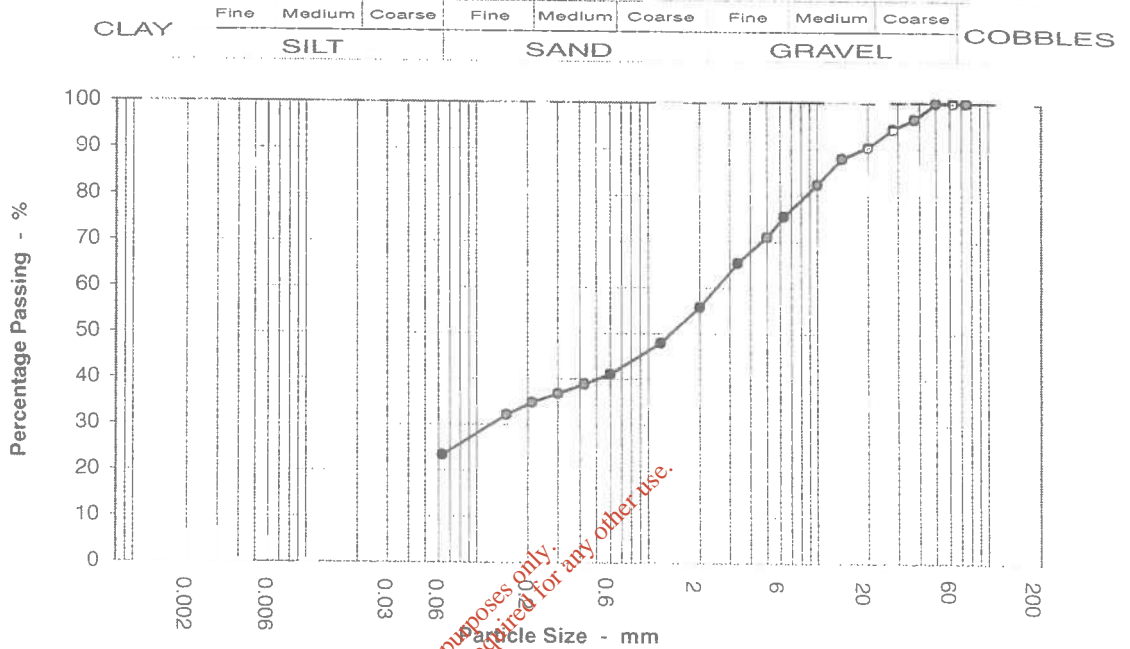
Very silty very sandy GRAVEL

Depth

0.00 m

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	97		
28	94		
20	90		
14	88		
10	82		
6.3	75		
5	71		
3.35	65		
2	56		
1.18	48		
0.6	41		
0.425	39		
0.3	37		
0.212	35		
0.15	32		
0.063	23		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	44.3
Sand	32.4
Silt & Clay	23.3

Grading Analysis	
D100	125.000
D60	2.608
D10	
Uniformity Coefficient	N/A

# PARTICLE SIZE DISTRIBUTION TEST

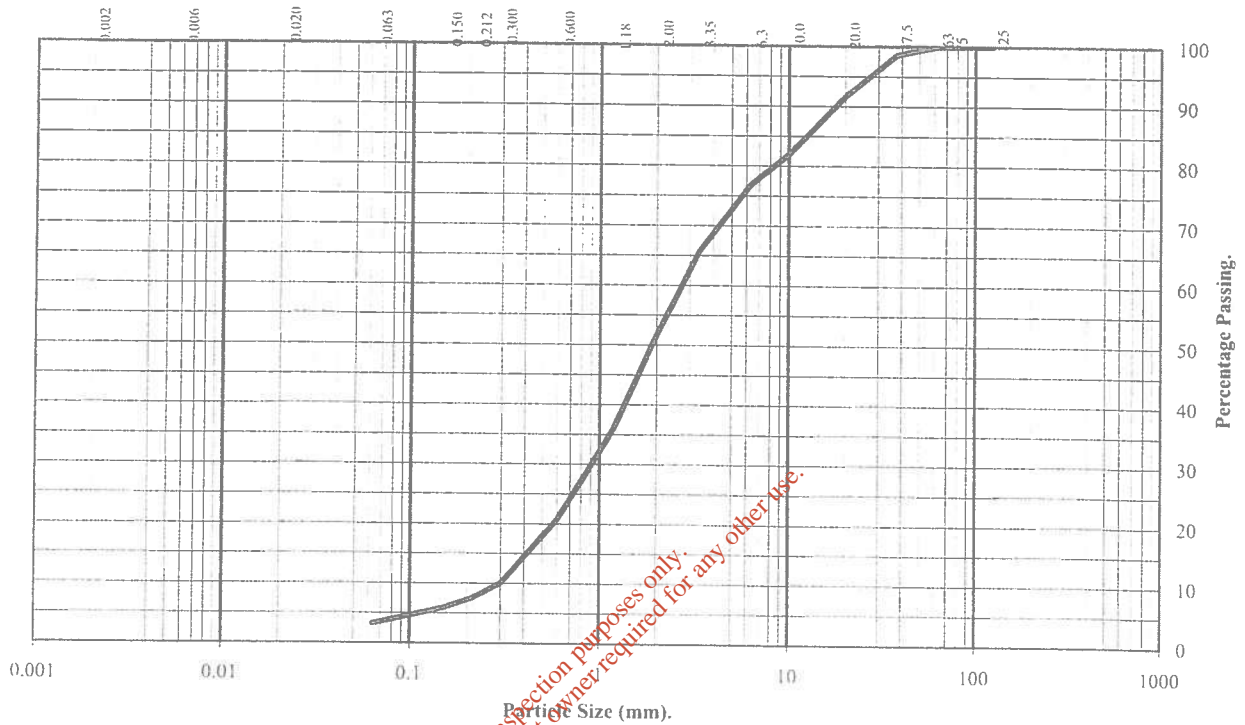
BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number:

**BH03**

Depth (m): **2.35**



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
38	99
20	92
10	82
6.3	77
3.35	66
2.00	52
1.18	36
0.60	21
0.30	10
0.21	8
0.15	6
0.06	3

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	0
Gravel	48
Sand	49
Silt and Clay	3

**Remarks:**

#- not determined

*Alan Walters* 14/01/10  
Checked by Date

*[Signature]* 14/01/10  
Approved by Date



**Bantry Inner Harbour**

Contract No.:  
**8847/09**  
Client Ref No.:  
**PC9030**





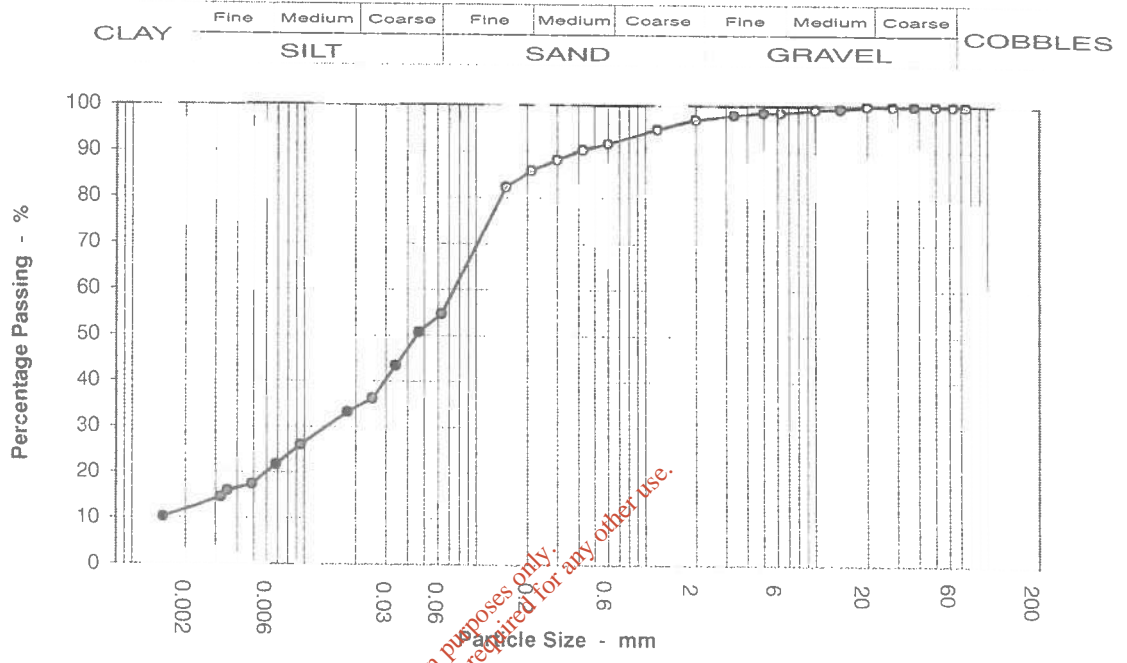
# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

<b>Job Ref</b>	<b>PC9030</b>
Borehole / Pit No	BH04
Sample No	1
Depth	0.00 m
Sample type	B

**Location**  
**Bantry Bay Inner Harbour**

**Soil Description**  
**Slightly gravelly sandy SILT**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.063	55
90	100	0.047	51
75	100	0.034	43
63	100	0.025	36
50	100	0.018	33
37.5	100	0.010	26
28	100	0.007	22
20	100	0.005	17
14	99	0.004	16
10	99	0.003	14
6.3	99	0.002	10
5	99		
3.35	98		
2	97		
1.18	95		
0.6	92		
0.425	90		
0.3	88		
0.212	86		
0.15	82		
0.063	55		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	3.0
Sand	43.1
Silt	42.5
Clay	11.4

Grading Analysis	
D100	125.000
D60	0.080
D10	
Uniformity Coefficient	N/A



# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref **PC9030**

Borehole / Pit No **BH04**

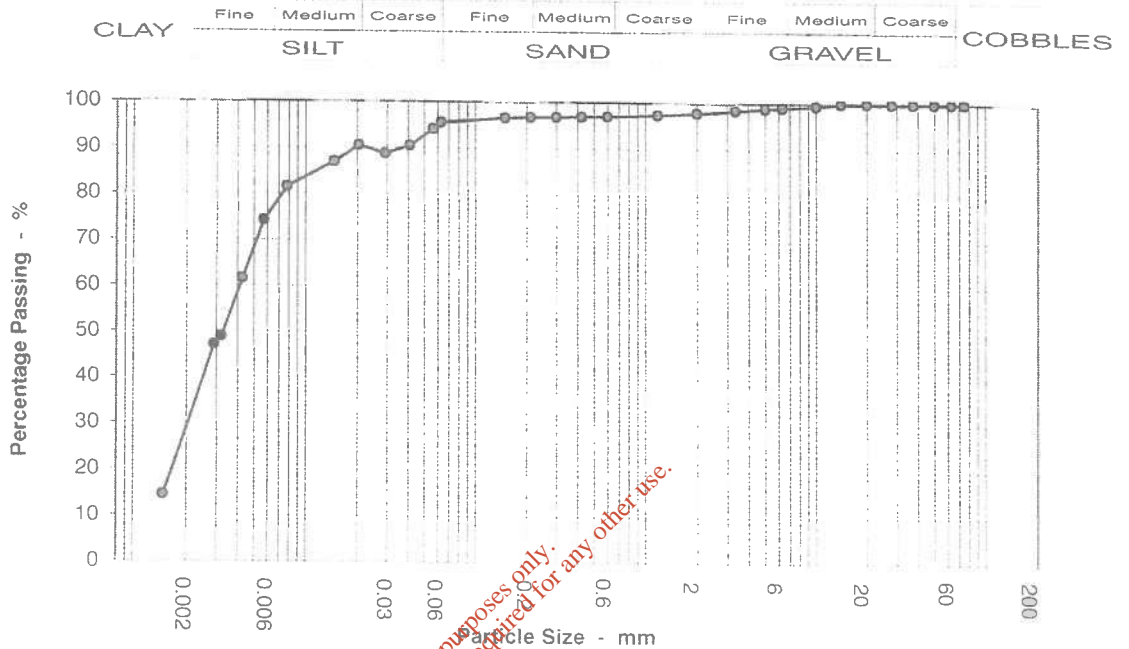
Location **Bantry Bay Inner Harbour**

Sample No **11**

Soil Description **Slightly gravelly slightly sandy CLAY**

Depth **2.50 m**

Sample type **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.057	94
90	100	0.041	91
75	100	0.029	89
63	100	0.021	91
50	100	0.015	87
37.5	100	0.008	81
28	100	0.006	74
20	100	0.004	62
14	100	0.003	49
10	100	0.003	47
6.3	99	0.002	14
5	99		
3.35	98		
2	98		
1.18	97		
0.6	97		
0.425	97		
0.3	97		
0.212	97		
0.15	97		
0.063	96		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	2.2
Sand	3.0
Silt	68.8
Clay	26.1

Grading Analysis	
D100	125.000
D60	0.004
D10	
Uniformity Coefficient	N/A



# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

**Job Ref**                      **PC9030**

Borehole / Pit No                      **BH05**

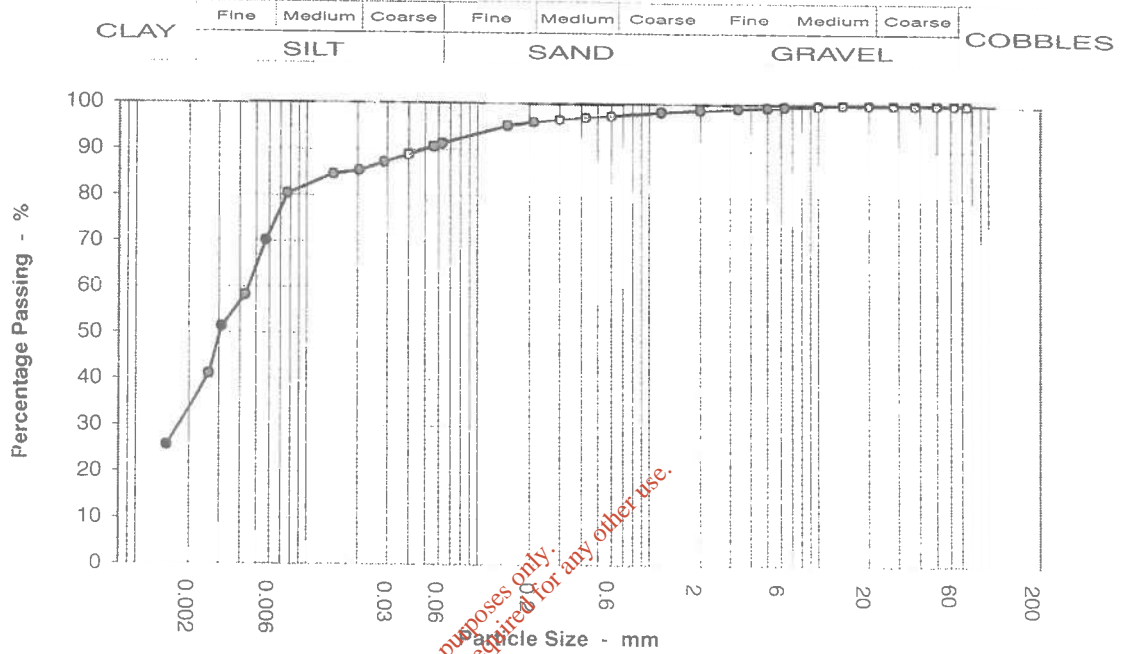
**Location**                                      **Bantry Bay Inner Harbour**

Sample No                                      **5**

**Soil Description**                              **Slightly gravelly slightly sandy SILT**

Depth    **1.50 m**

Sample type                                      **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.056	91
90	100	0.040	89
75	100	0.029	87
63	100	0.021	85
50	100	0.015	85
37.5	100	0.008	80
28	100	0.006	70
20	100	0.004	58
14	100	0.003	51
10	100	0.003	41
6.3	100	0.002	26
5	99		
3.35	99		
2	99		
1.18	98		
0.6	97		
0.425	97		
0.3	97		
0.212	96		
0.15	95		
0.063	91		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	1.3
Sand	7.8
Silt	58.3
Clay	32.6

Grading Analysis	
D100	125.000
D60	0.005
D10	
Uniformity Coefficient	N/A





# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref **PC9030**

Borehole / Pit No **BH05**

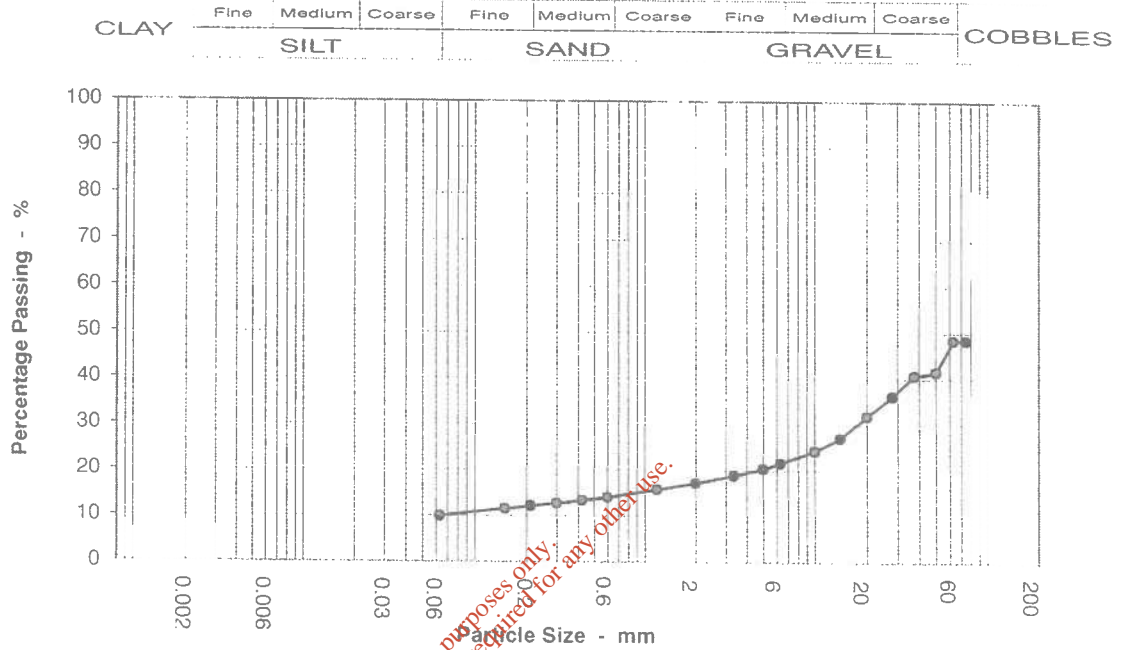
Location **Bantry Bay Inner Harbour**

Sample No **11**

Soil Description **COBBLES with much gravel**

Depth **3.50 m**

Sample type **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	48		
90	48		
75	48		
63	48		
50	42		
37.5	41		
28	36		
20	32		
14	27		
10	24		
6.3	22		
5	20		
3.35	19		
2	17		
1.18	16		
0.6	14		
0.425	13		
0.3	13		
0.212	12		
0.15	11		
0.063	10		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	53.2
Gravel	29.6
Sand	7.3
Silt & Clay	9.9

Grading Analysis	
D100	125.000
D60	125.000
D10	0.069
Uniformity Coefficient	1805



# PARTICLE SIZE DISTRIBUTION

**BS 1377 : Part 2 : 1990 : Clause 9**

**Job Ref**                      **PC9030**

Borehole / Pit No              **BH06**

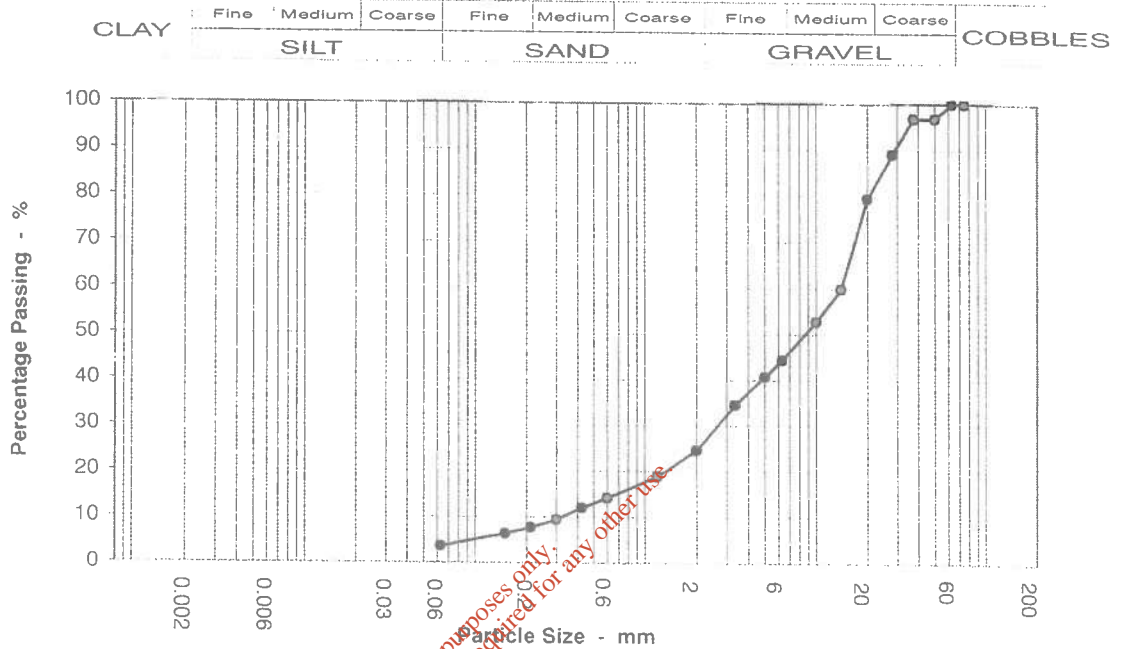
Location                              **Bantry Bay Inner Harbour**

Sample No                              **1**

Soil Description                      **Slightly silty very sandy GRAVEL**

Depth                                      **0.50 m**

Sample type                              **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	97		
37.5	97		
28	89		
20	79		
14	60		
10	53		
6.3	44		
5	41		
3.35	35		
2	25		
1.18	19		
0.6	14		
0.425	12		
0.3	9		
0.212	8		
0.15	6		
0.063	4		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.7
Gravel	74.6
Sand	21.0
Silt & Clay	3.6

Grading Analysis	
D100	125.000
D60	14.054
D10	0.327
Uniformity Coefficient	43

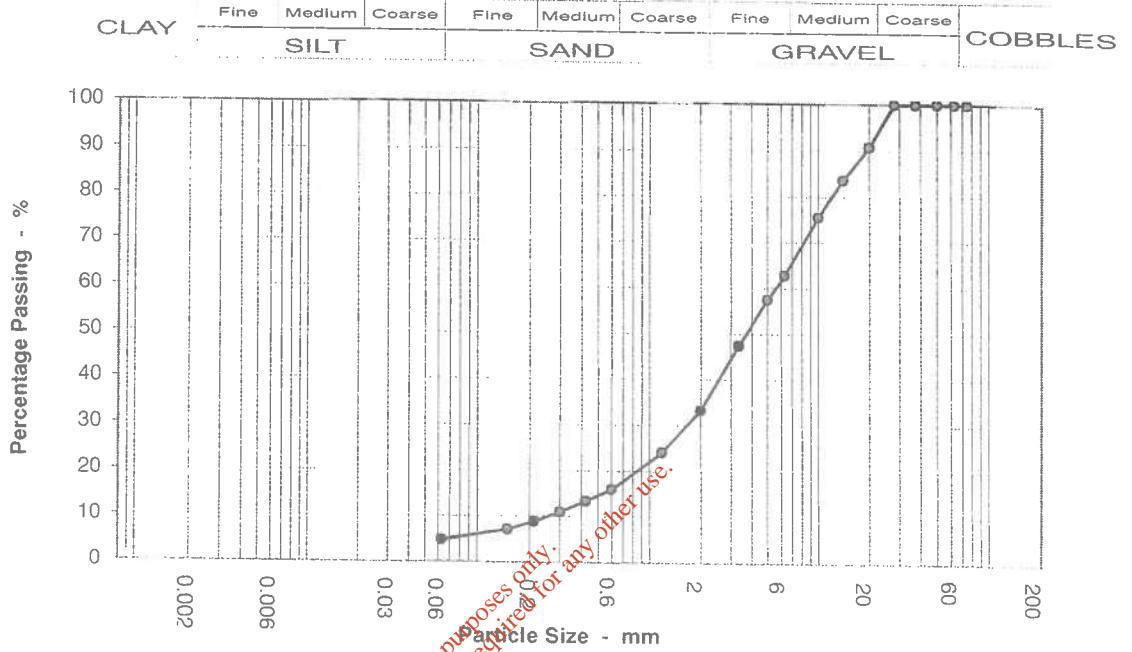


# PARTICLE SIZE DISTRIBUTION

**BS 1377 : Part 2 : 1990 : Clause 9**

<b>Job Ref</b>	<b>PC9030</b>
Borehole / Pit No	BH07
Sample No	1
Depth	0.50 m
Sample type	B

Location	<b>Bantry Bay Inner Harbour</b>
Soil Description	<b>Silty very sandy GRAVEL</b>



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	91		
14	84		
10	75		
6.3	63		
5	57		
3.35	47		
2	33		
1.18	24		
0.6	16		
0.425	13		
0.3	11		
0.212	9		
0.15	7		
0.063	5		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	66.8
Sand	28.4
Silt & Clay	4.8

Grading Analysis	
D100	125.000
D60	5.645
D10	0.262
Uniformity Coefficient	22





# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

**Job Ref**

**PC9030**

Borehole / Pit No

BH07

Location

**Bantry Bay Inner Harbour**

Sample No

10

Soil Description

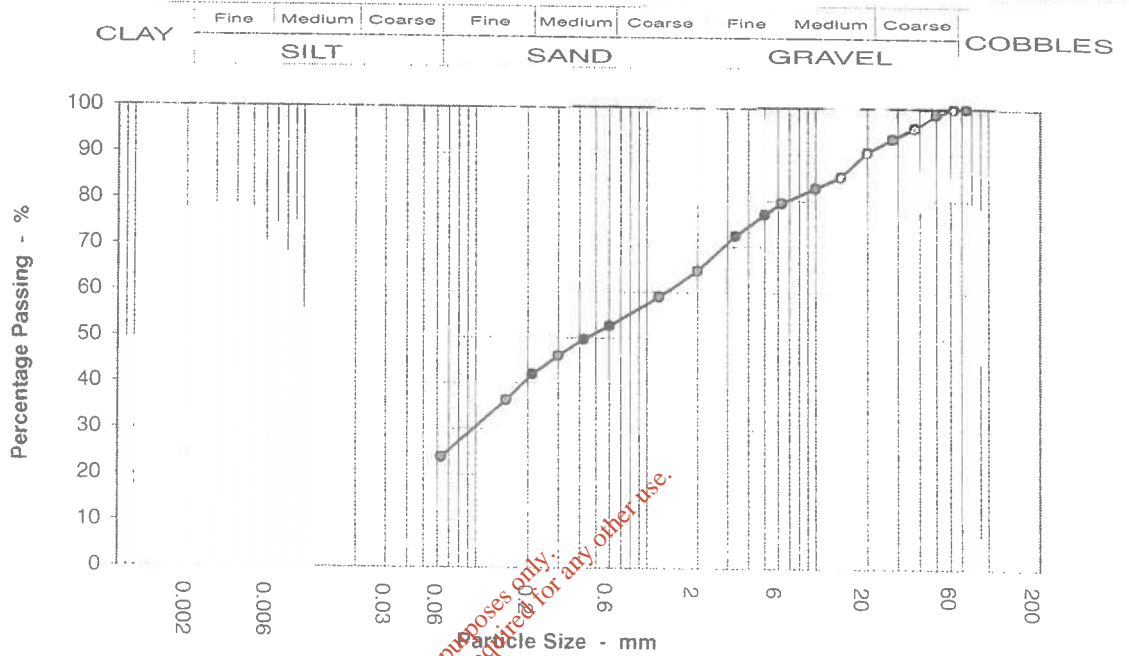
Very silty very gravelly SAND

Depth

3.50 m

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	99		
37.5	96		
28	93		
20	90		
14	85		
10	83		
6.3	79		
5	77		
3.35	72		
2	65		
1.18	59		
0.6	52		
0.425	50		
0.3	46		
0.212	42		
0.15	36		
0.063	24		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.3
Gravel	35.2
Sand	40.8
Silt & Clay	23.7

Grading Analysis	
D100	125.000
D60	1.345
D10	
Uniformity Coefficient	N/A



# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

PC9030

Borehole / Pit No

BH07

Location

Bantry Bay Inner Harbour

Sample No

17

Soil Description

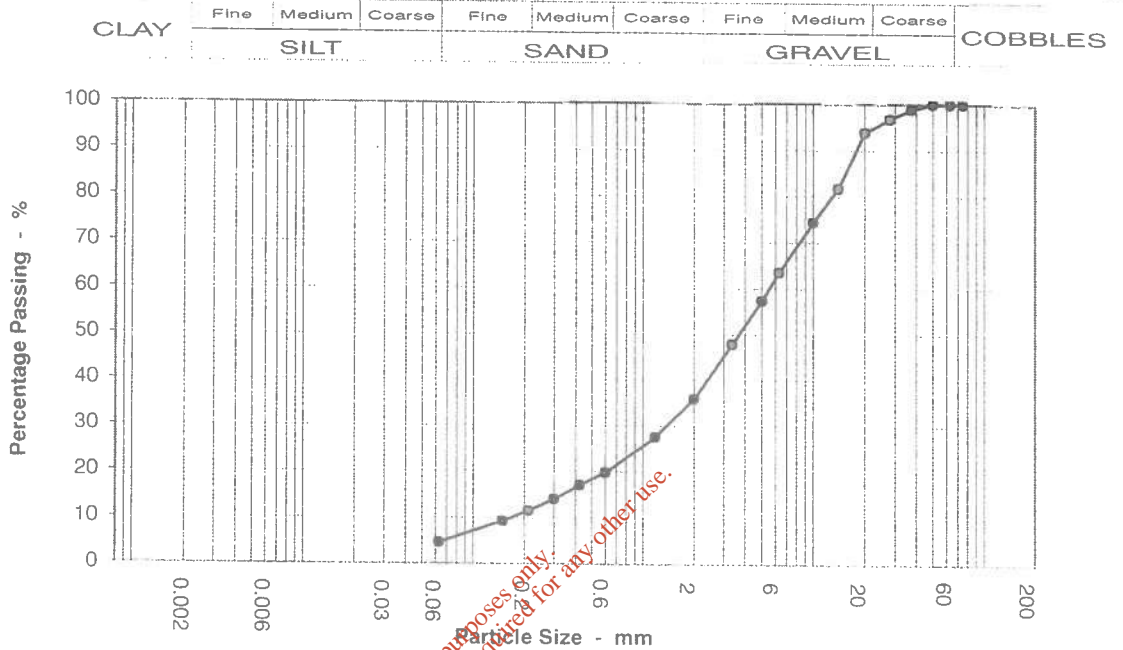
Silty very sandy GRAVEL

Depth

6.00 m

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	99		
28	97		
20	94		
14	82		
10	74		
6.3	63		
5	57		
3.35	48		
2	36		
1.18	27		
0.6	20		
0.425	17		
0.3	14		
0.212	11		
0.15	9		
0.063	5		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	64.2
Sand	31.3
Silt & Clay	4.6

Grading Analysis	
D100	125.000
D60	5.575
D10	0.174
Uniformity Coefficient	32

# PARTICLE SIZE DISTRIBUTION TEST

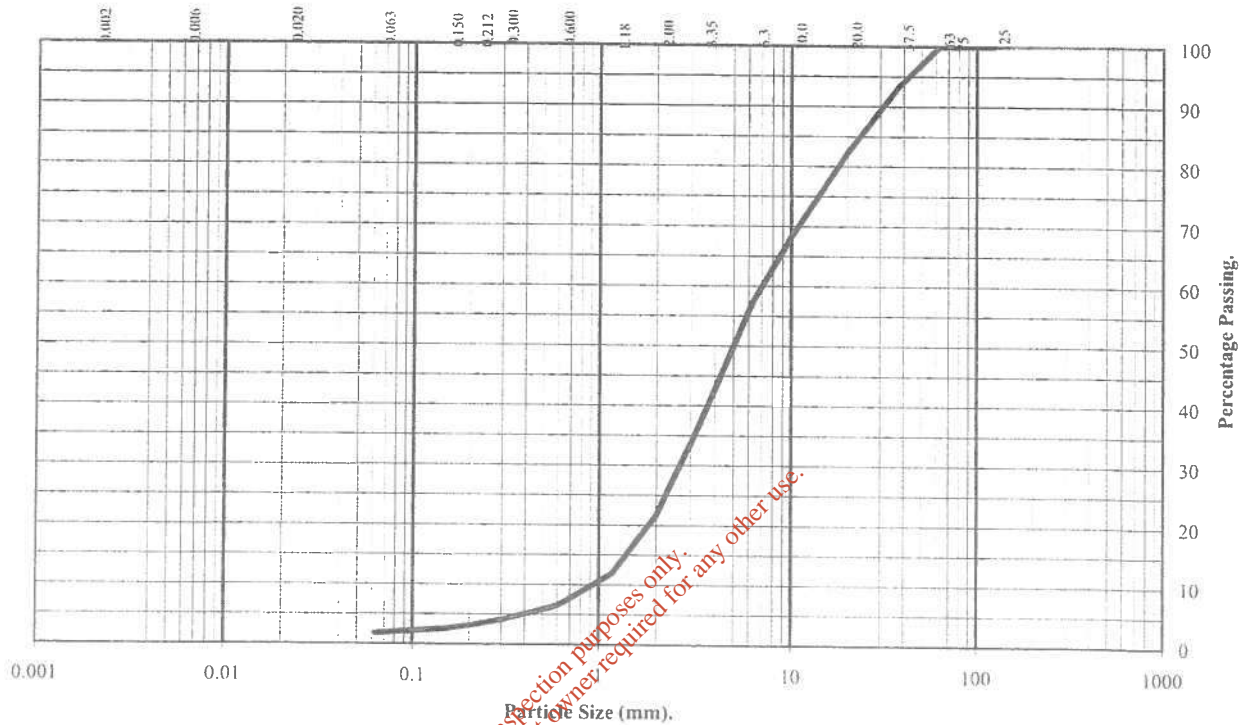
BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number:

**BH08**

Depth (m): **0.00**



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BS Test Sieve	Percentage Passing
125	100
75	100
63	100
38	93
20	82
10	68
6.3	57
3.35	37
2.00	22
1.18	12
0.60	6
0.30	4
0.21	3
0.15	3
0.06	2

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	0
Gravel	78
Sand	20
Silt and Clay	2

**Remarks:**

#- not determined

*Alan Walker* 14/01/10  
Checked by Date

*[Signature]* 14/01/10  
Approved by Date



**Bantry Inner Harbour**

Contract No.:  
**8847/09**  
Client Ref No:  
**PC9030**





# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

**Job Ref**                      **PC9030**

Borehole / Pit No                      BH08

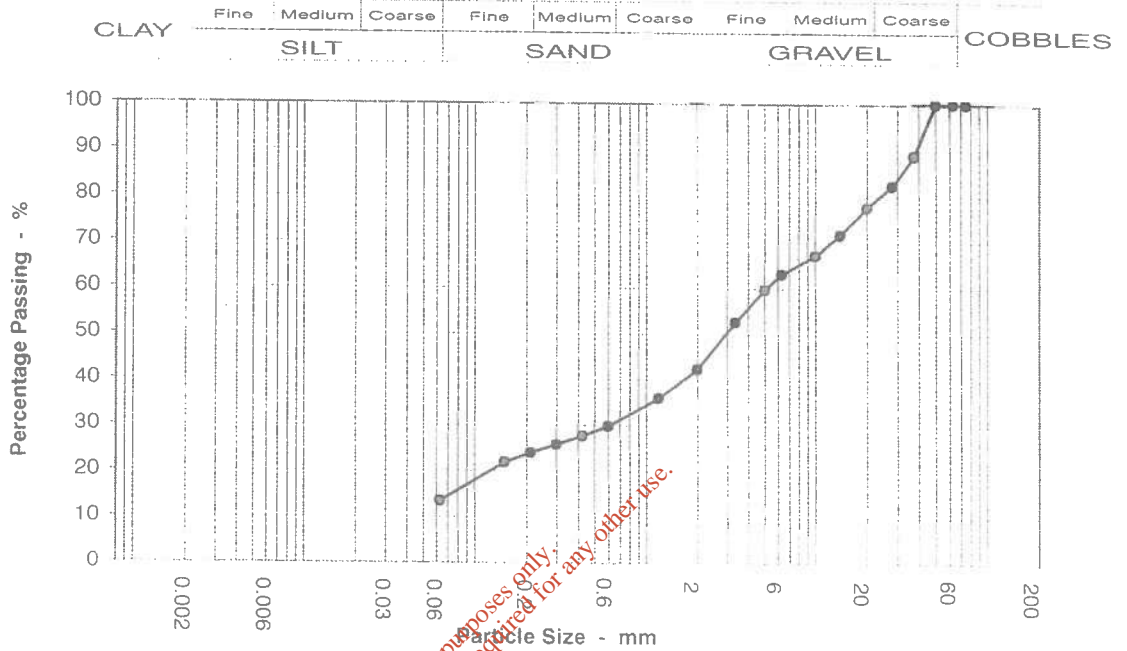
**Location**                                      **Bantry Bay Inner Harbour**

Sample No                                      5

**Soil Description**                              **Silty very sandy GRAVEL**

Depth    1.00      m

Sample type                                      B



Sieving		Sedimentation	
Particle Size (mm)	% Passing	Particle Size (mm)	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	89		
28	82		
20	78		
14	72		
10	67		
6.3	63		
5	60		
3.35	53		
2	42		
1.18	36		
0.6	30		
0.425	28		
0.3	26		
0.212	24		
0.15	22		
0.063	13		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	57.7
Sand	28.9
Silt & Clay	13.5

Grading Analysis	
D100	125.000
D60	5.138
D10	
Uniformity Coefficient	N/A



# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

PC9030

Borehole / Pit No

BH08

Location

Bantry Bay Inner Harbour

Sample No

19

Soil Description

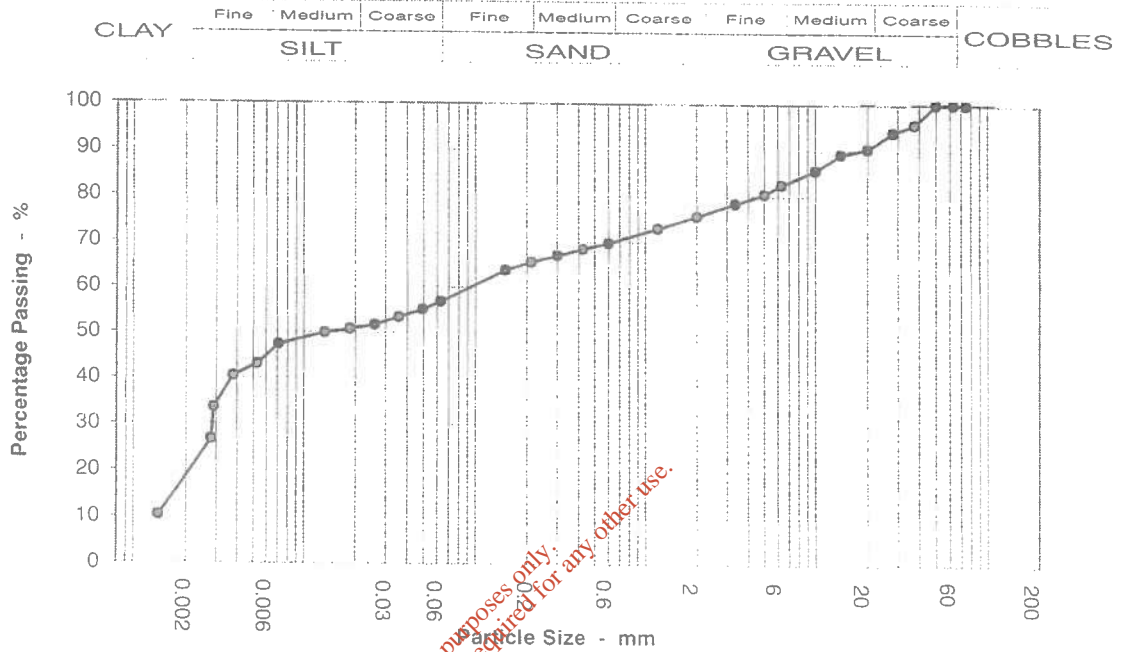
Slightly sandy slightly gravelly organic SILT

Depth

5.00 m

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.049	55
90	100	0.036	53
75	100	0.026	52
63	100	0.019	51
50	100	0.013	50
37.5	96	0.007	47
28	94	0.005	43
20	90	0.004	40
14	89	0.003	34
10	86	0.003	27
6.3	83	0.001	10
5	80		
3.35	78		
2	76		
1.18	73		
0.6	70		
0.425	68		
0.3	67		
0.212	65		
0.15	64		
0.063	57		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	24.4
Sand	19.3
Silt	39.0
Clay	17.3

Grading Analysis	
D100	125.000
D60	0.104
D10	
Uniformity Coefficient	N/A





# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

**Job Ref**                      **PC9030**

Borehole / Pit No              BH09

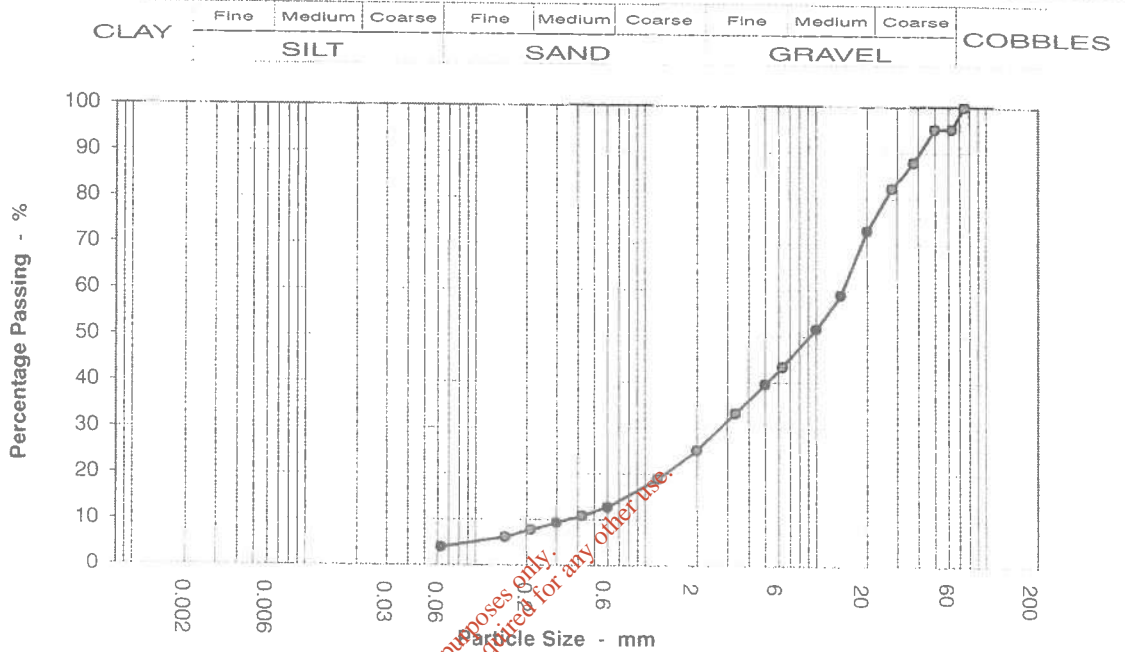
Location                              **Bantry Bay Inner Harbour**

Sample No                              1

Soil Description                      Slightly silty very sandy GRAVEL with some cobbles

Depth                                      0.00              m

Sample type                              B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	95		
50	95		
37.5	88		
28	82		
20	73		
14	59		
10	51		
6.3	43		
5	40		
3.35	33		
2	25		
1.18	19		
0.6	13		
0.425	11		
0.3	9		
0.212	8		
0.15	6		
0.063	4		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	4.8
Gravel	70.0
Sand	21.3
Silt & Clay	3.9

Grading Analysis	
D100	125.000
D60	14.484
D10	0.357
Uniformity Coefficient	41

# PARTICLE SIZE DISTRIBUTION TEST

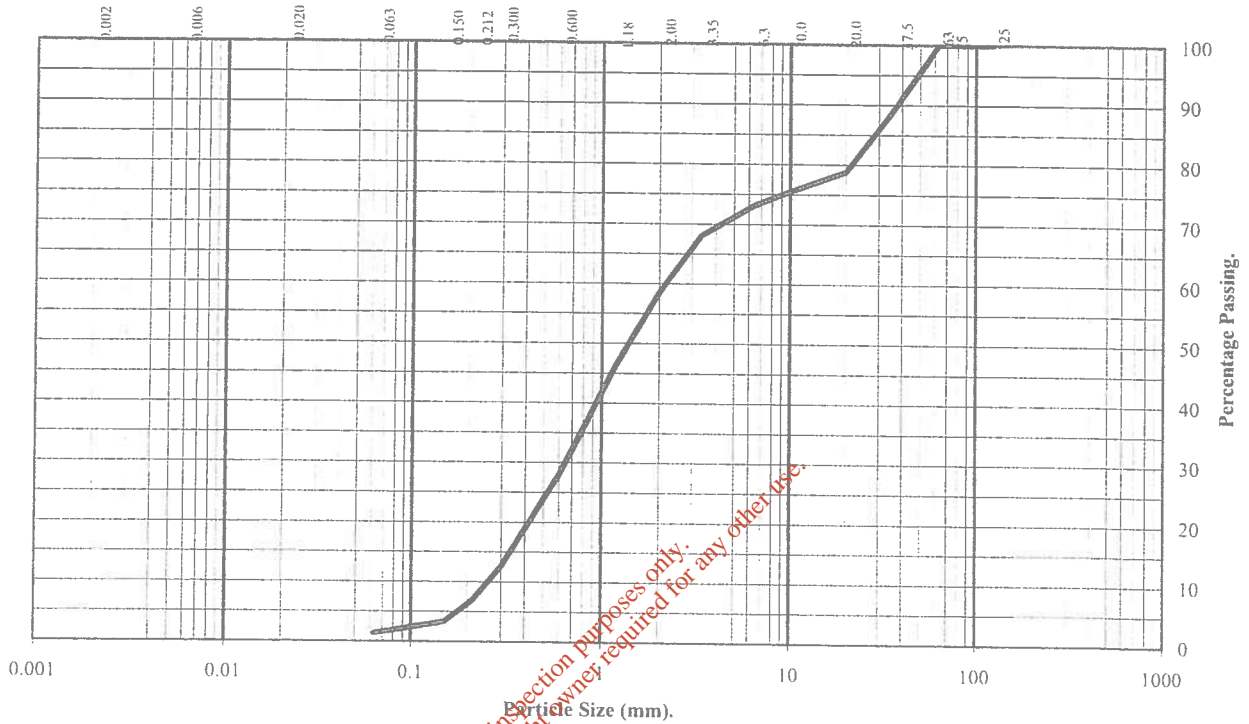
BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number:

BH11

Depth (m): 0.00



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BS Test Sieve	Percentage Passing
125	100
75	100
63	100
38	90
20	79
10	75
6.3	73
3.35	68
2.00	59
1.18	46
0.60	28
0.30	13
0.21	7
0.15	3
0.06	1

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	0
Gravel	41
Sand	58
Silt and Clay	1

**Remarks:**

#- not determined

*Alan Walters* 14/01/10  
Checked by Date

*[Signature]* 14/01/10  
Approved by Date



Bantry Inner Harbour

Contract No.: 8847/09  
Client Ref No: PC9030





# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref **PC9030**

Borehole / Pit No **BH11**

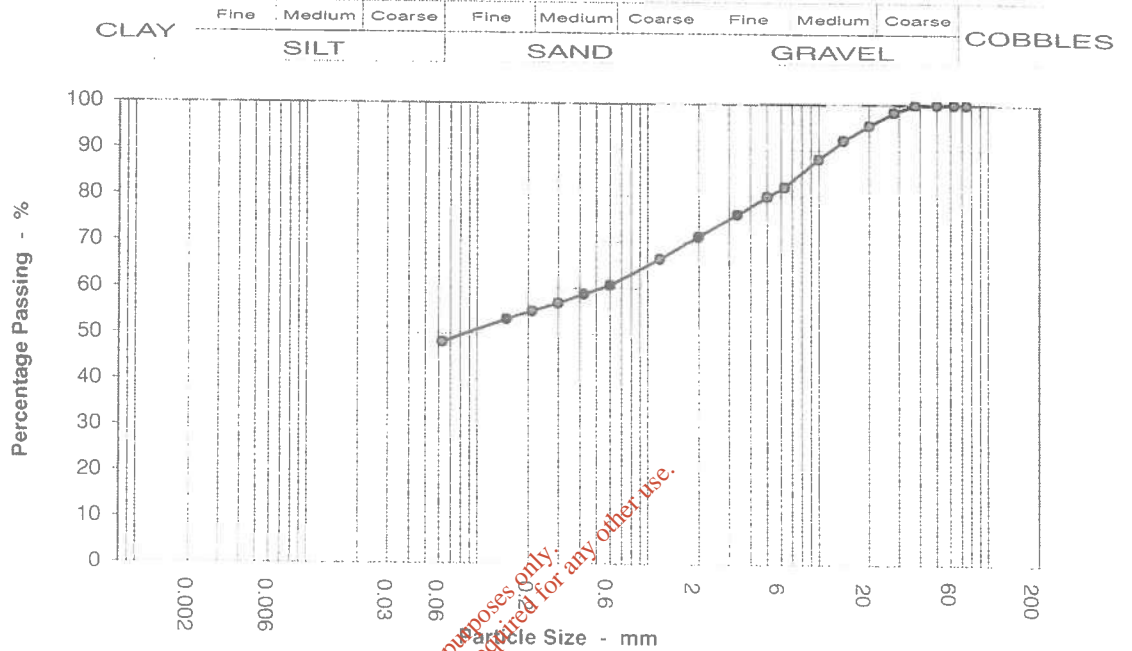
Location **Bantry Bay Inner Harbour**

Sample No **5**

Soil Description **Slightly sandy slightly gravelly CLAY**

Depth **1.00 m**

Sample type **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	98		
20	95		
14	92		
10	88		
6.3	82		
5	80		
3.35	76		
2	71		
1.18	66		
0.6	61		
0.425	59		
0.3	57		
0.212	55		
0.15	53		
0.063	48		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	28.8
Sand	23.0
Silt & Clay	48.1

Grading Analysis	
D100	125.000
D60	0.547
D10	
Uniformity Coefficient	N/A



# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

PC9030

Borehole / Pit No

BH11

Location

Bantry Bay Inner Harbour

Sample No

20

Soil Description

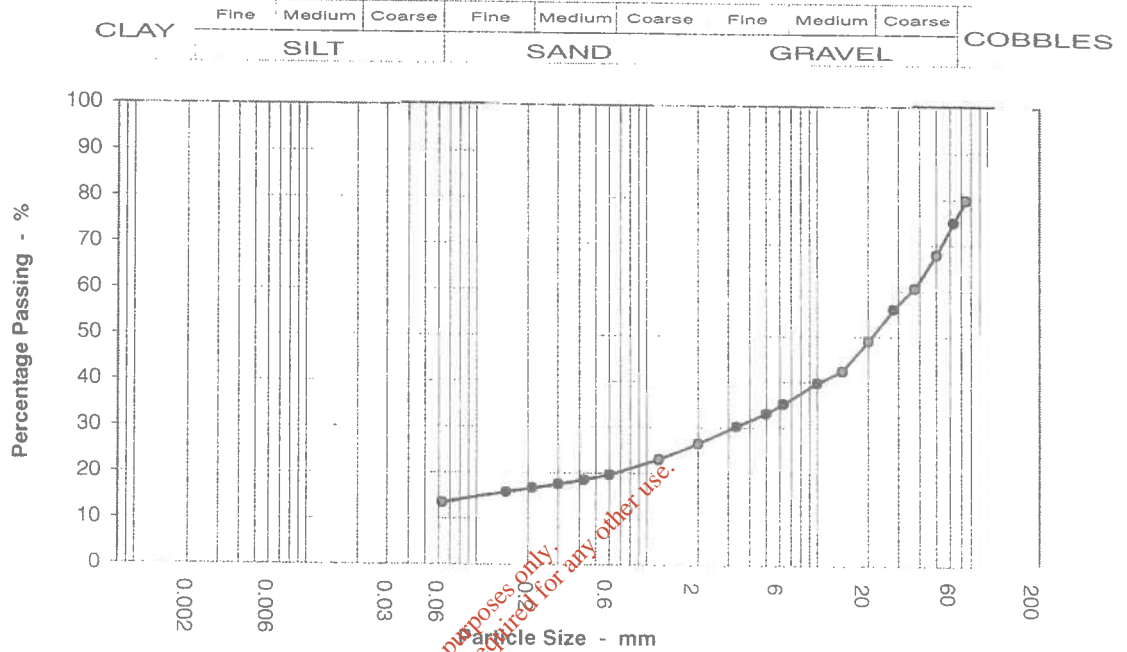
Sandy clayey GRAVEL with many cobbles

Depth

6.00 m

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	80		
63	75		
50	68		
37.5	60		
28	56		
20	49		
14	42		
10	40		
6.3	35		
5	33		
3.35	30		
2	26		
1.18	23		
0.6	20		
0.425	18		
0.3	17		
0.212	17		
0.15	16		
0.063	13		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	26.8
Gravel	46.7
Sand	13.0
Silt & Clay	13.4

Grading Analysis	
D100	125.000
D60	36.490
D10	
Uniformity Coefficient	N/A



# PARTICLE SIZE DISTRIBUTION

**BS 1377 : Part 2 : 1990 : Clause 9**

**Job Ref**                      **PC9030**

Borehole / Pit No                      BH11

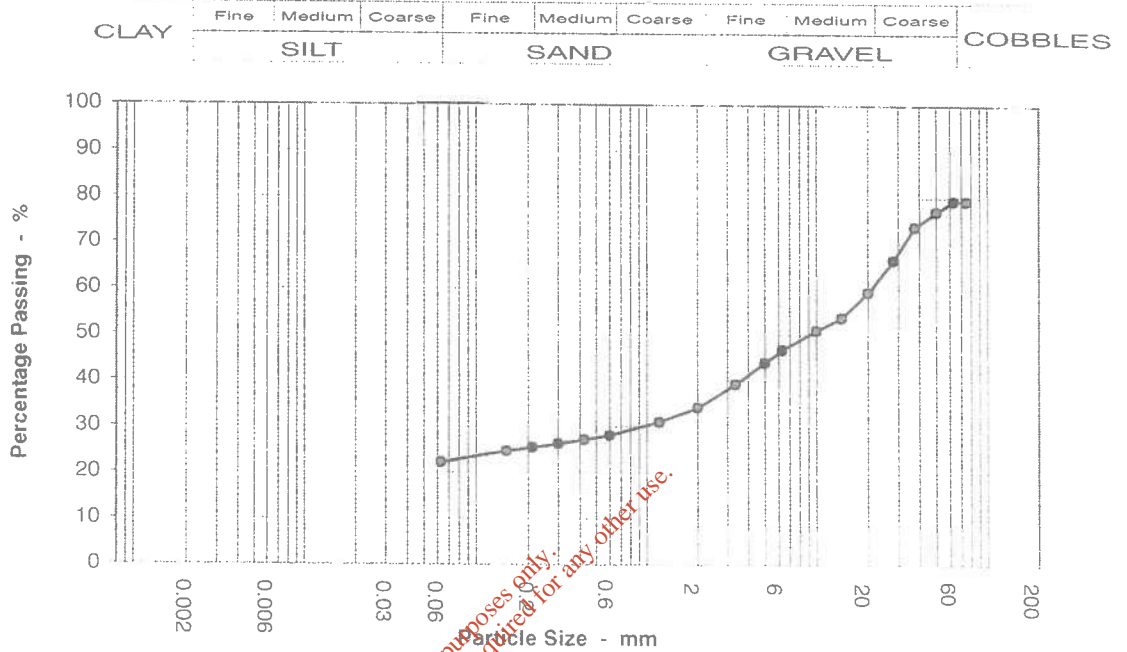
Location                                      **Bantry Bay Inner Harbour**

Sample No                                      23

Soil Description                              **Sandy very clayey GRAVEL with many cobbles**

Depth    7.00                      m

Sample type                                      B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	88		
75	79		
63	79		
50	77		
37.5	73		
28	66		
20	59		
14	54		
10	51		
6.3	47		
5	44		
3.35	39		
2	34		
1.18	31		
0.6	28		
0.425	27		
0.3	26		
0.212	25		
0.15	25		
0.063	22		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	21.4
Gravel	44.5
Sand	12.0
Silt & Clay	22.1

Grading Analysis	
D100	125.000
D60	20.915
D10	
Uniformity Coefficient	N/A



# PARTICLE SIZE DISTRIBUTION TEST

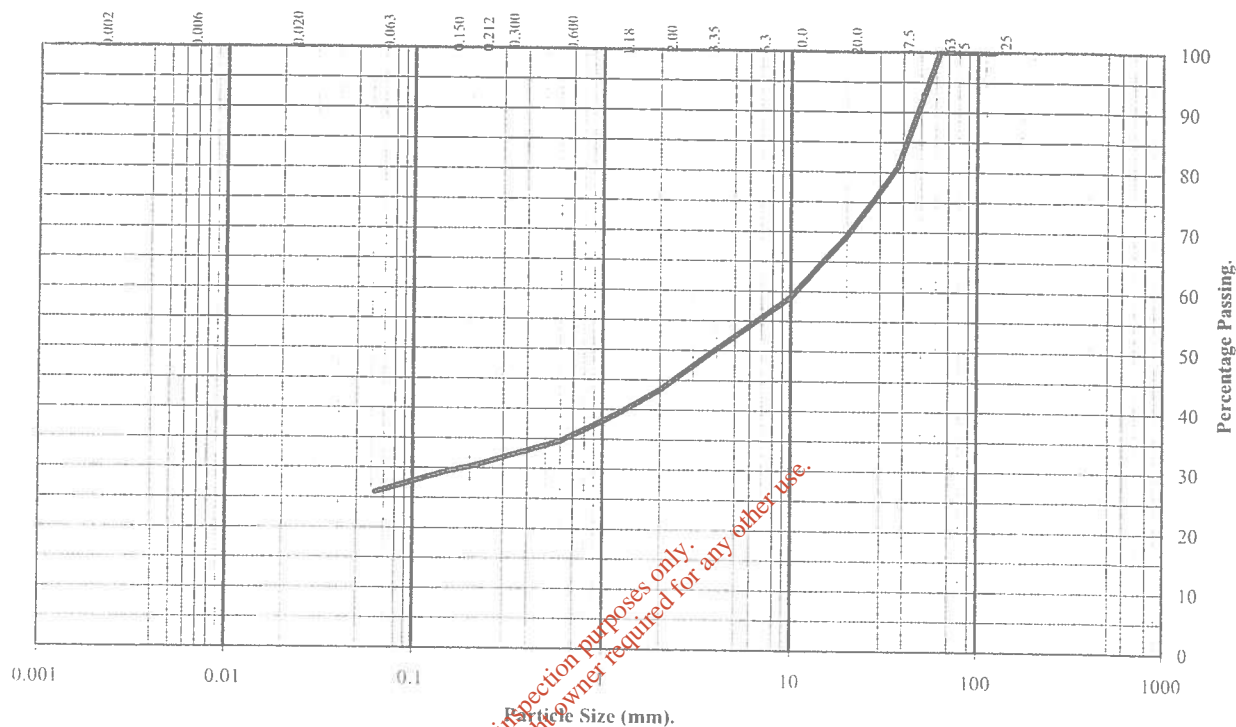
BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number:

**BH11**

Depth (m): **7.00**



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BS Test Sieve	Percentage Passing
125	100
75	100
63	100
38	81
20	69
10	59
6.3	55
3.35	49
2.00	43
1.18	39
0.60	35
0.30	32
0.21	30
0.15	29
0.06	26

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	0
Gravel	57
Sand	17
Silt and Clay	26

**Remarks:**

#- not determined

*Alan Walker* 14/01/10  
Checked by Date

*[Signature]* 14/01/10  
Approved by Date



**Bantry Inner Harbour**

Contract No.:  
**8847/09**  
Client Ref No:  
**PC9030**





# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

PC9030

Borehole / Pit No

BH12

Location

Bantry Bay Inner Harbour

Sample No

2

Soil Description

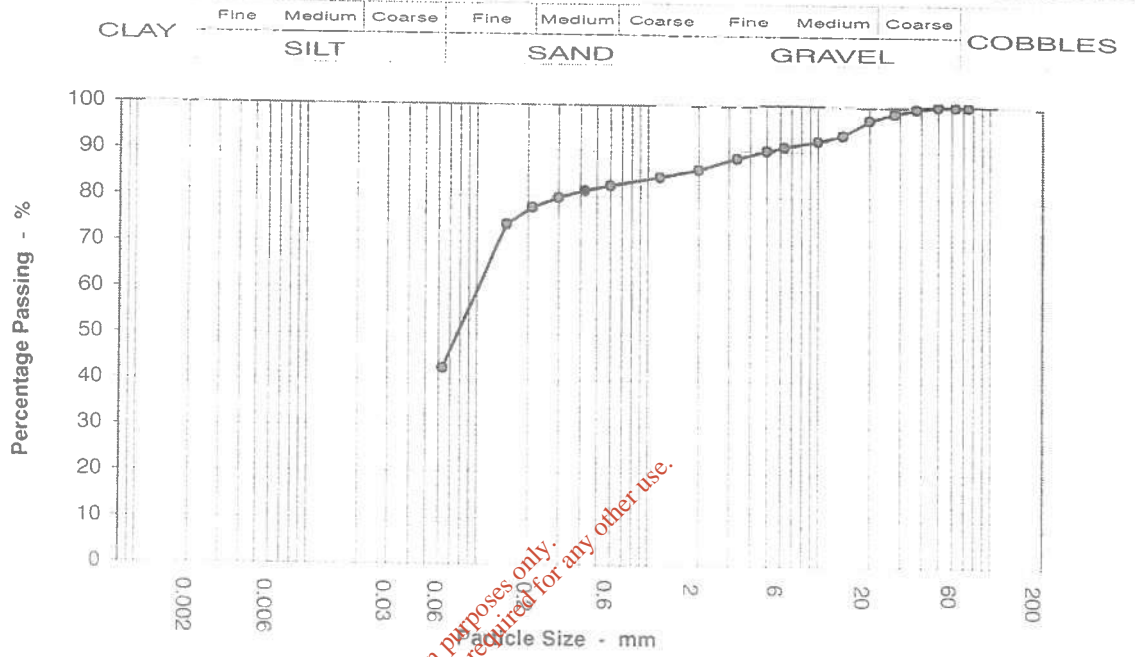
Slightly gravelly sandy SILT

Depth

1.50 m

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	99		
28	98		
20	97		
14	94		
10	92		
6.3	91		
5	90		
3.35	88		
2	86		
1.18	84		
0.6	82		
0.425	81		
0.3	80		
0.212	78		
0.15	74		
0.063	42		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	14.1
Sand	43.4
Silt & Clay	42.5

Grading Analysis	
D100	125.000
D60	0.112
D10	
Uniformity Coefficient	N/A



# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

PC9030

Borehole / Pit No

BH12

Location

Bantry Bay Inner Harbour

Sample No

10

Soil Description

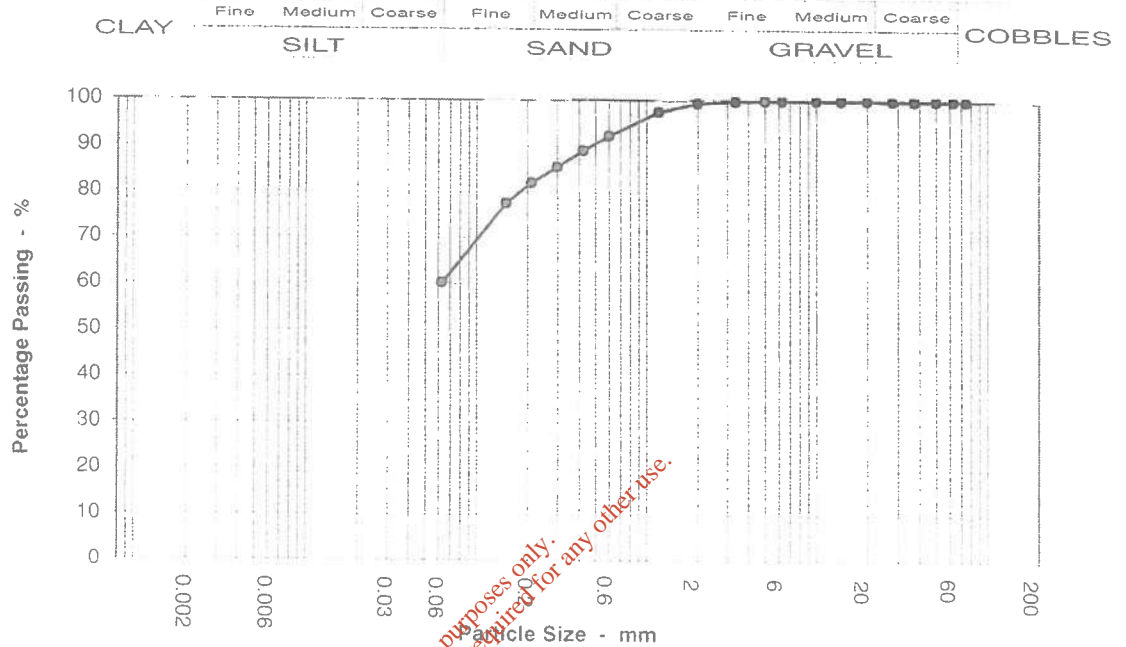
Sandy organic SILT

Depth

3.50 m

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	97		
0.6	92		
0.425	89		
0.3	85		
0.212	82		
0.15	77		
0.063	60		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	0.6
Sand	39.2
Silt & Clay	60.2

Grading Analysis	
D100	125.000
D60	
D10	
Uniformity Coefficient	N/A

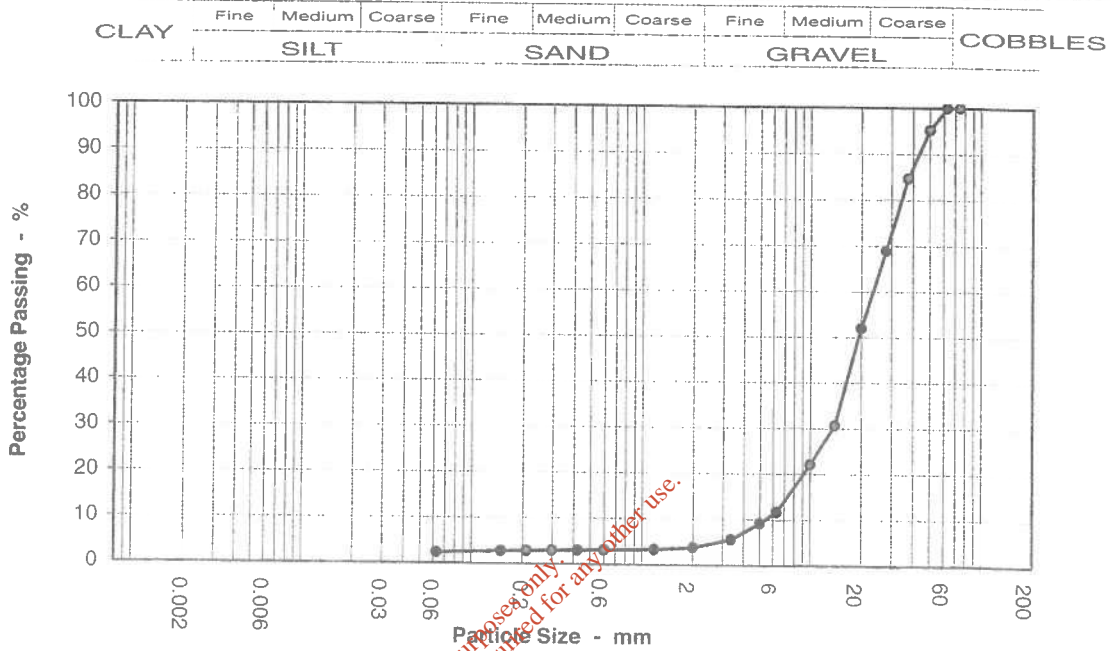


# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

<b>Job Ref</b>	<b>PC9030</b>
Borehole / Pit No	BH12
Sample No	18
Depth	5.50 m
Sample type	B

Location	<b>Bantry Bay Inner Harbour</b>
Soil Description	<b>Slightly sandy slightly silty GRAVEL</b>



Seiving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	95		
37.5	85		
28	69		
20	52		
14	31		
10	22		
6.3	12		
5	9		
3.35	6		
2	4		
1.18	3		
0.6	3		
0.425	3		
0.3	3		
0.212	3		
0.15	3		
0.063	2		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	1.1
Gravel	95.1
Sand	1.5
Silt & Clay	2.3

Grading Analysis	
D100	63.000
D60	23.802
D10	5.424
Uniformity Coefficient	4



# PARTICLE SIZE DISTRIBUTION

**BS 1377 : Part 2 : 1990 : Clause 9**

**Job Ref** **PC9030**

**Borehole / Pit No** **BH12**

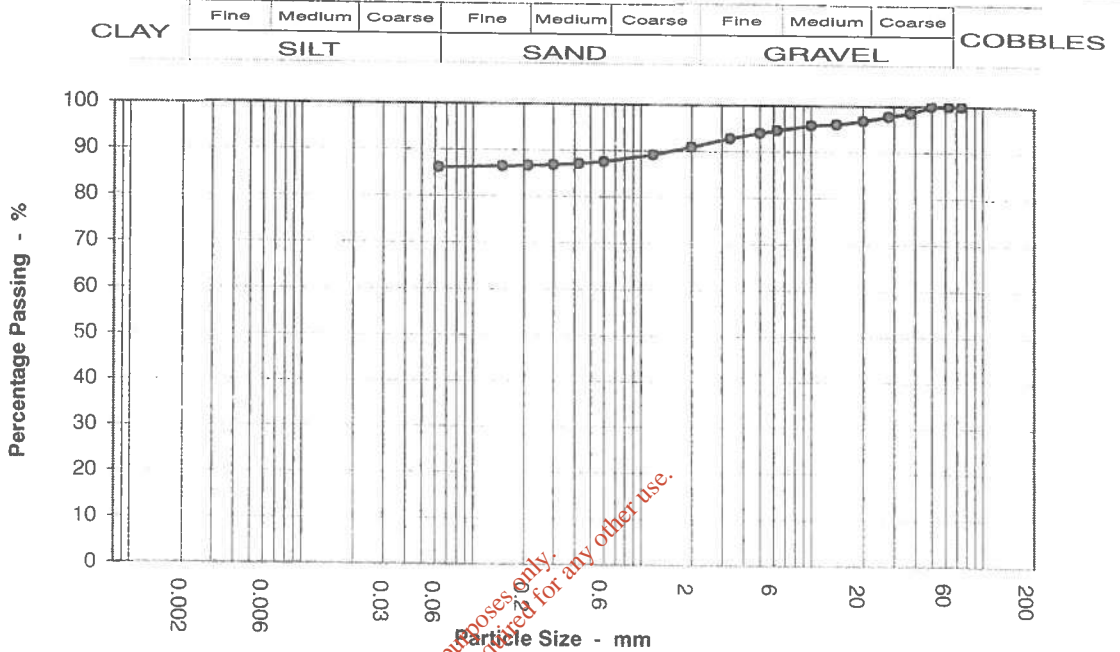
**Location** **Bantry Bay Inner Harbour**

**Sample No** **19**

**Soil Description** **Slightly sandy slightly gravelly SILT**

**Depth** **7.00 m**

**Sample type** **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	99		
28	98		
20	97		
14	96		
10	96		
6.3	95		
5	94		
3.35	93		
2	91		
1.18	89		
0.6	88		
0.425	87		
0.3	87		
0.212	87		
0.15	86		
0.063	86		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	9.1
Sand	4.7
Silt & Clay	86.2

Grading Analysis	
D100	125.000
D60	
D10	
Uniformity Coefficient	N/A





# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

**Job Ref**                    **PC9030**

Borehole / Pit No            **BH13**

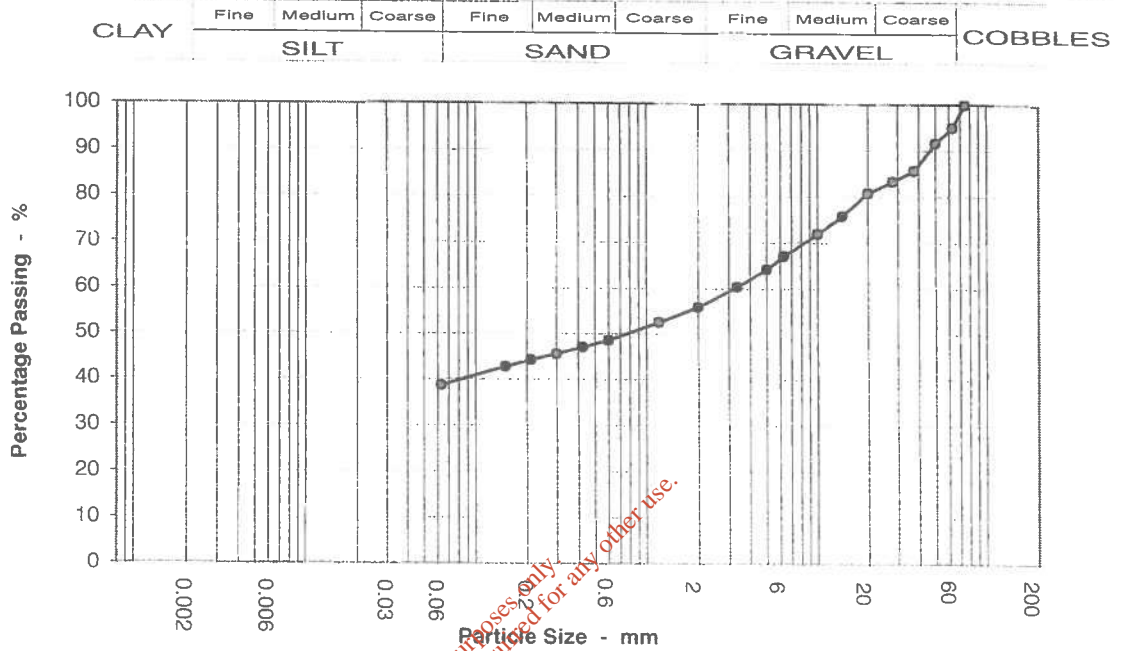
**Location**                    **Bantry Bay Inner Harbour**

Sample No                    **2**

**Soil Description**            **Slightly sandy gravelly CLAY with some cobbles**

Depth                         **1.50 m**

Sample type                   **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	95		
50	92		
37.5	86		
28	83		
20	81		
14	76		
10	72		
6.3	67		
5	64		
3.35	60		
2	56		
1.18	52		
0.6	48		
0.425	47		
0.3	45		
0.212	44		
0.15	43		
0.063	39		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	5.8
Gravel	38.4
Sand	17.2
Silt & Clay	38.6

Grading Analysis	
D100	125.000
D60	3.265
D10	
Uniformity Coefficient	N/A

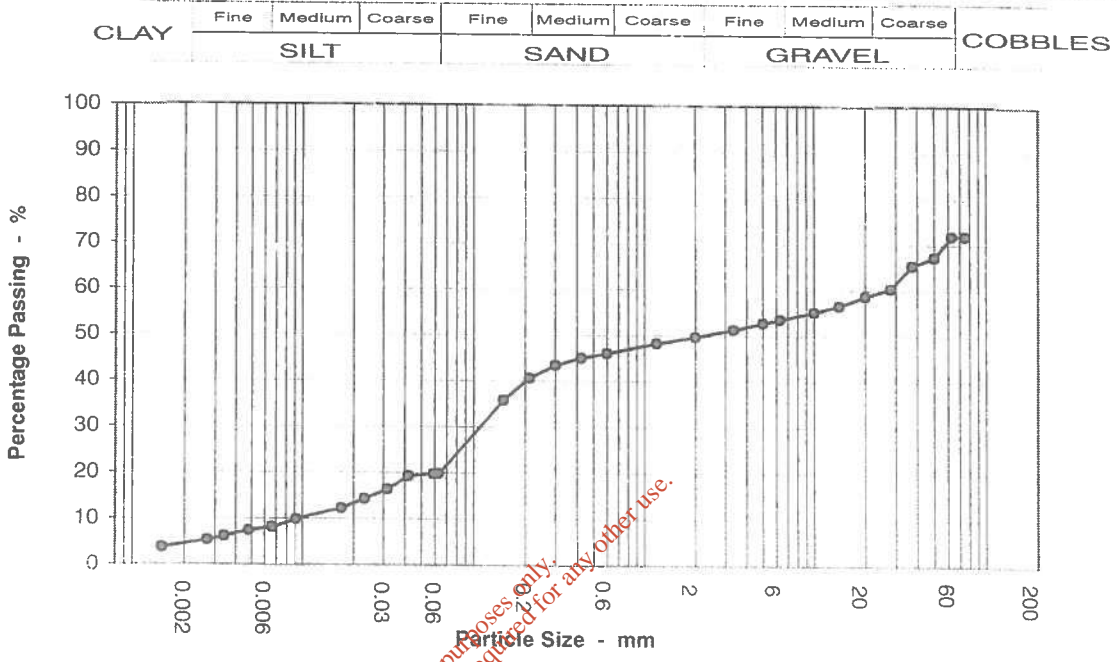


# PARTICLE SIZE DISTRIBUTION

**BS 1377 : Part 2 : 1990 : Clause 9**

<b>Job Ref</b>	<b>PC9030</b>
Borehole / Pit No	BH14
Sample No	2
Depth	1.50 m
Sample type	B

Location	<b>Bantry Bay Inner Harbour</b>
Soil Description	Very silty very gravelly SAND with many cobbles



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.059	20
90	72	0.042	19
75	72	0.032	16
63	72	0.023	14
50	67	0.017	12
37.5	65	0.009	10
28	60	0.007	8
20	59	0.005	7
14	57	0.003	6
10	55	0.003	5
6.3	54	0.002	4
5	53		
3.35	51		
2	50		
1.18	48		
0.6	46		
0.425	45		
0.3	43		
0.212	41		
0.15	36		
0.063	20		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	29.2
Gravel	21.1
Sand	30.0
Silt	15.4
Clay	4.4

Grading Analysis	
D100	125.000
D60	26.577
D10	0.010
Uniformity Coefficient	2756

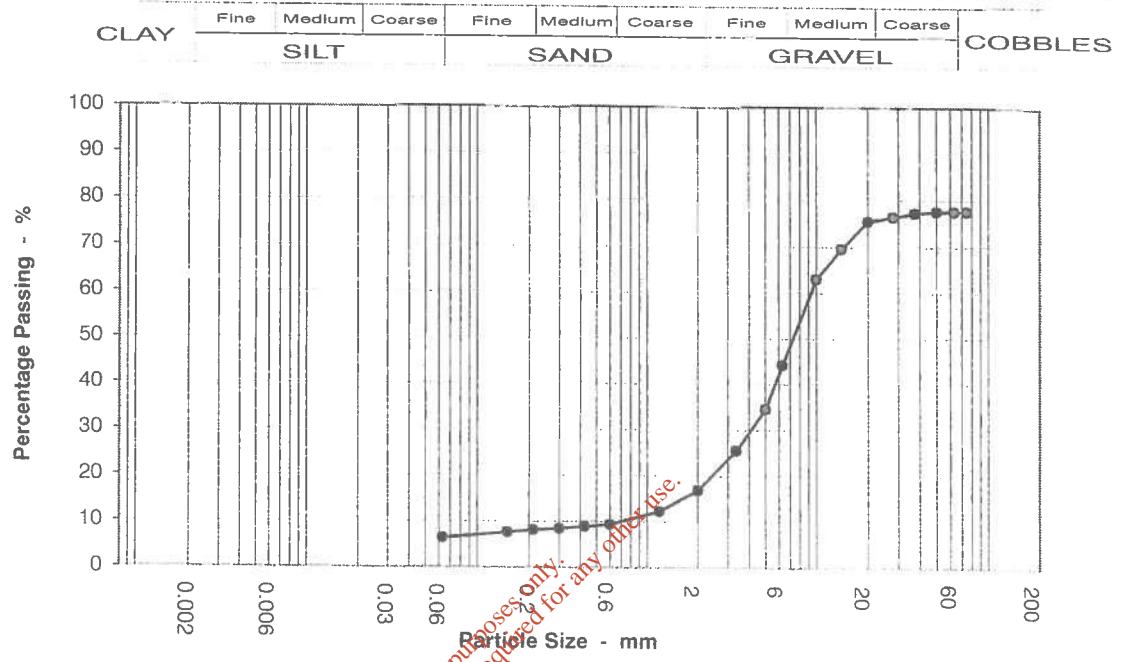


# PARTICLE SIZE DISTRIBUTION

**BS 1377 : Part 2 : 1990 : Clause 9**

<b>Job Ref</b>	<b>PC9030</b>
Borehole / Pit No	BH14
Sample No	4
Depth	3.50 m
Sample type	B

Location	<b>Bantry Bay Inner Harbour</b>
Soil Description	Silty sandy GRAVEL with many cobbles



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	78		
90	78		
75	78		
63	78		
50	78		
37.5	77		
28	76		
20	75		
14	69		
10	63		
6.3	44		
5	35		
3.35	25		
2	17		
1.18	12		
0.6	9		
0.425	9		
0.3	8		
0.212	8		
0.15	8		
0.063	6		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	22.5
Gravel	60.7
Sand	10.5
Silt & Clay	6.3

Grading Analysis	
D100	125.000
D60	9.439
D10	0.742
Uniformity Coefficient	13



# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref **PC9030**

Borehole / Pit No **BH14**

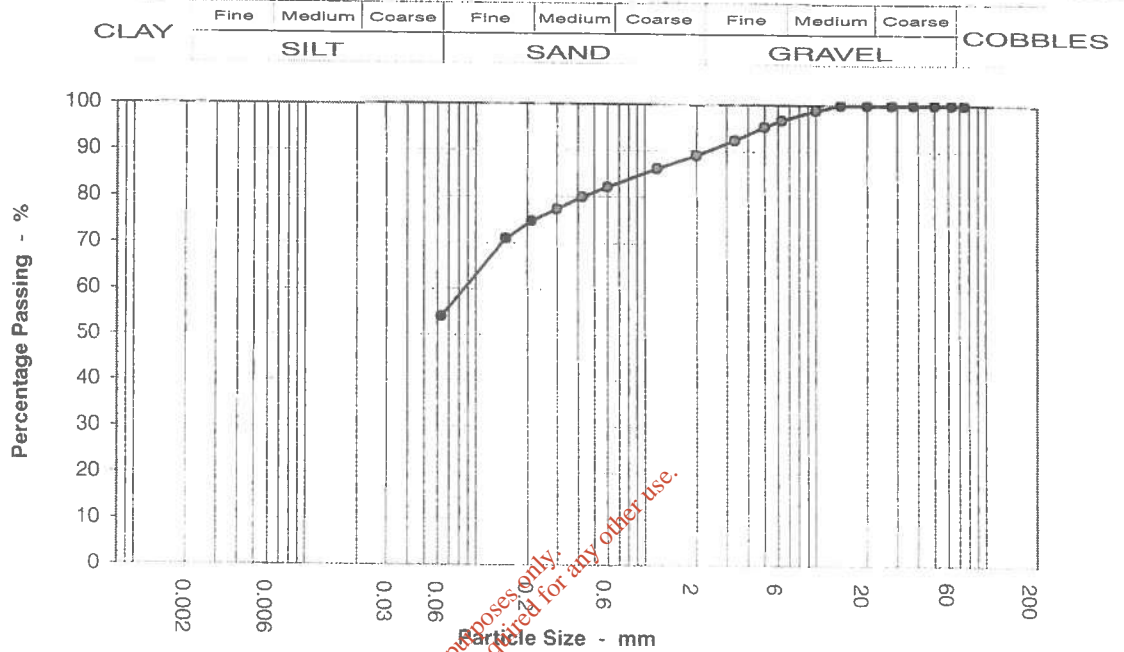
Location **Bantry Bay Inner Harbour**

Sample No **9**

Soil Description **Slightly gravelly sandy organic SILT**

Depth **6.00 m**

Sample type **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	97		
5	95		
3.35	92		
2	89		
1.18	86		
0.6	82		
0.425	80		
0.3	77		
0.212	75		
0.15	71		
0.063	54		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	11.0
Sand	35.1
Silt & Clay	53.9

Grading Analysis	
D100	125.000
D60	0.094
D10	
Uniformity Coefficient	N/A



# PARTICLE SIZE DISTRIBUTION

**BS 1377 : Part 2 : 1990 : Clause 9**

**Job Ref**                      **PC9030**

Borehole / Pit No            **BH14**

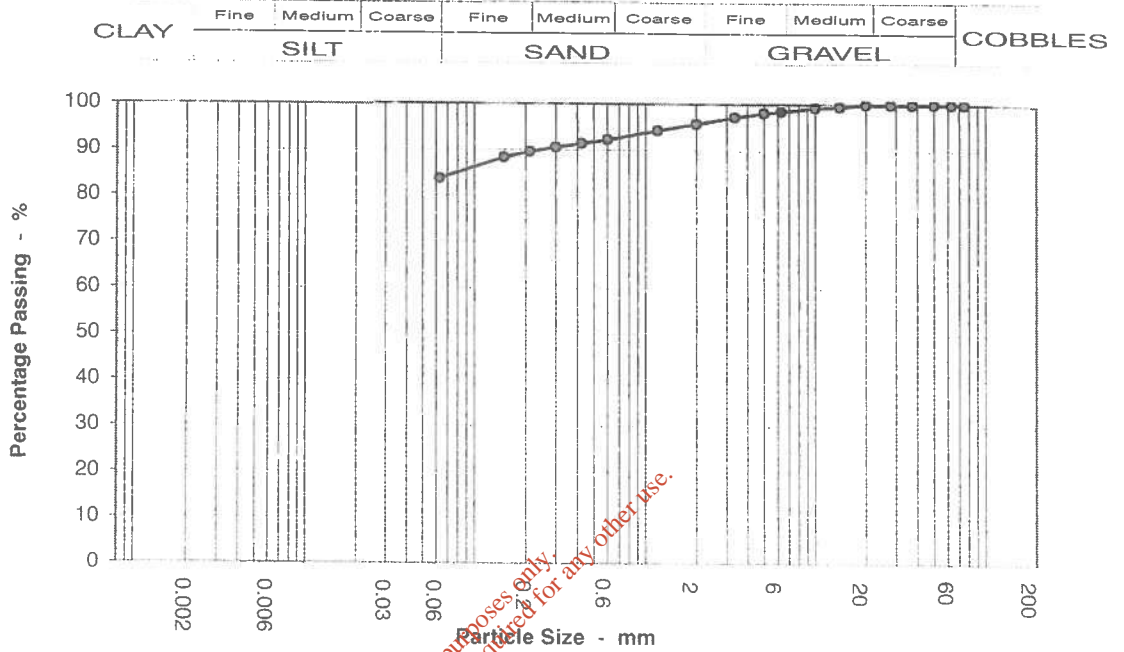
Location                                      **Bantry Bay Inner Harbour**

Sample No                                      **17**

Soil Description                              **Slightly gravelly slightly sandy CLAY**

Depth    **9.00      m**

Sample type                                      **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	99		
6.3	98		
5	98		
3.35	97		
2	96		
1.18	94		
0.6	92		
0.425	91		
0.3	91		
0.212	90		
0.15	88		
0.063	84		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	4.3
Sand	12.1
Silt & Clay	83.7

Grading Analysis	
D100	125.000
D60	
D10	
Uniformity Coefficient	N/A





# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref **PC9030**

Borehole / Pit No **BH15**

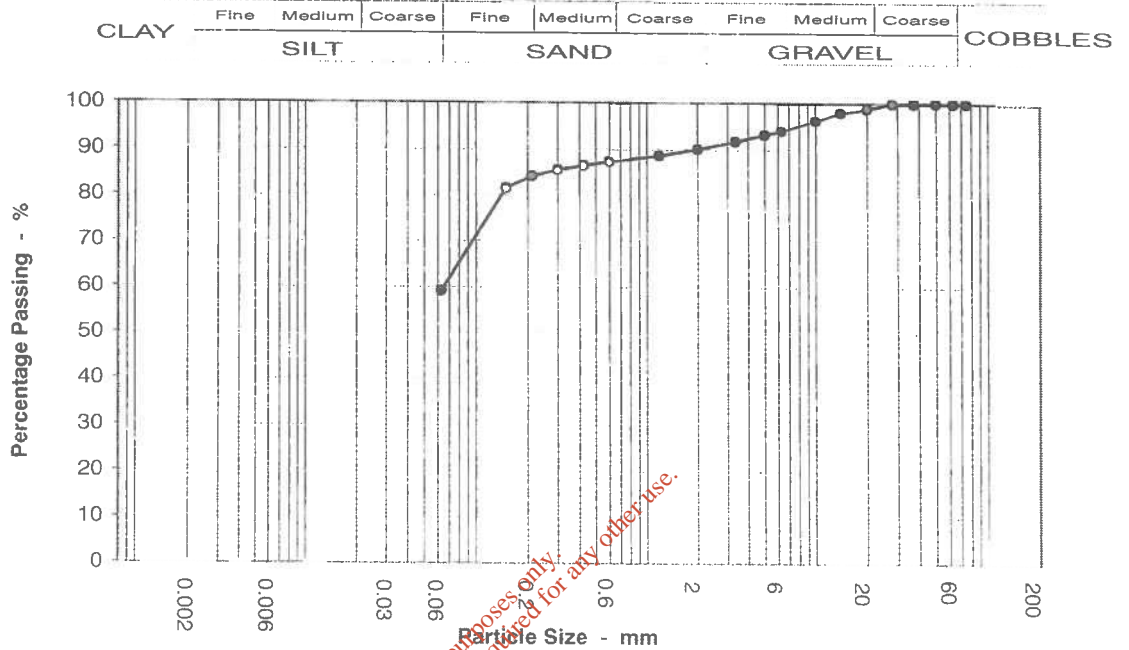
Location **Bantry Bay Inner Harbour**

Sample No **3**

Soil Description **Slightly gravelly slightly sandy SILT**

Depth **4.00 m**

Sample type **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	98		
10	96		
6.3	94		
5	93		
3.35	92		
2	90		
1.18	89		
0.6	87		
0.425	86		
0.3	85		
0.212	84		
0.15	81		
0.063	59		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	10.0
Sand	31.0
Silt & Clay	59.0

Grading Analysis	
D100	125.000
D60	0.067
D10	
Uniformity Coefficient	N/A



# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

PC9030

Borehole / Pit No

BH15

Location

Bantry Bay Inner Harbour

Sample No

20

Soil Description

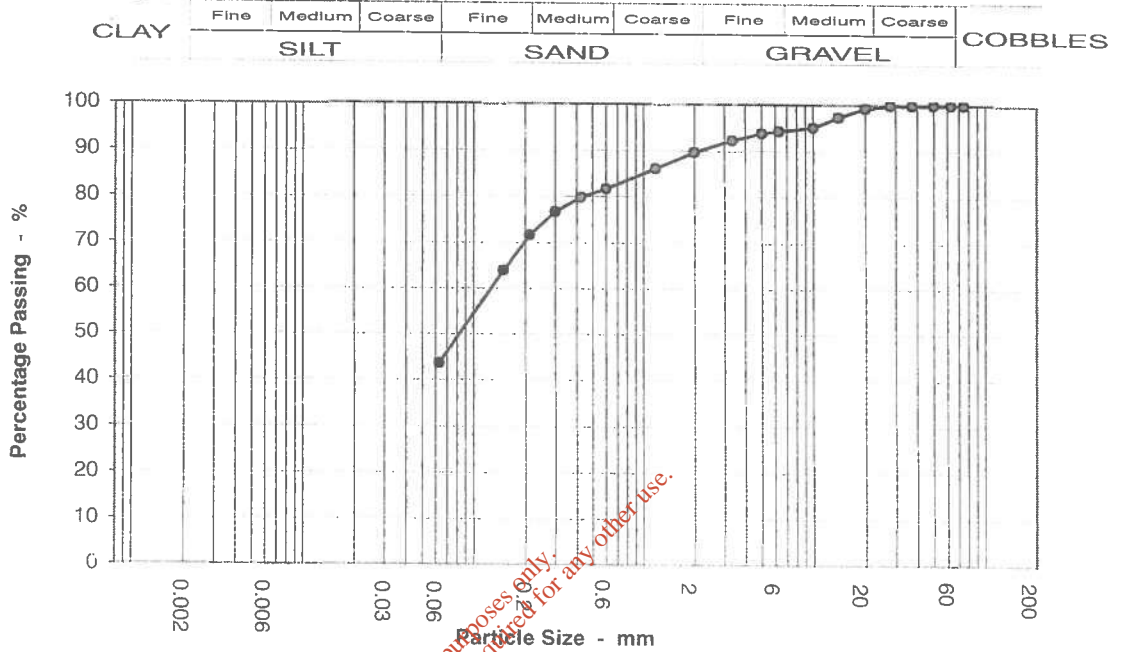
Slightly gravelly sandy organic SILT

Depth

5.50 m

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	97		
10	95		
6.3	94		
5	94		
3.35	92		
2	90		
1.18	86		
0.6	82		
0.425	80		
0.3	77		
0.212	72		
0.15	64		
0.063	43		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.0
Gravel	10.3
Sand	46.2
Silt & Clay	43.5

Grading Analysis	
D100	125.000
D60	0.134
D10	
Uniformity Coefficient	N/A



# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref **PC9030**

Borehole / Pit No **BH15**

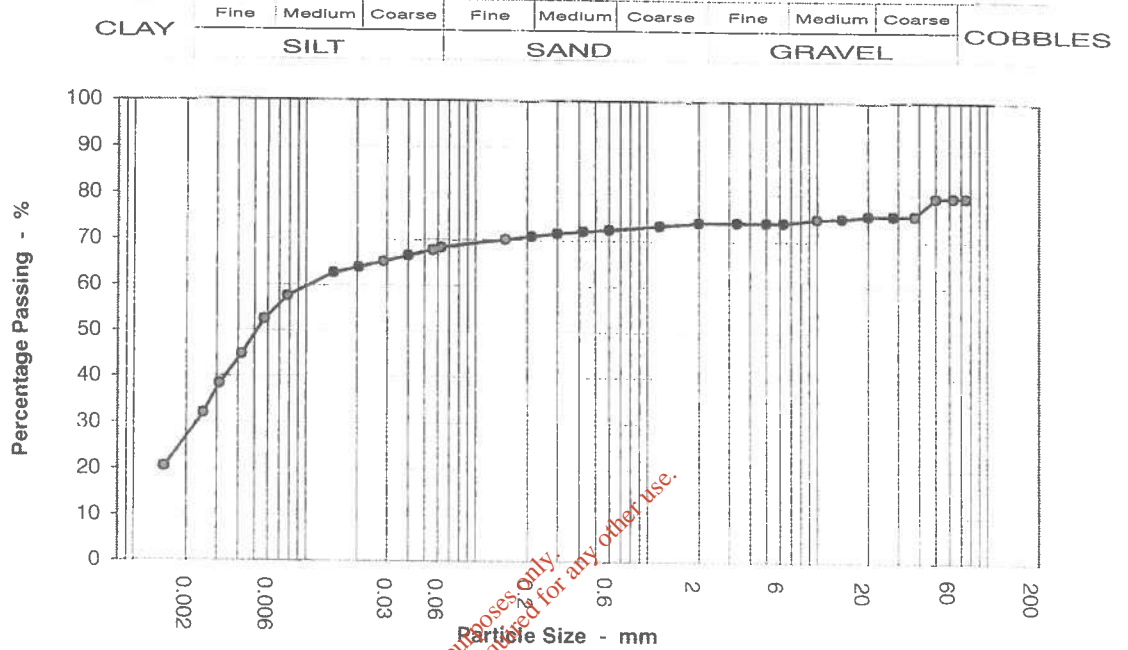
Location **Bantry Bay Inner Harbour**

Sample No **25**

Soil Description **Slightly gravelly slightly sandy SILT with many cobbles**

Depth **7.50 m**

Sample type **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.056	68
90	79	0.040	66
75	79	0.029	65
63	75	0.021	64
50	79	0.015	63
37.5	75	0.008	58
28	75	0.006	52
20	75	0.004	45
14	75	0.003	38
10	75	0.003	32
6.3	74	0.002	20
5	74		
3.35	74		
2	74		
1.18	73		
0.6	72		
0.425	72		
0.3	71		
0.212	71		
0.15	70		
0.063	68		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	20.6
Gravel	5.5
Sand	5.8
Silt	41.8
Clay	26.2

Grading Analysis	
D100	125.000
D60	0.011
D10	
Uniformity Coefficient	N/A



# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

PC9030

Borehole / Pit No

BH16

Location

Bantry Bay Inner Harbour

Sample No

4

Soil Description

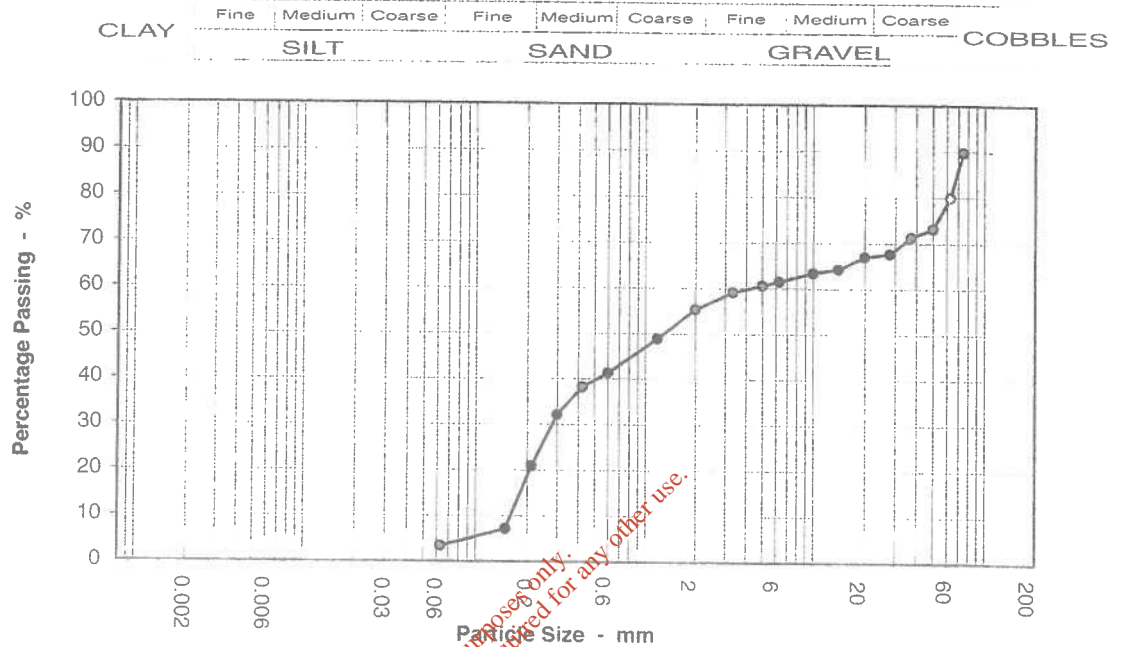
Silty very gravelly SAND with many cobbles

Depth

1.50 m

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	90		
63	80		
50	73		
37.5	71		
28	68		
20	67		
14	64		
10	63		
6.3	61		
5	61		
3.35	59		
2	55		
1.18	49		
0.6	41		
0.425	38		
0.3	32		
0.212	21		
0.15	7		
0.063	3		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	21.6
Gravel	23.1
Sand	51.9
Silt & Clay	3.4

Grading Analysis	
D100	90.000
D60	4.425
D10	0.163
Uniformity Coefficient	27



# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref **PC9030**

Borehole / Pit No **BH16**

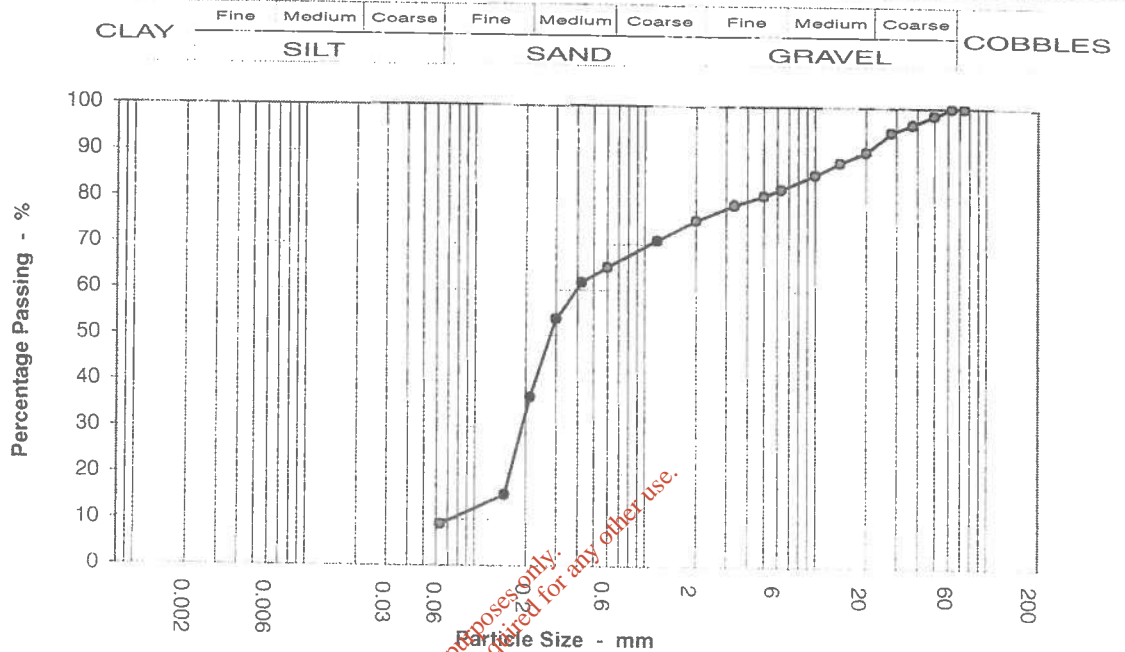
Location **Bantry Bay Inner Harbour**

Sample No **6**

Soil Description **Silty very gravelly SAND**

Depth **2.50 m**

Sample type **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	98		
37.5	96		
28	95		
20	90		
14	88		
10	85		
6.3	82		
5	81		
3.35	79		
2	75		
1.18	71		
0.6	65		
0.425	62		
0.3	54		
0.212	37		
0.15	15		
0.063	9		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	0.3
Gravel	24.4
Sand	66.3
Silt & Clay	9.0

Grading Analysis	
D100	125.000
D60	0.400
D10	0.077
Uniformity Coefficient	5



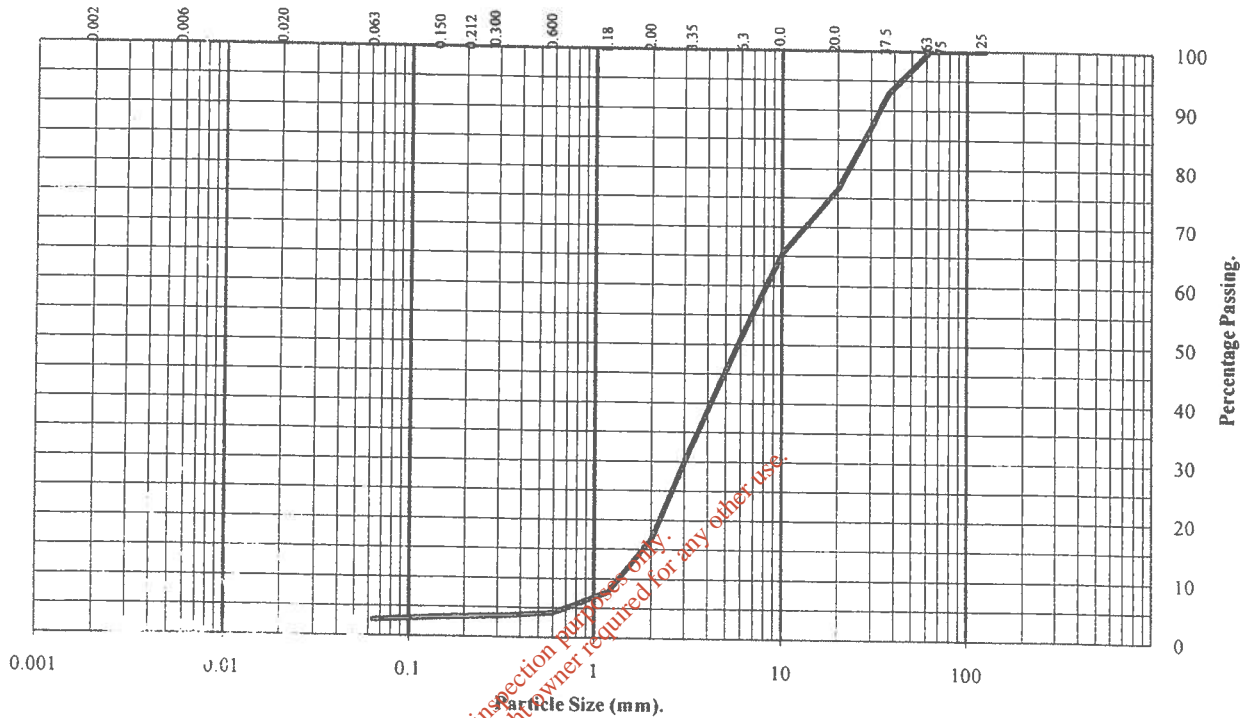
# PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **BH17**

Depth (m): **1.50**



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
38	93
20	77
10	66
6.3	52
3.35	34
2.00	17
1.18	8
0.60	4
0.30	4
0.21	3
0.15	3
0.06	3

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

Soil Fraction	Total Percentage
Cobbles	0
Gravel	83
Sand	14
Silt and Clay	3

**Remarks:**

#- not determined

Checked by *[Signature]* Date *21/01/09*

Approved by *[Signature]* Date *21/01/09*



**Bantry Inner Harbour**

Contract No.: 8847/09  
Client Ref No: PC9030



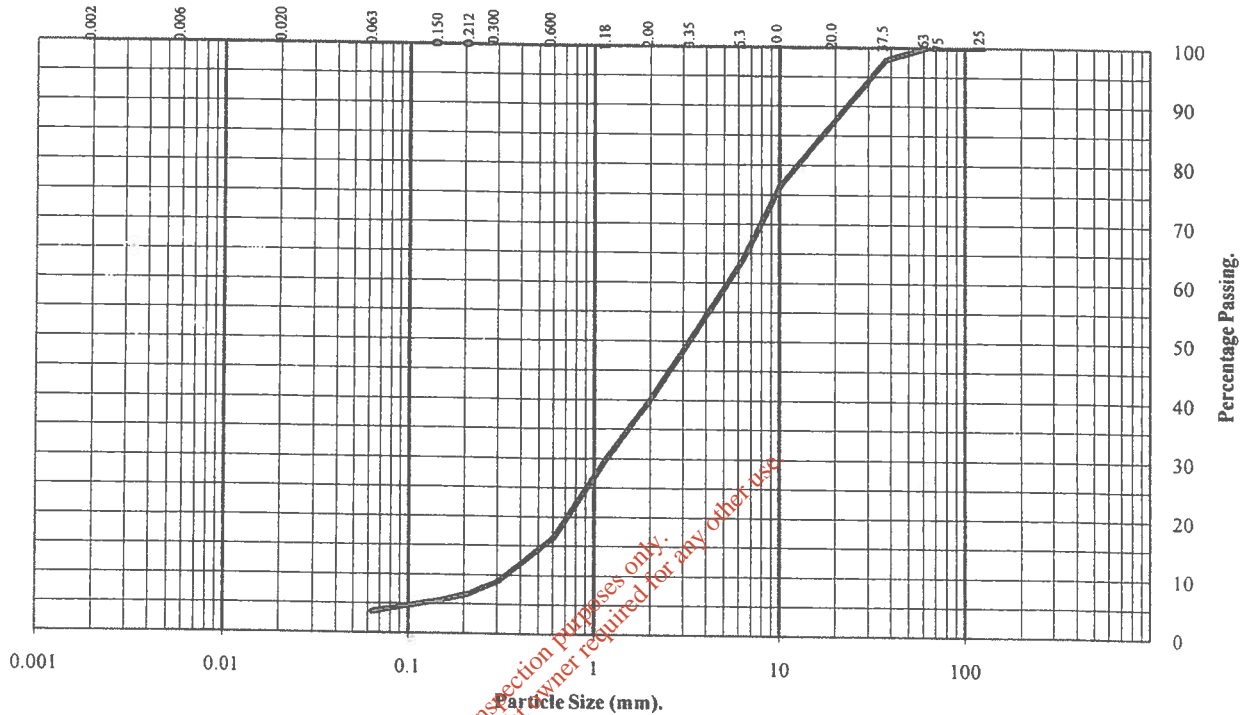
# PARTICLE SIZE DISTRIBUTION TEST

BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Hole Number: **BH17**

Depth (m): **4.50**



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
38	98
20	88
10	76
6.3	64
3.35	51
2.00	40
1.18	30
0.60	16
0.30	9
0.21	7
0.15	6
0.06	4

Particle Diameter	Percentage Passing
0.02	#
0.006	#
0.002	#

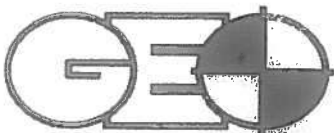
Soil Fraction	Total Percentage
Cobbles	0
Gravel	60
Sand	36
Silt and Clay	4

**Remarks:**

#- not determined

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Approved by *[Signature]* Date *31/11/09*



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**Bantry Inner Harbour**

Issue No 1.2

Contract No.:  
**8847/09**  
Client Ref No:  
**PC9030**



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# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

**Job Ref**                    **PC9030**

Borehole / Pit No            **BH17**

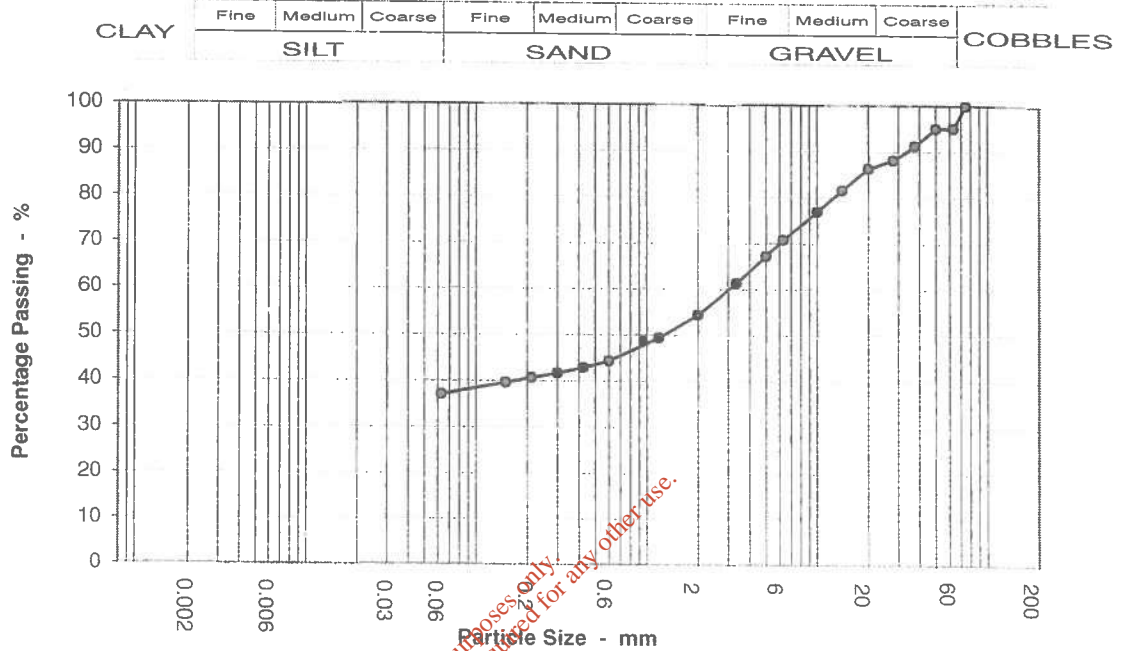
**Location**                    **Bantry Bay Inner Harbour**

Sample No                      **7**

**Soil Description**           **Slightly sandy gravelly CLAY with some cobbles**

Depth                            **7.10 m**

Sample type                    **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	95		
50	95		
37.5	91		
28	88		
20	86		
14	82		
10	77		
6.3	71		
5	67		
3.35	61		
2	54		
1.18	49		
0.6	44		
0.425	43		
0.3	42		
0.212	41		
0.15	40		
0.063	37		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause 9.2
Sedimentation	N/A

Sample Proportions	
Cobbles	4.9
Gravel	40.8
Sand	17.2
Silt & Clay	37.0

Grading Analysis	
D100	125.000
D60	3.118
D10	
Uniformity Coefficient	N/A



**Organic Matter Content**  
**BS 1377 : Part 3 : 1990 : Clause 3**

**Job Ref**

**Location**

**Bantry Bay Inner Harbour**

**PC9030**

Hole ID	Sample Ref	Depth (m)	Sample Type	Sample Description	% Mass < 2 mm	Organic Matter Content %
BH01	12	2.50	D	Slightly gravelly sandy organic SILT	46.68	5.76
BH01	20	4.50	D	Slightly gravelly organic SILT	16.81	10.39
BH01	26	6.50	D	Slightly gravelly organic SILT	31.96	9.82
BH03	3	0.35	D	Slightly sandy slightly organic SILT	38.43	6.73
BH04	3	0.50	D	Slightly gravelly sandy organic SILT	63.87	8.71
BH08	10	2.50	D	Slightly sandy slightly gravelly organic SILT	62.94	8.85
BH15	8	2.50	D	Slightly sandy slightly organic SILT	46.47	12.38
BH15	17	4.50	D	Silty PEAT	60.95	14.29

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# Mass Loss on Ignition

BS 1377 : Part 3 : 1990 : Clause 4

Job Ref

Location

Bantry Bay Inner Harbour

PC9030

Hole ID	Sample Ref	Depth (m)	Sample Type	Sample Description	% Mass < 2.0 mm	Mass Loss on Ignition %
BH01	12	2.50	D	Slightly gravelly sandy organic SILT	46.7	4.32
BH01	20	4.50	D	Slightly gravelly organic SILT	16.8	8.3
BH01	26	6.50	D	Slightly gravelly organic SILT	32.0	16.72
BH03	3	0.35	D	Slightly sandy slightly organic SILT	38.4	6
BH04	3	0.50	D	Slightly gravelly sandy organic SILT	63.9	8.02
BH07	2	1.50	B	SILT	28.1	5.51
BH08	10	2.50	D	Slightly sandy slightly gravelly organic SILT	62.9	7.58
BH12	9	3.00	D	Sandy organic SILT	37.8	11.58
BH14	2	1.50	B	Very silty very gravelly SAND with many cobbles	63.4	3.62
BH15	8	2.50	D	Slightly sandy slightly organic SILT	46.5	8.89
BH15	17	4.50	D	Silty PEAT	61.0	11.63

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# Undrained Shear Strength in Triaxial Compression

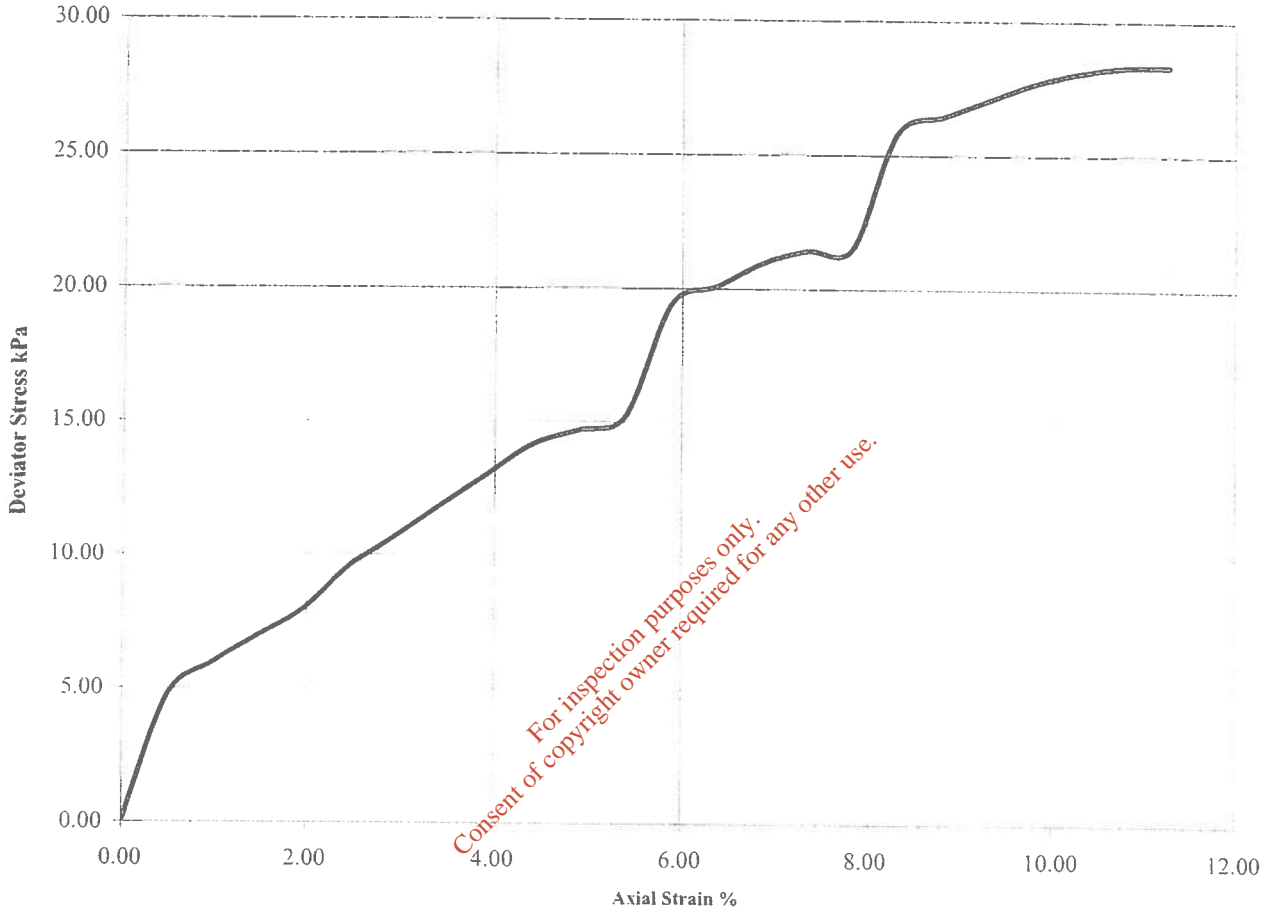
without measurement of Pore Pressure

B.S. 1377 : Part 7 : Clause 8 : 1991

Hole Number:

**BH01** Sample Number: N/A

Depth (m): **1.50**



Diameter (mm):		102		Height (mm):		204		Test:		100mm Multistage	
Specimen	Moisture Content (%)	Bulk Density (Mg/m <sup>3</sup> )	Dry Density (Mg/m <sup>3</sup> )	Cell Pressure (kPa)	Deviator Stress (kPa)	Cohesion (kPa)	Failure Strain (%)	Mode of Failure	Remarks		
A	44	1.86	1.30	100	15	8	5.4	Plastic			
				150	22	11	7.8				
				250	28	14	11.3				

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Contract No.  
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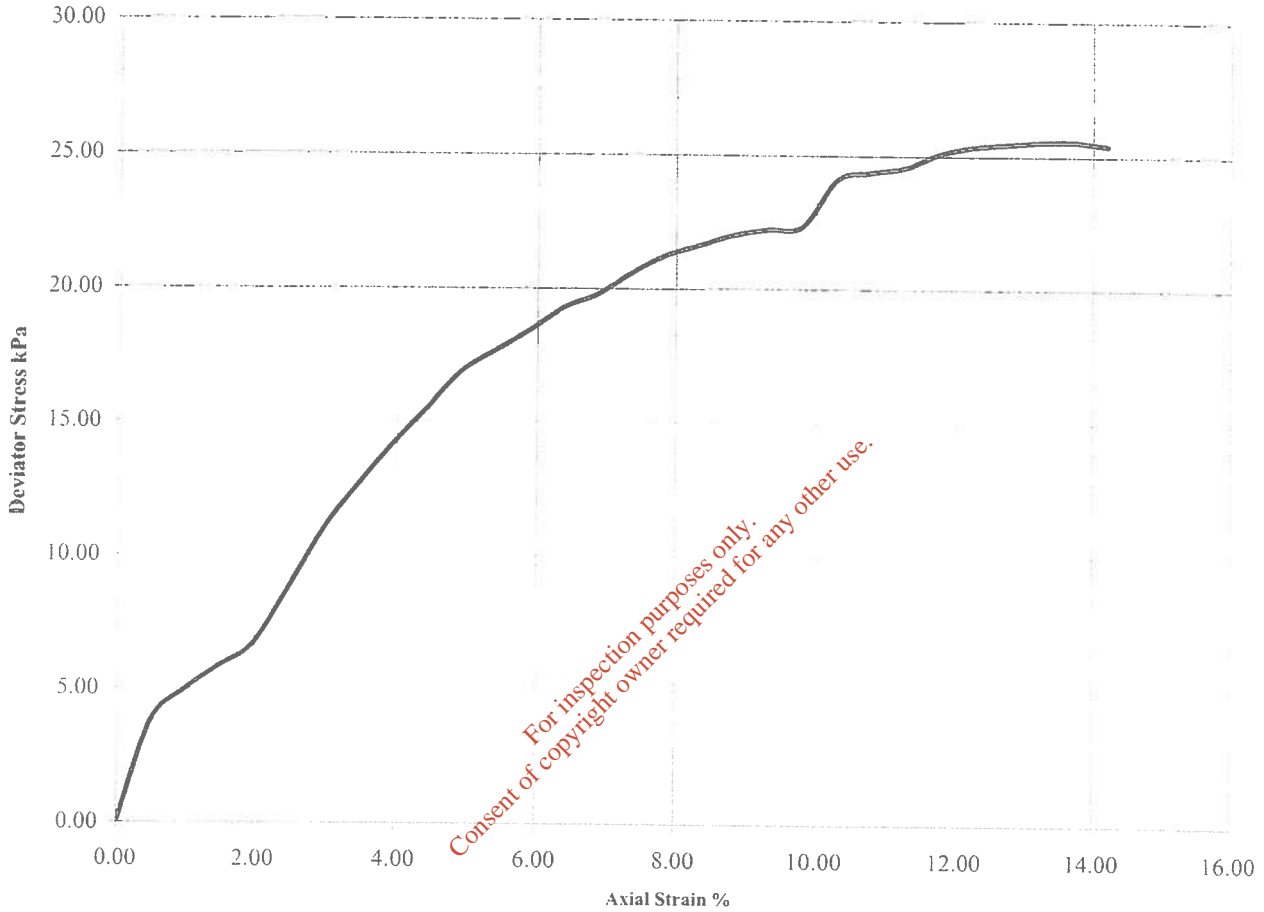
Client Ref No.  
PC9030  
page of

# Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

B.S. 1377 : Part 7 : Clause 8 : 1991

Hole Number: **BH01** Sample Number: **N/A** Depth (m): **4.00**



Diameter (mm):		Height (mm):			Test:		100mm Multistage		
Specimen	Moisture Content (%)	Bulk Density (Mg/m <sup>3</sup> )	Dry Density (Mg/m <sup>3</sup> )	Cell Pressure (kPa)	Deviator Stress (kPa)	Cohesion (kPa)	Failure Strain (%)	Mode of Failure	Remarks
A	48	1.92	1.30	125	20	10	6.9	Compound	
				200	22	11	9.8		
				300	26	13	13.7		

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**Bantry Inner Harbour**

Contract No.  
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Client Ref No.  
PC9030  
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# Undrained Shear Strength in Triaxial Compression

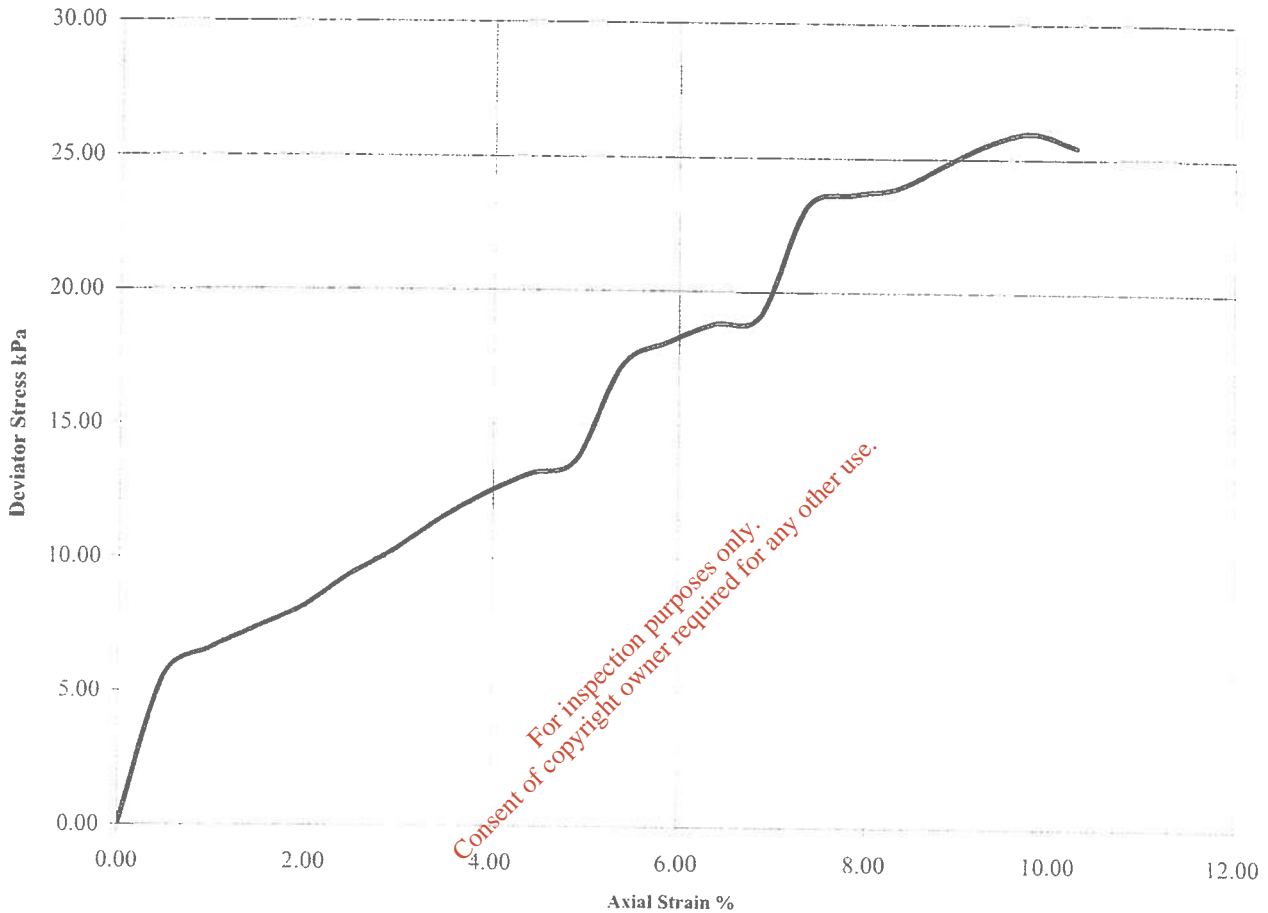
without measurement of Pore Pressure

B.S. 1377 : Part 7 : Clause 8 : 1991

Hole Number:

**BH04** Sample Number: **N/A**

Depth (m): **1.50**



Diameter (mm):		102		Height (mm):		204		Test:		100mm Multistage	
Specimen	Moisture Content (%)	Bulk Density (Mg/m <sup>3</sup> )	Dry Density (Mg/m <sup>3</sup> )	Cell Pressure (kPa)	Deviator Stress (kPa)	Cohesion (kPa)	Failure Strain (%)	Mode of Failure	Remarks		
A	49	1.79	1.20	75	14	7	4.9	Plastic			
				150	19	10	6.9				
				250	26	13	9.8				

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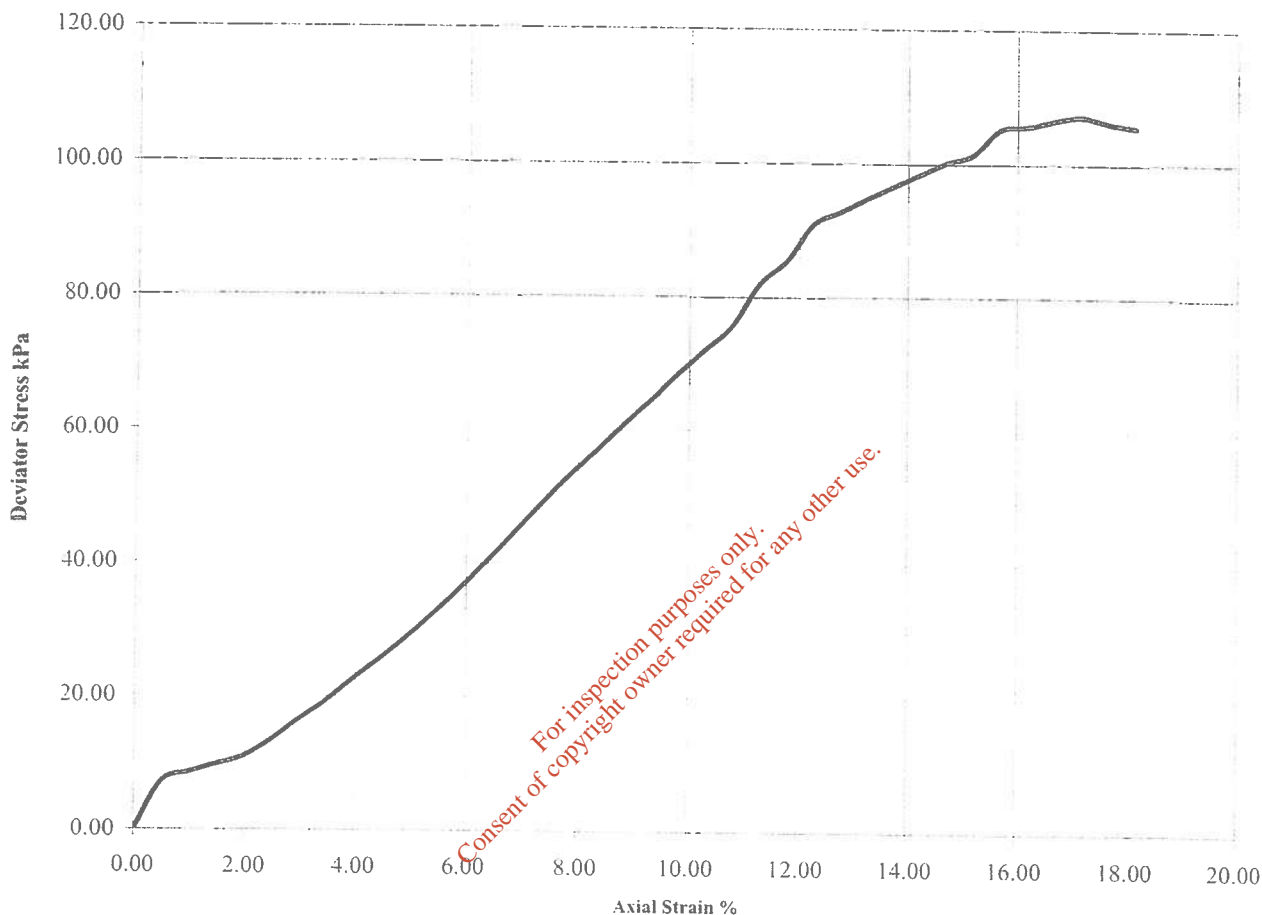
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**PC9030**  
page of

# Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

B.S. 1377 : Part 7 : Clause 8 : 1991

Hole Number: **BH04** Sample Number: **N/A** Depth (m): **2.50**



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Diameter (mm):		102		Height (mm):		204		Test:		100mm Multistage	
Specimen	Moisture Content (%)	Bulk Density (Mg/m <sup>3</sup> )	Dry Density (Mg/m <sup>3</sup> )	Cell Pressure (kPa)	Deviator Stress (kPa)	Cohesion (kPa)	Failure Strain (%)	Mode of Failure	Remarks		
A	30	1.79	1.38	75	85	43	11.8	Compound			
				150	101	51	15.2				
				250	107	54	17.2				

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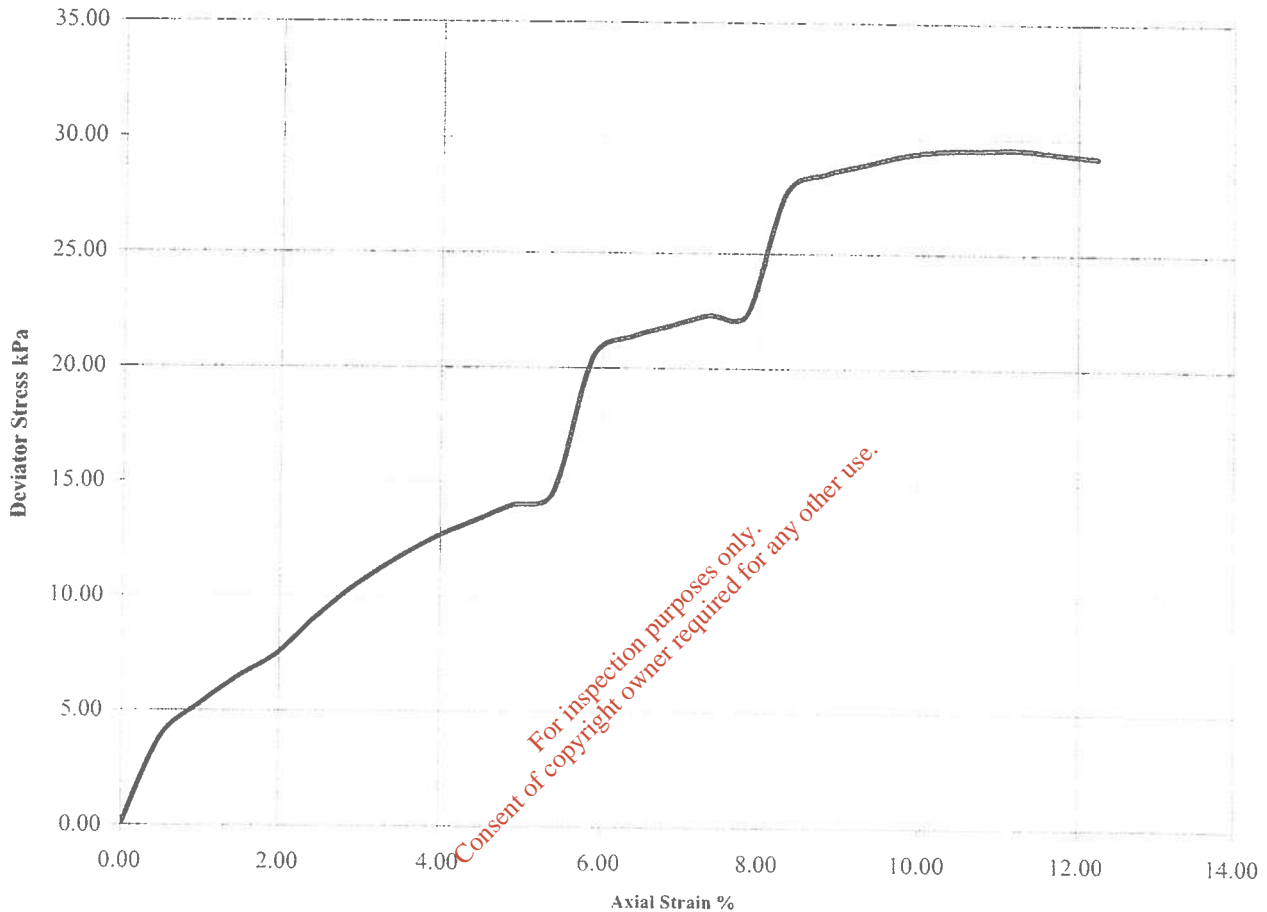


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PC9030  
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# Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure  
B.S. 1377 : Part 7 : Clause 8 : 1991

Hole Number: **BH08** Sample Number: **N/A** Depth (m): **3.00**



Diameter (mm):		Height (mm):			Test:		100mm Multistage		
Specimen	Moisture Content (%)	Bulk Density (Mg/m <sup>3</sup> )	Dry Density (Mg/m <sup>3</sup> )	Cell Pressure (kPa)	Deviator Stress (kPa)	Cohesion (kPa)	Failure Strain (%)	Mode of Failure	Remarks
A	92	1.74	0.91	75	15	7	5.4	Plastic	
				150	22	11	7.8		
				250	30	15	11.3		

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# Undrained Shear Strength in Triaxial Compression

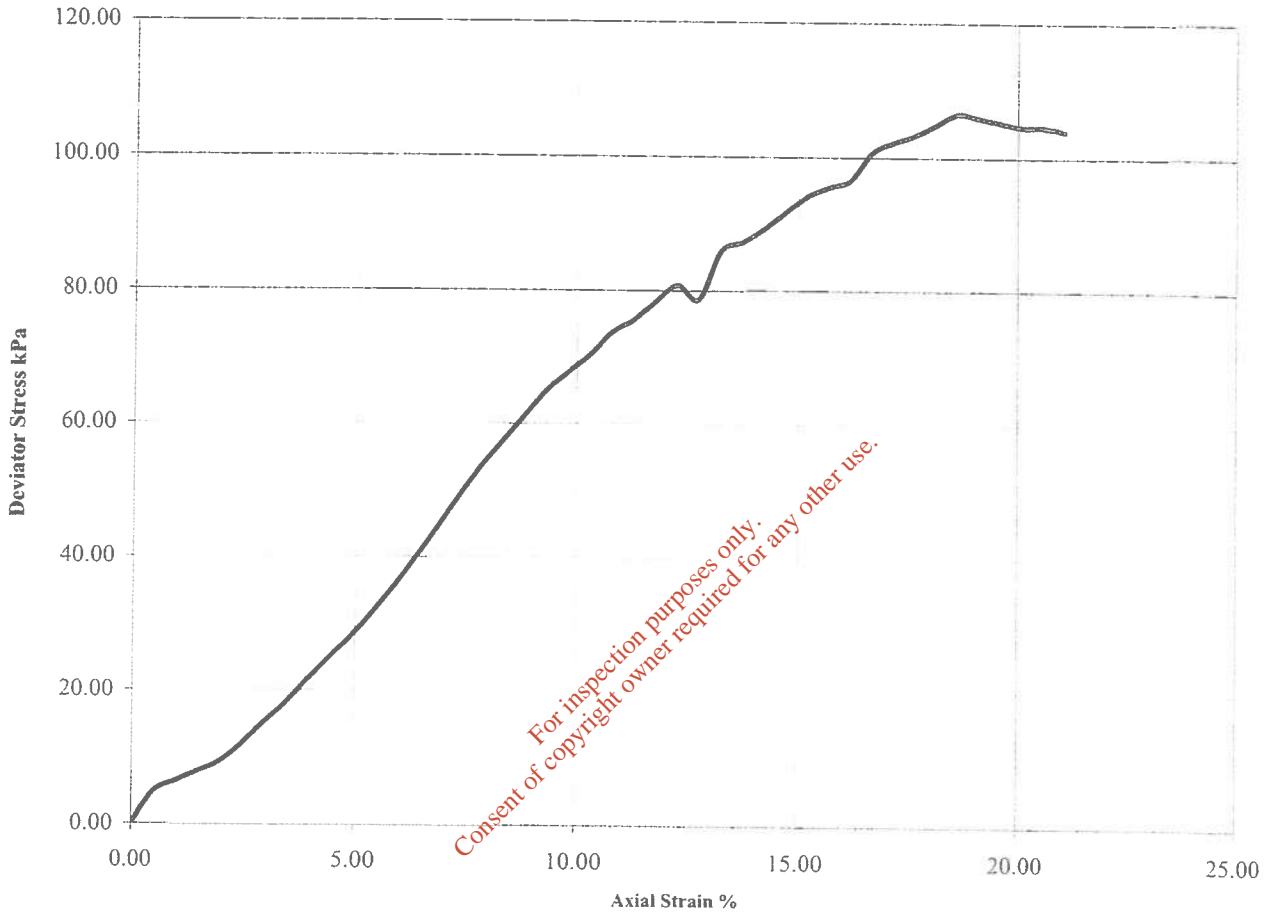
without measurement of Pore Pressure

B.S. 1377 : Part 7 : Clause 8 : 1991

Hole Number:

**BH11** Sample Number: N/A

Depth (m): **1.50**



Diameter (mm):		102		Height (mm):		204		Test:	100mm Multistage		Remarks
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Deviator Stress (kPa)	Cohesion (kPa)	Failure Strain (%)	Mode of Failure			
A	39	2.10	1.51	50	81	40	12.3	Compound			
				175	97	48	16.2				
				250	107	53	18.6				

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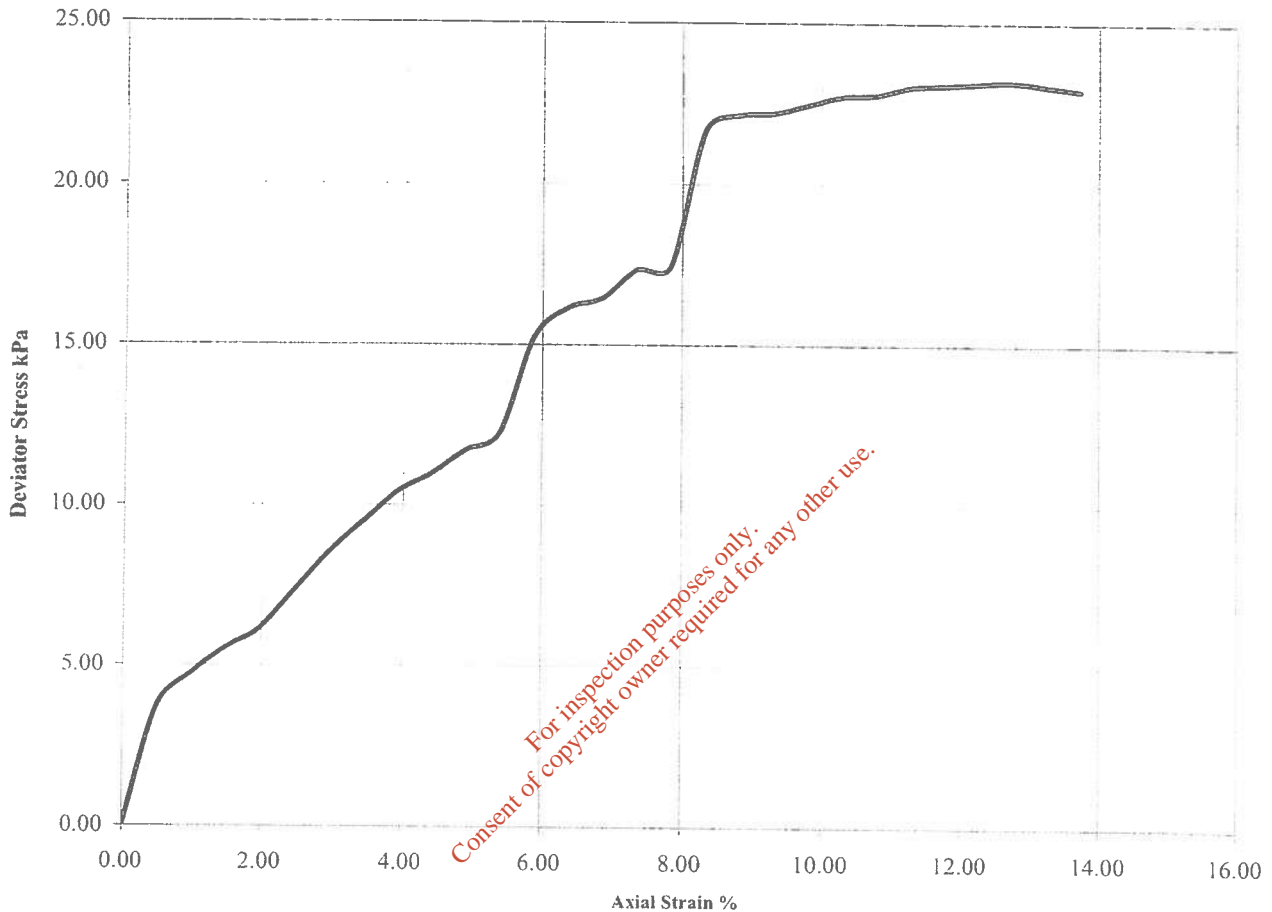


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# Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure  
B.S. 1377 : Part 7 : Clause 8 : 1991

Hole Number: **BH15** Sample Number: **N/A** Depth (m): **1.50**



Diameter (mm):		102		Height (mm):		204		Test:		100mm Multistage	
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Deviator Stress (kPa)	Cohesion (kPa)	Failure Strain (%)	Mode of Failure	Remarks		
A	56	1.73	1.11	50	12	6	5.4	Compound			
				150	17	9	7.8				
				250	23	12	12.7				

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PC9030

page of

# Undrained Shear Strength in Triaxial Compression

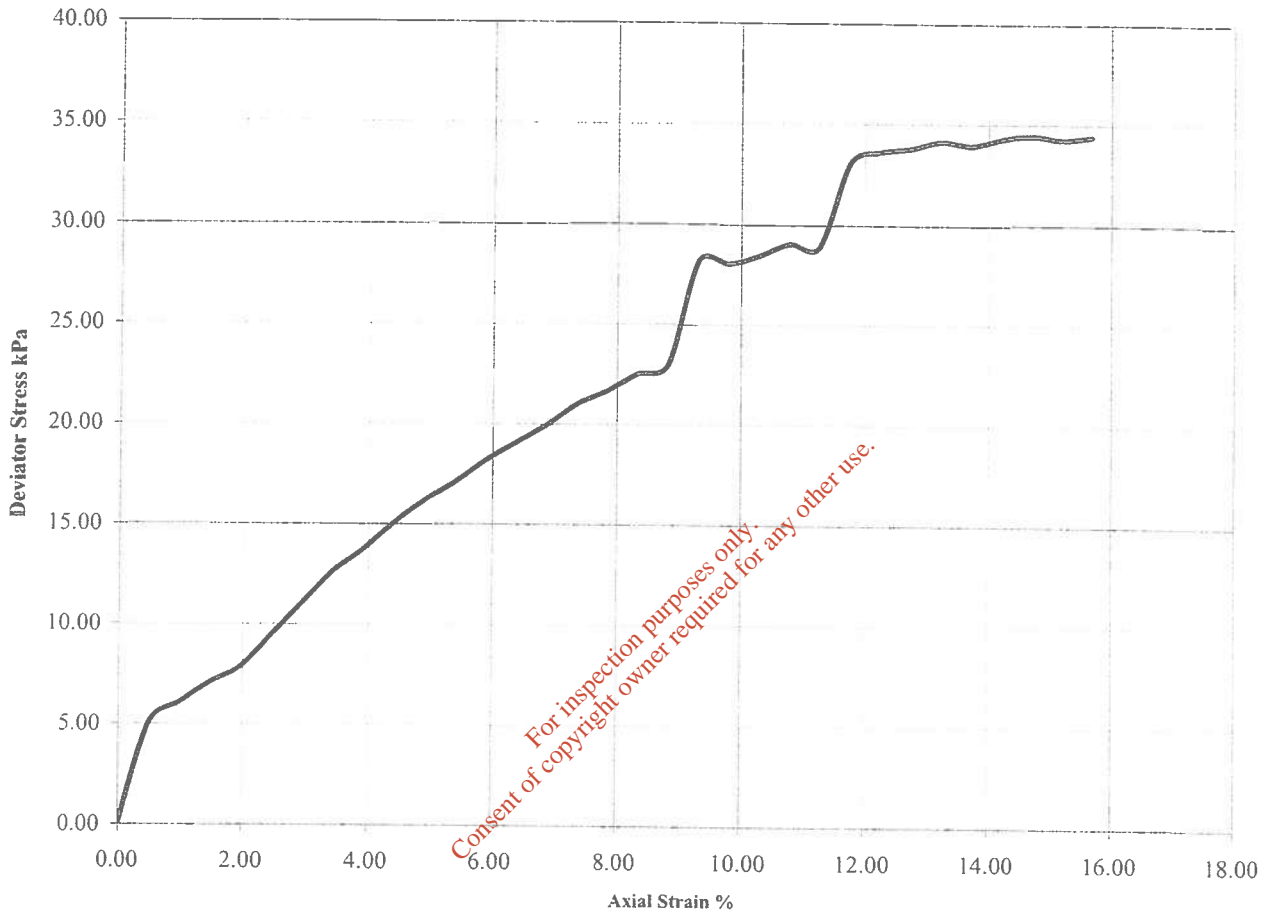
without measurement of Pore Pressure

B.S. 1377 : Part 7 : Clause 8 : 1991

Hole Number:

BH15 Sample Number: N/A

Depth (m): 3.00



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Diameter (mm):		102		Height (mm):		204		Test:		100mm Multistage		Remarks
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Deviator Stress (kPa)	Cohesion (kPa)	Failure Strain (%)	Mode of Failure				
A	88	1.28	0.68	75	28	14	9.3	Compound				
				150	29	15	10.8					
				250	34	17	14.7					

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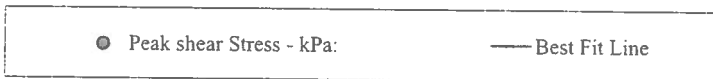
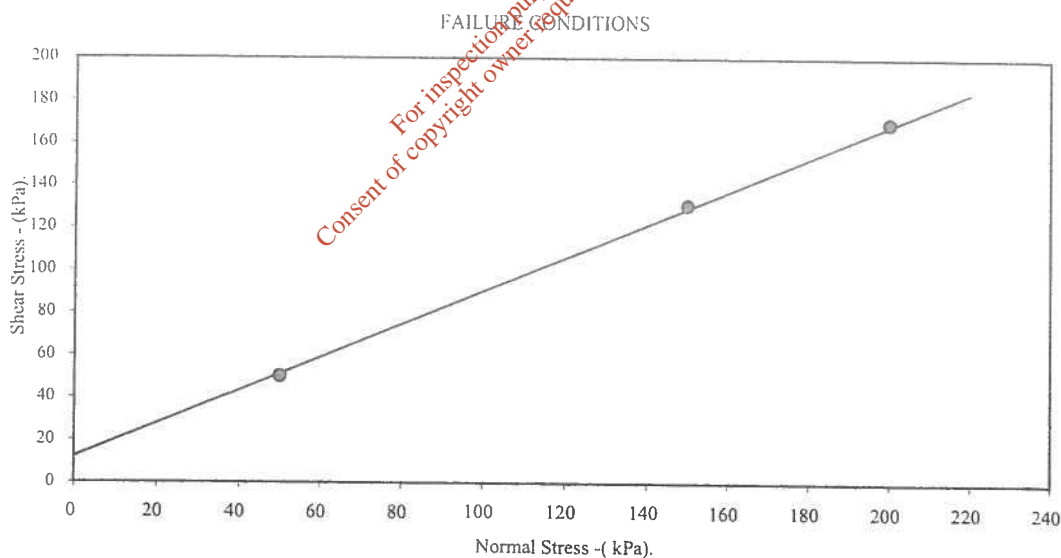
page of

## CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: **BH1/6**                      Depth (m): **1.00**

Sample Type:	Remoulded (Light Tamping) Material above 2mm removed.		
Particle Density - Mg/m <sup>3</sup> :	2.65                      (Assumed)		
Specimen Tested:	Submerged		
Sample Description: <b>Grey sandy silty CLAY.</b>			
<b>STAGE</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>Initial Conditions</b>			
Height - mm:	24.30	24.30	24.30
Length - mm:	60.00	60.00	60.00
Moisture Content - %:	21	21	21
Bulk Density - Mg/m <sup>3</sup> :	1.69	1.70	1.70
Dry Density - Mg/m <sup>3</sup> :	1.40	1.40	1.41
Voids Ratio:	0.8993	0.8885	0.8835
Normal Pressure- kPa	50	150	200
<b>Consolidation</b>			
Consolidated Height - mm:	23.79	23.31	22.82
<b>Shear</b>			
Rate of Strain (mm/min)	0.010	0.010	0.010
Strain at peak shear stress (%)	9.59	5.43	5.66
Peak shear Stress - kPa:	50	131	170
<b>PEAK</b>			
Angle of Shearing Resistance:( $\theta$ )			<b>38.0</b>
Effective Cohesion - kPa:			<b>12</b>



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**Geo/8847/09**

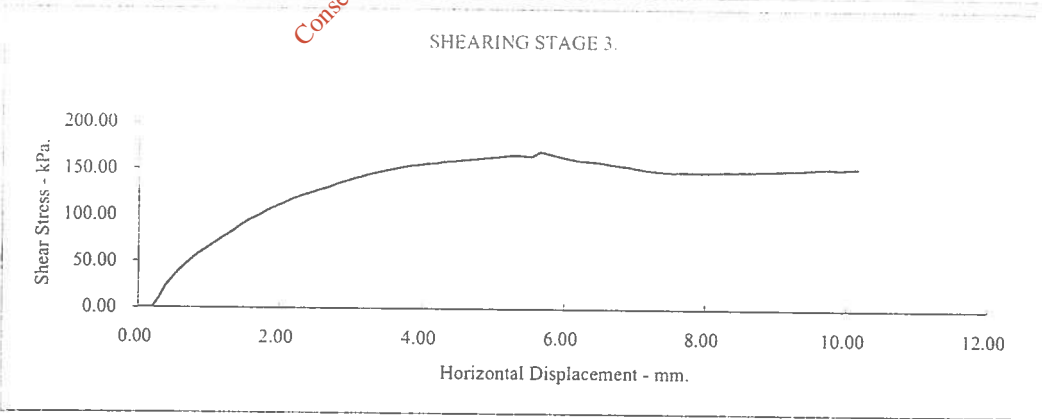
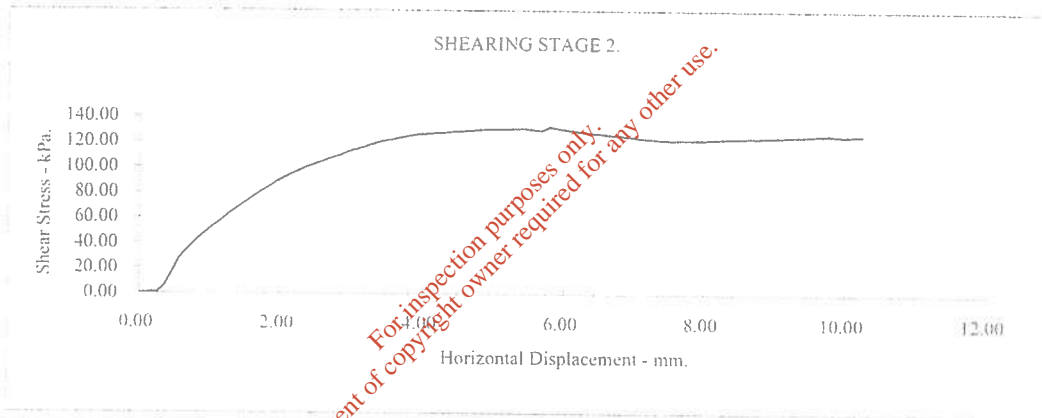
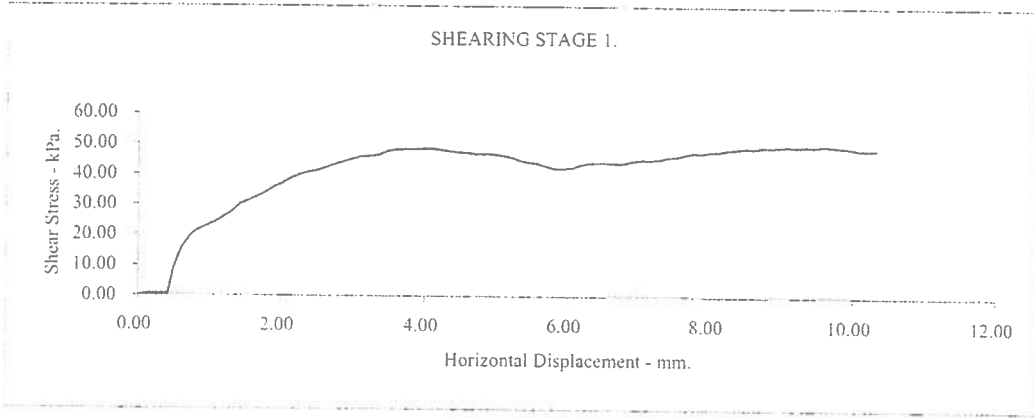
Client Ref Number:  
**PC9030**

Figure:  
Bynea, Llanelli, SA14 9SU

# CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5:1990.

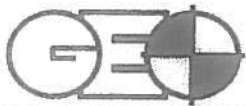
Borehole/Sample Number: BH1/6      Depth (m): 1.00



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LABORATORY TESTING SERVICES LIMITED  
GEO 064      17-May-05      Issue No. 1.1

**Bantry Inner Harbour**

Contract No.:  
**Geo/8847/09**

Client Ref Number:  
**PC9030**

Figure:  
Bynea, Llanelli, SA14 9SL



# CONSOLIDATED DRAINED SHEARBOX TEST.

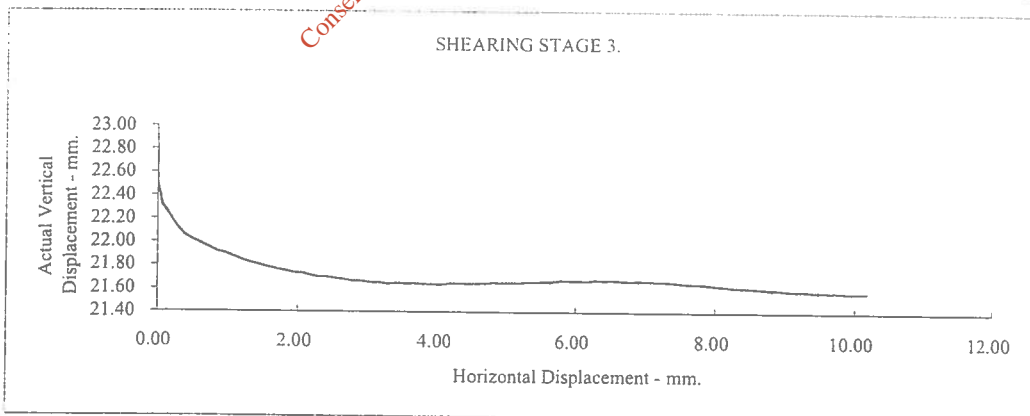
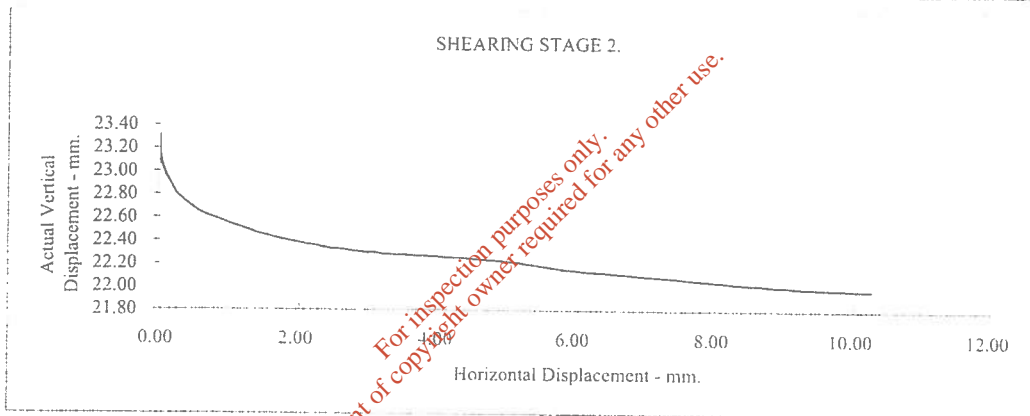
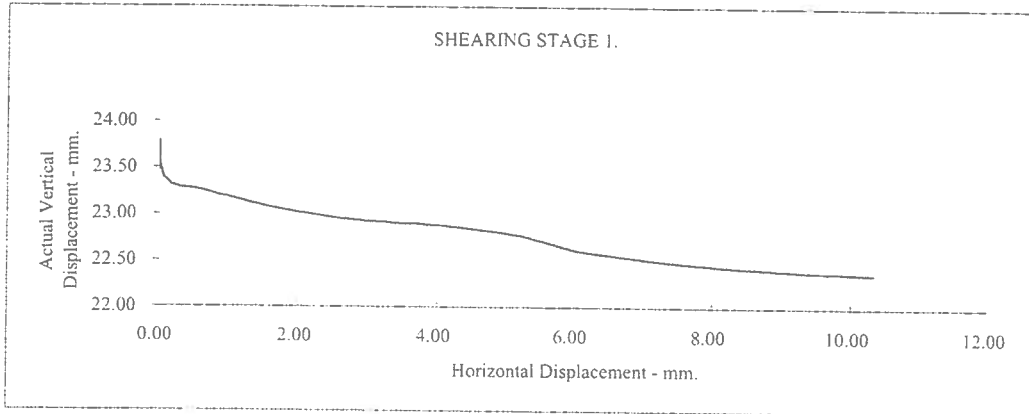
BS1377:Part 7:4.5:1990.

Borehole/Sample Number:

BH1/6

Depth (m):

1.00



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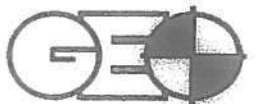
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17-May-05

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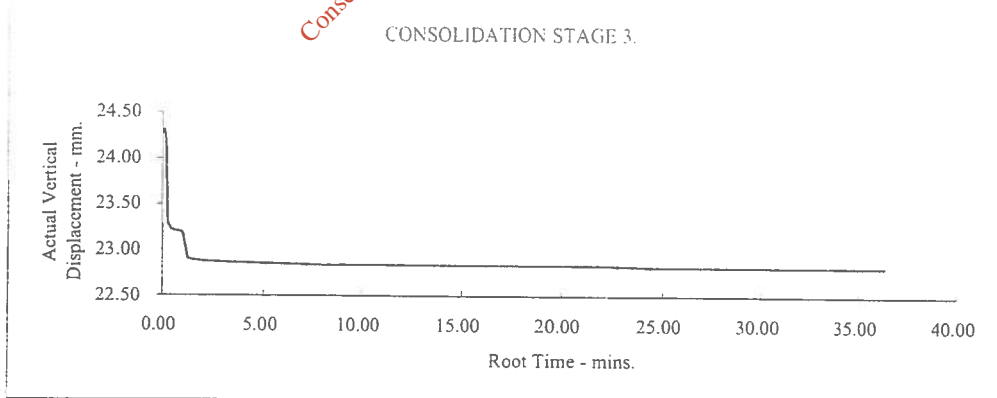
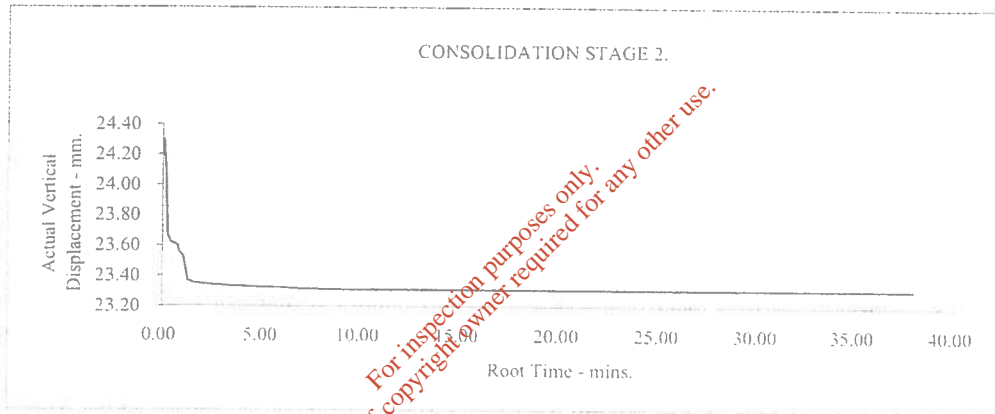
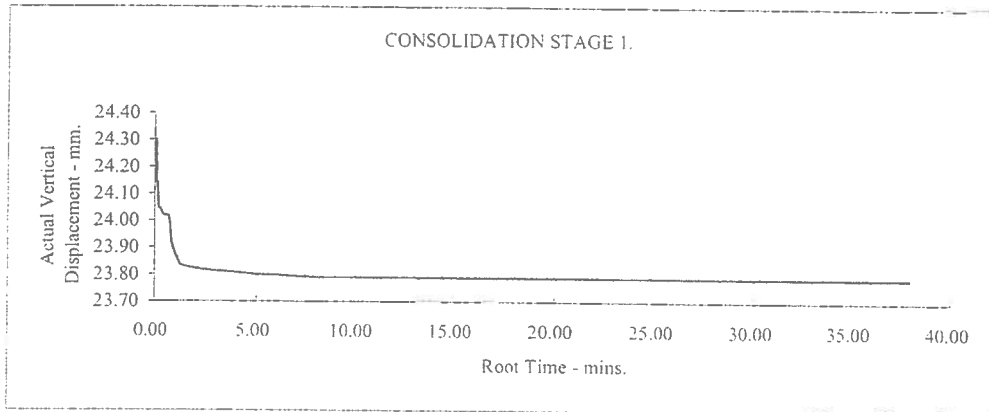
Figure.

Bynea, Llanelli, SA14 9SU

# CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

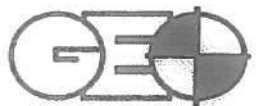
Borehole/Sample Number: BH1/6      Depth (m): 1.00



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GEO 064    17-May-05    Issue No. 1.1

**Bantry Inner Harbour**

Contract No.:  
**Geo/8847/09**

Client Ref Number:  
**PC9030**

Figure:  
Bynea, Llanelli, SA14 9ST

## CONSOLIDATED DRAINED SHEARBOX TEST.

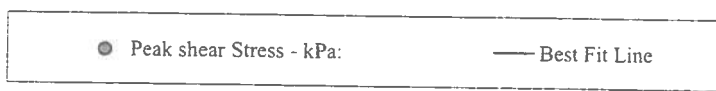
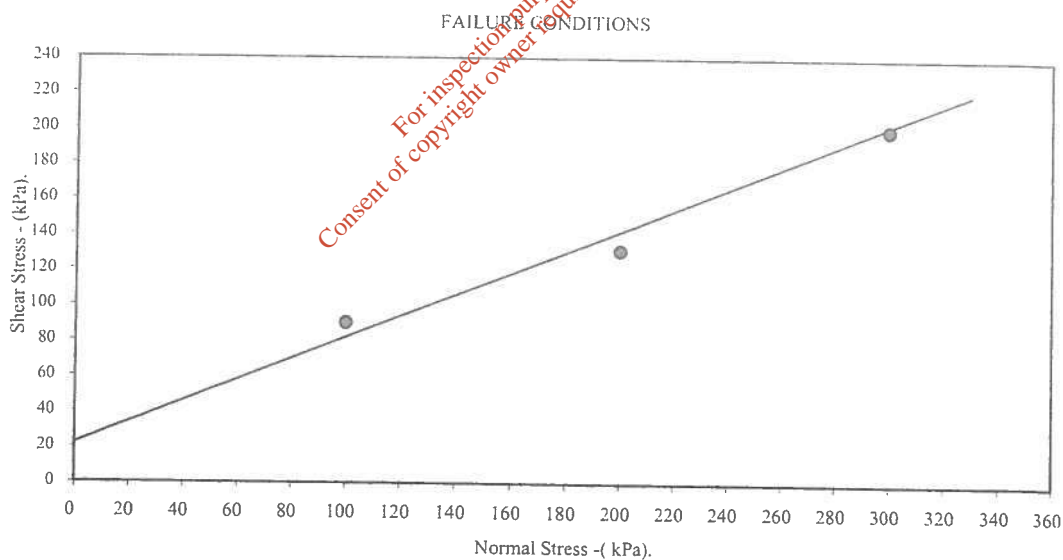
BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH2/5                      Depth (m): 1.00

Sample Type:	Remoulded (Light Tamping) Material above 2mm removed.
Particle Density - Mg/m <sup>3</sup> :	2.65 (Assumed)
Specimen Tested:	Submerged

Sample Description: <b>Grey silty clayey SAND (fine-coarse).</b>			
<b>STAGE</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>Initial Conditions</b>			
Height - mm:	24.30	24.30	24.30
Length - mm:	60.00	60.00	60.00
Moisture Content - %:	12	12	12
Bulk Density - Mg/m <sup>3</sup> :	1.65	1.66	1.67
Dry Density - Mg/m <sup>3</sup> :	1.47	1.48	1.49
Voids Ratio:	0.7968	0.7896	0.7807
Normal Pressure- kPa	100	200	300
<b>Consolidation</b>			
Consolidated Height - mm:	24.20	23.65	23.10
<b>Shear</b>			
Rate of Strain (mm/min)	0.010	0.010	0.010
Strain at peak shear stress (%)	11.03	9.60	10.02
Peak shear Stress - kPa:	90	131	200

<b>PEAK</b>	
Angle of Shearing Resistance:( $\theta$ )	31.0
Effective Cohesion - kPa:	22



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**Bantry Inner Harbour**

Contract No.:  
Geo/8847/09

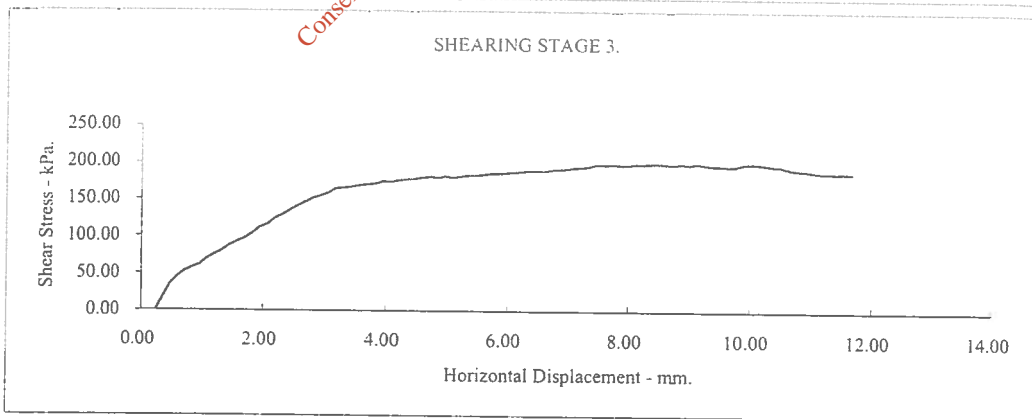
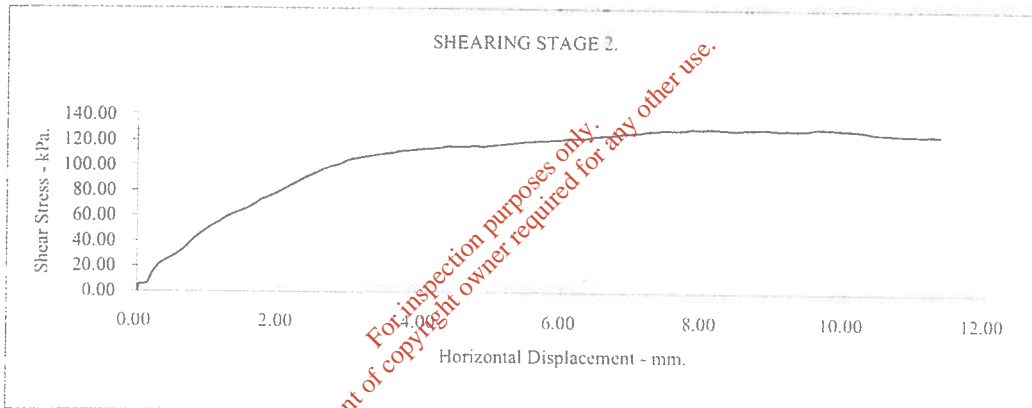
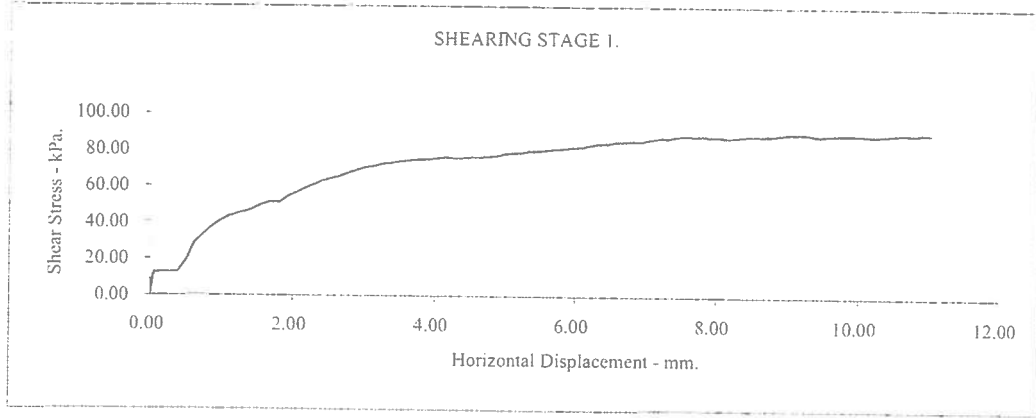
Client Ref Number:  
PC9030

Figure:  
Bynea Llanelli, SA14 9SL

# CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH2/5      Depth (m): 1.00



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GEO/064    17-May-05    Issue No. 1.1

**Bantry Inner Harbour**

Contract No.:  
Geo/8847/09

Client Ref Number:  
PC9030

Figure:  
Bynea Llanelli, SA14 9ST

# CONSOLIDATED DRAINED SHEARBOX TEST.

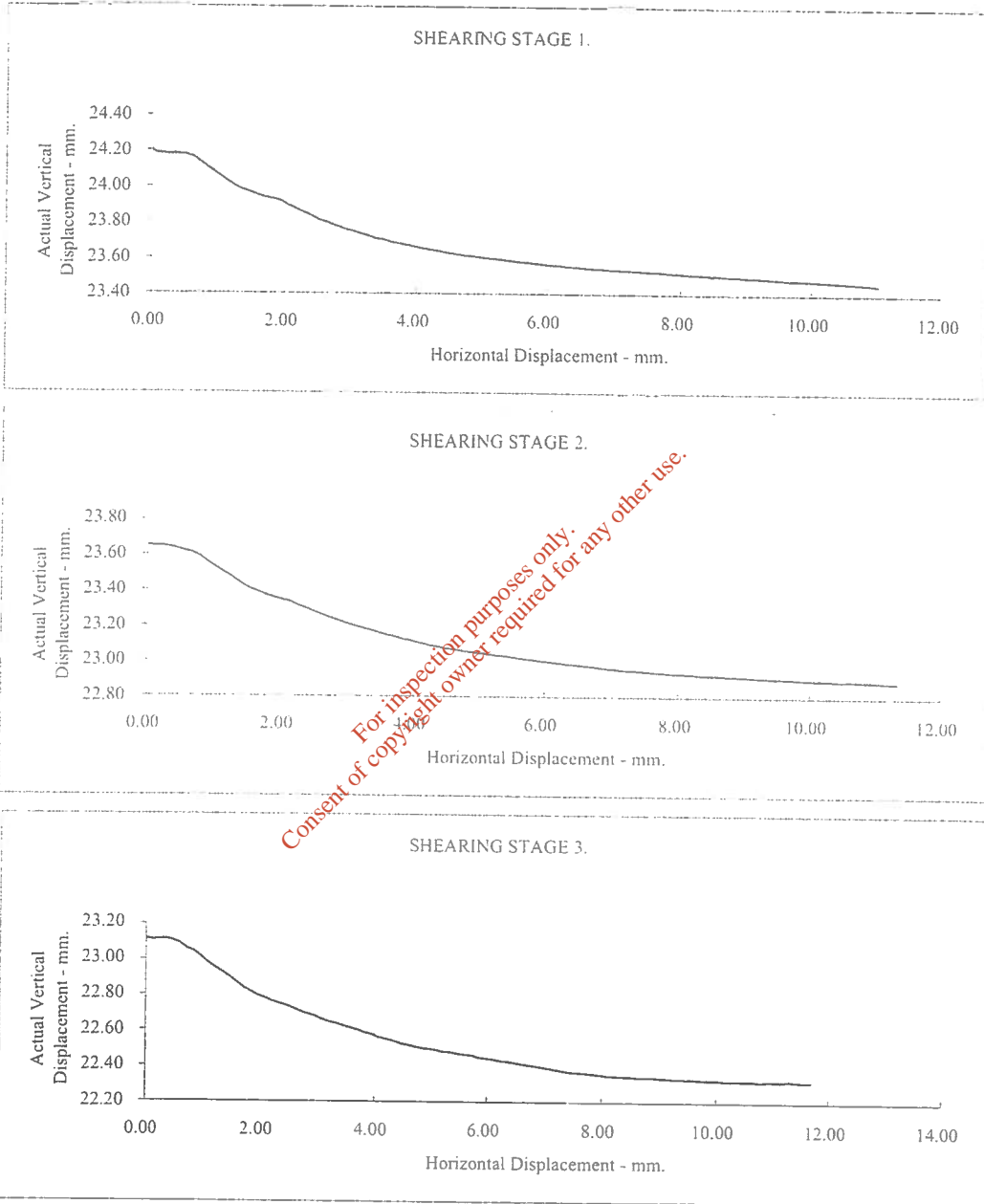
BS1377:Part 7:4.5 :1990.

Borehole/Sample Number:

BH2/5

Depth (m):

1.00



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14/01/10

Date

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GEO 064

17-May-05

Issue No 1 1

**Bantry Inner Harbour**

Contract No.:

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Client Ref Number:

PC9030

Figure.

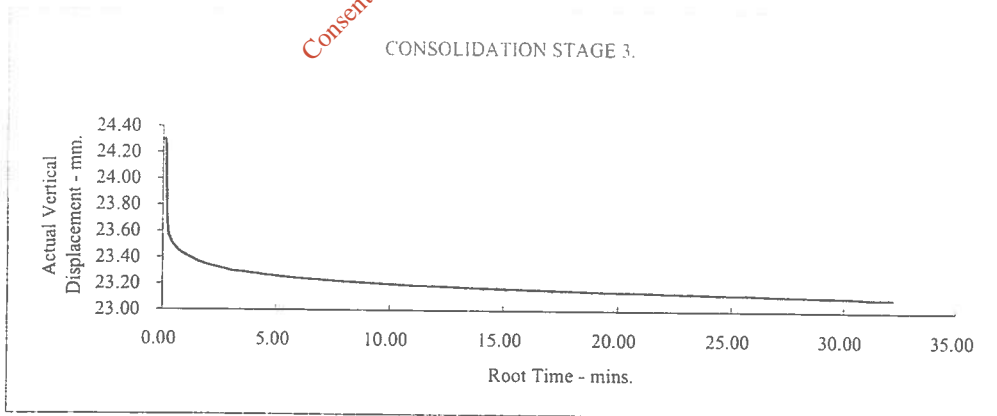
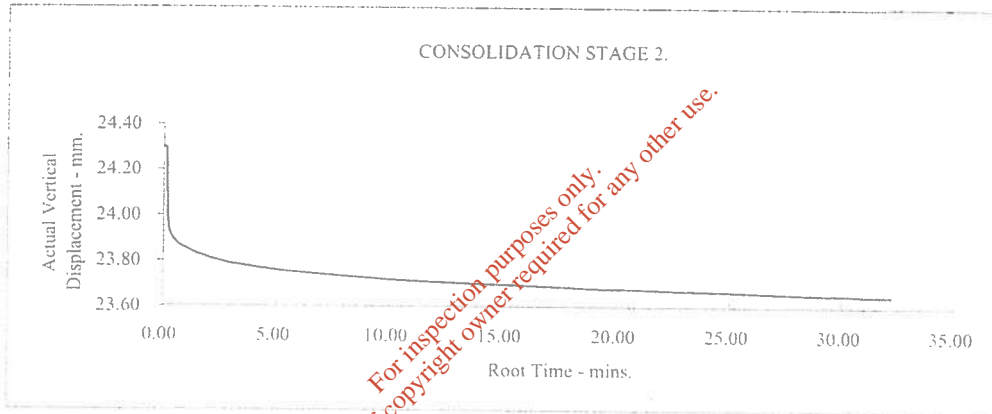
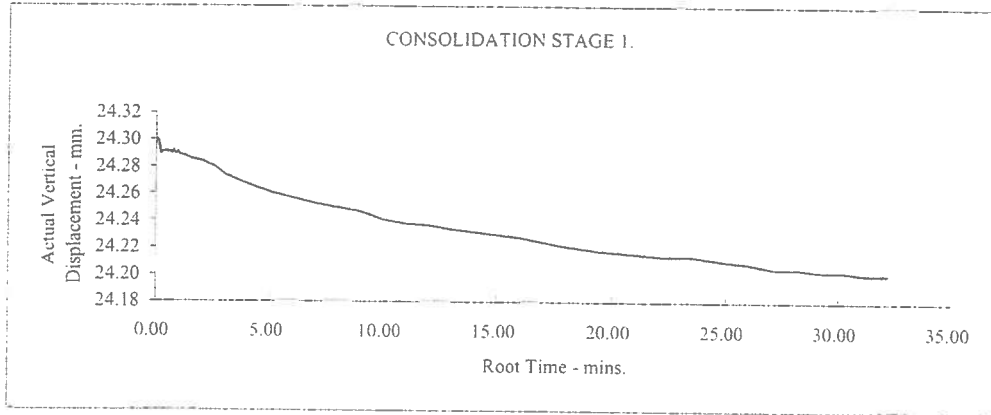
Bynea, Llanelli, SA14 4SJ



# CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH2/5      Depth (m): 1.00



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GEO 664      17-May-05      Issue No 11

**Bantry Inner Harbour**

Contract No.:  
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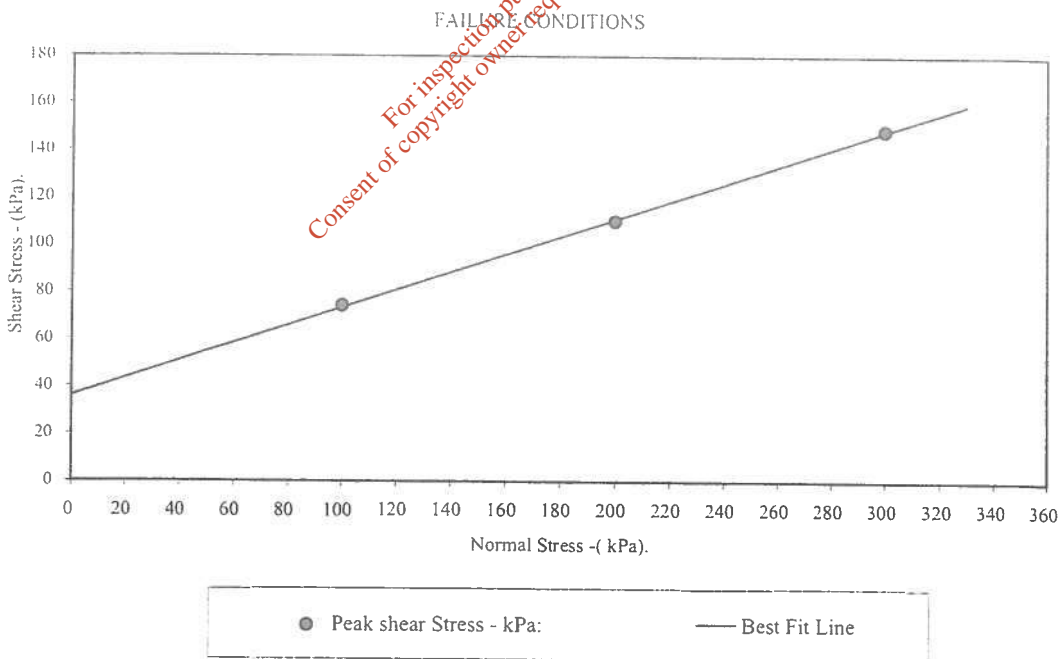
Figure:  
Bynea, Llanelli, SA14 9SL

## CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH2/11                      Depth (m): 3.00

Sample Type:	Remoulded (Light Tamping) Material above 2mm removed.		
Particle Density - Mg/m <sup>3</sup> :	2.65 (Assumed)		
Specimen Tested:	Submerged		
Sample Description: <b>Grey sandy (fine) clayey SILT.</b>			
<b>STAGE</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>Initial Conditions</b>			
Height - mm:	24.30	24.30	24.30
Length - mm:	60.00	60.00	60.00
Moisture Content - %:	9	9	9
Bulk Density - Mg/m <sup>3</sup> :	1.74	1.74	1.74
Dry Density - Mg/m <sup>3</sup> :	1.60	1.60	1.60
Voids Ratio:	0.6571	0.6542	0.6552
Normal Pressure- kPa	100	200	300
<b>Consolidation</b>			
Consolidated Height - mm:	23.57	23.28	22.98
<b>Shear</b>			
Rate of Strain (mm/min)	0.010	0.010	0.010
Strain at peak shear stress (%)	7.71	9.73	9.76
Peak shear Stress - kPa:	74	110	149
<b>PEAK</b>			
Angle of Shearing Resistance:( $\theta$ )			20.5
Effective Cohesion - kPa:			36



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### Bantry Inner Harbour

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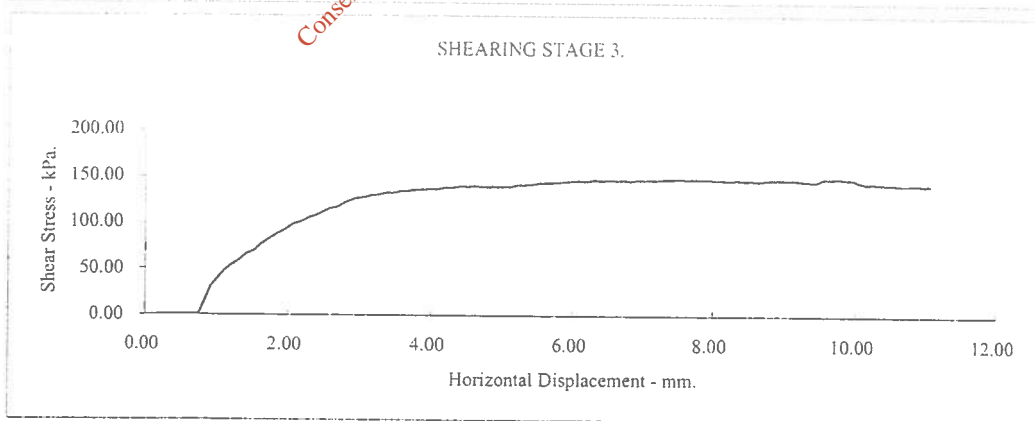
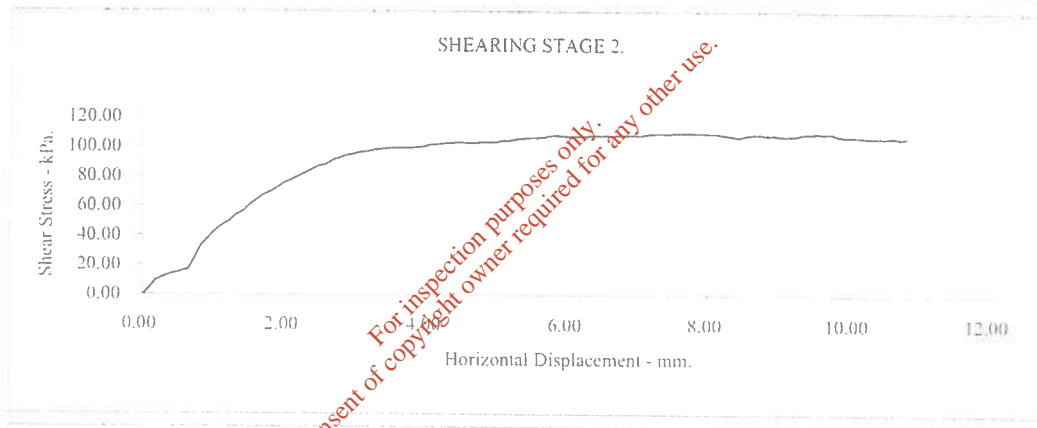
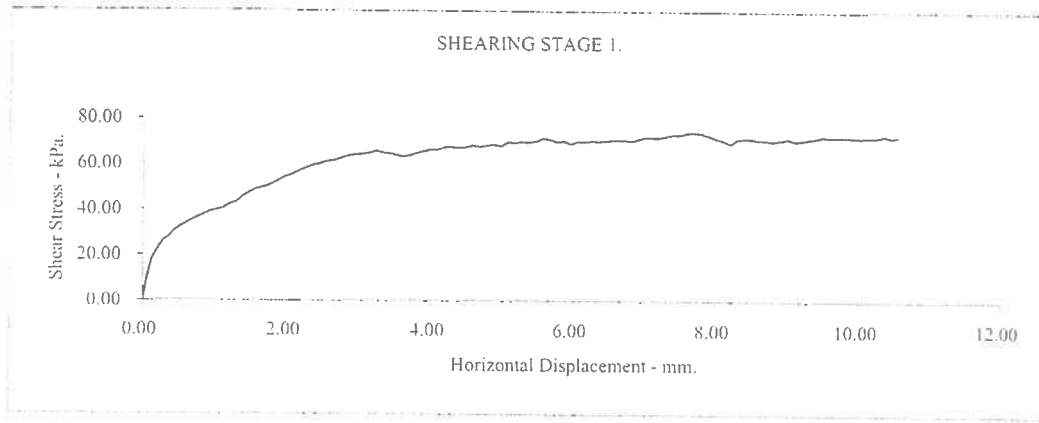
Client Ref Number:  
**PC9030**

Figure:  
Bynea, Llanelli SA14 9SU.

# CONSOLIDATED DRAINED SHEARBOX TEST.

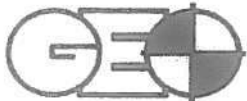
BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH2/11      Depth (m): 3.00



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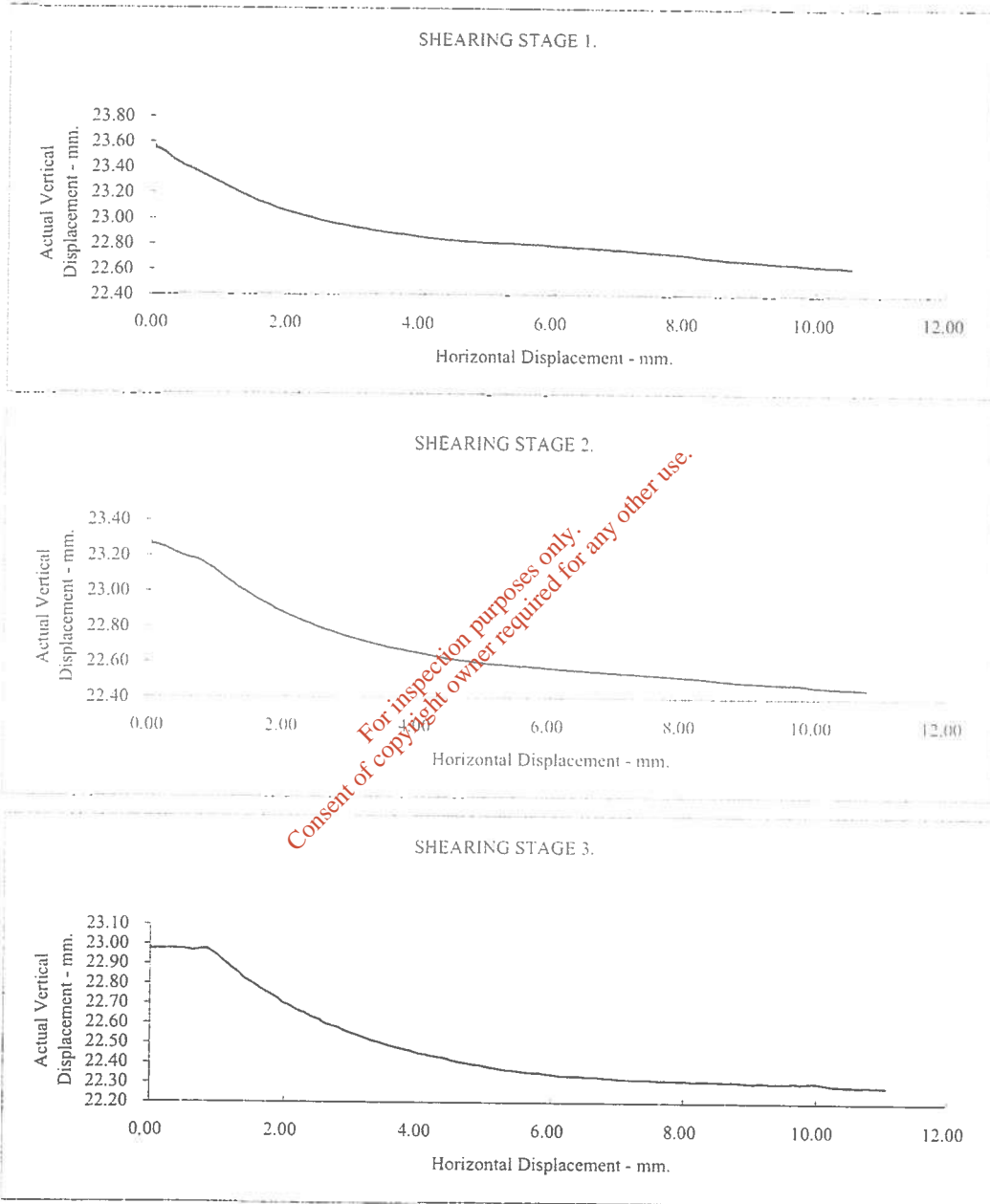
Client Ref Number:  
**PC9030**

Figure:  
Bynea, Llanelli, SA14 9ST

# CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5:1990.

Borehole/Sample Number: BH2/11      Depth (m): 3.00



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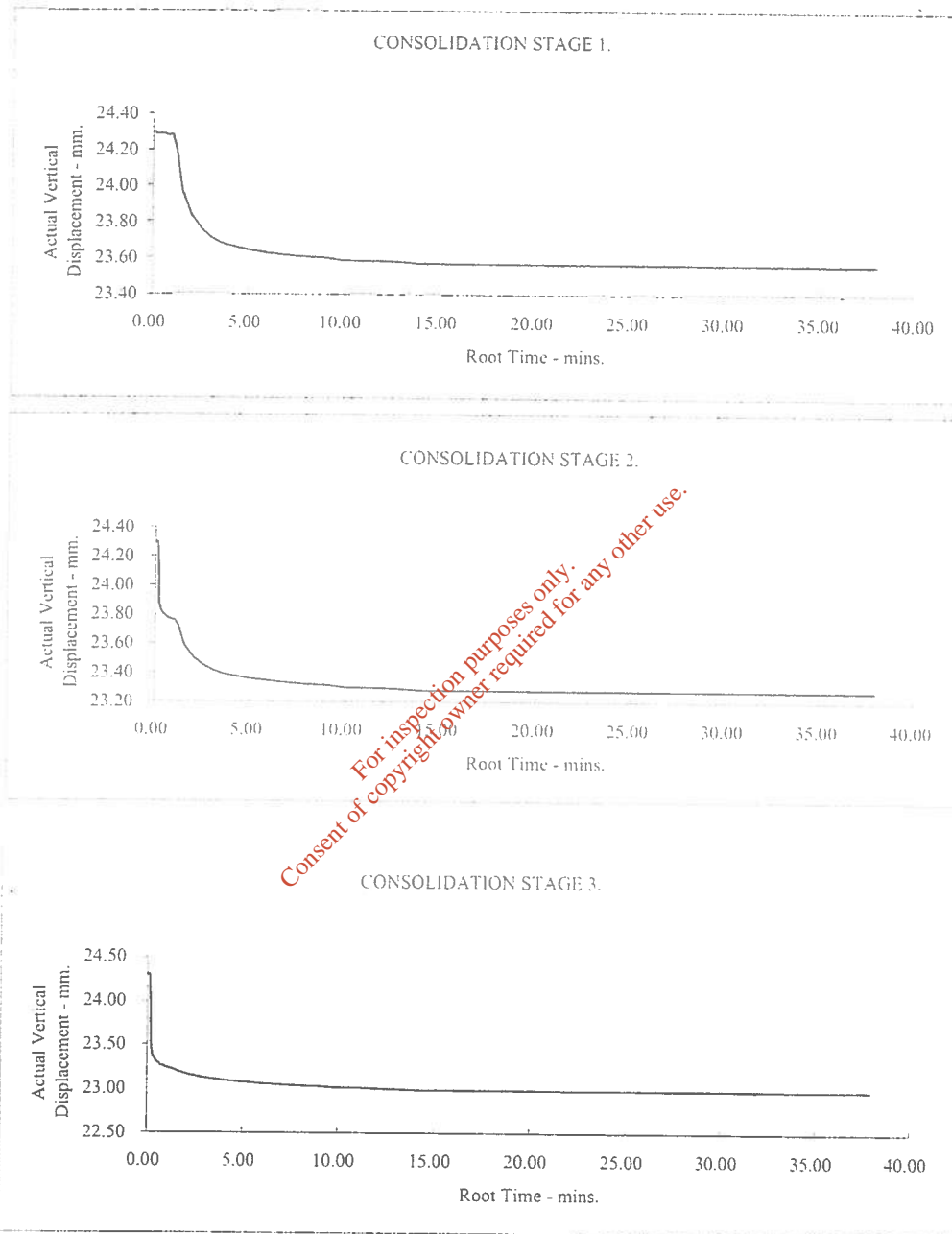
Client Ref Number:  
PC9030

Figure:  
Bynea, Llanelli, SA14 9SL

# CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH2/11      Depth (m): 3.00



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Contract No.:  
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Client Ref Number:  
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Figure:  
Bycen, Laneih, SA1495C

## CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

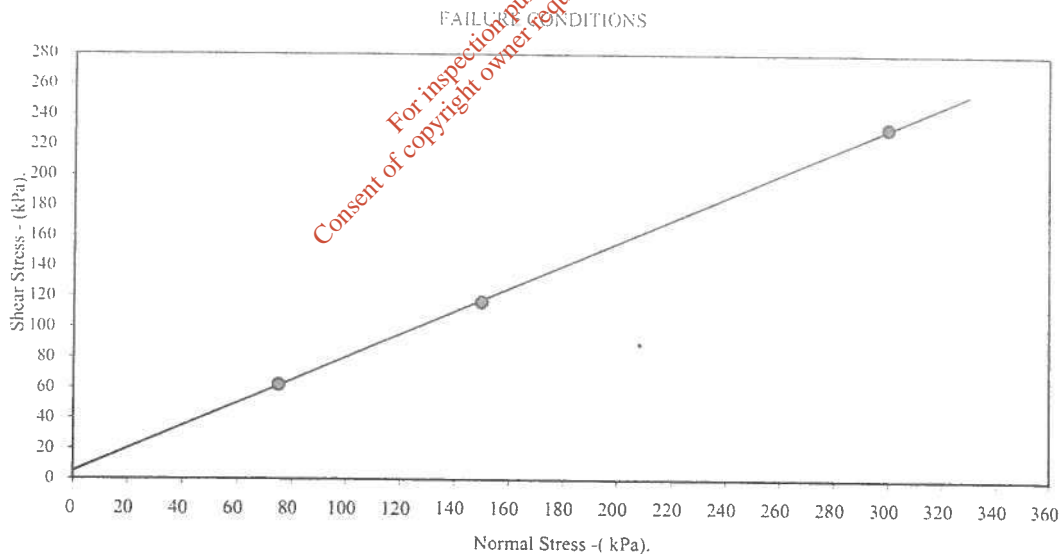
Borehole/Sample Number: BH3/10                      Depth (m): 2.35

Sample Type:	Remoulded (Light Tamping) Material above 2mm removed.
Particle Density - Mg/m <sup>3</sup> :	2.65                      (Assumed)
Specimen Tested:	Submerged

Sample Description:  
**Grey brown slightly clayey SAND (fine-coarse).**

STAGE	1	2	3
<b>Initial Conditions</b>			
Height - mm:	24.30	24.30	24.30
Length - mm:	60.00	60.00	60.00
Moisture Content - %:	9	9	9
Bulk Density - Mg/m <sup>3</sup> :	1.73	1.75	1.77
Dry Density - Mg/m <sup>3</sup> :	1.59	1.60	1.62
Void Ratio:	0.6699	0.6570	0.6401
Normal Pressure - kPa	75	150	300
<b>Consolidation</b>			
Consolidated Height - mm:	23.57	22.81	22.05
<b>Shear</b>			
Rate of Strain (mm/min)	0.010	0.010	0.010
Strain at peak shear stress (%)	5.80	7.20	7.01
Peak shear Stress - kPa:	62	116	232

<b>PEAK</b>	
Angle of Shearing Resistance:( $\theta$ )	37.0
Effective Cohesion - kPa:	5



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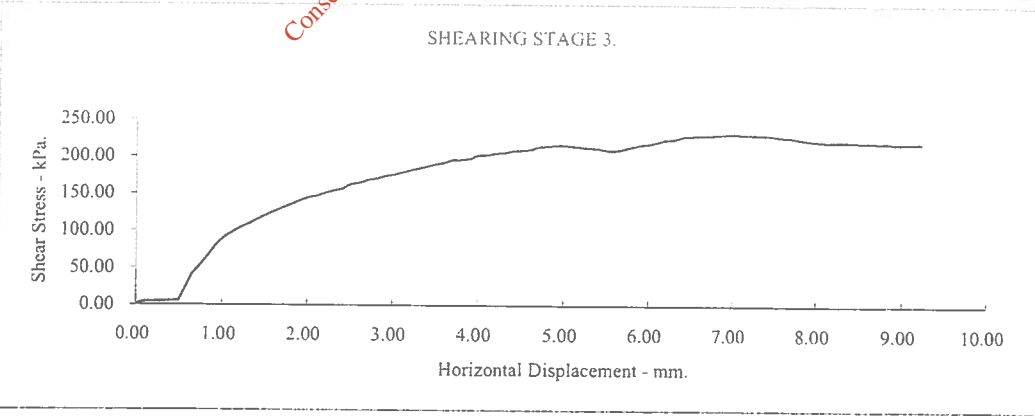
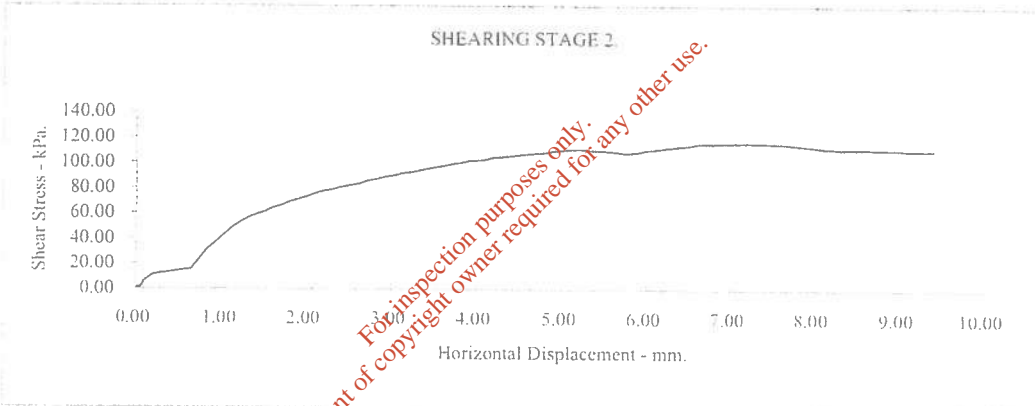
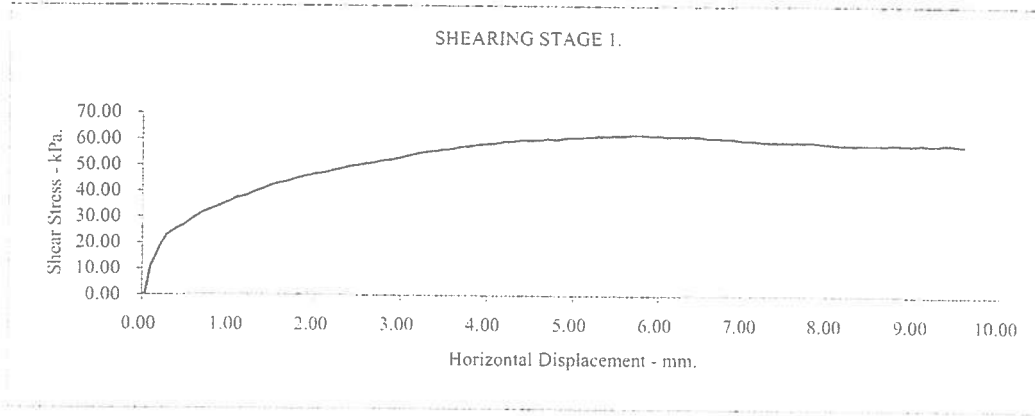
Figure:  
Banza Llanelli SAI/981



# CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH3/10      Depth (m): 2.35



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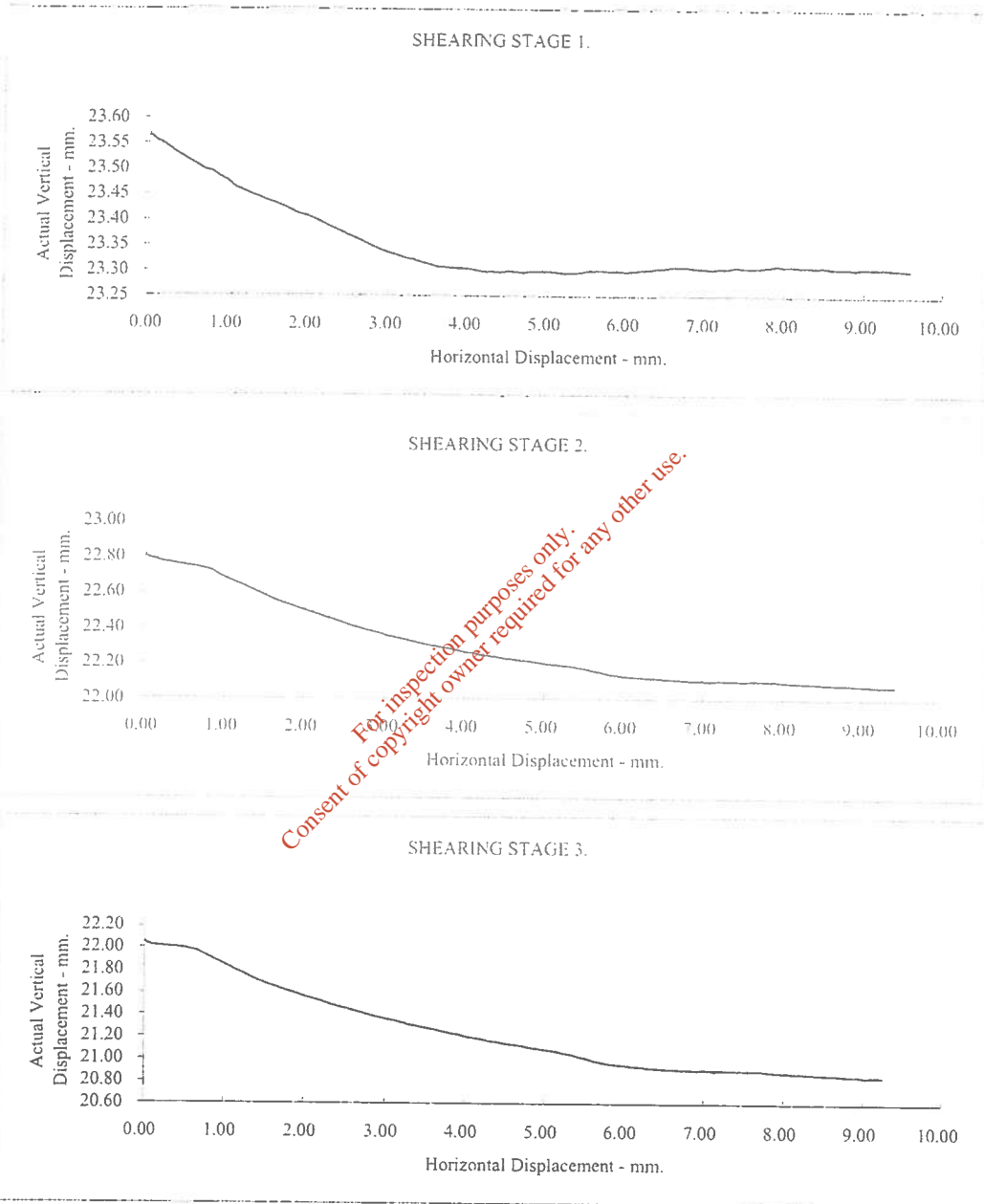
**Bantry Inner Harbour**

Contract No.:  
**Geo/8847/09**  
Client Ref Number:  
**PC9030**  
Figure:  
Bynea Linnelli SA14 9ST

# CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH3/10      Depth (m): 2.35



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**Bantry Inner Harbour**

Contract No.:  
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Client Ref Number:  
PC9030

Figure:  
B:nea Llanelli, SA14 9SL

# CONSOLIDATED DRAINED SHEARBOX TEST.

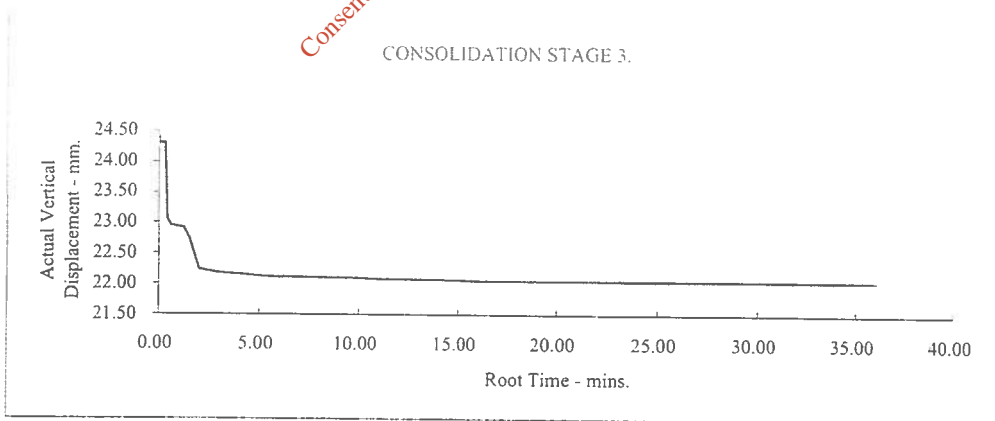
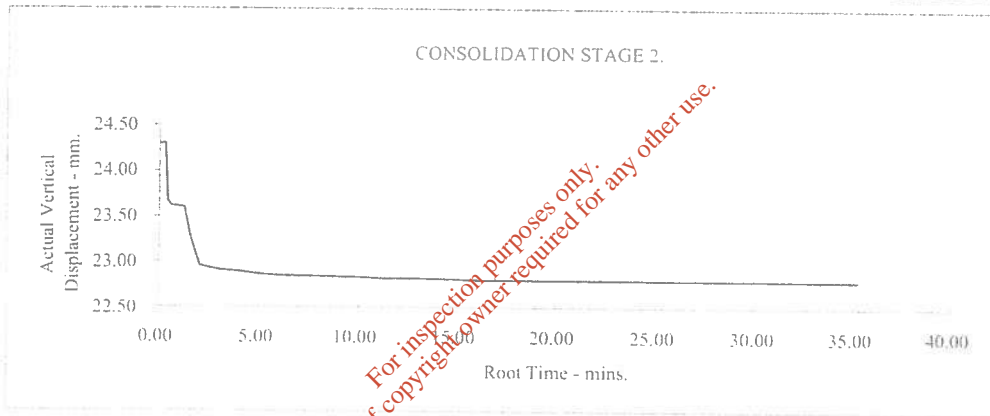
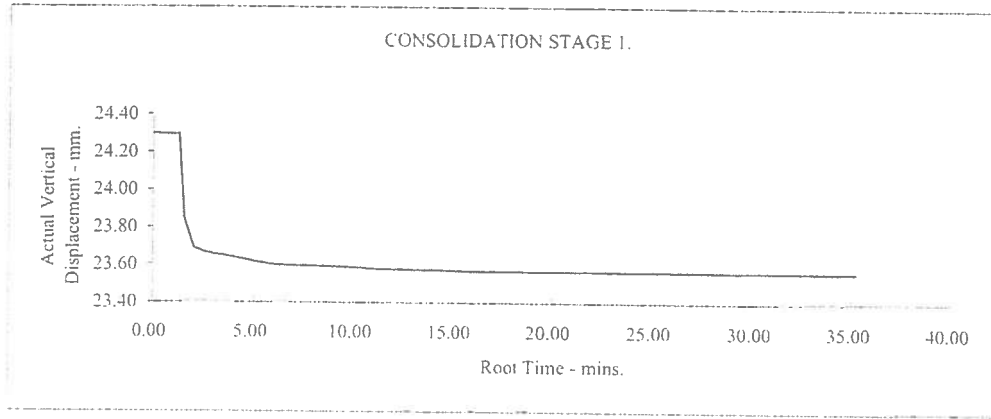
BS1377:Part 7:4.5 :1990.

Borehole/Sample Number:

BH3/10

Depth (m):

2.35



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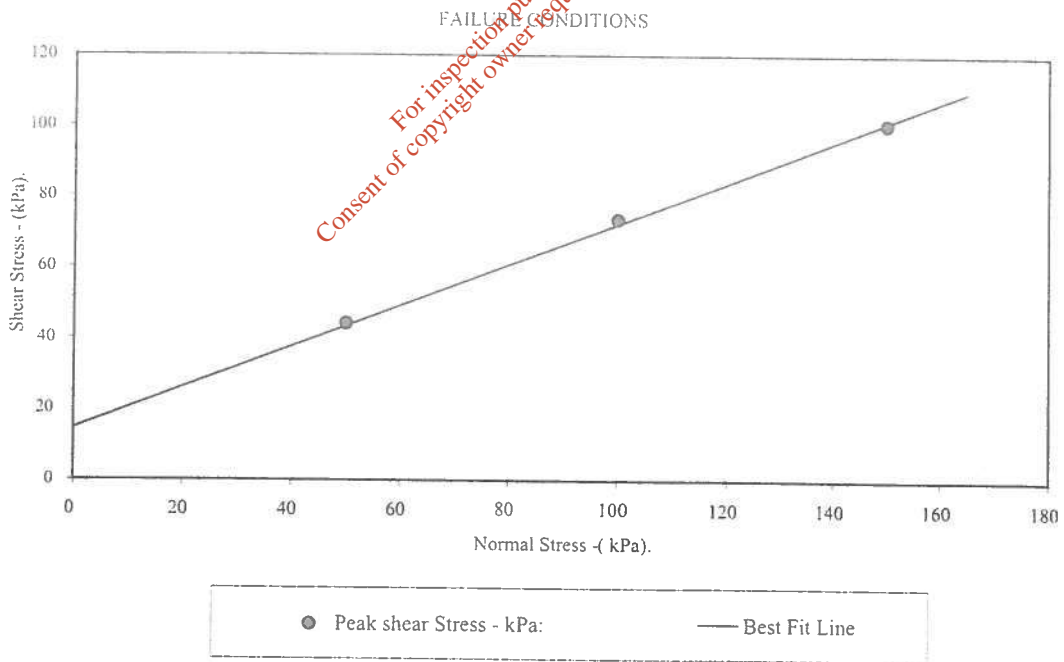
Figure:  
Bynea, Llaneth. SA1: 951

## CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH04                      Depth (m): 1.50

Sample Type:	Remoulded (Light Tamping)		
Particle Density - Mg/m <sup>3</sup> :	2.65 (Assumed)		
Specimen Tested:	Submerged		
Sample Description: <b>Grey silty CLAY.</b>			
<b>STAGE</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>Initial Conditions</b>			
Height - mm:	24.30	24.30	24.30
Length - mm:	60.00	60.00	60.00
Moisture Content - %:	25	25	25
Bulk Density - Mg/m <sup>3</sup> :	1.99	1.99	1.99
Dry Density - Mg/m <sup>3</sup> :	1.59	1.59	1.59
Voids Ratio:	0.6700	0.6672	0.6678
Normal Pressure- kPa	50	100	150
<b>Consolidation</b>			
Consolidated Height - mm:	24.18	23.85	23.52
<b>Shear</b>			
Rate of Strain (mm/min)	0.125	0.125	0.125
Strain at peak shear stress (%)	2.13	2.09	2.05
Peak shear Stress - kPa:	44	74	101
<b>PEAK</b>			
Angle of Shearing Resistance:( $\theta$ )			<b>30.0</b>
Effective Cohesion - kPa:			<b>15</b>



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Contract No.:  
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Client Ref Number:  
PC9030

Figure:  
Bynea, Linnelli, SA14 9SL

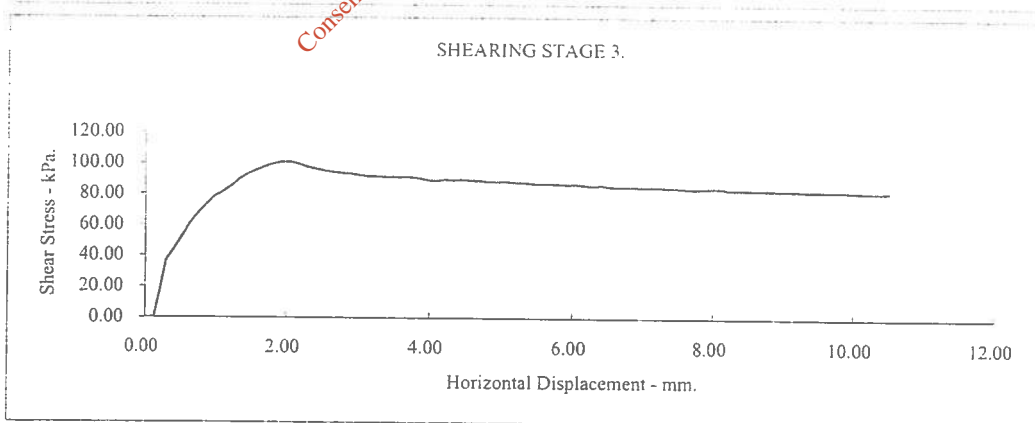
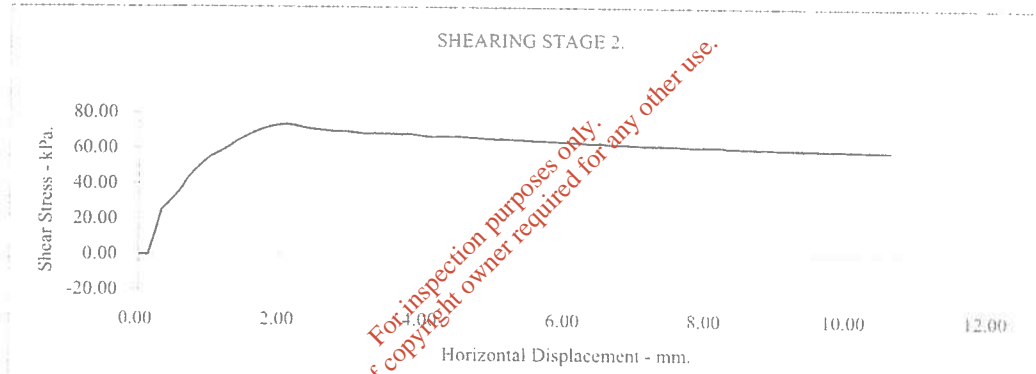
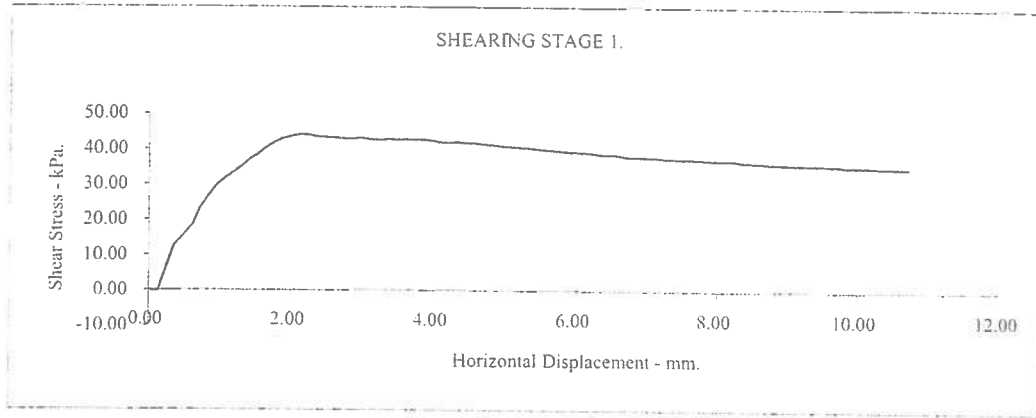
# CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH04

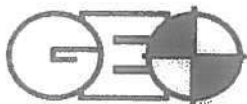
Depth (m):

1.50



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Contract No.:  
Geo/8578/09

Client Ref Number:  
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Figure:  
Bynea, Llanelli, SA14 9SU

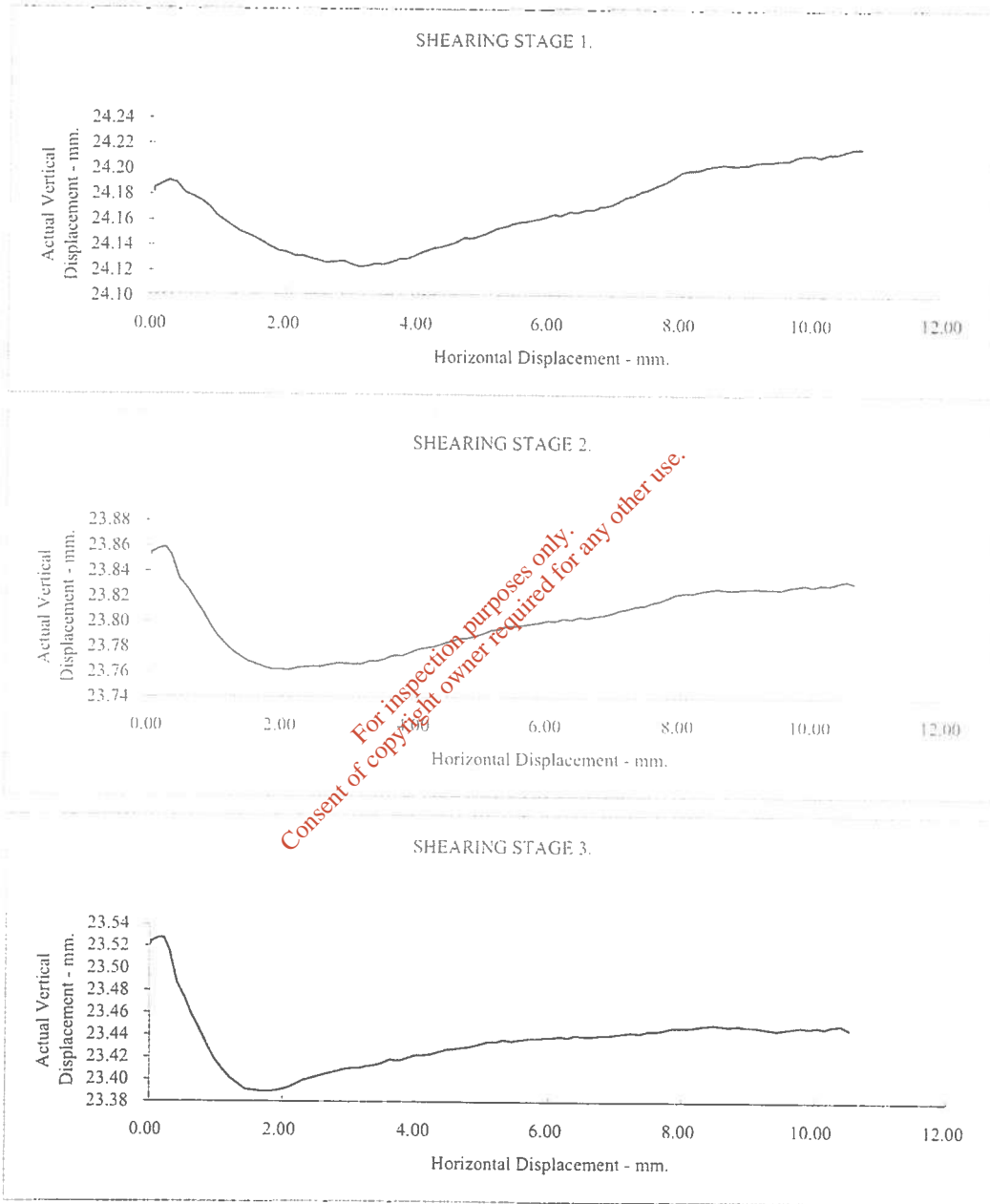
# CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

Borehole Sample Number: BH04

Depth (m):

1.50



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Client Ref Number:  
**PC9030**

Figure:  
Byrea, Lianell SA13/981



# CONSOLIDATED DRAINED SHEARBOX TEST.

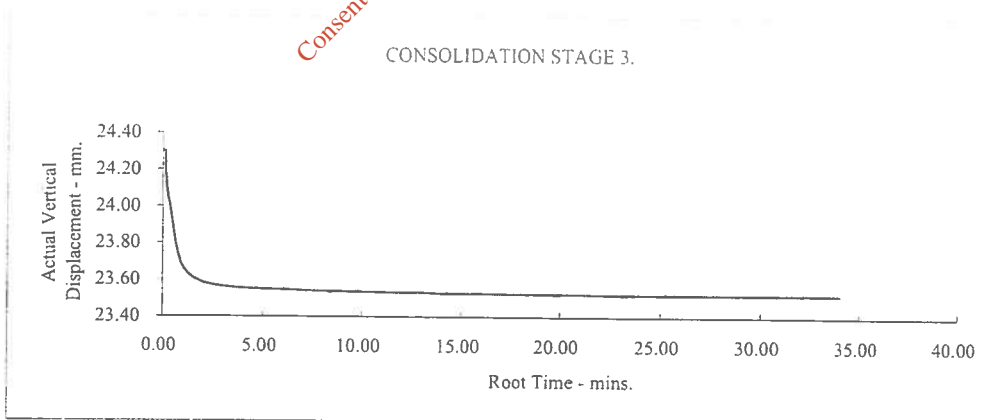
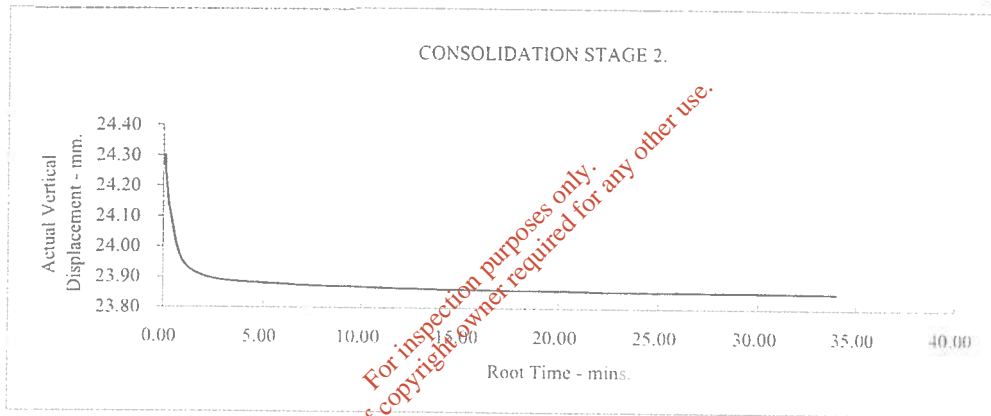
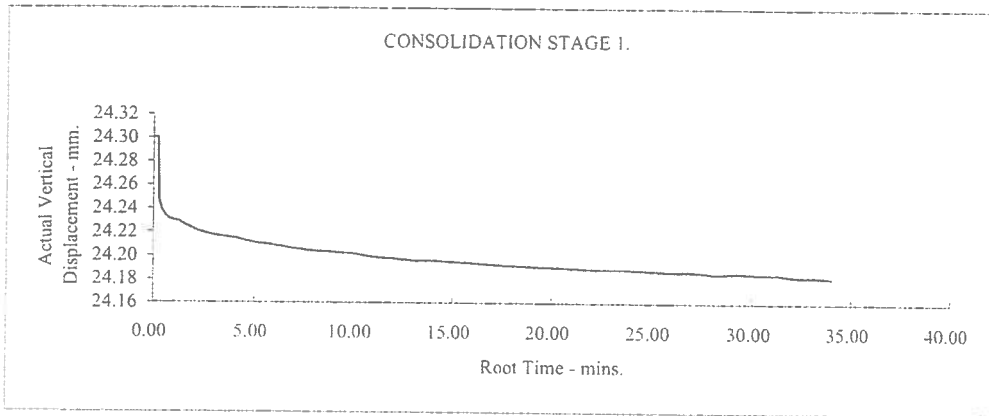
BS1377:Part 7:4.5 :1990.

Borehole/Sample Number:

BH04

Depth (m):

1.50



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Contract No.:  
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Figure:  
Bynea, Llanelli, SA14 9SU

## CONSOLIDATED DRAINED SHEARBOX TEST.

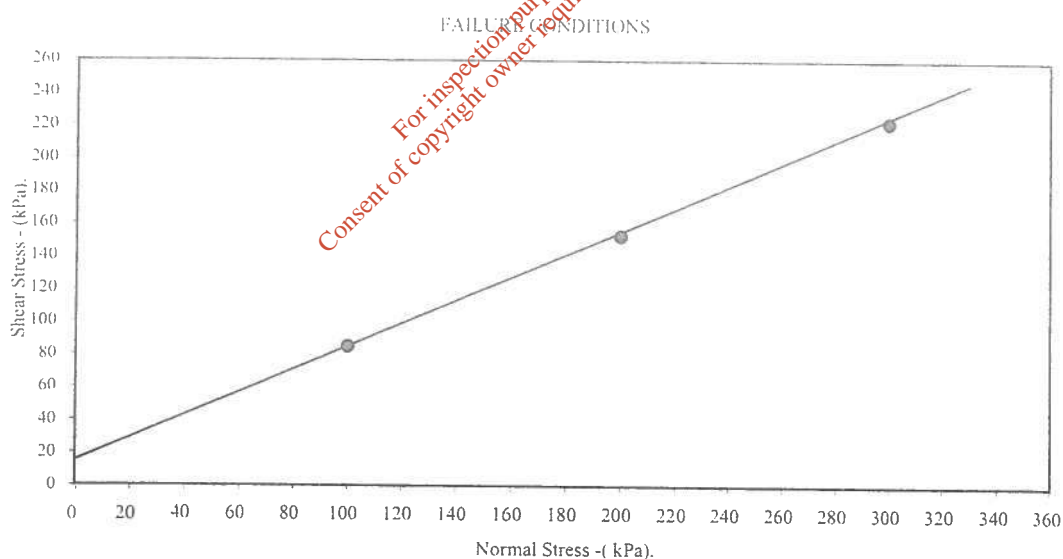
BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH8/1                      Depth (m): 0.00

Sample Type:	Remoulded (Light Tamping) Material above 2mm removed.
Particle Density - Mg/m <sup>3</sup> :	2.65                      (Assumed)
Specimen Tested:	Submerged

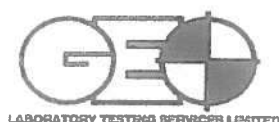
Sample Description:			
<b>Grey slightly silty slightly clayey SAND (fine-coarse).</b>			
<b>STAGE</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>Initial Conditions</b>			
Height - mm:	24.30	24.30	24.30
Length - mm:	60.00	60.00	60.00
Moisture Content - %:	9	9	9
Bulk Density - Mg/m <sup>3</sup> :	1.55	1.56	1.58
Dry Density - Mg/m <sup>3</sup> :	1.42	1.42	1.44
Voids Ratio:	0.8720	0.8610	0.8384
Normal Pressure- kPa	100	200	300
<b>Consolidation</b>			
Consolidated Height - mm:	23.91	23.46	23.00
<b>Shear</b>			
Rate of Strain (mm/min)	0.010	0.010	0.010
Strain at peak shear stress (%)	7.07	5.50	5.32
Peak shear Stress - kPa:	85	153	222

<b>PEAK</b>	
Angle of Shearing Resistance:( $\theta$ )	35.0
Effective Cohesion - kPa:	15



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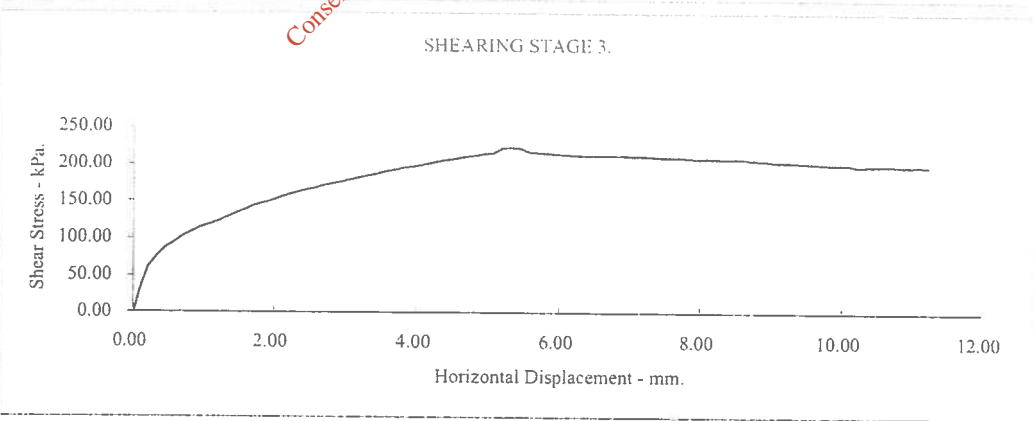
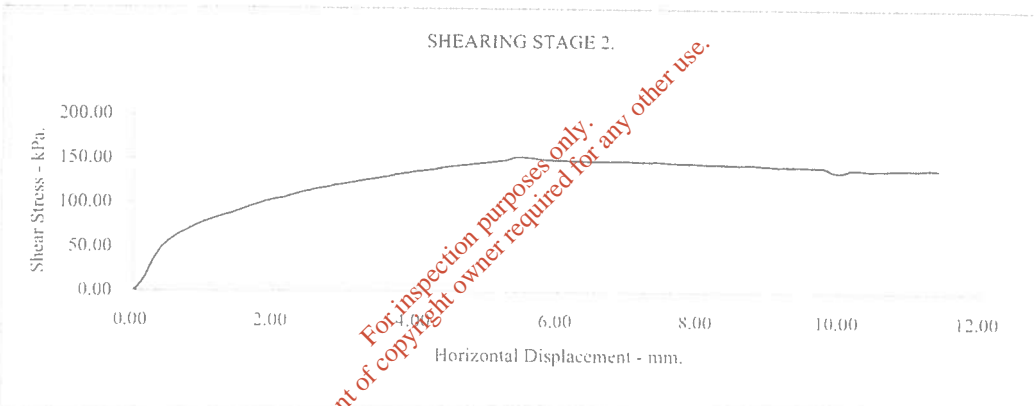
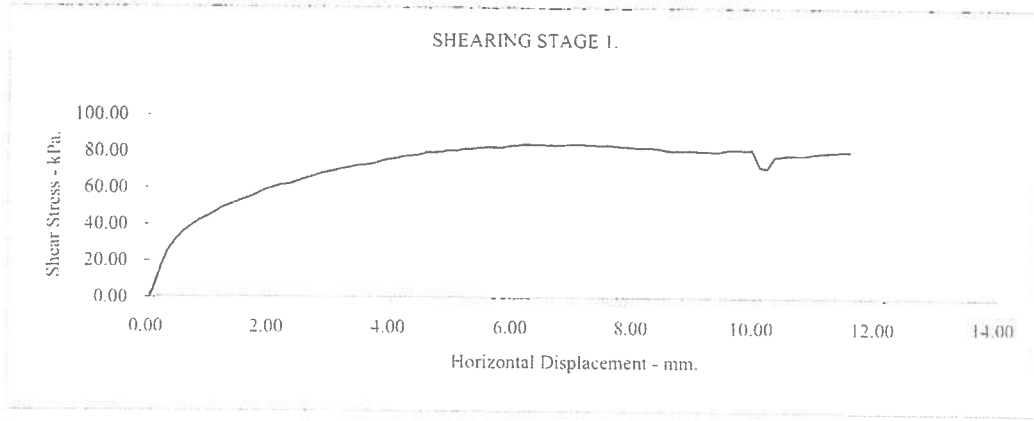
Client Ref Number:  
PC9030

Figure:  
Bynes Llanelli, SA14 9SA

# CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5:1990.

Borehole/Sample Number: BHS/1      Depth (m): 0.00



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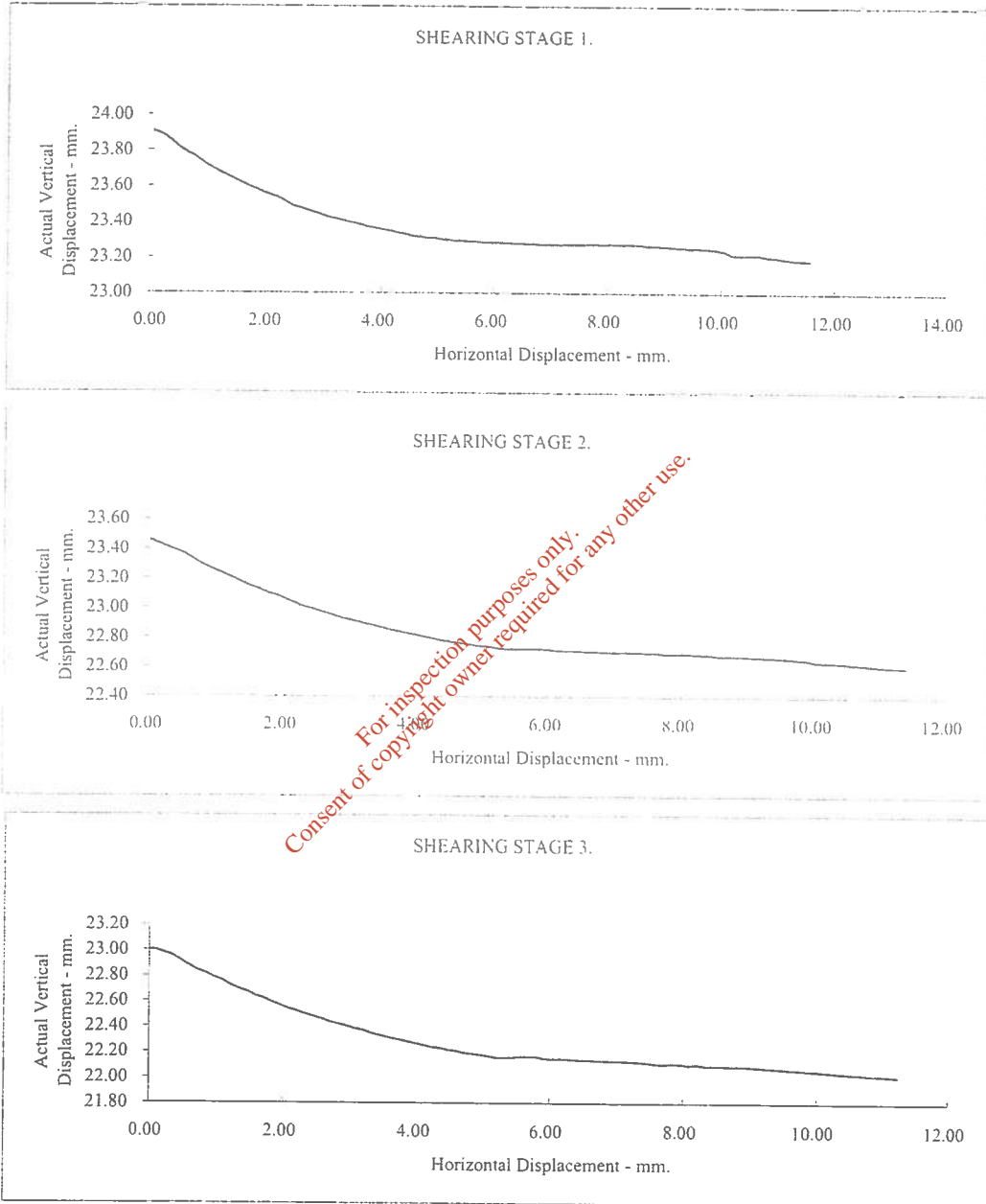
**Bantry Inner Harbour**

Contract No.:  
**Geo/8847/09**  
Client Ref Number:  
**PC9030**  
Figure:  
Banea, Llanelli, SA14 9ST

# CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH8/1      Depth (m): 0.00



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**Bantry Inner Harbour**

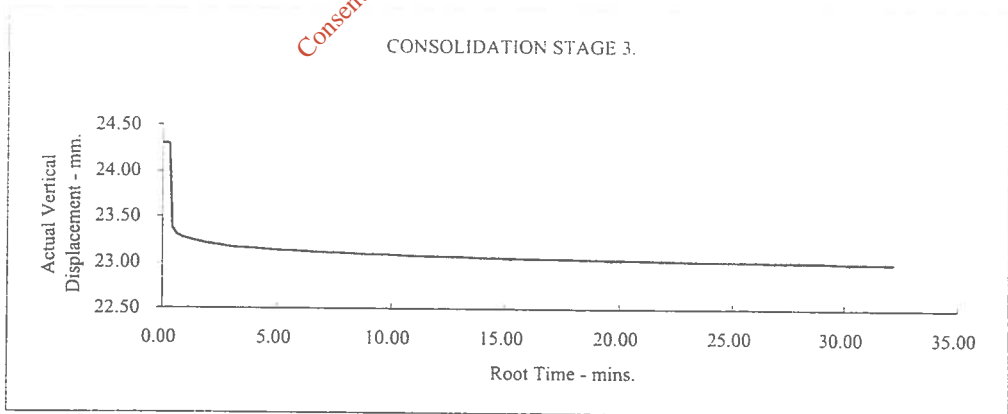
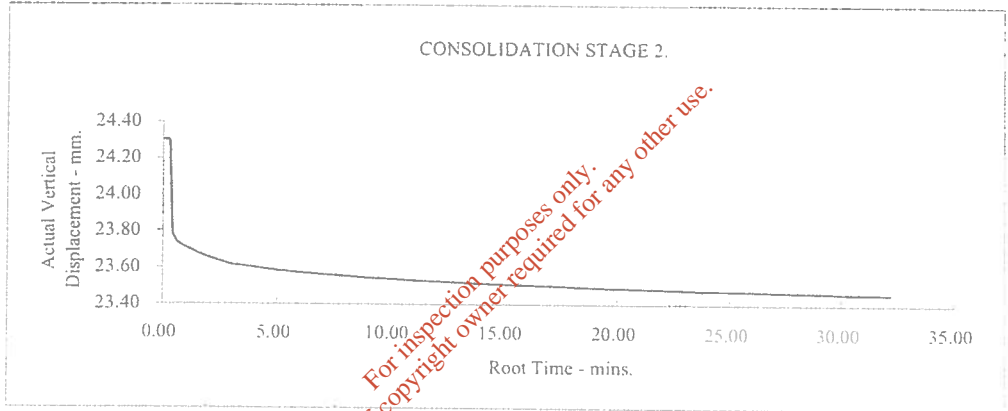
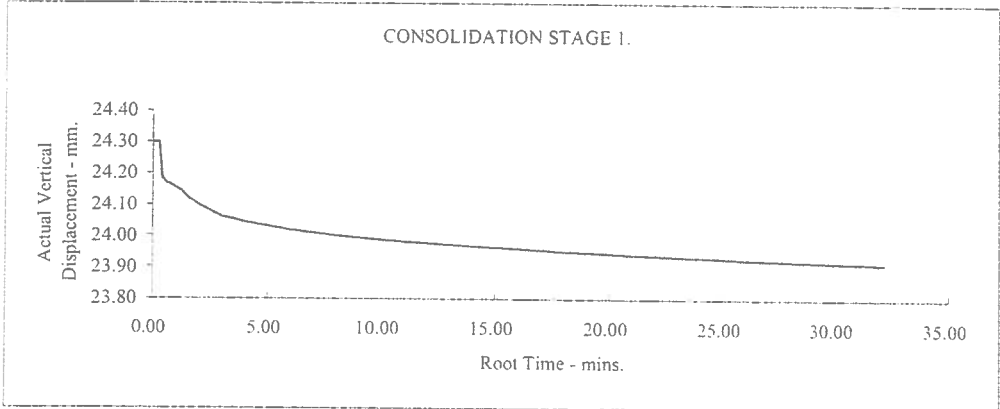
Contract No.:  
**Geo/8847/09**

Client Ref Number:  
**PC9030**

Figure:  
Bynea, Llanelli, SA14 0ST

**CONSOLIDATED DRAINED SHEARBOX TEST.**  
BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH8/1                      Depth (m): 0.00



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GEO 064    17-May-05    Issue No. 1 |

**Bantry Inner Harbour**

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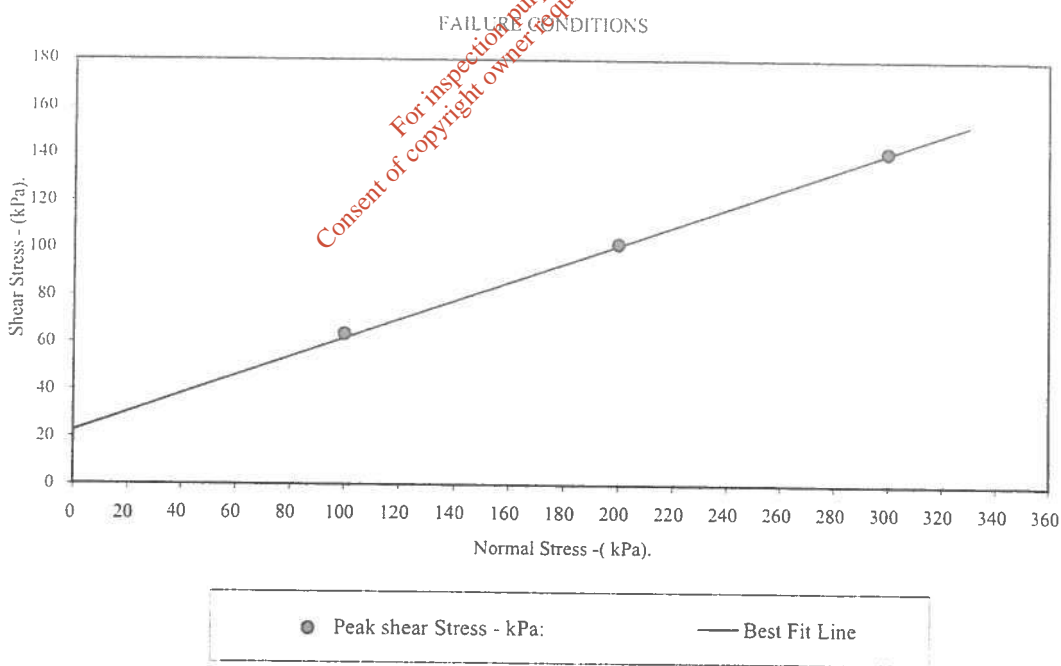
Figure:  
Bynea Landfill SA14 9SU

## CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH11/15                      Depth (m): 7.00

Sample Type:	Remoulded (Light Tamping) Material above 2mm removed.		
Particle Density - Mg/m <sup>3</sup> :	2.65                      (Assumed)		
Specimen Tested:	Submerged		
Sample Description: <b>Grey silty CLAY.</b>			
<b>STAGE</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>Initial Conditions</b>			
Height - mm:	24.30	24.30	24.30
Length - mm:	60.00	60.00	60.00
Moisture Content - %:	11	11	11
Bulk Density - Mg/m <sup>3</sup> :	1.84	1.84	1.84
Dry Density - Mg/m <sup>3</sup> :	1.65	1.65	1.65
Voids Ratio:	0.6020	0.6019	0.6022
Normal Pressure- kPa	100	200	300
<b>Consolidation</b>			
Consolidated Height - mm:	22.75	22.47	22.20
<b>Shear</b>			
Rate of Strain (mm/min)	0.010	0.010	0.010
Strain at peak shear stress (%)	8.46	8.06	5.16
Peak shear Stress - kPa:	64	102	141
<b>PEAK</b>			
Angle of Shearing Resistance:( $\theta$ )			<b>21.5</b>
Effective Cohesion - kPa:			<b>23</b>



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**Bantry Inner Harbour**

Contract No.:  
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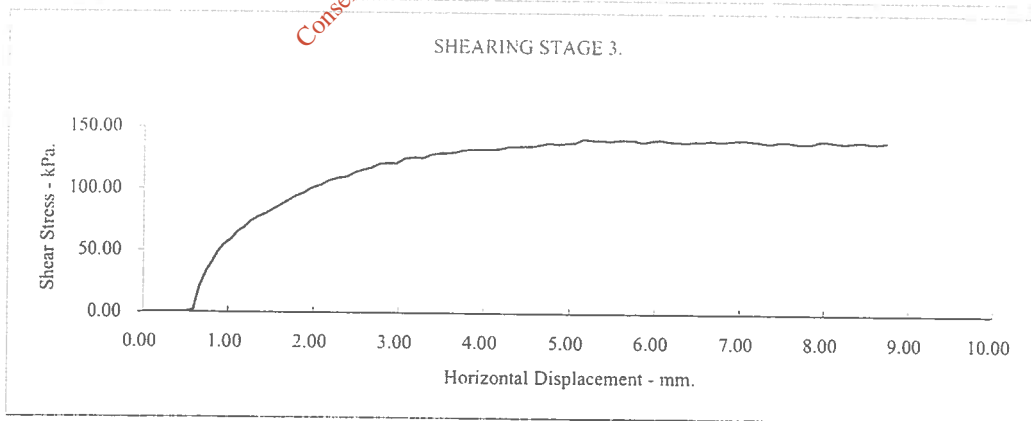
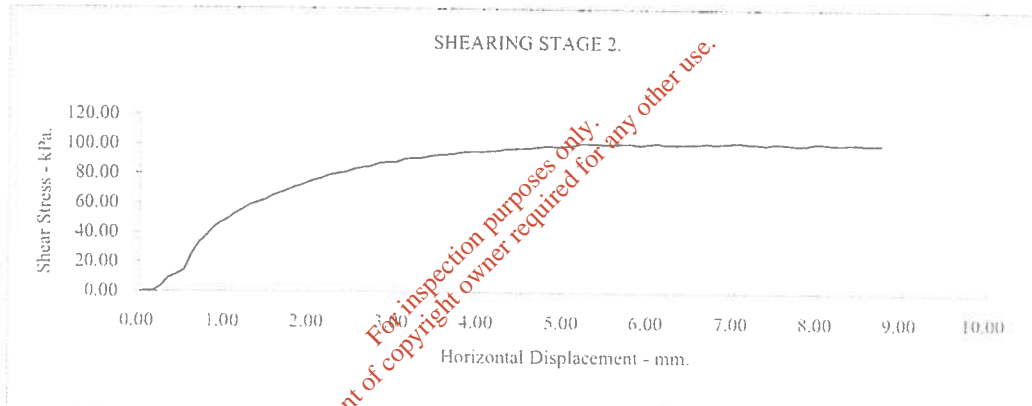
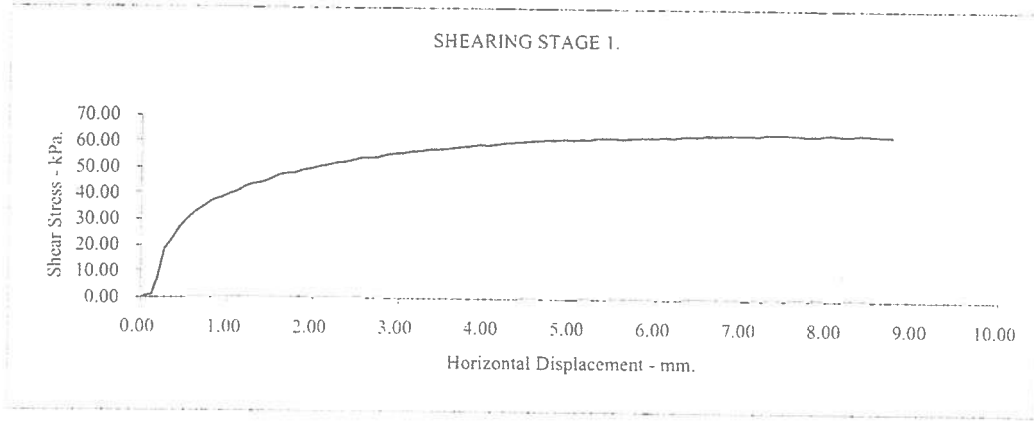
Client Ref Number:  
PC9030

Figure:  
Bynea, Llanelli, SA14 9ST

# CONSOLIDATED DRAINED SHEARBOX TEST.

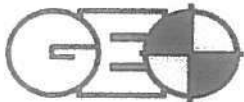
BS1377:Part 7:4.5:1990.

Borehole/Sample Number: BH11/15      Depth (m): 7.00



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Contract No.:  
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Figure:  
Byzsa, Llaneth, SA11 9SU



# CONSOLIDATED DRAINED SHEARBOX TEST.

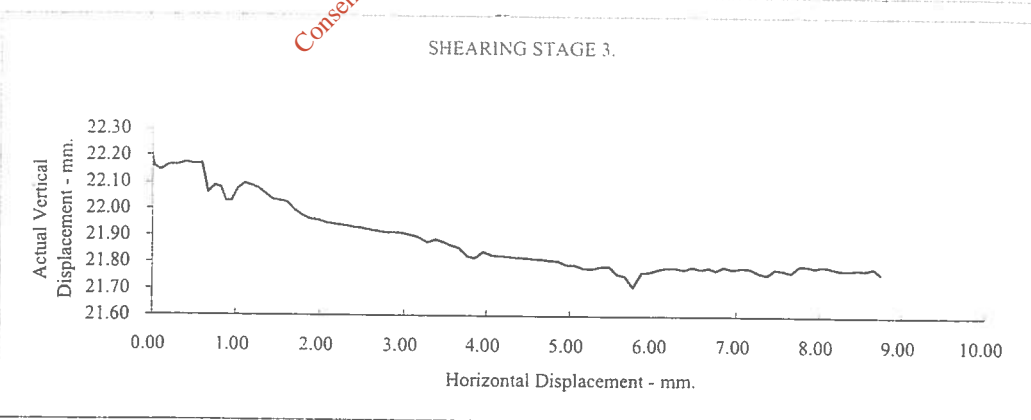
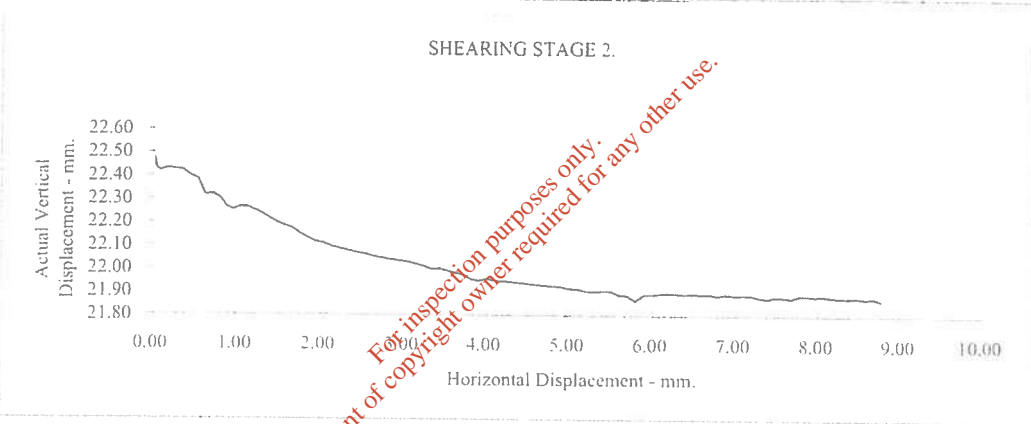
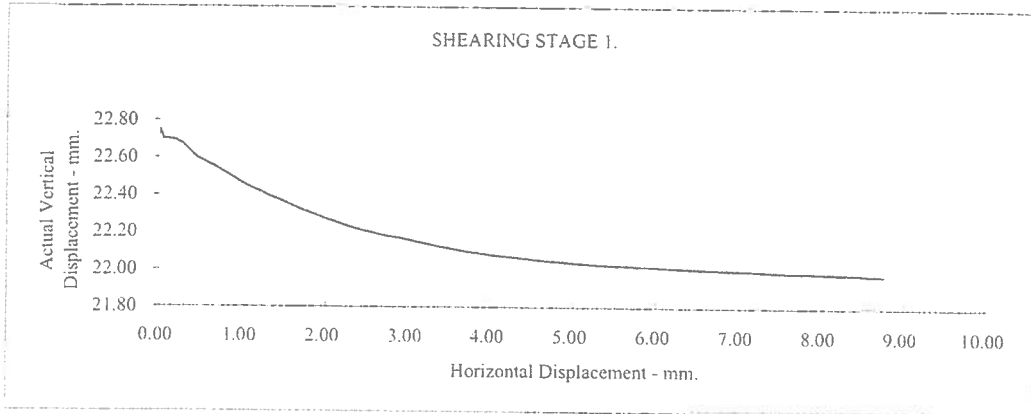
BS1377:Part 7:4.5 :1990.

Borehole/Sample Number:

BH11/15

Depth (m):

7.00



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GEO 063 17-May-05 Issue No. 1.1

**Bantry Inner Harbour**

Contract No.:  
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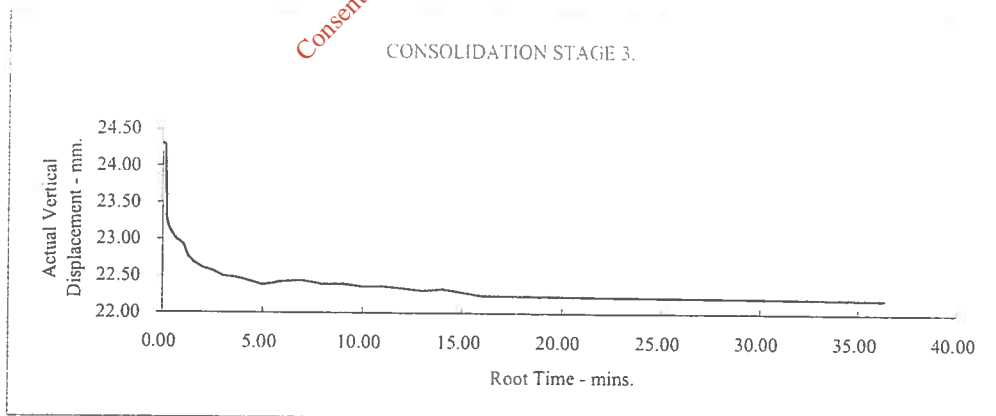
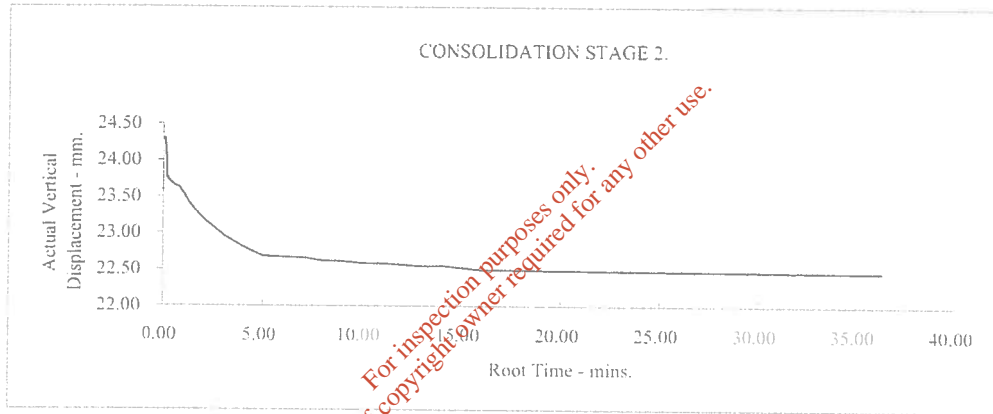
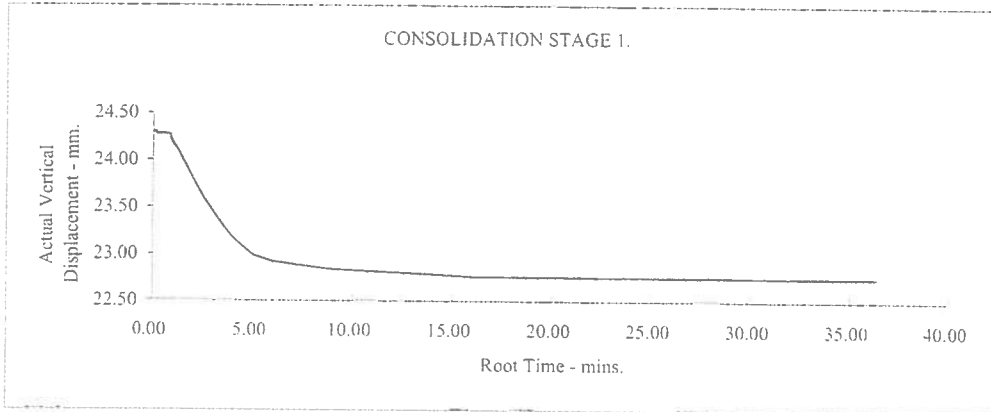
Client Ref Number:  
PC9030

Figure:  
Bynes, Llanelli, SA14 0SU

# CONSOLIDATED DRAINED SHEARBOX TEST.

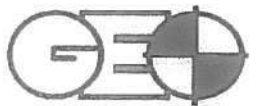
BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH11/15      Depth (m): 7.00



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**Bantry Inner Harbour**

Contract No.:  
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**PC9030**

Figure:  
Bynea, Llanelli SA14 9SL

## CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

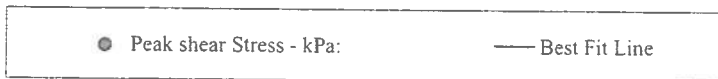
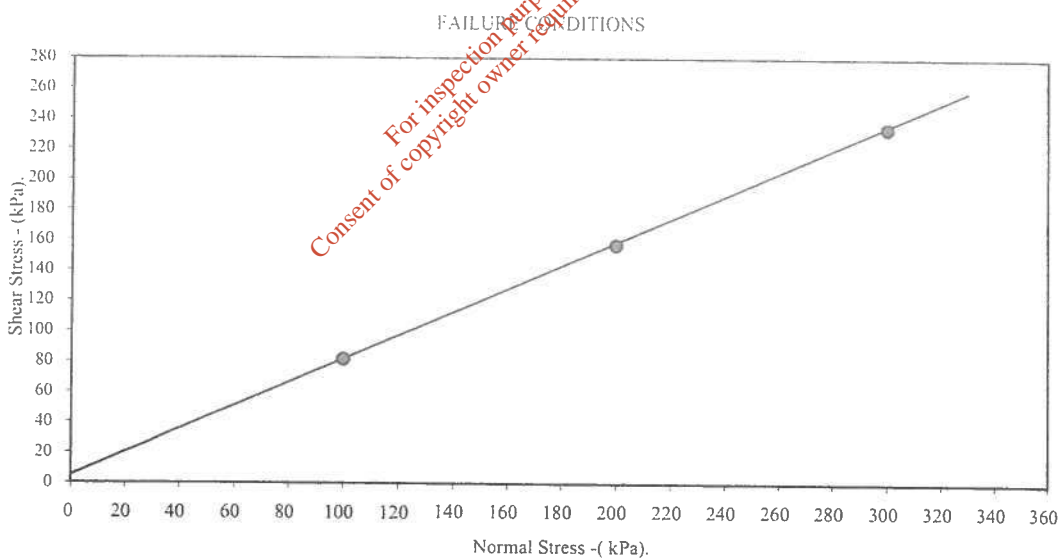
Borehole/Sample Number: BH11/1                      Depth (m): 0.00

Sample Type:	Remoulded (Light Tamping) Material above 2mm removed.
Particle Density - Mg/m <sup>3</sup> :	2.65 (Assumed)
Specimen Tested:	Submerged

Sample Description:  
**Grey silty clayey SAND (fine-coarse).**

STAGE	1	2	3
<b>Initial Conditions</b>			
Height - mm:	24.30	24.30	24.30
Length - mm:	60.00	60.00	60.00
Moisture Content - %:	12	12	12
Bulk Density - Mg/m <sup>3</sup> :	1.73	1.74	1.75
Dry Density - Mg/m <sup>3</sup> :	1.55	1.55	1.57
Voids Ratio:	0.7104	0.7074	0.6912
Normal Pressure- kPa	100	200	300
<b>Consolidation</b>			
Consolidated Height - mm:	24.19	23.84	23.49
<b>Shear</b>			
Rate of Strain (mm/min)	0.010	0.010	0.010
Strain at peak shear stress (%)	4.64	5.69	5.45
Peak shear Stress - kPa:	81	157	234

<b>PEAK</b>	
Angle of Shearing Resistance:( $\theta$ )	37.5
Effective Cohesion - kPa:	5



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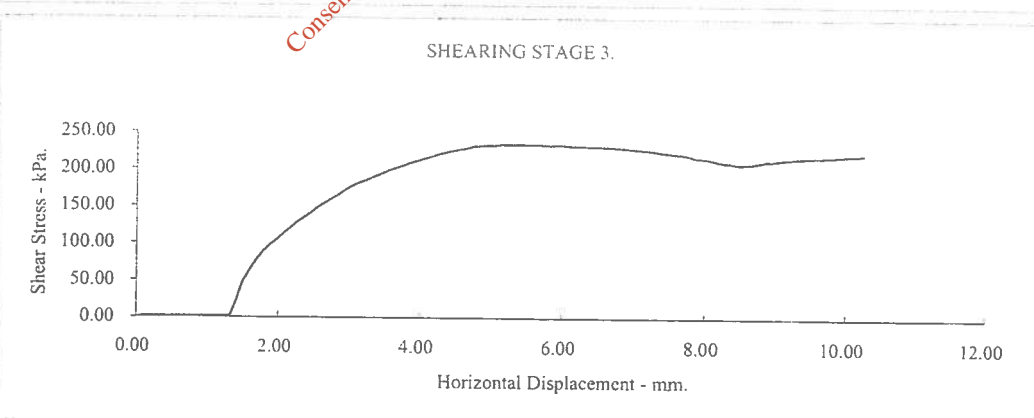
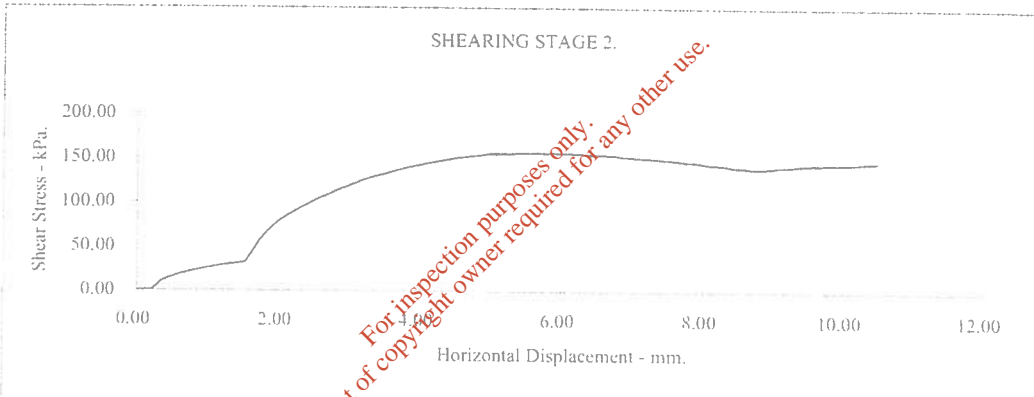
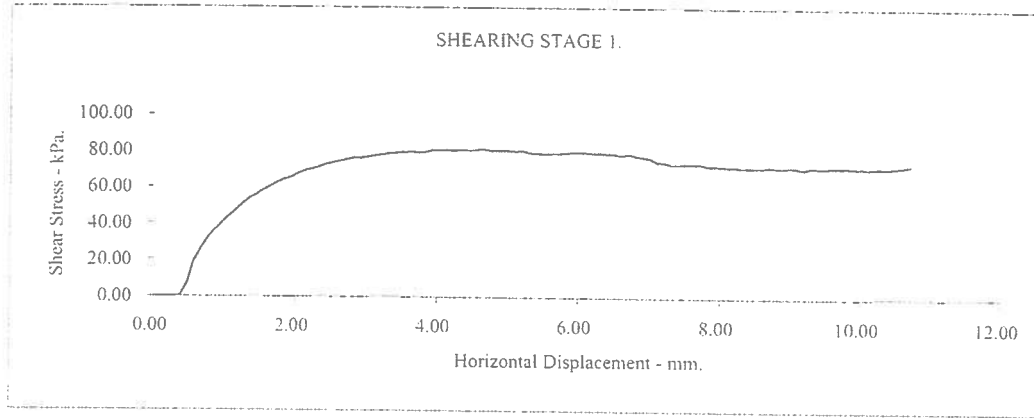
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Client Ref Number:  
**PC9030**

Figure:  
Wynca, Llanelli, SA11 9SU

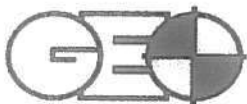
**CONSOLIDATED DRAINED SHEARBOX TEST.**  
BS1377:Part 7:4.5:1990.

Borehole/Sample Number: BH11/1      Depth (m): 0.00



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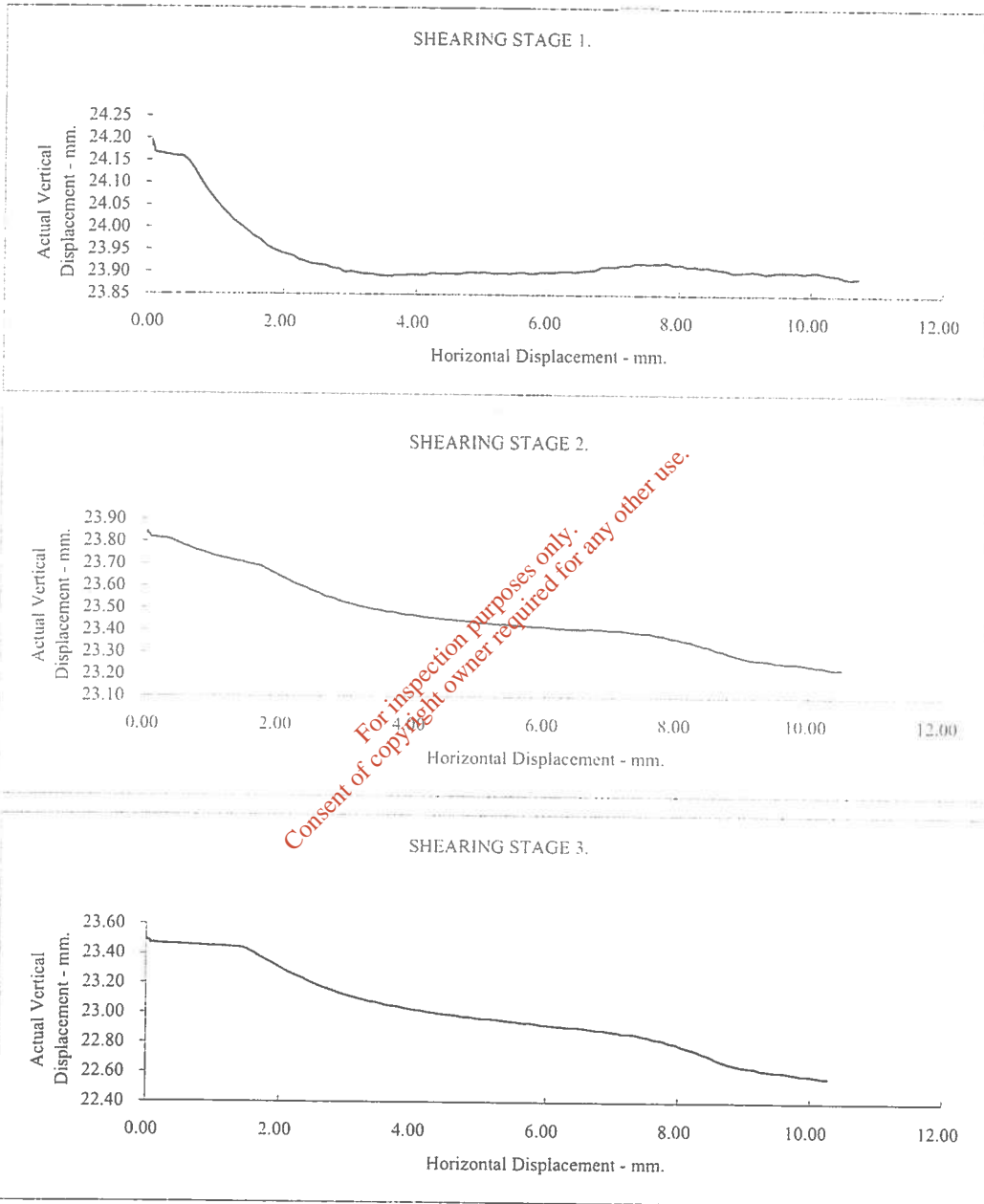
Client Ref Number:  
**PC9030**

Figure:  
Bynea Llanelli, SA14 9SU

# CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

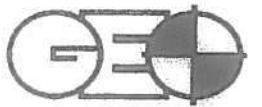
Borehole/Sample Number: BH11/1      Depth (m): 0.00



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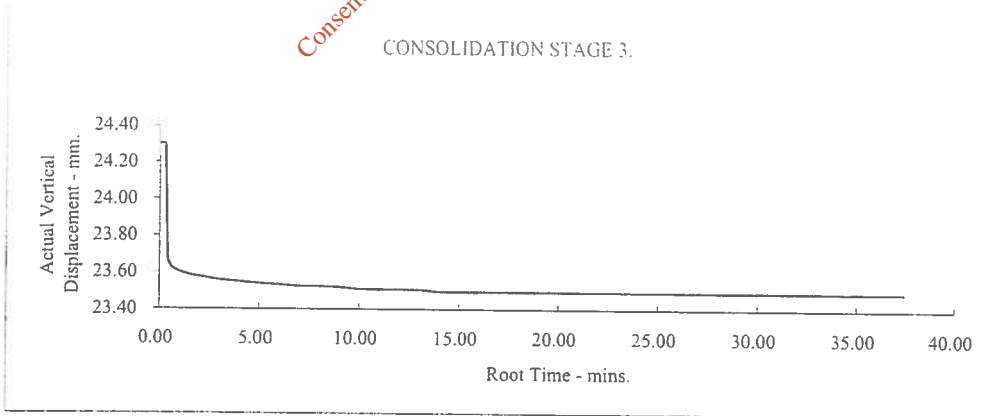
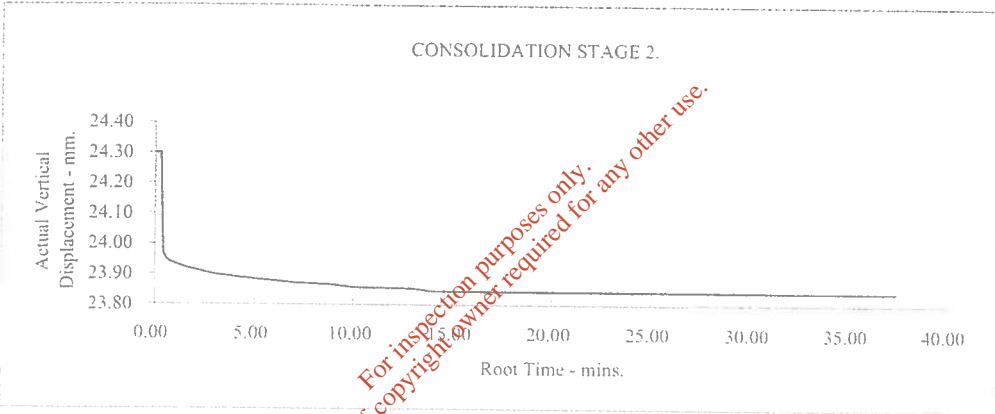
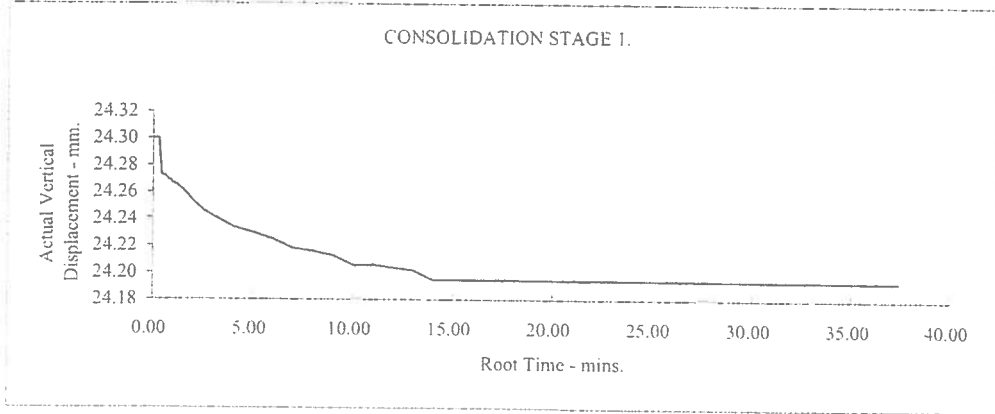
Client Ref Number:  
PC9030

Figure:  
Bynea, Llanelli, SA14 9SU

# CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

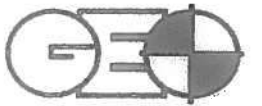
Borehole/Sample Number: BH11/1      Depth (m): 0.00



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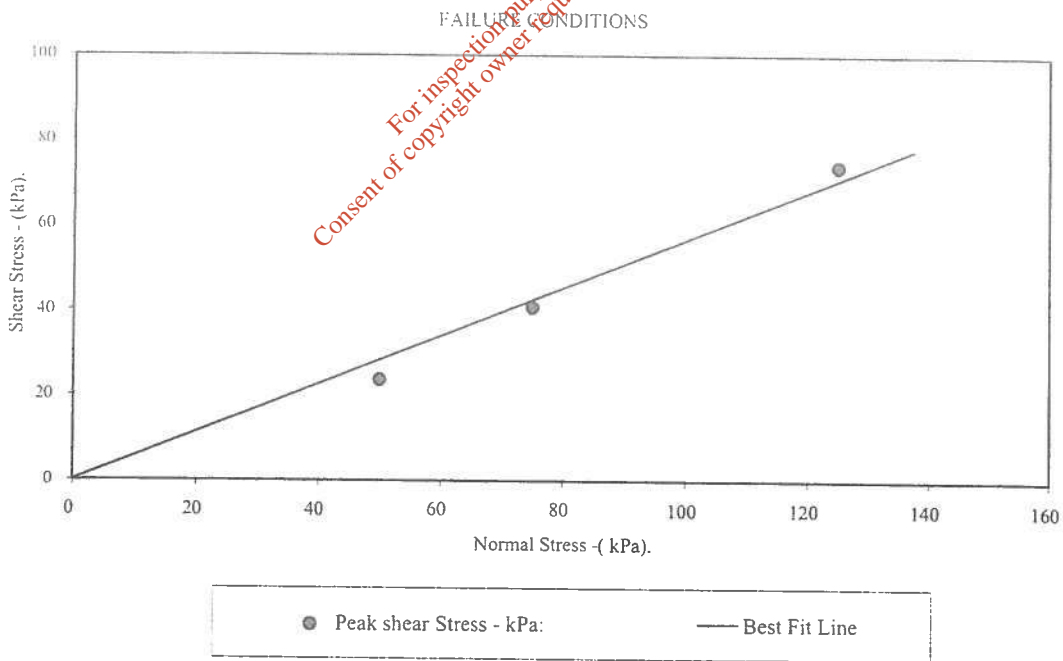
Figure:  
Bynea, Llanelli, SA1 1 9ST

## CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH17/5                      Depth (m): 1.50-2.00

Sample Type:	Remoulded (Light Tamping) Material above 2mm removed.		
Particle Density - Mg/m <sup>3</sup> :	2.65                      (Assumed)		
Specimen Tested:	Submerged		
Sample Description:			
<b>Light brown sity slightly clayey SAND (fine-coarse).</b>			
<b>STAGE</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>Initial Conditions</b>			
Height - mm:	24.30	24.30	24.30
Length - mm:	60.00	60.00	60.00
Moisture Content - %:	9	9	9
Bulk Density - Mg/m <sup>3</sup> :	1.74	1.73	1.72
Dry Density - Mg/m <sup>3</sup> :	1.59	1.59	1.57
Void Ratio:	0.6623	0.6710	0.6835
Normal Pressure - kPa	50	75	125
<b>Consolidation</b>			
Consolidated Height - mm:	24.29	23.97	23.65
<b>Shear</b>			
Rate of Strain (mm/min)	0.010	0.010	0.010
Strain at peak shear stress (%)	8.76	8.74	3.47
Peak shear Stress - kPa:	24	41	74
<b>PEAK</b>			
Angle of Shearing Resistance:( $\theta$ )			29.5
Effective Cohesion - kPa:			0



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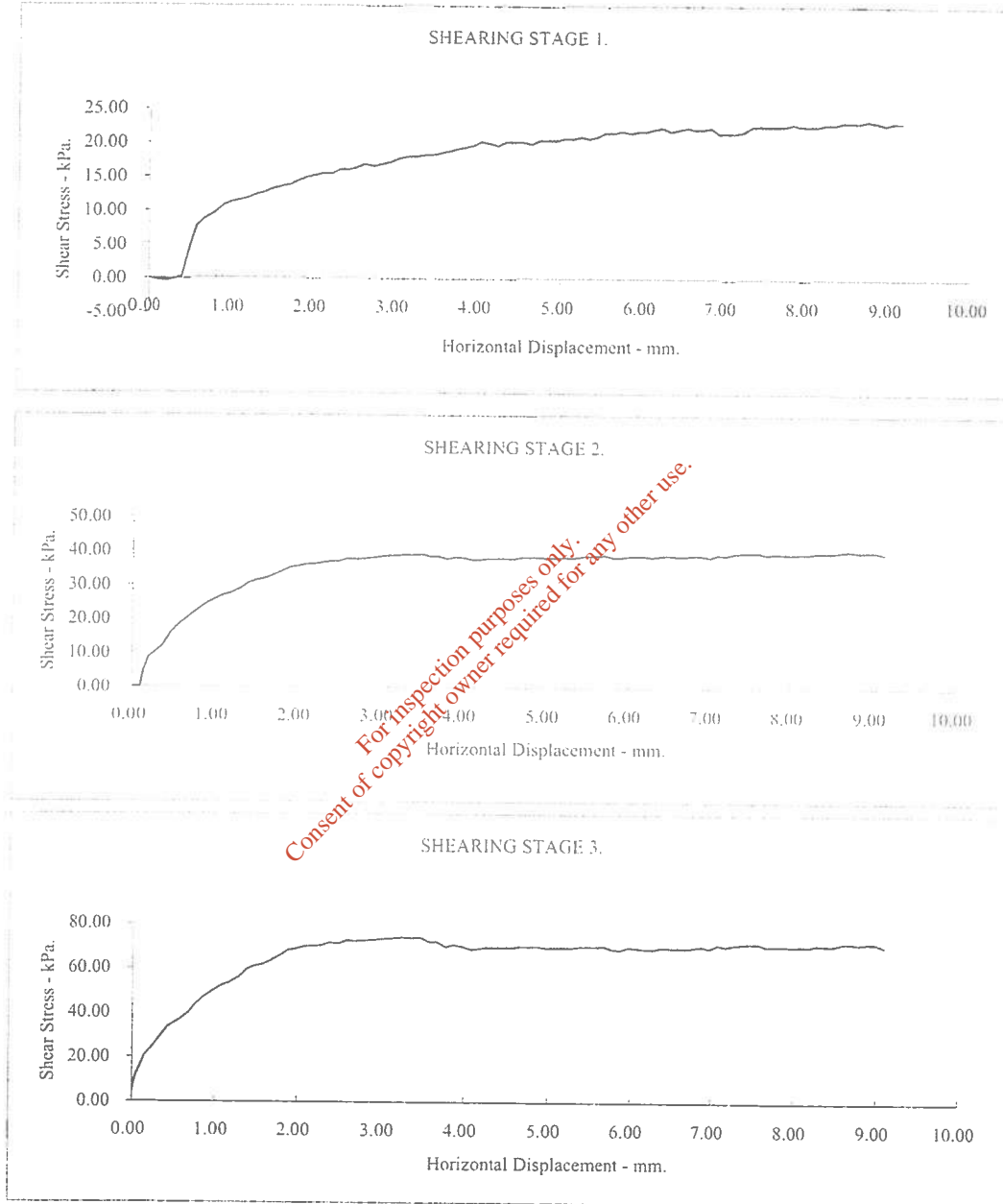
Figure:  
Bynea, Llanelli, SA14 9ST



# CONSOLIDATED DRAINED SHEARBOX TEST.

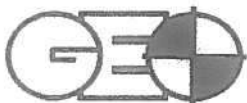
BS1377:Part 7:4.5:1990.

Borehole Sample Number: BH17/5      Depth (m): 1.50-2.00



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**Bantry Inner Harbour**

Contract No.:  
**Geo/8847/09**

Client Ref Number:  
**PC9030**

Figure:  
Bynea, Llanelli, SA14 9SU

# CONSOLIDATED DRAINED SHEARBOX TEST.

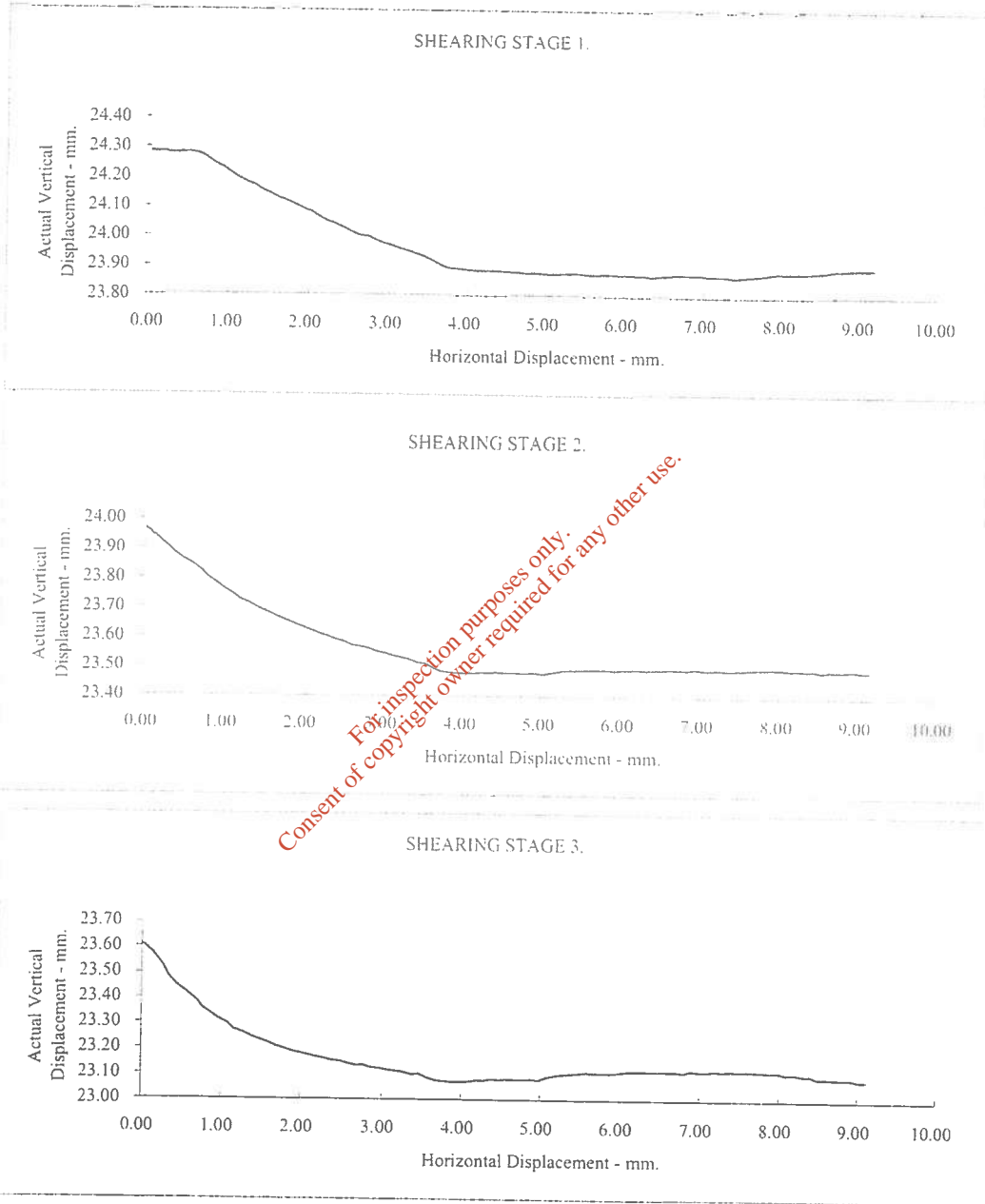
BS1377:Part 7:4.5 :1990.

Borehole/Sample Number:

BH17/5

Depth (m):

1.50-2.00

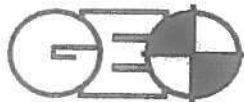


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Geo 064 17-May-05 Issue No 11

**Bantry Inner Harbour**

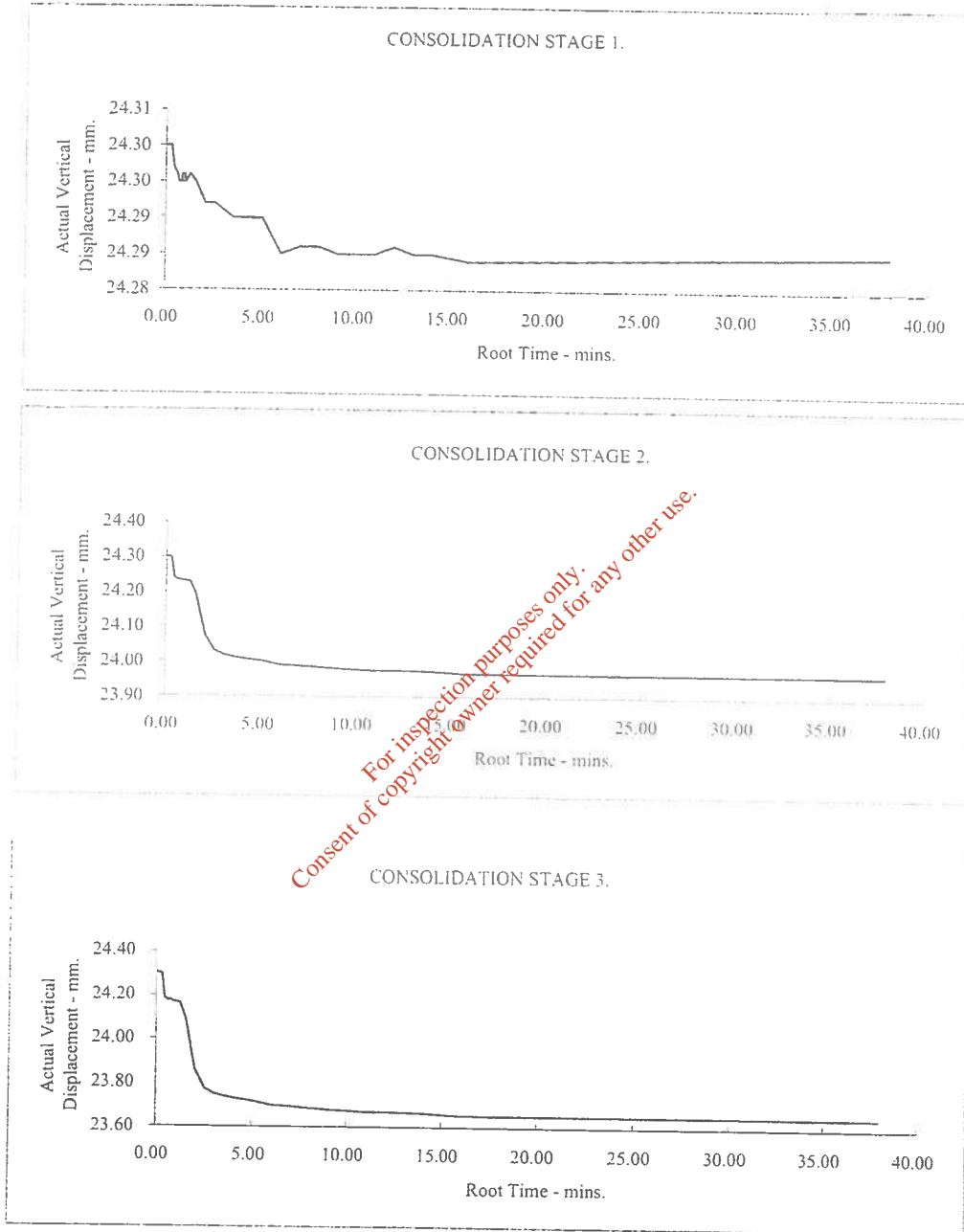
Contract No.:  
Geo/8847/09

Client Ref Number:  
PC9030

Figure:  
Bynea Ulanelli, SA14 9SU

**CONSOLIDATED DRAINED SHEARBOX TEST.**  
BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH17/5      Depth (m): 1.50-2.00



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GEO 064    17-May-05    Issue No. 1.1

**Bantry Inner Harbour**

Contract No.:  
Geo/8847/09

Client Ref Number:  
PC9030

Figure:  
Bynea Hanehill SAI 951

## CONSOLIDATED DRAINED SHEARBOX TEST.

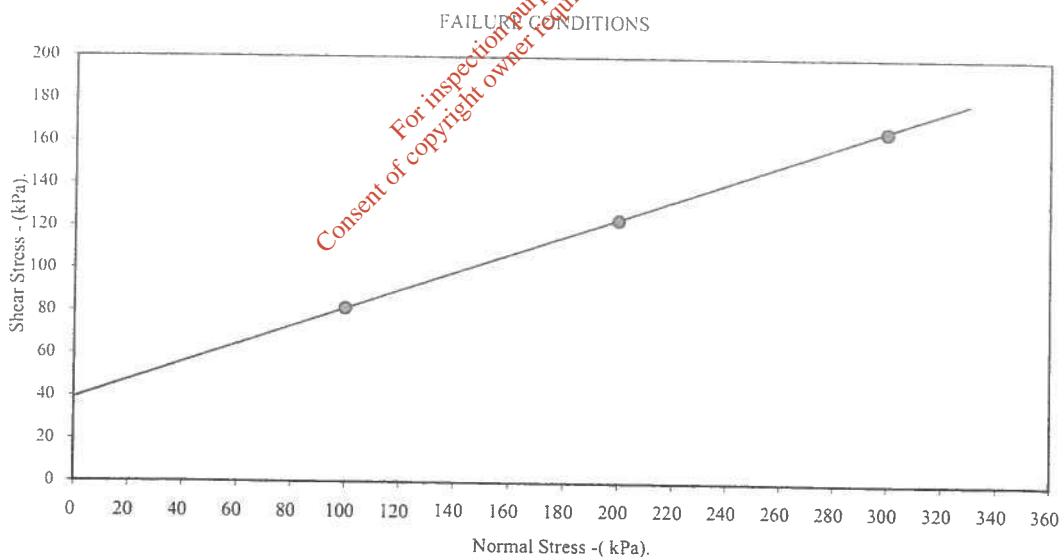
BS1377:Part 7:4.5 :1990.

Borehole/Sample Number: BH17/5                      Depth (m): 4.50-5.00

Sample Type:	Remoulded (Light Tamping) Material above 2mm removed.
Particle Density - Mg/m <sup>3</sup> :	2.65                      (Assumed)
Specimen Tested:	Submerged

Sample Description:			
<b>Grey brown slightly clayey SAND (fine-coarse).</b>			
<b>STAGE</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>Initial Conditions</b>			
Height - mm:	24.30	24.30	24.30
Length - mm:	60.00	60.00	60.00
Moisture Content - %:	10	10	10
Bulk Density - Mg/m <sup>3</sup> :	1.74	1.73	1.72
Dry Density - Mg/m <sup>3</sup> :	1.58	1.57	1.56
Void Ratio:	0.6767	0.6855	0.6980
Normal Pressure- kPa	100	200	300
<b>Consolidation</b>			
Consolidated Height - mm:	23.86	22.75	21.65
<b>Shear</b>			
Rate of Strain (mm/min)	0.010	0.010	0.010
Strain at peak shear stress (%)	8.85	7.59	7.86
Peak shear Stress - kPa:	81	123	166

<b>PEAK</b>	
Angle of Shearing Resistance:( $\theta$ )	23.0
Effective Cohesion - kPa:	39



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**Bantry Inner Harbour**

Contract No.:  
Geo/8847/09

Client Ref Number:  
PC9030

Figure:  
Bynea, Llanelli, SA14 9SU

# CONSOLIDATED DRAINED SHEARBOX TEST.

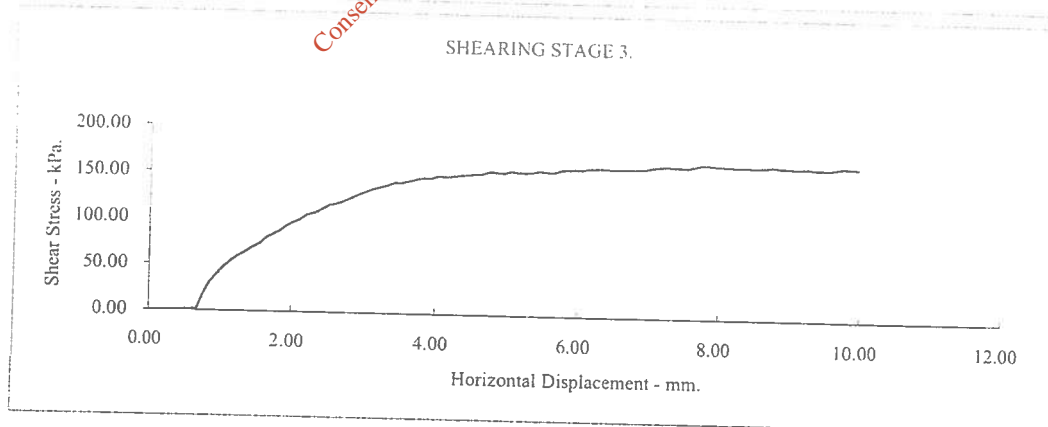
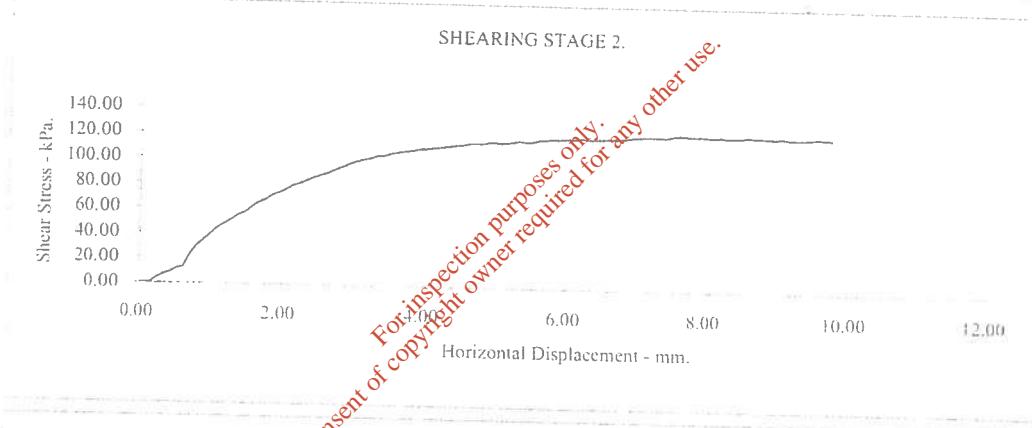
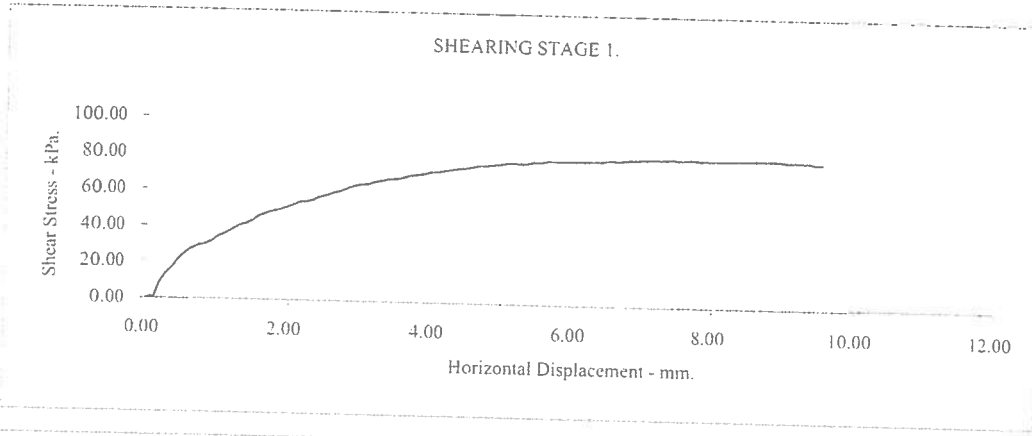
BS1377:Part 7:4.5 :1990.

Borehole/Sample Number:

BH17/5

Depth (m):

4.50-5.00



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Contract No.:  
**Geo/8847/09**

Client Ref Number:  
**PC9030**

Figure:  
Bynea, Llanelli, SA11 9NQ

# CONSOLIDATED DRAINED SHEARBOX TEST.

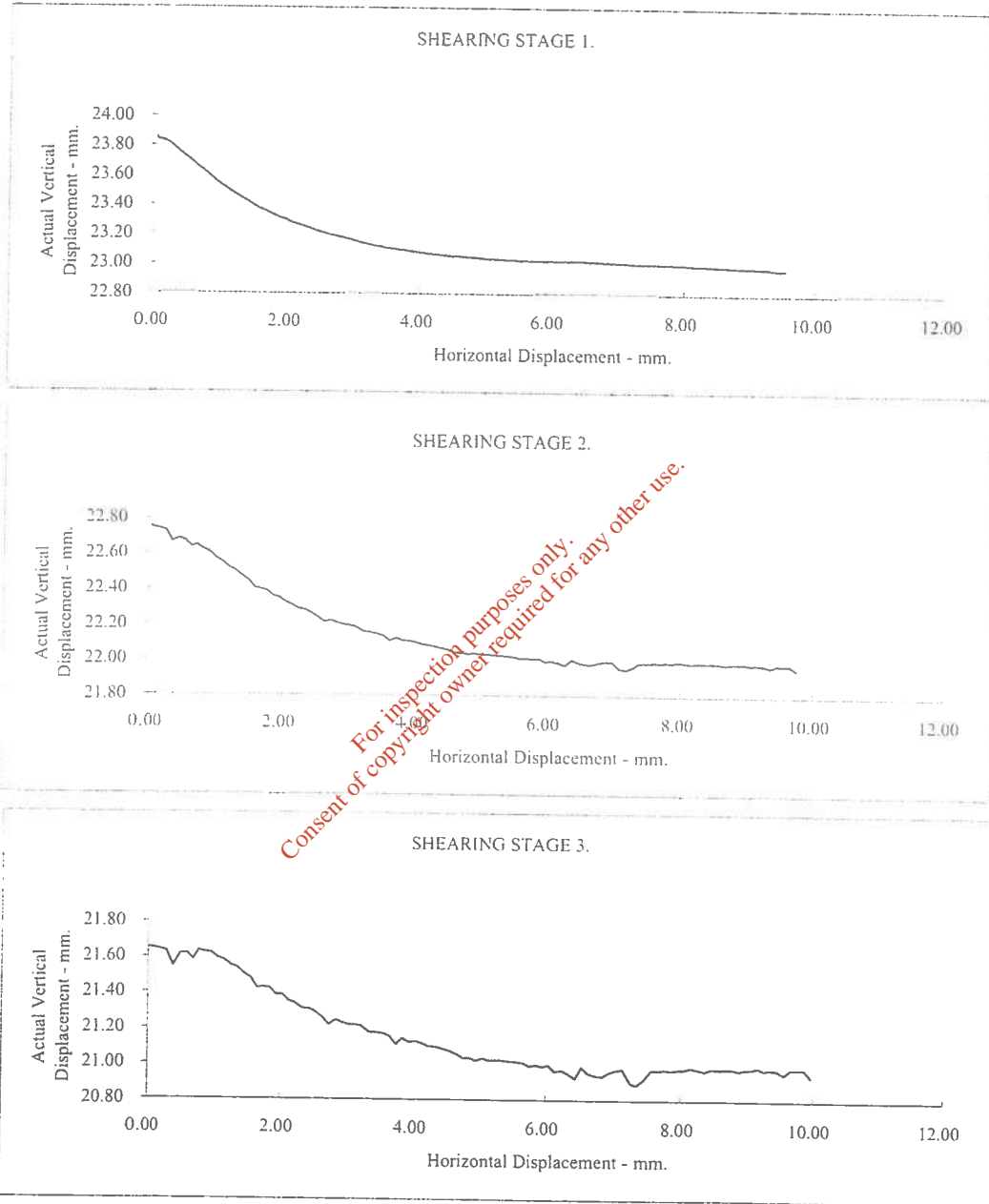
BS1377:Part 7:4.5 :1990.

Borehole/Sample Number:

BH17/5

Depth (m):

4.50-5.00



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Contract No.:  
Geo/8847/09

Client Ref Number:  
PC9030

Figure:  
Bynea, Llanelli, SA14 9SL

# CONSOLIDATED DRAINED SHEARBOX TEST.

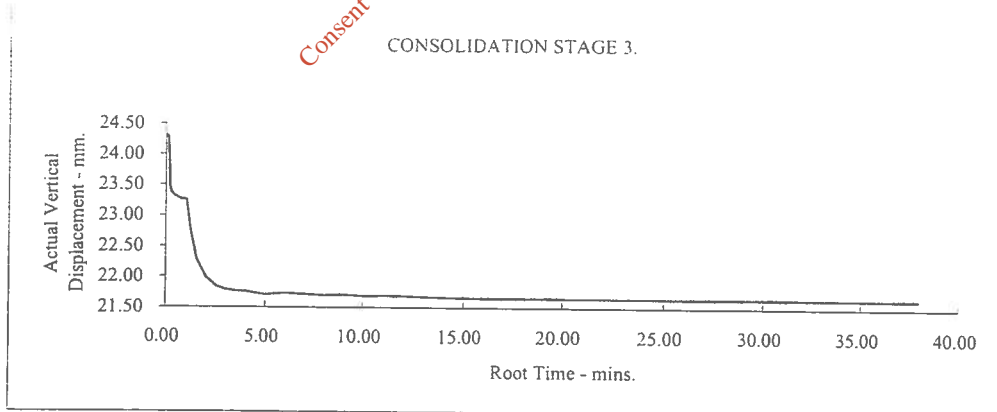
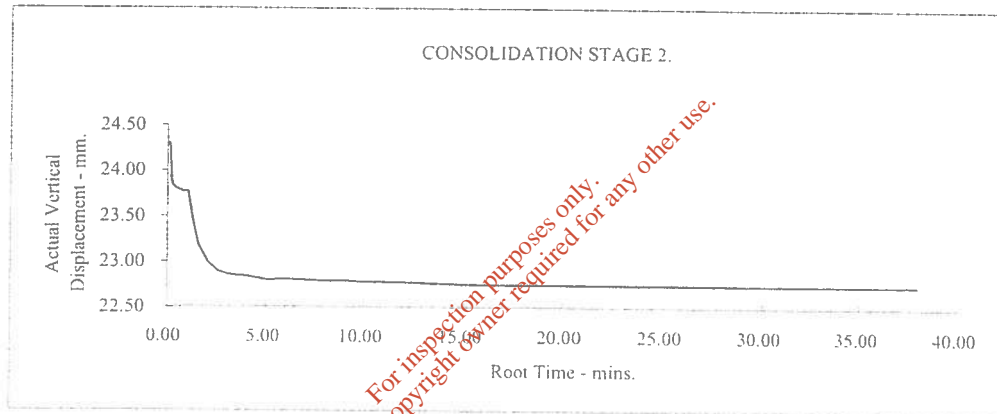
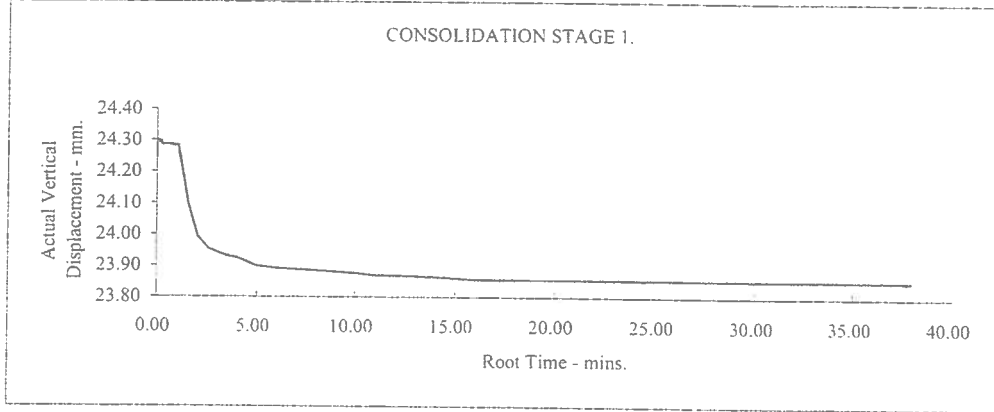
BS1377:Part 7:4.5 :1990.

Borehole/Sample Number:

BH17/5

Depth (m):

4.50-5.00



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Date



LABORATORY TESTING SERVICES LIMITED

GEO 064 17-May-05

Issue No. 1 1

**Bantry Inner Harbour**

Contract No.:  
**Geo/8847/09**

Client Ref Number:  
**PC9030**

Figure:  
Bynea, Llanelli, SA14 9SU



**Consolidated Undrained Triaxial Compression Test**  
BS 1377 : Part 8 : 1990

**Specimen Details**

Borehole		BH07
Sample No.		
Depth	m	9
Date		00/01/1900
Disturbed / Undisturbed		Undisturbed

**Description of Specimen**

Grey very silty Clay very soft
--------------------------------

**Initial Specimen Conditions**

Height	mm	76.24	73.40	76.28
Diameter	mm	38.14	38.20	38.10
Area	mm <sup>2</sup>	1142.49	1146.08	1140.09
Volume	cm <sup>3</sup>	87.10	84.12	86.97
Mass	g	164.37	172.30	166.09
Dry Mass	g	0.00	134.40	130.90
Density	Mg/m <sup>3</sup>	1.89	2.05	1.91
Dry Density	Mg/m <sup>3</sup>	#DIV/0!	1.60	1.51
Moisture Content	%	#DIV/0!	28	27
Specific Gravity	kN/m <sup>3</sup>	2.65	2.65	2.65
(assumed/measured)		assumed	assumed	assumed

**Final Specimen Conditions**

Moisture Content	%	25	26	25
Density	Mg/m <sup>3</sup>	2.13	2.13	2.03
Dry Density	Mg/m <sup>3</sup>	1.71	1.68	1.62

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Contract No

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Bantry Inner Harbour



**Consolidated Undrained Triaxial Compression Test**  
BS 1377 : Part 8 : 1990

**Specimen Details**

Borehole		BH07
Sample No.		
Depth	m	9
Date		00/01/1900

**Test Setup**

Date started	25/10/2008	27/10/2008	25/10/2008
Date Finished	00/01/1900	30/10/2008	00/01/1900
Top Drain Used	y	y	y
Base Drain Used	y	y	y
Side Drains Used	y	y	y
Pressure System Number	P2	P10	P6
Cell Number	C2	C10	C6

**Saturation**

Cell Pressure Incr.	kPa	100.00	100.00	100.00
Back Pressure Incr.	kPa	95.00	95.00	95.00
Differential Pressure	kPa	5.00	5.00	5.00
Final Cell Pressure	kPa	400.00	400.00	600.00
Final Pore Pressure	kPa	391.00	389.00	597.00
Final B Value		1.00	1.00	1.00

**Consolidation**

Effective Pressure	kPa	150.00	250.00	350.00
Cell Pressure	kPa	400.00	500.00	600.00
Back Pressure	kPa	250.00	250.00	250.00
Excess Pore Pressure	kPa	141.00	239.00	347.00
Pore Pressure at End	kPa	250.00	250.00	250.00
Consolidated Volume	cm <sup>3</sup>	81.00	79.82	80.87
Consolidated Height	mm	74.46	72.15	74.50
Consolidated Area	mm <sup>2</sup>	1089.15	1107.03	1086.78
Vol. Compressibility	m <sup>2</sup> /MN	0.28013	0.20446	0.28057
Consolidation Coef.	m <sup>2</sup> /yr.	0.45946	0.76497	0.87412

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Bantry Inner Harbour

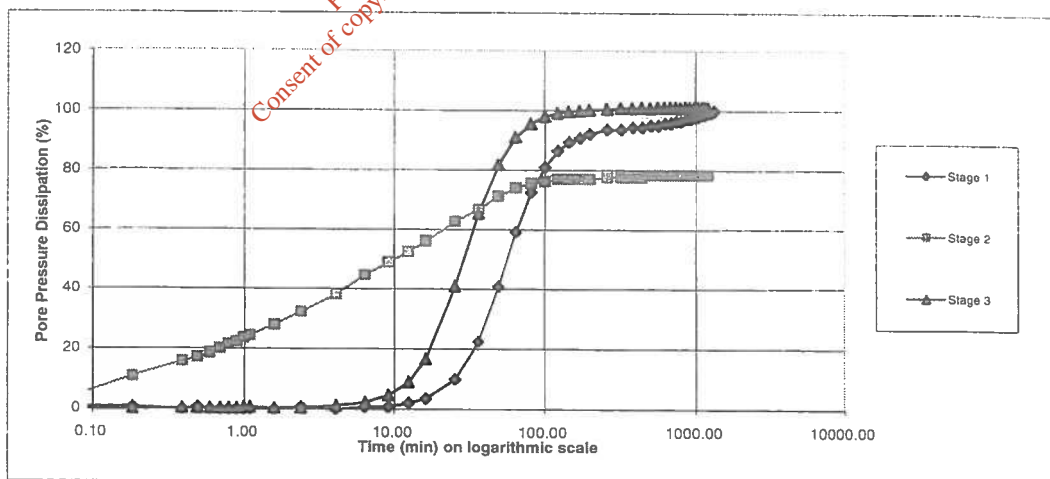
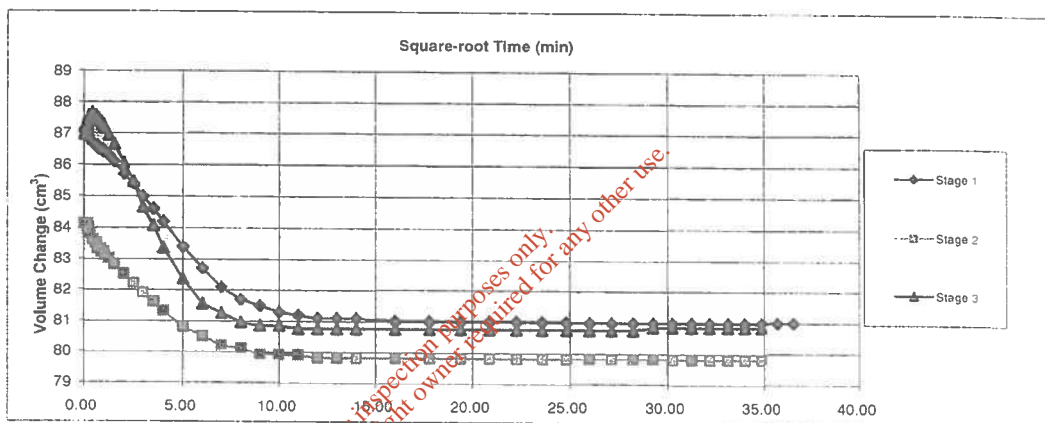
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GEO/8790/09

## Consolidated Undrained Triaxial Compression Test BS 1377 : Part 8 : 1990

### Specimen Details

Borehole		BH07
Sample No.		
Depth	m	9
Date		00/01/1900

### Consolidation Stage



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Bantry Inner Harbour

Client Ref  
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**Consolidated Undrained Triaxial Compression Test**  
BS 1377 : Part 8 : 1990

**Specimen Details**

Borehole		BH07
Sample No.		
Depth	m	9
Date		00/01/1900

**Shearing**

Initial Cell Pressure	kPa	400	500	600
Initial Pore Pressure	kPa	250	250	250
Rate of Strain	mm/min	0.0248	0.0400	0.0472
<b>Max Deviator Stress</b>				
Axial Strain		6.634	7.928	7.249
Axial Stress	kPa	167.161	299.25	380.21
Cor. Deviator stress	kPa	162.907	293.73	374.69
Effective Major Stress	kPa	277.907	516.73	653.69
Effective Minor Stress	kPa	116.000	223.00	279.00
Effective Stress Ratio		2.396	2.317	2.34
s'	kPa	196.953	369.86	466.35
t'	kPa	80.955	146.86	187.35
<b>Max Effective Principle Stress Ratio</b>				
Axial Strain		6.487	5.724	6.765
Axial Stress	kPa	165.708	277.795	378.419
Cor. Deviator stress	kPa	160.484	272.727	372.974
Effective Major Stress	kPa	274.484	487.727	647.974
Effective Minor Stress	kPa	114.000	215.000	275.000
Effective Stress Ratio		2.408	2.268	2.356
s'	kPa	194.242	351.363	461.487
t'	kPa	80.242	136.363	186.487
Shear Resistance Angle	degs	24.0		
Cohesion c'	kPa	0		

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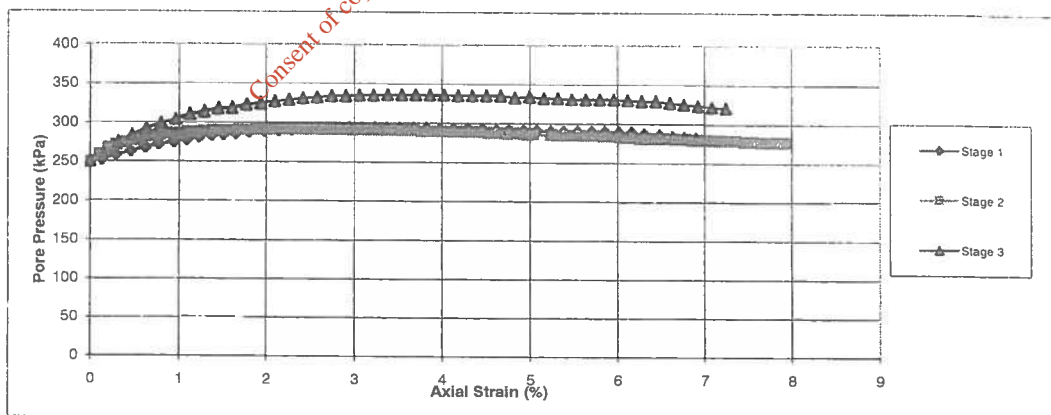
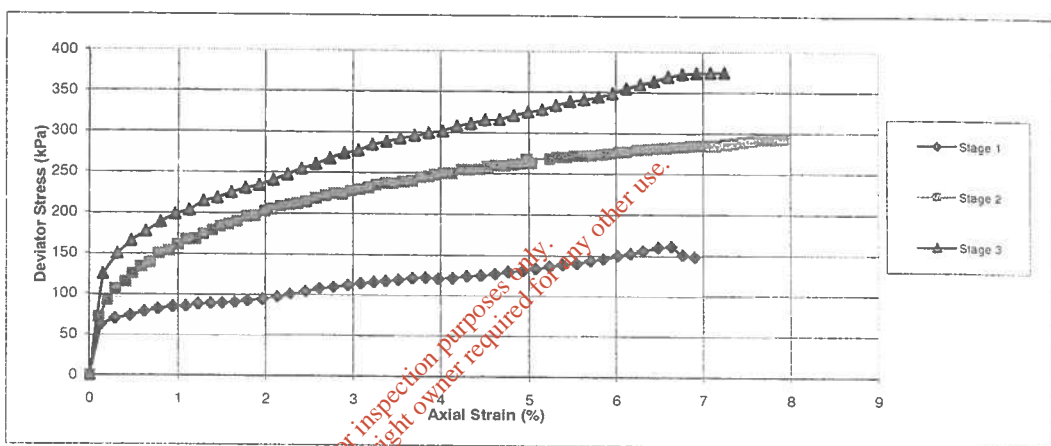
Bantry Inner Harbour

## Consolidated Undrained Triaxial Compression Test BS 1377 : Part 8 : 1990

### Specimen Details

Borehole		BH07
Sample No.		
Depth	m	9
Date		00/01/1900

### Shearing Stage



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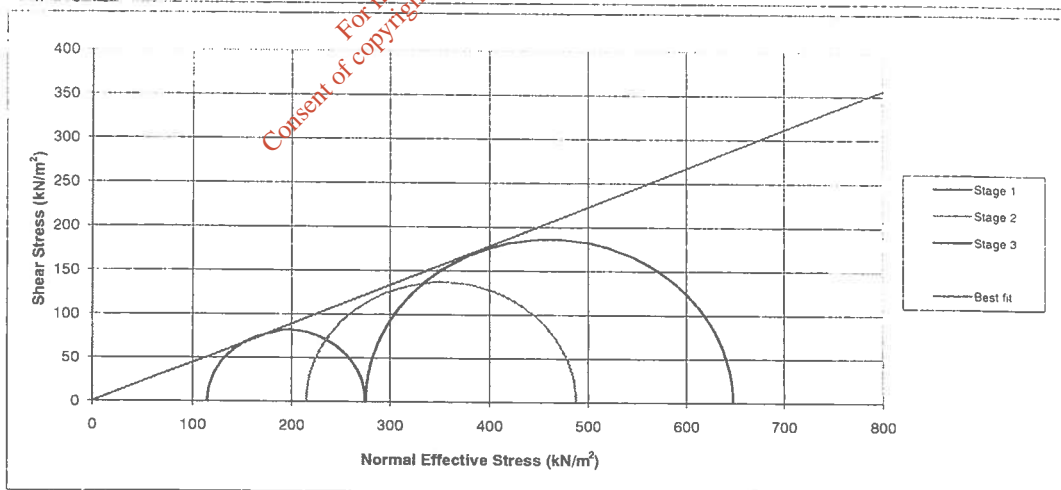
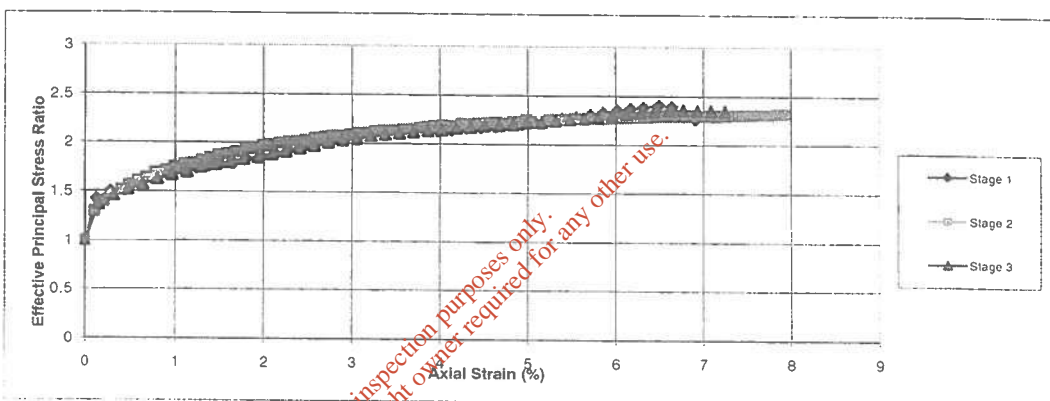
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Contract No  
GEO/8790/09

## Consolidated Undrained Triaxial Compression Test BS 1377 : Part 8 : 1990

### Specimen Details

Borehole		BH07
Sample No.		
Depth	m	9
Date		00/01/1900

### Shearing Stage



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Contract No

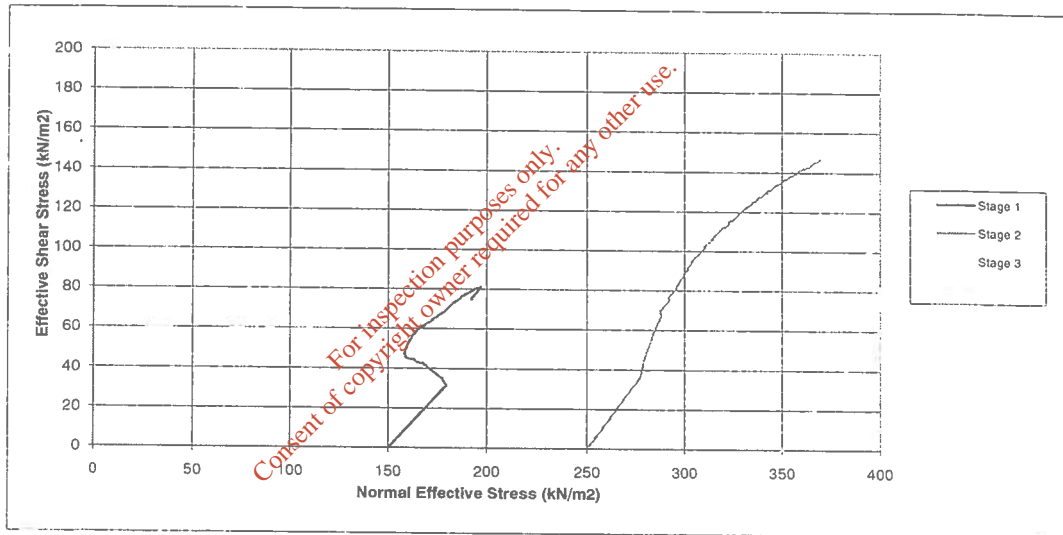
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## Consolidated Undrained Triaxial Compression Test BS 1377 : Part 8 : 1990

### Specimen Details

Borehole		BH07
Sample No.		
Depth	m	9
Date		00/01/1900

### Shearing Stage



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**Consolidated Undrained Triaxial Compression Test**  
BS 1377 : Part 8 : 1990

**Specimen Details**

Borehole		BH12
Sample No.		
Depth	m	2
Date		22/10/2009
Disturbed / Undisturbed		Undisturbed

**Description of Specimen**

Grey silty CLAY
-----------------

**Initial Specimen Conditions**

Height	mm	76.22	76.24	76.42
Diameter	mm	38.12	38.14	38.16
Area	mm <sup>2</sup>	1141.29	1142.49	1143.69
Volume	cm <sup>3</sup>	86.99	87.10	87.40
Mass	g	147.20	139.45	135.61
Dry Mass	g	90.44	81.51	76.18
Density	Mg/m <sup>3</sup>	1.69	1.60	1.55
Dry Density	Mg/m <sup>3</sup>	1.04	0.94	0.87
Moisture Content	%	63	71	78
Specific Gravity	kN/m <sup>3</sup>	2.65	2.65	2.65
	(assumed/measured)	assumed	assumed	assumed

**Final Specimen Conditions**

Moisture Content	%	47	47	47
Density	Mg/m <sup>3</sup>	1.79	1.84	1.70
Dry Density	Mg/m <sup>3</sup>	1.22	1.25	1.16

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**Consolidated Undrained Triaxial Compression Test**  
BS 1377 : Part 8 : 1990

**Specimen Details**

Borehole		BH12
Sample No.		
Depth	m	2
Date		22/10/2009

**Test Setup**

Date started	17/10/2009	17/10/2009	18/10/2009
Date Finished	21/10/2009	21/10/2009	21/10/2009
Top Drain Used	y	y	y
Base Drain Used	y	y	y
Side Drains Used	y	y	y
Pressure System Number	P2	P6	P8
Cell Number	C2	C6	C8

**Saturation**

Cell Pressure Incr.	kPa	100.00	100.00	100.00
Back Pressure Incr.	kPa	95.00	95.00	95.00
Differential Pressure	kPa	5.00	5.00	5.00
Final Cell Pressure	kPa	300.00	400.00	500.00
Final Pore Pressure	kPa	292.00	399.00	495.00
Final B Value		1.00	1.00	1.00

**Consolidation**

Effective Pressure	kPa	75.00	150.00	250.00
Cell Pressure	kPa	300.00	400.00	500.00
Back Pressure	kPa	225.00	250.00	250.00
Excess Pore Pressure	kPa	67.00	149.00	245.00
Pore Pressure at End	kPa	225.00	250.00	250.00
Consolidated Volume	cm <sup>3</sup>	74.39	65.30	65.70
Consolidated Height	mm	72.54	69.88	70.10
Consolidated Area	mm <sup>2</sup>	1031.08	951.86	954.38
Vol. Compressibility	m <sup>2</sup> /MN	0.64376	1.00111	0.99313
Consolidation Coef.	m <sup>2</sup> /yr.	0.29971	0.23417	0.16359

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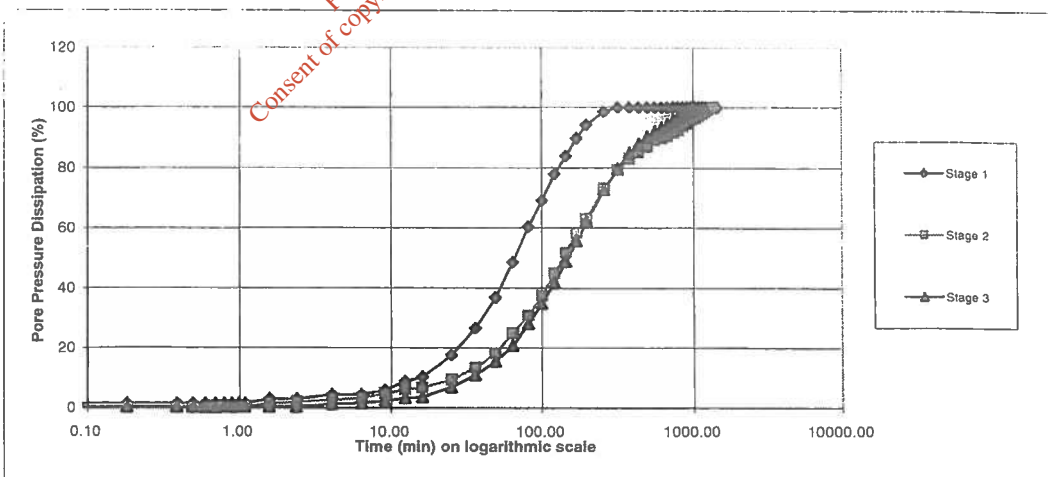
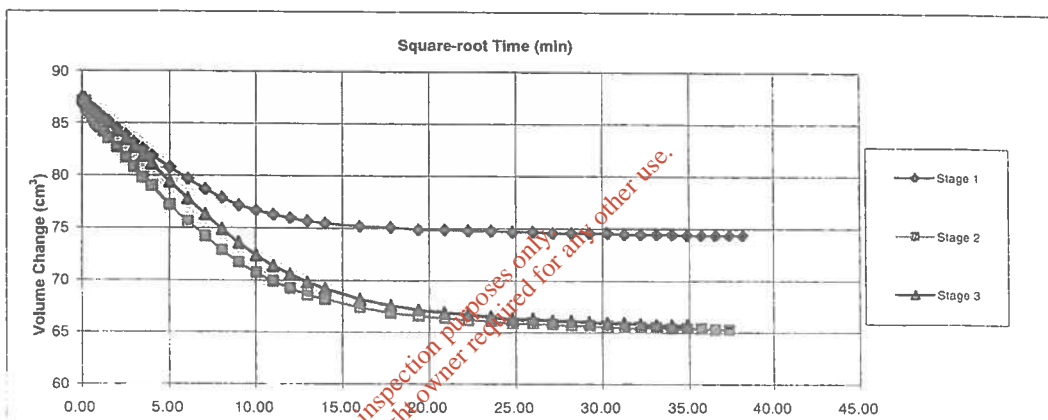


## Consolidated Undrained Triaxial Compression Test BS 1377 : Part 8 : 1990

### Specimen Details

Borehole	BH12
Sample No.	
Depth	m                      2
Date	22/10/2009

### Consolidation Stage



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**Consolidated Undrained Triaxial Compression Test**  
BS 1377 : Part 8 : 1990

**Specimen Details**

Borehole		BH12
Sample No.		
Depth	m	2
Date		22/10/2009

**Shearing**

Initial Cell Pressure	kPa	300	400	500
Initial Pore Pressure	kPa	225	250	250
Rate of Strain	mm/min	0.0158	0.0119	0.0083
<b>Max Deviator Stress</b>				
Axial Strain		12.834	12.607	12.797
Axial Stress	kPa	100.600	166.18	236.65
Cor. Deviator stress	kPa	95.079	159.71	230.24
Effective Major Stress	kPa	126.079	207.71	302.24
Effective Minor Stress	kPa	32.000	48.00	72.00
Effective Stress Ratio		3.940	4.327	4.20
s'	kPa	79.040	127.85	187.12
t'	kPa	47.040	79.85	115.12
<b>Max Effective Principle Stress Ratio</b>				
Axial Strain		10.560	10.375	11.684
Axial Stress	kPa	95.419	164.776	235.045
Cor. Deviator stress	kPa	89.362	158.757	228.812
Effective Major Stress	kPa	119.362	205.757	299.812
Effective Minor Stress	kPa	30.000	47.000	71.000
Effective Stress Ratio		3.979	4.378	4.223
s'	kPa	74.681	126.379	185.406
t'	kPa	44.681	79.379	114.406
Shear Resistance Angle	degs	38.0		
Cohesion c'	kPa	0		

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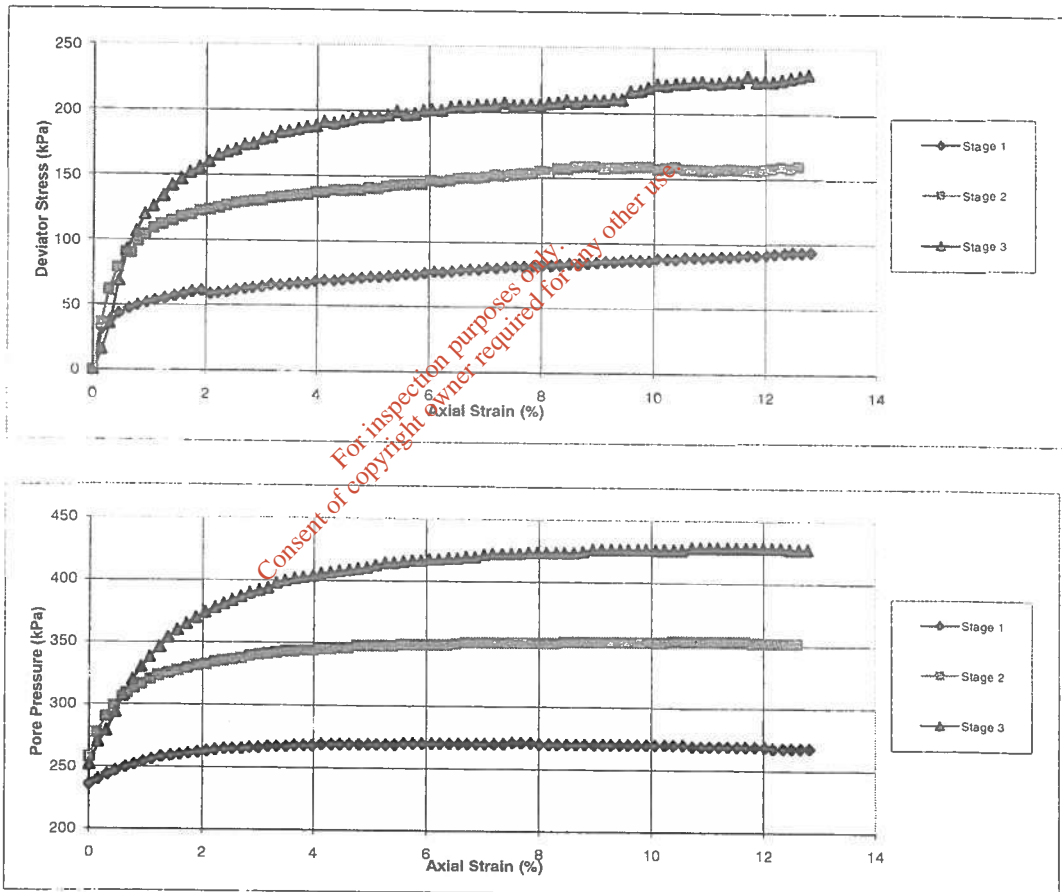
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## Consolidated Undrained Triaxial Compression Test BS 1377 : Part 8 : 1990

Specimen Details		Stage 1
Borehole		BH12
Sample No.		
Depth	m	2
Date		22/10/2009

### Shearing Stage



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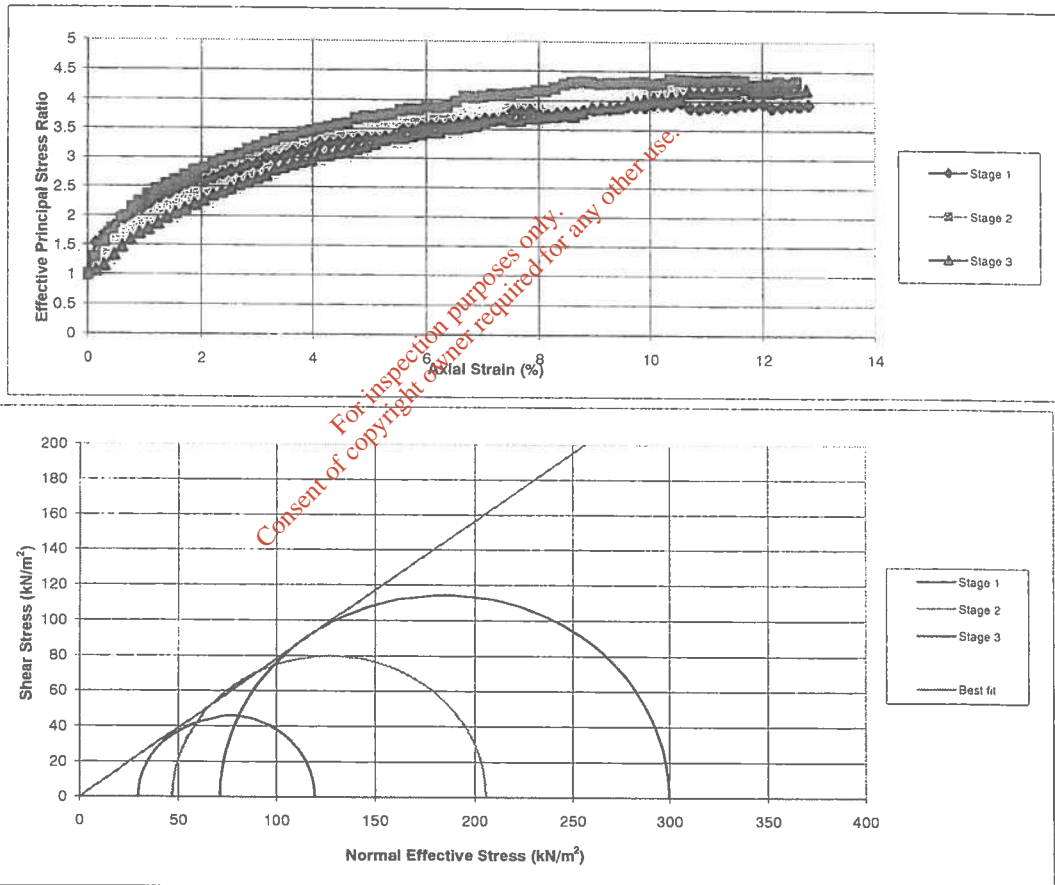
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GEO/8790/09

## Consolidated Undrained Triaxial Compression Test BS 1377 : Part 8 : 1990

### Specimen Details

Borehole	BH12
Sample No.	
Depth	m 2
Date	22/10/2009

### Shearing Stage



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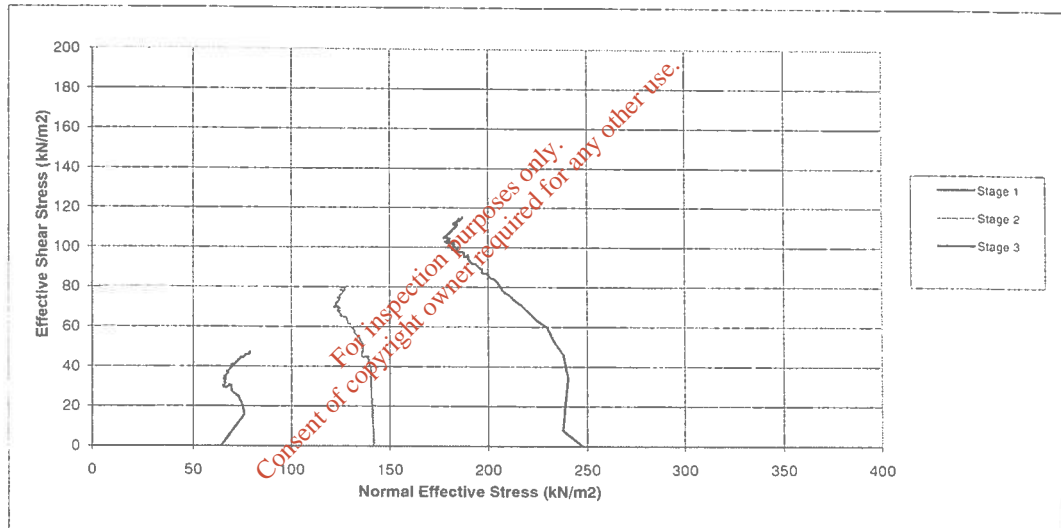
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Contract No  
**GEO/8790/09**

## Consolidated Undrained Triaxial Compression Test BS 1377 : Part 8 : 1990

### Specimen Details

Borehole		BH12
Sample No.		
Depth	m	2
Date		22/10/2009

### Shearing Stage



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23/10/09

Date



LABORATORY TESTING SERVICES LIMITED

Bantry Inner Harbour

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Contract No

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**Consolidated Undrained Triaxial Compression Test**  
BS 1377 : Part 8 : 1990

**Specimen Details**

Borehole		BH12
Sample No.		
Depth	m	4.0-4.45
Date		20/10/2009
Disturbed / Undisturbed		Undisturbed

**Description of Specimen**

Grey silty CLAY
-----------------

**Initial Specimen Conditions**

Height	mm	76.24	76.22	76.12
Diameter	mm	38.16	38.16	38.14
Area	mm <sup>2</sup>	1143.69	1143.69	1142.49
Volume	cm <sup>3</sup>	87.19	87.17	86.97
Mass	g	128.68	129.24	121.76
Dry Mass	g	93.69	98.84	94.93
Density	Mg/m <sup>3</sup>	1.48	1.48	1.40
Dry Density	Mg/m <sup>3</sup>	1.07	1.13	1.09
Moisture Content	%	37	31	28
Specific Gravity	kN/m <sup>3</sup>	2.65	2.65	2.65
	(assumed/measured)	assumed	assumed	assumed

**Final Specimen Conditions**

Moisture Content	%	46	42	36
Density	Mg/m <sup>3</sup>	1.89	1.98	1.86
Dry Density	Mg/m <sup>3</sup>	1.29	1.39	1.37

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