

WS08B GL – 5m



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Appendix 6

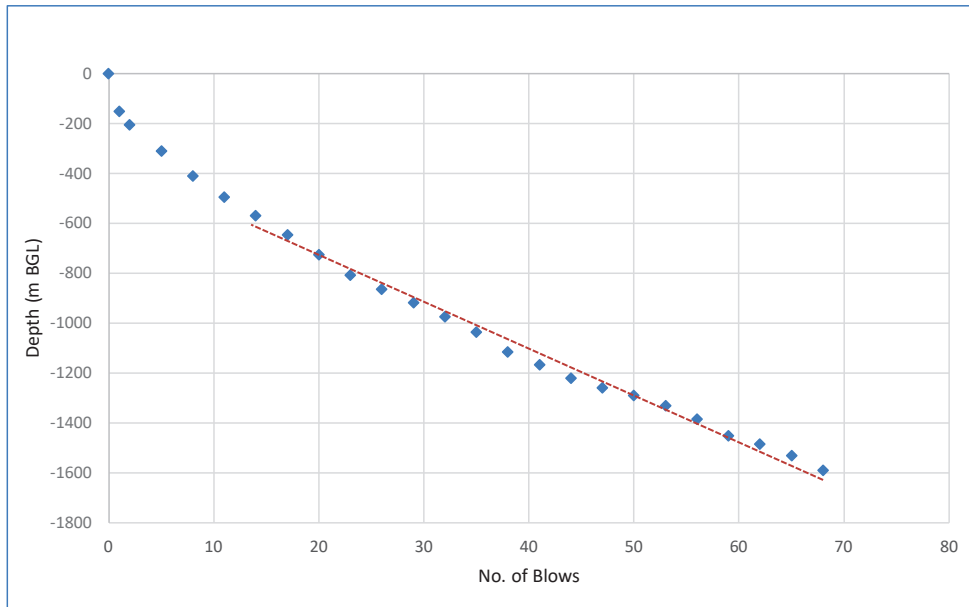
TRL DCP Records

Dynamic Cone Penetrometer



RECEIVED: 24/03/2025

Contract Sea Gardens, Bray Ref No. 24991 Client Atkins				Date: 16/01/2024		Test No. 301		
Location TP301 Direction Soil Description: Firm dark brown sandy gravelly CLAY with high cobble content.				DCP Zero Reading 115 mm		Start of Test at: 0 m BGL Approximate Chainage		
No of Blows	Total Blows	Reading mm	No of Blows	Total Blows	Reading mm	No of Blows	Total Blows	Reading mm
0	0	115	3	59	1566			
1	1	268	3	62	1601			
1	2	320	3	65	1647			
3	5	425	3	68	1705			
3	8	526						
3	11	610						
3	14	686						
3	17	761						
3	20	842						
3	23	924						
3	26	980						
3	29	1033						
3	32	1090						
3	35	1151						
3	38	1232						
3	41	1281						
3	44	1336						
3	47	1373						
3	50	1404						
3	53	1446						
3	56	1500						



Depth range (mm)	From	to	Penetration	mm / blow
	571	1590		
Blows	14	68	54	18.87

TRRL RN8: $\text{Log}_{10}(\text{CBR}) = 2.48 - 1.057 \cdot \text{Log}_{10}(\text{mm/blow})$

$\text{Log}_{10}(\text{CBR}) = 1.132$

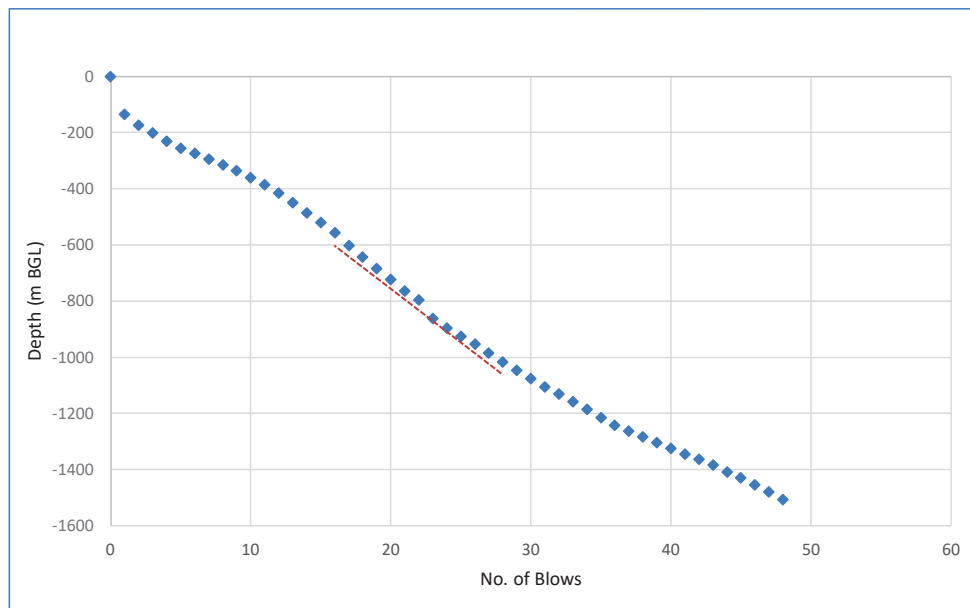
CBR = 13.536

Dynamic Cone Penetrometer



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Contract Sea Gardens, Bray Ref No. 24991 Client Atkins				Date: 16/01/2024		Test No. 302		
				DCP Zero Reading		115	mm	
Location TP302								
Direction				Start of Test at:		0	m BGL	
Soil Description:				Approximate Chainage				
<i>No of Blows</i>	<i>Total Blows</i>	<i>Reading mm</i>	<i>No of Blows</i>	<i>Total Blows</i>	<i>Reading mm</i>	<i>No of Blows</i>	<i>Total Blows</i>	<i>Reading mm</i>
0	0	115	1	21	879	1	42	1479
1	1	250	1	22	912	1	43	1499
1	2	290	1	23	977	1	44	1523
1	3	316	1	24	1011	1	45	1544
1	4	345	1	25	1040	1	46	1569
1	5	370	1	26	1069	1	47	1595
1	6	390	1	27	1099	1	48	1622
1	7	410	1	28	1131	1		
1	8	430	1	29	1161	1		
1	9	450	1	30	1192	1		
1	10	475	1	31	1220	1		
1	11	500	1	32	1245	1		
1	12	530	1	33	1274	1		
1	13	564	1	34	1301	1		
1	14	600	1	35	1331	1		
1	15	635	1	36	1357	1		
1	16	672	1	37	1378	1		
1	17	718	1	38	1398	1		
1	18	758	1	39	1419	1		
1	19	800	1	40	1439	1		
1	20	839	1	41	1459	1		



Depth range (mm)	From	to	Penetration	mm / blow
	603	1016	413	
Blows	17	28	11	37.55

TRRL RN8: $\text{Log}_{10}(\text{CBR}) = 2.48 - 1.057 * \text{Log}_{10}(\text{mm/blow})$

$\text{Log}_{10}(\text{CBR}) = 0.816$

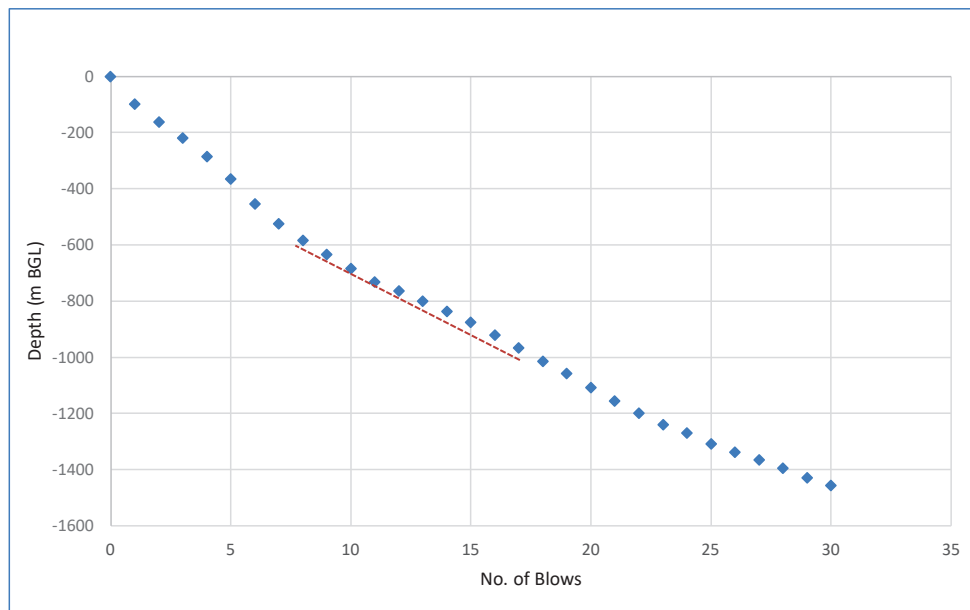
CBR = 6.542

Dynamic Cone Penetrometer



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Contract Sea Gardens, Bray Ref No. 24991 Client Atkins				Date: 16/01/2024		Test No. 303		
Location TP303 Direction Soil Description:				DCP Zero Reading 165 mm		Start of Test at: 0 m BGL Approximate Chainage		
No of Blows	Total Blows	Reading mm	No of Blows	Total Blows	Reading mm	No of Blows	Total Blows	Reading mm
0	0	165	1	21	1321			
1	1	265	1	22	1363			
1	2	327	1	23	1404			
1	3	385	1	24	1434			
1	4	450	1	25	1473			
1	5	530	1	26	1502			
1	6	620	1	27	1531			
1	7	690	1	28	1561			
1	8	748	1	29	1594			
1	9	800	1	30	1621			
1	10	849						
1	11	896						
1	12	930						
1	13	966						
1	14	1001						
1	15	1041						
1	16	1086						
1	17	1131						
1	18	1179						
1	19	1223						
1	20	1273						



Depth range (mm)	From	to	Penetration	mm / blow
	583	966		
Blows	8	17	9	42.56

TRRL RN8: $\text{Log}_{10}(\text{CBR}) = 2.48 - 1.057 \cdot \text{Log}_{10}(\text{mm/blow})$

$\text{Log}_{10}(\text{CBR}) = 0.758$

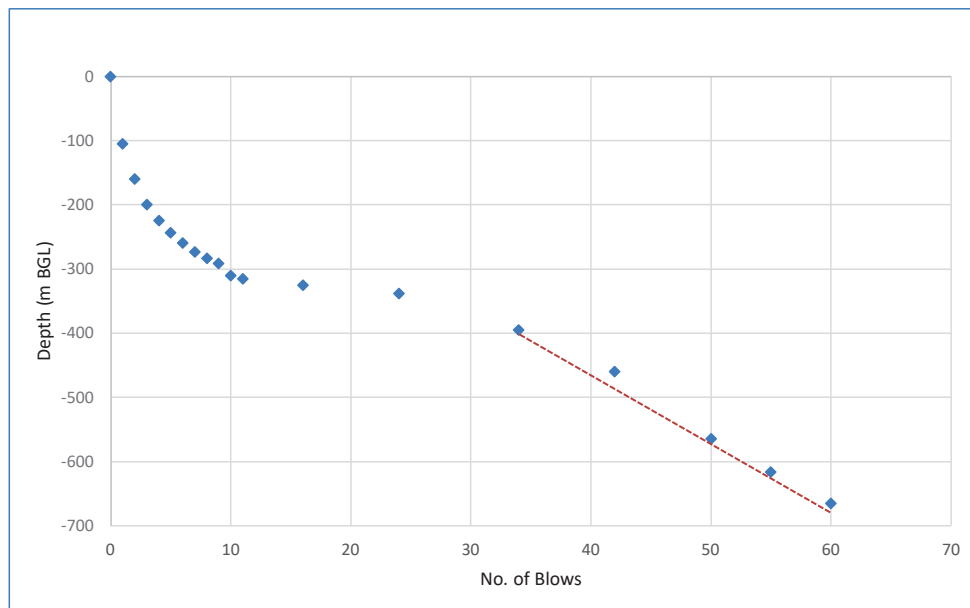
CBR = 5.731

Dynamic Cone Penetrometer



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Contract Sea Gardens, Bray Ref No. 24991 Client Atkins				Date: 17/01/2024		Test No. 304		
Location TP304 Direction Soil Description:				DCP Zero Reading 140 mm				
				Start of Test at: 0 m BGL				
				Approximate Chainage				
No of Blows	Total Blows	Reading mm	No of Blows	Total Blows	Reading mm	No of Blows	Total Blows	Reading mm
0	0	140						
1	1	245						
1	2	300						
1	3	340						
1	4	365						
1	5	384						
1	6	400						
1	7	413						
1	8	423						
1	9	431						
1	10	450						
1	11	455						
5	16	465						
8	24	478						
10	34	535						
8	42	600						
8	50	704						
5	55	756						
5	60	805						



	From	to	Penetration	mm / blow
Depth range (mm)	395	665	270	
Blows	34	60	26	10.38

TRRL RN8: $\text{Log}_{10}(\text{CBR}) = 2.48 - 1.057 \cdot \text{Log}_{10}(\text{mm/blow})$

$\text{Log}_{10}(\text{CBR}) = 1.406$

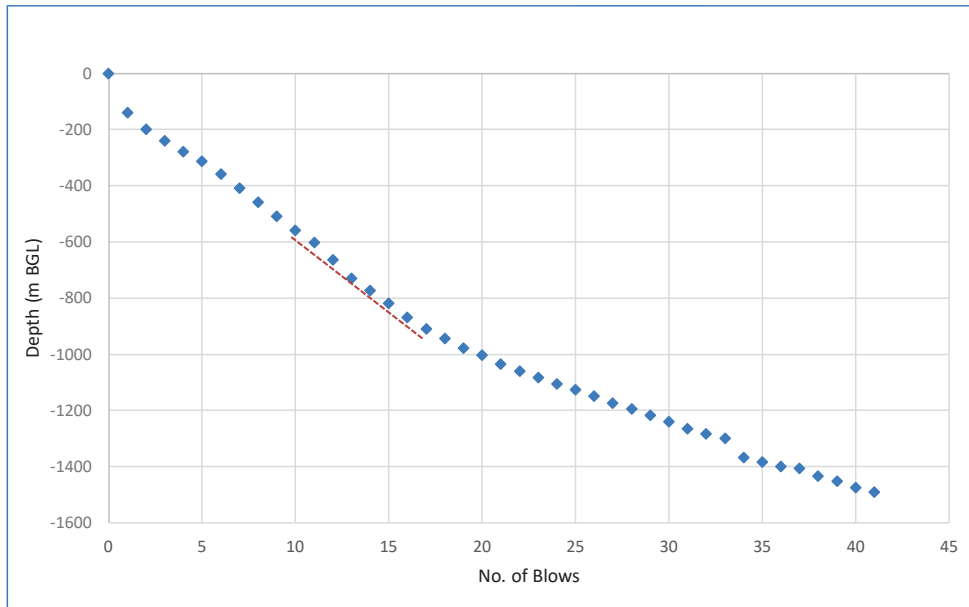
CBR = 25.449

Dynamic Cone Penetrometer



RECEIVED: 24/03/2025

Contract Sea Gardens, Bray Ref No. 24991 Client Atkins				Date: 17/01/2024		Test No. 305		
Location TP305 Direction Soil Description:				DCP Zero Reading 121 mm				
				Start of Test at: 0 m BGL				
				Approximate Chainage				
No of Blows	Total Blows	Reading mm	No of Blows	Total Blows	Reading mm	No of Blows	Total Blows	Reading mm
0	0	121		21	1155			
1	1	261		22	1180			
1	2	320		23	1205			
1	3	360		24	1226			
1	4	400		25	1248			
1	5	435		26	1271			
1	6	480		27	1295			
1	7	530		28	1315			
1	8	580		29	1338			
1	9	630		30	1361			
1	10	680		31	1385			
1	11	724		32	1405			
1	12	785		33	1421			
1	13	850		34	1489			
1	14	895		35	1505			
1	15	940		36	1520			
1	16	990		37	1527			
1	17	1030		38	1555			
1	18	1065		39	1573			
1	19	1099		40	1595			
1	20	1125		41	1611			



	From	to	Penetration	mm / blow
Depth range (mm)	559	909	350	
Blows	10	17	7	50.00

TRRL RN8: $\text{Log}_{10}(\text{CBR}) = 2.48 - 1.057 \times \text{Log}_{10}(\text{mm/blow})$

$\text{Log}_{10}(\text{CBR}) = 0.684$

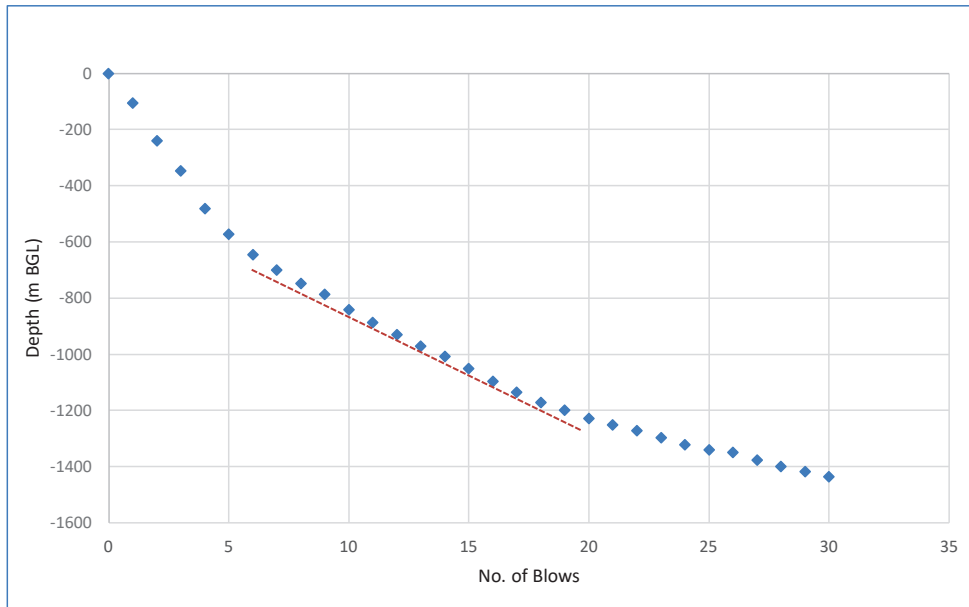
CBR = 4.833

Dynamic Cone Penetrometer



RECEIVED: 24/03/2025

Contract Sea Gardens, Bray Ref No. 24991 Client Atkins				Date: 17/01/2024 Test No. 306				
				DCP Zero Reading 244 mm				
Location TP306				Start of Test at: 0 m BGL				
Direction				Approximate Chainage				
Soil Description:								
No of Blows	Total Blows	Reading mm	No of Blows	Total Blows	Reading mm	No of Blows	Total Blows	Reading mm
0	0	244	1	21	1495			
1	1	350	1	22	1515			
1	2	485	1	23	1540			
1	3	592	1	24	1565			
1	4	725	1	25	1585			
1	5	817	1	26	1594			
1	6	890	1	27	1620			
1	7	945	1	28	1643			
1	8	991	1	29	1661			
1	9	1030	1	30	1680			
1	10	1085						
1	11	1130						
1	12	1175						
1	13	1215						
1	14	1251						
1	15	1295						
1	16	1341						
1	17	1379						
1	18	1415						
1	19	1444						
1	20	1472						



Depth range (mm)	From	to	Penetration	mm / blow
	646	1228		
Blows	6	20	14	

TRRL RN8: $\text{Log}_{10}(\text{CBR}) = 2.48 - 1.057 \cdot \text{Log}_{10}(\text{mm/blow})$

$\text{Log}_{10}(\text{CBR}) = 0.769$

CBR = 5.874

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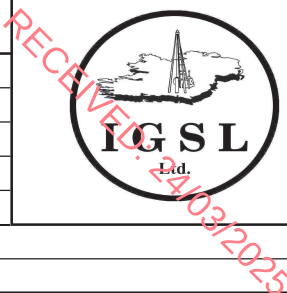
Appendix 7

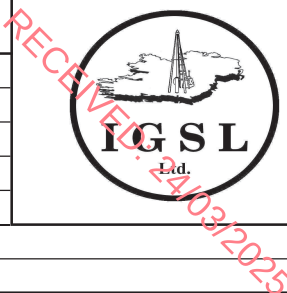
Groundwater and Gas Monitoring

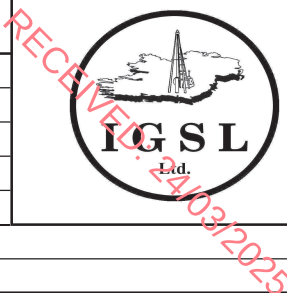
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Groundwater Monitoring									
Site Location		Sea Gardens Bray							
Project No.		24991							
Client		Ballymore Development							
Engineer		Atkins							
		Date of Reading							
		07/03/2024		25/03/2024		15/04/2024			
	Ground Elevation (m OD)	m bgl	m OD	m bgl	m OD	m bgl	m OD	m bgl	m OD
BH307	2.06	1.50	0.56	1.18	0.88	1.55	0.51		
BH312	4.14	1.73	2.41	1.89	2.25	1.81	2.33		
WS06A	2.03	1.16	0.87	1.16	0.87	1.13	0.90		
WS06B	1.77	1.04	0.73	1.24 H/1.22 L	0.53 H/0.55 L	1.18	0.59		
WS07A	1.69	0.76	0.93	0.94	0.75	0.82	0.87		
WS07B	2.17	1.30	0.87	1.44 H/1.67 L	0.73 H/0.50 L	1.33	0.84		
WS08A	3.88	1.23	2.65	1.69	2.19	1.44	2.44		
WS08B	3.91	1.95	1.96	2.10 H/2.12 L	1.81 H/1.79 L	2.02	1.89		
BH302	2.49	1.46	1.03	1.42	1.07	1.95	0.54		
BH304	3.38	2.22	1.16	1.98	1.40	2.42	0.96		
BH308	3.82	2.55	1.27	2.25	1.57	2.67	1.15		
BOH03	3.18	1.55	1.63	1.50 H/1.69 L	1.68 H/1.49 L	1.61	1.57		
COMMENTS	H - High Tide L - Low Tide								

Gas & Groundwater Monitoring						
Site Location	Sea Gardens Bray					
Project No.	24991					
Client	Ballymore Development					
Date	30.01.2024					
Engineer	Atkins					
Equipment	Geotech GA5000					
	Peak / Steady State Readings					
						
Location ID	WS08A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	1.67					
Gas Flow (l/hr)	0.2	0.2	0.2	0.2	0.2	0.2
CH4 (%)	0.1	0.1	0.1	0.1	0.1	0.1
CO2 (%)	0.0	3.4	3.4	3.4	3.3	3.4
O2 (%)	21.6	21.1	17.7	16.7	16.7	21.6
CO (ppm)	0	1	1	1	1	1
H2S (ppm)	0	0	0	0	0	0
Balance (%)	78.2	75.4	78.9	79.9	79.9	79.9
Barometric Pressure (mbar)	1031					
Weather/Temp.	Good/7°					
Location ID	WS07A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	0.69					
Gas Flow (l/hr)	0.2	0.2	0.3	0.3	0.3	0.4
CH4 (%)	0.1	0.1	0.1	0.1	0.1	0.1
CO2 (%)	0.1	0.1	0.0	0.0	0.0	0.1
O2 (%)	21.2	21.3	21.3	21.3	21.3	21.3
CO (ppm)	0	0	0	0	0	0
H2S (ppm)	0	0	0	0	0	0
Balance (%)	78.6	78.6	78.6	78.6	78.6	78.6
Barometric Pressure (mbar)	1032					
Weather/Temp.	Good/7°					
Location ID	WS06A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	1.39					
Gas Flow (l/hr)	0.2	0.3	0.3	0.3	0.3	0.3
CH4 (%)	0.0	0.0	0.0	0.0	0.0	0.0
CO2 (%)	0.0	3.5	3.5	3.5	3.5	3.5
O2 (%)	21.0	16.9	13.7	13.0	12.8	21.0
CO (ppm)	1	1	1	1	1	1
H2S (ppm)	0	0	0	0	0	0
Balance (%)	78.9	79.6	82.7	83.4	83.7	83.7
Barometric Pressure (mbar)	1031					
Weather/Temp.	Good/7°					
Comments						

Gas & Groundwater Monitoring						
Site Location	Sea Gardens Bray					
Project No.	24991					
Client	Ballymore Development					
Date	06.02.24					
Engineer	Atkins					
Equipment	Geotech GA5000					
	Peak / Steady State Readings					
						
Location ID	WS08A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	1.70					
Gas Flow (l/hr)	0.1	0.1	0.2	0.2	0.2	0.2
CH4 (%)	0.0	0.1	0.1	0.1	0.1	0.1
CO2 (%)	0.0	2.8	3.2	3.3	3.2	3.3
O2 (%)	21.5	20.1	17.0	16.8	17.1	21.5
CO (ppm)	0	1	1	1	1	1
H2S (ppm)	0	0	0	0	0	0
Balance (%)	79.1	75.8	78.9	78.8	78.6	78.9
Barometric Pressure (mbar)	1023					
Weather/Temp.	Good/5°					
Location ID	WS07A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	0.75					
Gas Flow (l/hr)	0.1	0.1	0.2	0.3	0.2	0.3
CH4 (%)	0.0	0.0	0.1	0.1	0.1	0.1
CO2 (%)	0.0	0.1	0.1	0.0	0.0	0.1
O2 (%)	21.0	21.1	21.1	21.2	21.3	21.3
CO (ppm)	0	0	0	0	0	0
H2S (ppm)	0	0	0	0	0	0
Balance (%)	78.9	78.8	78.6	78.7	78.6	78.9
Barometric Pressure (mbar)	1025					
Weather/Temp.	Good/5°					
Location ID	WS06A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	1.31					
Gas Flow (l/hr)	0.1	0.2	0.2	0.2	0.2	0.2
CH4 (%)	0.0	0.0	0.0	0.0	0.0	0.0
CO2 (%)	0.0	2.5	2.6	2.5	2.5	2.6
O2 (%)	21.1	19.0	19.0	19.1	18.9	21.1
CO (ppm)	0	0	0	0	0	0
H2S (ppm)	0	0	0	0	0	0
Balance (%)	78.9	78.5	78.4	78.4	78.6	78.9
Barometric Pressure (mbar)	1025					
Weather/Temp.	Good/5°					
Comments						

Gas & Groundwater Monitoring						
Site Location	Sea Gardens Bray					
Project No.	24991					
Client	Ballymore Development					
Date	19.02.24					
Engineer	Atkins					
Equipment	Geotech GA5000					
	Peak / Steady State Readings					
						
Location ID	WS08A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	1.52					
Gas Flow (l/hr)	0.1	0.2	0.2	0.2	0.2	0.2
CH4 (%)	0.1	0.1	0.1	0.1	0.1	0.1
CO2 (%)	0.0	0.0	0.0	0.0	0.0	3.4
O2 (%)	21.2	21.1	21.1	21.1	21.1	21.2
CO (ppm)	0	0	0	0	0	0
H2S (ppm)	0	0	0	0	0	0
Balance (%)	78.7	78.8	78.8	78.8	78.8	78.8
Barometric Pressure (mbar)	1030					
Weather/Temp.	Good/10°					
Location ID	WS07A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	0.92					
Gas Flow (l/hr)	0.2	0.3	0.3	0.4	0.4	0.4
CH4 (%)	0.1	0.1	0.1	0.1	0.1	0.1
CO2 (%)	0.0	0.0	0.0	0.0	0.0	0.0
O2 (%)	21.0	21.0	21.0	21.0	21.0	21
CO (ppm)	0	0	0	0	0	0
H2S (ppm)	0	0	0	0	0	0
Balance (%)	78.9	78.9	78.9	78.9	78.9	78.9
Barometric Pressure (mbar)	1030					
Weather/Temp.	Good/10°					
Location ID	WS06A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	1.20					
Gas Flow (l/hr)	0.1	0.1	0.1	0.1	0.1	0.1
CH4 (%)	0.1	0.1	0.1	0.1	0.1	0.1
CO2 (%)	0.0	0.0	0.0	0.0	0.0	0.0
O2 (%)	21.0	21.0	21.0	21.0	21.0	21.0
CO (ppm)	0	0	0	0	0	0
H2S (ppm)	0	0	0	0	0	0
Balance (%)	78.9	78.8	78.9	78.9	78.9	78.9
Barometric Pressure (mbar)	1030					
Weather/Temp.	Good/10°					
Comments						

Gas & Groundwater Monitoring						
Site Location	Sea Gardens Bray					
Project No.	24991					
Client	Ballymore Development					
Date	27.02.24					
Engineer	Atkins					
Equipment	Geotech GA5000					
Peak / Steady State Readings						
Location ID	WS08A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	1.34					
Gas Flow (l/hr)	0.1	0.2	0.2	0.2	0.2	0.2
CH4 (%)	0.0	0.0	0.0	0.0	0.0	0.0
CO2 (%)	3.5	3.5	3.5	3.5	3.5	3.5
O2 (%)	8.7	9.0	9.1	9.0	9.1	9.1
CO (ppm)	1	1	1	1	1	1
H2S (ppm)	0	0	0	0	0	0
Balance (%)	86.8	86.5	86.4	86.7	86.4	86.8
Barometric Pressure (mbar)	1020					
Weather/Temp.	Good/6°					
Location ID	WS07A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	0.83					
Gas Flow (l/hr)	0.1	0.1	0.2	0.3	0.3	0.3
CH4 (%)	0.1	0.1	0.0	0.0	0.0	0.1
CO2 (%)	0.1	0.1	0.1	0.1	0.1	0.1
O2 (%)	21.1	21.1	21.4	21.1	21.1	21.4
CO (ppm)	0	0	0	0	0	0
H2S (ppm)	0	0	0	0	0	0
Balance (%)	78.7	78.7	78.5	78.9	78.9	78.9
Barometric Pressure (mbar)	1020					
Weather/Temp.	Good/6°					
Location ID	WS06A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	1.34					
Gas Flow (l/hr)	0.1	0.2	0.2	0.2	0.2	0.2
CH4 (%)	0.1	0.0	0.0	0.0	0.0	0.0
CO2 (%)	2.4	2.4	2.4	2.4	2.4	2.4
O2 (%)	19.1	18.9	18.9	18.7	18.6	19.1
CO (ppm)	0	0	1	1	1	1
H2S (ppm)	0	0	0	0	0	0
Balance (%)	78.4	78.7	78.0	77.9	78.0	78.7
Barometric Pressure (mbar)	1020					
Weather/Temp.	Good/6°					
Comments						

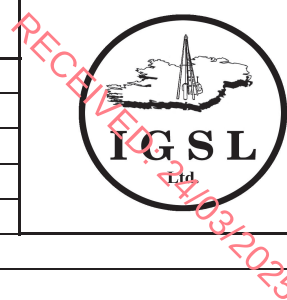
Gas & Groundwater Monitoring						
Site Location	Sea Gardens Bray					
Project No.	24991					
Client	Ballymore Development					
Date	07.03.24					
Engineer	Atkins					
Equipment	Geotech GA5000					
Peak / Steady State Readings						
Location ID	WS08A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	1.23					
Gas Flow (l/hr)	0.1	0.2	0.2	0.2	0.2	0.2
CH4 (%)	0.0	0.0	0.0	0.0	0.0	0.0
CO2 (%)	4.9	4.9	4.9	4.9	4.9	4.9
O2 (%)	7.2	7.1	7.1	6.9	7.0	7.2
CO (ppm)	1	1	1	1	1	1
H2S (ppm)	0	0	0	0	0	0
Balance (%)	87.9	87.9	88.0	88.1	88.1	88.1
Barometric Pressure (mbar)	1019					
Weather/Temp.	Good/7°					
Location ID	WS07A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	0.76					
Gas Flow (l/hr)	0.1	0.2	0.3	0.3	0.3	0.3
CH4 (%)	0.1	0.1	0.1	0.1	0.0	0.1
CO2 (%)	0.1	0.1	0.0	0.0	0.0	0.1
O2 (%)	21.8	21.8	21.8	21.9	21.9	21.9
CO (ppm)	1	0	0	1	0	1
H2S (ppm)	0	0	0	0	0	0
Balance (%)	78.1	78.1	78.1	78.0	78.0	78.1
Barometric Pressure (mbar)	1020					
Weather/Temp.	Good/7°					
Location ID	WS06A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	1.16					
Gas Flow (l/hr)	0.1	0.2	0.2	0.3	0.2	0.3
CH4 (%)	0.1	0.1	0.0	0.0	0.0	0.1
CO2 (%)	0.0	2.7	2.7	2.7	2.7	2.7
O2 (%)	21.1	19.5	16.9	16.5	16.5	21.1
CO (ppm)	1	1	2	2	2	2
H2S (ppm)	0	0	0	0	0	0
Balance (%)	78.8	77.7	80.4	80.7	80.8	80.8
Barometric Pressure (mbar)	1020					
Weather/Temp.	Good/7°					
Comments						

Gas & Groundwater Monitoring						
Site Location	Sea Gardens Bray					
Project No.	24991					
Client	Ballymore Development					
Date	25.03.24					
Engineer	Atkins					
Equipment	Geotech GA5000					
Peak / Steady State Readings						
WS08A						
Location ID	WS08A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	1.69					
Gas Flow (l/hr)	0.2	0.2	0.3	0.3	0.3	0.3
CH4 (%)	0.1	0.1	0.1	0.1	0.1	0.1
CO2 (%)	4.9	5.0	5.1	5.3	5.7	5.7
O2 (%)	20.7	16.0	9.9	8.0	6.8	20.7
CO (ppm)	0	0	0	0	0	0
H2S (ppm)	0	0	0	0	0	0
Balance (%)	74.3	78.0	85.0	86.6	87.5	87.5
Barometric Pressure (mbar)	992					
Weather/Temp.	Light rain/8°					
WS07A						
Location ID	WS07A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	0.94					
Gas Flow (l/hr)						
CH4 (%)	0.1	0.1	0.2	0.2	0.2	0.2
CO2 (%)	0.1	0.1	0.1	0.1	0.1	0.1
O2 (%)	21.1	21.0	21.0	21.0	21.0	21.1
CO (ppm)	0	0	0	0	0	0
H2S (ppm)	0	0	0	0	0	0
Balance (%)	78.8	78.8	78.8	78.9	78.8	78.9
Barometric Pressure (mbar)	992					
Weather/Temp.	Light rain/8°					
WS06A						
Location ID	WS06A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	1.16					
Gas Flow (l/hr)	0.2	0.2	0.3	0.4	0.3	0.4
CH4 (%)	0.1	0.1	0.1	0.1	0.1	0.1
CO2 (%)	0.1	2.6	2.6	2.6	2.6	2.6
O2 (%)	21.0	20.7	17.7	17.5	17.4	21.0
CO (ppm)	0	1	1	1	1	1
H2S (ppm)	0	0	0	0	0	0
Balance (%)	78.8	76.6	79.7	79.8	79.9	79.9
Barometric Pressure (mbar)	992					
Weather/Temp.	Light rain/8°					
Comments						



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Gas & Groundwater Monitoring						
Site Location	Sea Gardens Bray					
Project No.	24991					
Client	Ballymore Development					
Date	15.04.24					
Engineer	Atkins					
Equipment	Geotech GA5000					
Peak / Steady State Readings						
Location ID	WS08A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	1.44					
Gas Flow (l/hr)	0.1	0.2	0.2	0.2	0.2	0.2
CH4 (%)	0.1	0.1	0.1	0.1	0.1	0.1
CO2 (%)	6.7	6.7	6.6	6.5	6.4	6.7
O2 (%)	8.4	7.2	4.7	2.1	1.4	8.4
CO (ppm)	1	1	1	1	1	1
H2S (ppm)	0	0	0	0	0	0
Balance (%)	84.8	86.0	88.6	91.4	92.1	92.1
Barometric Pressure (mbar)	1010					
Weather/Temp.	Light rain/7°					
Location ID	WS07A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	0.82					
Gas Flow (l/hr)	0.1	0.2	0.2	0.2	0.2	0.2
CH4 (%)	0.1	0.1	0.1	0.1	0.1	0.1
CO2 (%)	0.1	0.1	0.1	0.1	0.1	0.1
O2 (%)	21.1	21.1	21.1	21.1	21.1	21.1
CO (ppm)	0	0	0	0	0	0
H2S (ppm)	0	0	0	0	0	0
Balance (%)	78.7	78.7	78.8	78.8	78.8	78.8
Barometric Pressure (mbar)	1009					
Weather/Temp.	Light rain/7°					
Location ID	WS06A					
Time (sec)	10	30	60	90	180	Peak
Water Level (mbgl)	1.13					
Gas Flow (l/hr)	0.1	0.2	0.2	0.2	0.2	0.2
CH4 (%)	0.1	0.1	0.1	0.1	0.1	0.1
CO2 (%)	0.1	3.1	3.1	3.2	3.2	3.2
O2 (%)	20.8	20.8	19.2	15.9	15.6	20.8
CO (ppm)	0	1	1	1	1	1
H2S (ppm)	0	0	0	0	0	0
Balance (%)	79.0	76.0	77.6	80.9	81.2	81.2
Barometric Pressure (mbar)	1010					
Weather/Temp.	Light rain/7°					
Comments						



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Appendix 8

Geotechnical Laboratory Testing

IGSL Ltd Materials Laboratory Unit J5, M7 Business Park Newhall, Naas Co. Kildare 045 846176		Test Report												
		Determination of Moisture Content, Liquid & Plastic Limits Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**												
Report No. R152688 Contract No. 24991 Contract Name: Sea Gardens, Bray, Co. Wicklow Customer Ballymore Group / Atkins Samples Received: Various Date Tested: Various														
BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description	
BH301	AA203016	1.0	A23/4805	B	32	33	NP	NP	99	WS	4.4		Brown sandy gravelly SILT	
BH301	AA203018	3.0	A23/4806	B	90	73	NP	NP	94	WS	4.4		Brown sandy gravelly SILT	
BH301	AA203020	4.0	A23/4807	B	47	46	NP	NP	99	WS	4.4		Grey slightly sandy, slightly gravelly, SILT	
BH301	AA2035022	5.0	A23/4808	B	40	34	NP	NP	96	WS	4.4		Grey sandy SILT	
BH301	AA203025	7.5	A23/4810	B	45	49	NP	NP	99	WS	4.4		Grey sandy SILT	
BH301	AA203028	10.0	A23/4812	B	80	70	NP	NP	97	WS	4.4		Black SILT with some organic traces	
BH302	AA203034	2.0	A23/4815	B	22	37	NP	NP	48	WS	4.4		Brown slightly gravelly SAND	
BH302	AA203036	4.0	A23/4816	B	53	55	NP	NP	70	WS	4.4		Grey slightly gravelly SAND	
BH302	AA203038	5.5	A23/4818	U	38	37	NP	NP	96	WS	4.4		Grey sandy SILT	
BH302	AA203040	7.0	A23/4819	B	108	76	NP	NP	98	WS	4.4		Grey SILT	
BH302	AA203042	8.0	A23/4820	B	50	45	NP	NP	100	WS	4.4		Grey SILT	
BH302	AA203044	10.0	A23/4821	B	112	86	NP	NP	94	WS	4.4		Grey peaty SILT	
BH303	AA209321	1.0	A23/4823	U	22	39	NP	NP	65	WS	4.4		Grey gravelly sandy SILT	
BH303	AA209328	6.0	A23/4825	B	64	42	NP	NP	98	WS	4.4		Grey/brown sandy SILT	
BH303	AA209328	8.0	A23/4826	U	69	53	26	27	97	WS	4.4	C H	Grey/brown sandy CLAY	
Preparation: WS - Wet sieved AR - As received NP - Non plastic					Sample Type: B - Bulk Disturbed U - Undisturbed			Remarks: Results relate only to the specimen tested, in as received condition unless otherwise noted. NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12. Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information. This report shall not be reproduced except in full without written approval from the Laboratory.						
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IGSL Ltd Materials Laboratory Unit J5, M7 Business Park Newhall, Naas Co. Kildare 045 846176				Test Report											
				Determination of Moisture Content, Liquid & Plastic Limits Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**											
Report No. R152689 Contract No. 24991 Contract Name: Sea Gardens, Bray, Co. Wicklow Customer Ballymore Group / Atkins Samples Received: Various Date Tested: Various															
BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description		
BH303	AA209330	10.0	A23/4827	B	4.6	36	NP	NP	18	WS	4.4		Grey sandy slightly silty GRAVEL with occ.cobbles		
BH303	AA209333	13.0	A23/4828	B	27	23	NP	NP	95	WS	4.4		Grey slightly clayey/silty, slightly sandy, GRAVEL with many cobbles		
BH304	AA209002	2.0	A23/4829	U	24	26	NP	NP	54	WS	4.4		Brown(mottled) silty/clayey slightly gravelly SAND		
BH304	AA203009	7.5	A23/4832	U	55	48	25	23	98	WS	4.4	C I	Grey/brown sandy CLAY		
BH304	AA203012	9.5	A23/4834	U	47	48	26	22	99	WS	4.4	C I	Grey sandy CLAY		
BH305	AA197073	2.0	A23/4988	B	31	26	NP	NP	90	WS	4.4		Brown very sandy SILT		
BH305	AA197078	6.0	A23/4990	B	51	42	NP	NP	96	WS	4.4		Grey/brown sandy SILT		
BH305	AA197081	8.0	A23/4992	B	70	58	28	30	97	WS	4.4	C H	Grey/brown sandy CLAY		
BH306	AA197055	1.0	A23/4836	B	29	35	NP	NP	99	WS	4.4		Brown SILT		
BH306	AA197057	3.0	A23/4838	B	28	32	NP	NP	99	WS	4.4		Grey/brown SILT		
BH306	AA197060	5.5	A23/4840	U	46	37	NP	NP	98	WS	4.4		Grey/brown sandy SILT		
BH306	AA197062	6.5	A23/4841	U	64	52	NP	NP	96	WS	4.4		Grey/brown sandy SILT		
BH306	AA197065	8.5	A23/4842	U	67	60	27	33	98	WS	4.4	C H	Black sandy CLAY		
BH307	AA192092	2.0	A23/4845	B	13	88	NP	NP	42	WS	4.4		Black sandy gravelly SILT		
BH307	AA192096	5.5	A23/4847	U	72	80	NP	NP	95	WS	4.4		Grey/brown sandy SILT		
Preparation: WS - Wet sieved AR - As received NP - Non plastic Liquid Limit 4.3 Cone Penetrometer definitive method Clause: 4.4 Cone Penetrometer one point method				Sample Type: B - Bulk Disturbed U - Undisturbed				Remarks: Results relate only to the specimen tested, in as received condition unless otherwise noted. NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12. Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information. This report shall not be reproduced except in full without written approval from the Laboratory.							
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IGSL Ltd Materials Laboratory Unit J5, M7 Business Park Newhall, Naas Co. Kildare 045 846176				Test Report										
				Determination of Moisture Content, Liquid & Plastic Limits Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**										
Report No. R152690 Contract No. 24991 Contract Name: Sea Gardens, Bray, Co. Wicklow Customer Ballymore Group / Atkins Samples Received: Various Date Tested: Various														
BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description	
BH307	AA192098	6.5	A23/4848	U	66	58	28	30	97	WS	4.4	C H	Grey sandy CLAY	
BH307	AA192101	8.5	A23/4849	U	107	82	NP	NP	89	WS	4.4		Grey/brown sandy SILT	
BH308	AA197088	4.0	A23/4994	B	111	62	NP	NP	86	WS	4.4		Grey/brown sandy, slightly gravelly, SILT	
BH308	AA197097	10.0	A23/4996	B	57	60	28	32	98	WS	4.4	C H	Grey/brown slightly sandy, slightly gravelly, CLAY	
BH309	AA191709	1.0	A23/4998	B	32	36	NP	NP	88	WS	4.4		Brown sandy SILT	
BH309	AA191712	4.0	A23/4999	U	38	43	NP	NP	87	WS	4.4		Grey sandy SILT	
BH309	AA191716	8.0	A23/5000	U	69	57	NP	NP	99	WS	4.4		Grey/brown sandy SILT	
BH310	AA197280	1.0	A23/5002	B	23	34	21	13	61	WS	4.4	C L	Grey brown sandy gravelly CLAY	
BH310	AA197294	5.0	A23/5003	B	21	29	NP	NP	56	WS	4.4		Grey silty, slightly gravelly, SAND	
BH311	AA197252	1.0	A23/5005	B	28	40	NP	NP	94	WS	4.4		Brown sandy SILT	
BH311	AA197254	3.0	A23/5006	B	30	31	NP	NP	98	WS	4.4		Grey/brown sandy SILT	
BH311	AA197258	7.0	A23/5007	U	99	79	NP	NP	99	WS	4.4		Grey/brown sandy SILT	
BH311	AA197260	9.0	A23/5008	U	62	54	NP	NP	97	WS	4.4		Grey sandy SILT	
BH312	AA192497	2.0	A23/5009	B	43	46	NP	NP	76	WS	4.4		Brown sandy gravelly SILT	
BH312	AA192500	5.0	A23/5010	B	55	50	NP	NP	98	WS	4.4		Grey/brown sandy SILT	
Preparation: WS - Wet sieved AR - As received NP - Non plastic				Sample Type: B - Bulk Disturbed U - Undisturbed				Remarks: Results relate only to the specimen tested, in as received condition unless otherwise noted. NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12. Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information. This report shall not be reproduced except in full without written approval from the Laboratory.						
Liquid Limit 4.3 Cone Penetrometer definitive method Clause: 4.4 Cone Penetrometer one point method				Persons authorized to approve reports H Byrne (Laboratory Manager)				Approved by 		Date 02/02/24		Page 1 of 1		

IGSL Ltd Materials Laboratory Unit J5, M7 Business Park Newhall, Naas Co. Kildare 045 846176				Test Report									
				Determination of Moisture Content, Liquid & Plastic Limits Tested in accordance with BS1377:Part 2:1990, clauses 3.2, 4.3, 4.4 & 5.3**									
Report No. R152691 Contract No. 24991 Contract Name: Sea Gardens, Bray, Co. Wicklow Customer Ballymore Group / Atkins Samples Received: Various Date Tested: Various													
BH/TP*	Sample No.	Depth* (m)	Lab. Ref	Sample Type*	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH312	AA192503	8.0	A23/5012	U	23	34	NP	NP	75	WS	4.4		Grey sandy gravelly SILT
BH313	AA204380	1.0	A23/5013	B	21	32	NP	NP	70	WS	4.4		Brown sandy gravelly SILT
BH313	AA04381	2.0	A23/5014	B	8.4	51	NP	NP	12	WS	4.4		Brown sandy gravelly SILT
BH313	AA204385	6.0	A23/5015	B	40	46	NP	NP	97	WS	4.4		Grey sandy, slightly gravelly, SILT
BH314	AA167251	2.0	A23/5016	B	7.2	32	NP	NP	11	WS	4.4		Brown very sandy GRAVEL
BH314	AA167264	5.0	A23/5017	B	79	63	NP	NP	N/A	AR	4.4		Grey sandy SILT/CLAY with some organic material
BH314	AA157256	7.0	A23/5018	U	92	75	NP	NP	88	WS	4.4		Grey/brown peaty sandy SILT
BH314	AA157258	9.0	A23/5019	B	66	52	NP	NP	92	WS	4.4		Grey sandy SILT
BH315	AA197272	0.5	A23/5020	B	26	30	NP	NP	90	WS	4.4		Brown sandy gravelly SILT
BH315	AA197274	2.0	A23/5021	B	21	28	NP	NP	62	WS	4.4		Brown sandy gravelly SILT
BH315	AA197276	4.0	A23/5022	B	18	41	NP	NP	5	WS	4.4		Grey/brown sandy silty GRAVEL
BH315	AA197278	6.0	A23/5023	U	52	56	NP	NP	91	WS	4.4		Grey sandy SILT
Preparation: WS - Wet sieved AR - As received NP - Non plastic				Sample Type: B - Bulk Disturbed U - Undisturbed				Remarks: Results relate only to the specimen tested, in as received condition unless otherwise noted. NOTE: **These clauses have been superceded by EN 17892-1 and EN17892-12. Opinions and interpretations are outside the scope of accreditation. * denotes Customer supplied information. This report shall not be reproduced except in full without written approval from the Laboratory.					
Liquid Limit 4.3 Cone Penetrometer definitive method Clause: 4.4 Cone Penetrometer one point method				Persons authorized to approve reports H Byrne (Laboratory Manager)				Approved by 		Date 02/02/24		Page 1 of 1	

TEST REPORT

Determination of Particle Size Distribution

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



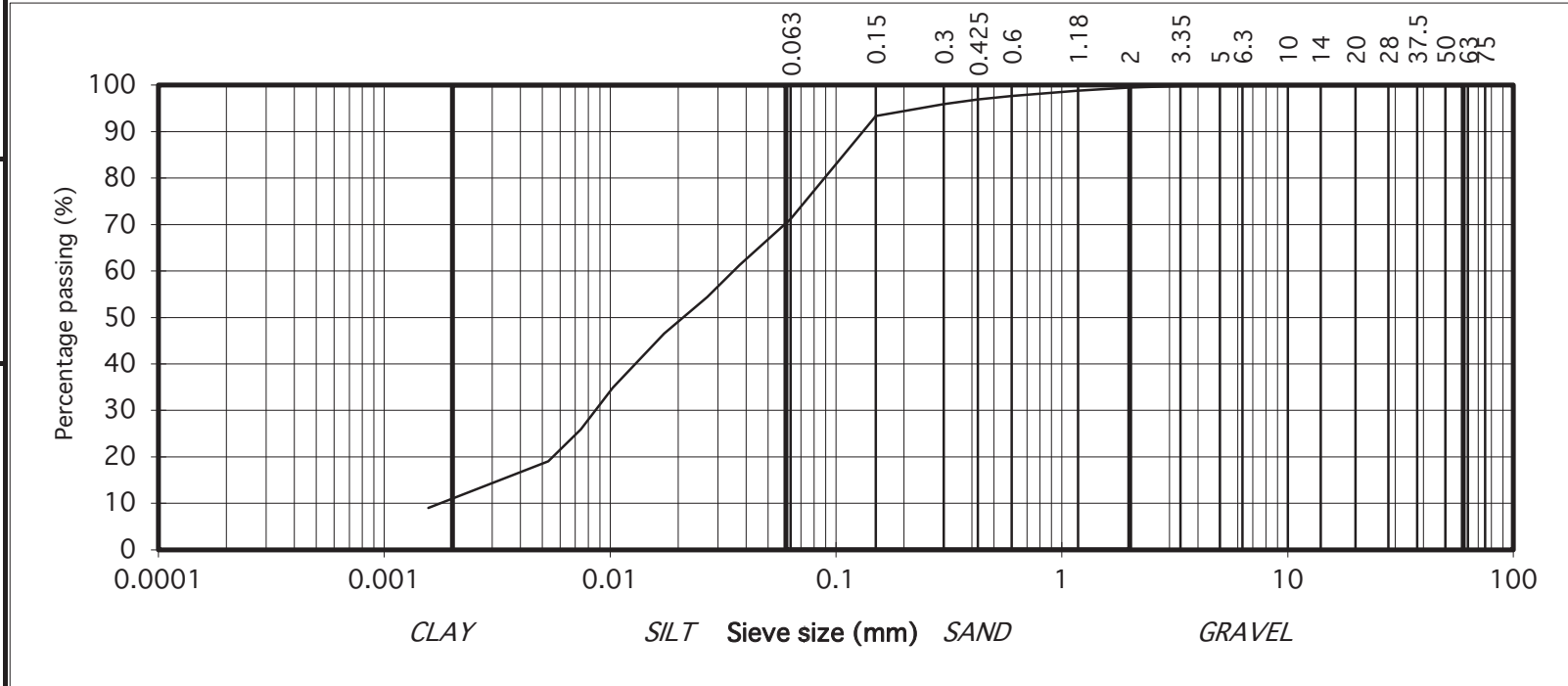
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particle size	% passing		Contract No.	24991	Report No.	R152607
			Contract Name :	Sea Gardens , Bray , Co.Wicklow		
			BH/TP No.	BH301		
			Sample No.*	AA203020	Lab. Sample No.	A23/4807
			Sample Type:	B		
			Depth* (m)	4.00	Customer:	Ballymore Group / Atkins
			Date Received	06/11/2023	Date Testing started	29/11/2023
			Description:	Grey slightly sandy, slightly gravelly, SILT		
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .		
75	100	COBBLES	Percentage passing (%) 0.0001 0.001 0.01 0.1 1 10 100 CLAY SILT Sieve size (mm) SAND GRAVEL			
63	100					
50	100					
37.5	100					
28	100					
20	100					
14	100					
10	100					
6.3	100					
5	100					
3.35	100	GRAVEL				
2	99					
1.18	99					
0.6	98					
0.425	97					
0.3	96					
0.15	93					
0.063	71					
0.037	61					
0.027	54					
0.017	47	SAND				
0.010	35					
0.007	26					
0.005	19					
0.002	9					

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Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

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



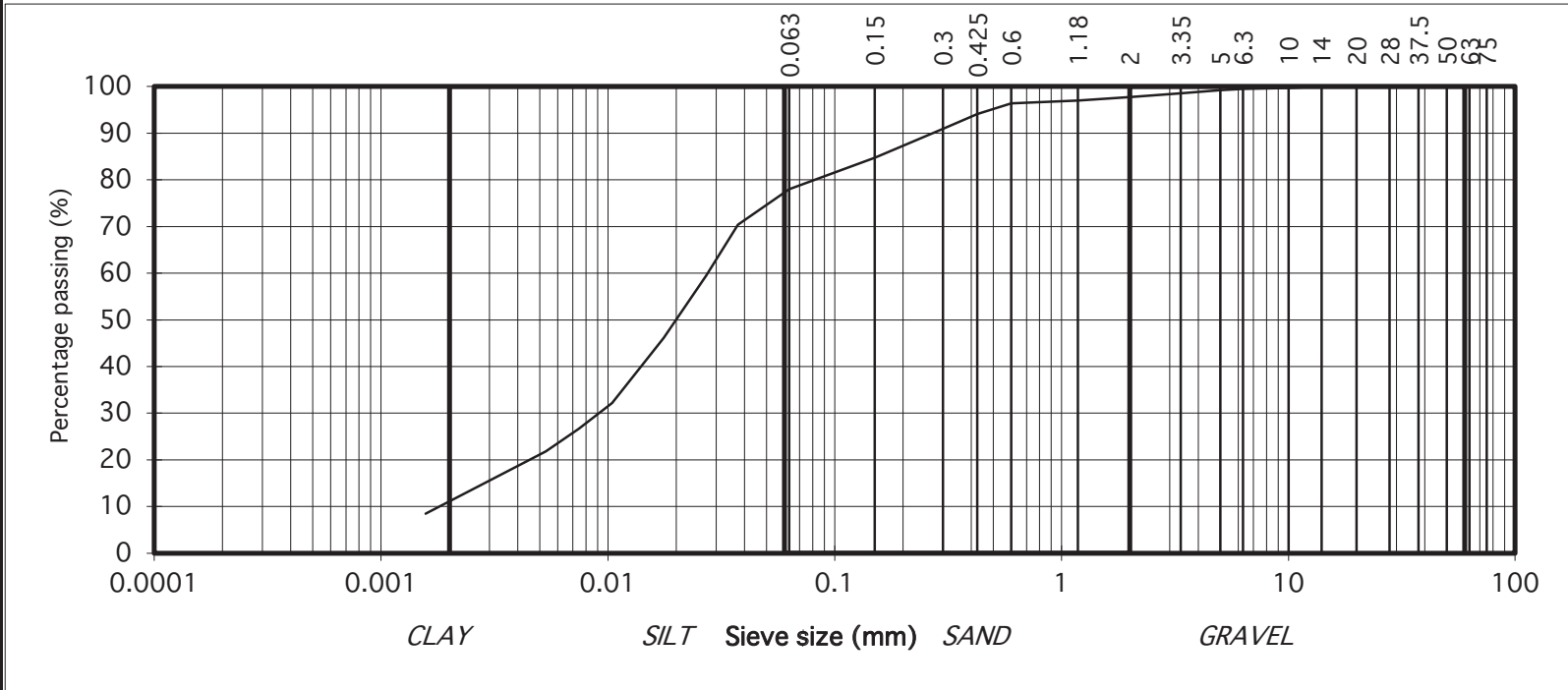
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particle size	% passing		Contract No.	24991	Report No.	R152608	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Sea Gardens , Bray , Co.Wicklow			
			BH/TP No.	BH301			
			Sample No.*	AA203024	Lab. Sample No.	A23/4809	
75	100	COBBLES	Sample Type:	B			
63	100						
50	100						
37.5	100						
28	100						
20	100						
14	100						
10	100	GRAVEL	Depth* (m)	7.00	Customer:	Ballymore Group / Atkins	
6.3	99						
5	99						
3.35	99						
2	98						
1.18	97						
0.6	96						
0.425	94	SAND					
0.3	91						
0.15	85						
0.063	78						
0.037	70						
0.027	59						
0.018	46						
0.010	32	SILT/CLAY					
0.007	27						
0.005	22						
0.002	8						

Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .
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Sieve size (mm)	Percentage passing (%)
0.075	0
0.15	10
0.3	20
0.6	32
1.18	46
2.5	70
5.0	85
10	91
20	94
40	96
75	99

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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TEST REPORT

Determination of Particle Size Distribution

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



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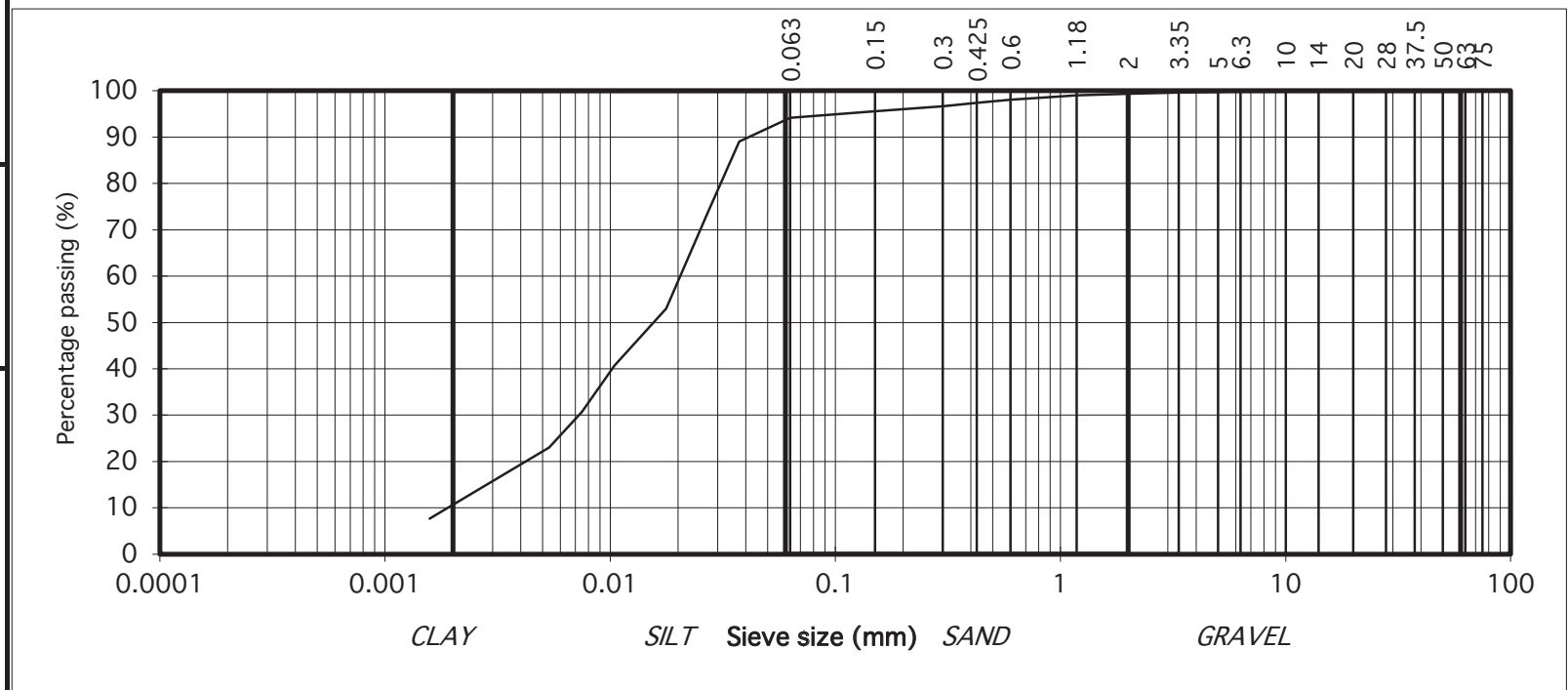
particle size	% passing		Contract No.	24991	Report No.	R152609	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.	
			Contract Name :	Sea Gardens , Bray , Co.Wicklow				
			BH/TP No.	BH301				
			Sample No.*	AA203027	Lab. Sample No.	A23/4811		
			Sample Type:	B				
			Depth* (m)	9.00	Customer:	Ballymore Group / Atkins		
			Date Received	06/11/2023	Date Testing started	29/11/2023		
			Description:	Grey slightly sandy, slightly gravelly, SILT/CLAY				
75	100	COBBLES	Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .				
63	100							
50	100							
37.5	100							
28	100							GRAVEL
20	100							
14	100							
10	100							
6.3	100							
5	100							
3.35	100							
2	99	SAND						
1.18	99							
0.6	98							
0.425	97							
0.3	97							
0.15	96							
0.063	94							SILT/CLAY
0.037	89							
0.027	74							
0.018	53							
0.010	41							
0.007	31							
0.005	23							
0.002	8							

Percentage passing (%)

0.00010.0010.010.1110100

CLAYSILT Sieve size (mm) SANDGRAVEL

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152610				
			Contract Name :	Sea Gardens , Bray , Co.Wicklow						
			BH/TP No.	BH301						
			Sample No.*	AA203030	Lab. Sample No.	A23/4813				
			Sample Type:	B						
			Depth* (m)	12.00	Customer:	Ballymore Group / Atkins				
			Date Received	06/11/2023	Date Testing started	30/11/2023				
			Description:	Brown slightly clayey/silty, sandy, GRAVEL with many cobbles						
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2 Sample size did not meet the requirements of BS1377						
75	100	COBBLES	Percentage passing (%) Sieve size (mm)							
63	79									
50	79									
37.5	69									
28	50									
20	39									
14	33									
10	27									
6.3	21									
5	18									
3.35	13	GRAVEL								
2	8									
1.18	5									
0.6	2									
0.425	2									
0.3	1	SAND								
0.15	1									
0.063	1									
		SILT/CLAY								

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TEST REPORT

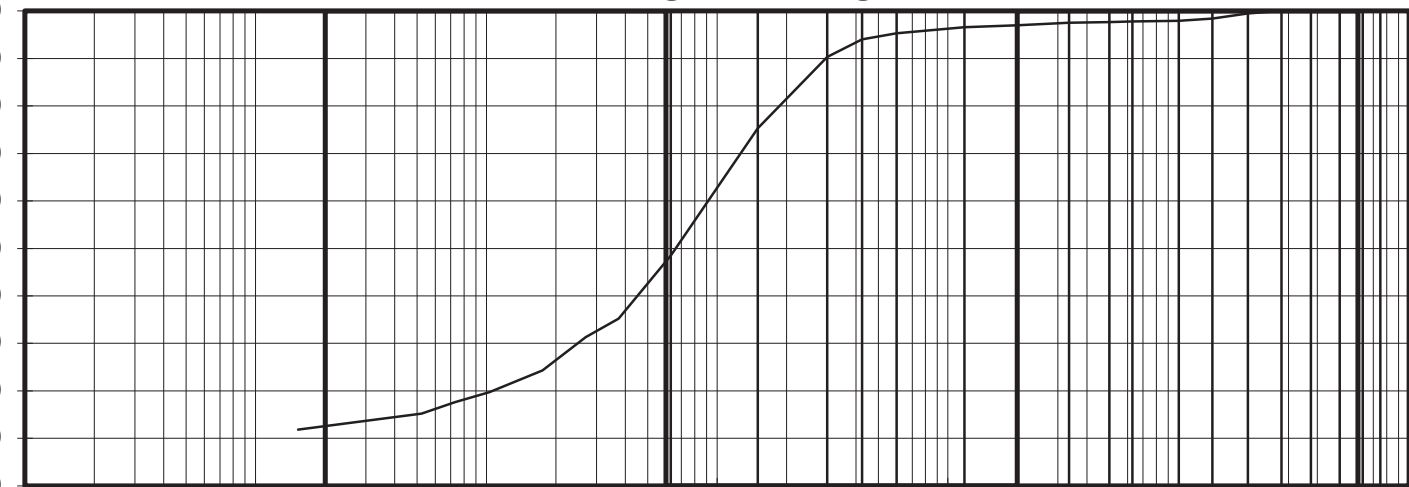
Determination of Particle Size Distribution

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

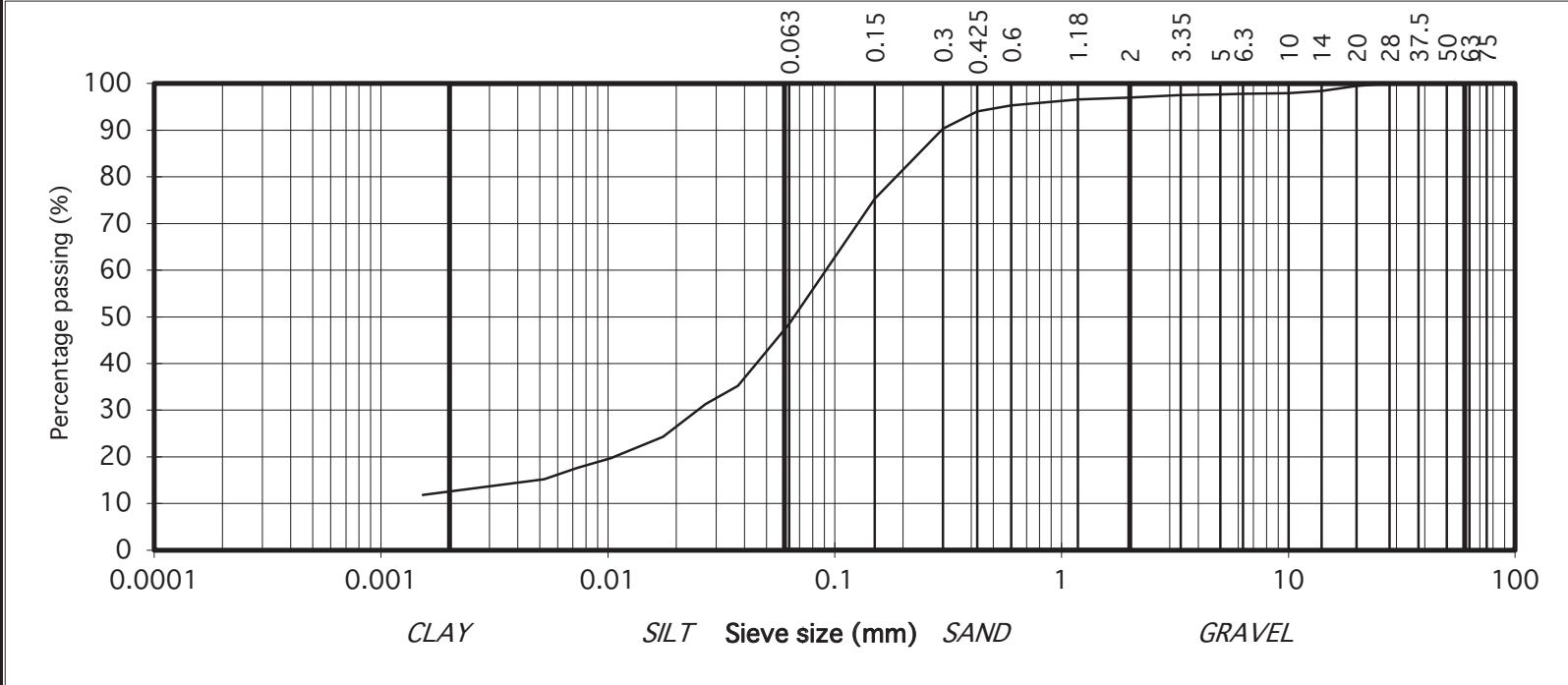


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particle size	% passing		Contract No.	24991	Report No.	R152611	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Sea Gardens , Bray , Co.Wicklow			
			BH/TP No.	BH302			
			Sample No.*	AA203033	Lab. Sample No.	A23/4814	
			Sample Type:	B			
			Depth* (m)	1.00	Customer:	Ballymore Group / Atkins	
			Date Received	06/11/2023	Date Testing started	05/12/2023	
			Description:	Brown sandy, slightly gravelly, SILT/CLAY			
75	100	COBBLES	Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			
63	100						
50	100						
37.5	100						
28	100						
20	99						
14	98						
10	98						
6.3	98						
5	98						
3.35	98	GRAVEL					
2	97						
1.18	97						
0.6	95						
0.425	94						
0.3	90						
0.15	75						
0.063	48						
0.037	35						
0.027	31						
0.018	24	SAND					
0.010	20						
0.007	18						
0.005	15						
0.002	12						
		SILT/CLAY					

100	90	80	70	60	50	40	30	20	10	0						
																
0.063	0.15	0.3	0.425	0.6	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	75
Sieve size (mm)																
CLAY SILT SAND GRAVEL																

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152612	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Sea Gardens , Bray , Co.Wicklow			
			BH/TP No.	BH302			
			Sample No.*	AA203037	Lab. Sample No.	A23/4817	
			Sample Type:	B			
			Depth* (m)	5.00	Customer:	Ballymore Group / Atkins	
			Date Received	06/11/2023	Date Testing started	05/12/2023	
			Description:	Grey slightly sandy, slightly gravelly, SILT/CLAY			
75	100	COBBLES	Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			
63	100						
50	100						
37.5	100						
28	100						
20	100						
14	99						
10	99						
6.3	99						
5	98						
3.35	98	GRAVEL					
2	98						
1.18	97						
0.6	95						
0.425	94						
0.3	93						
0.15	90						
0.063	63						
0.038	46						
0.027	41						
0.018	35	SAND					
0.010	29						
0.007	23						
0.005	19						
0.002	7						
							SILT/CLAY

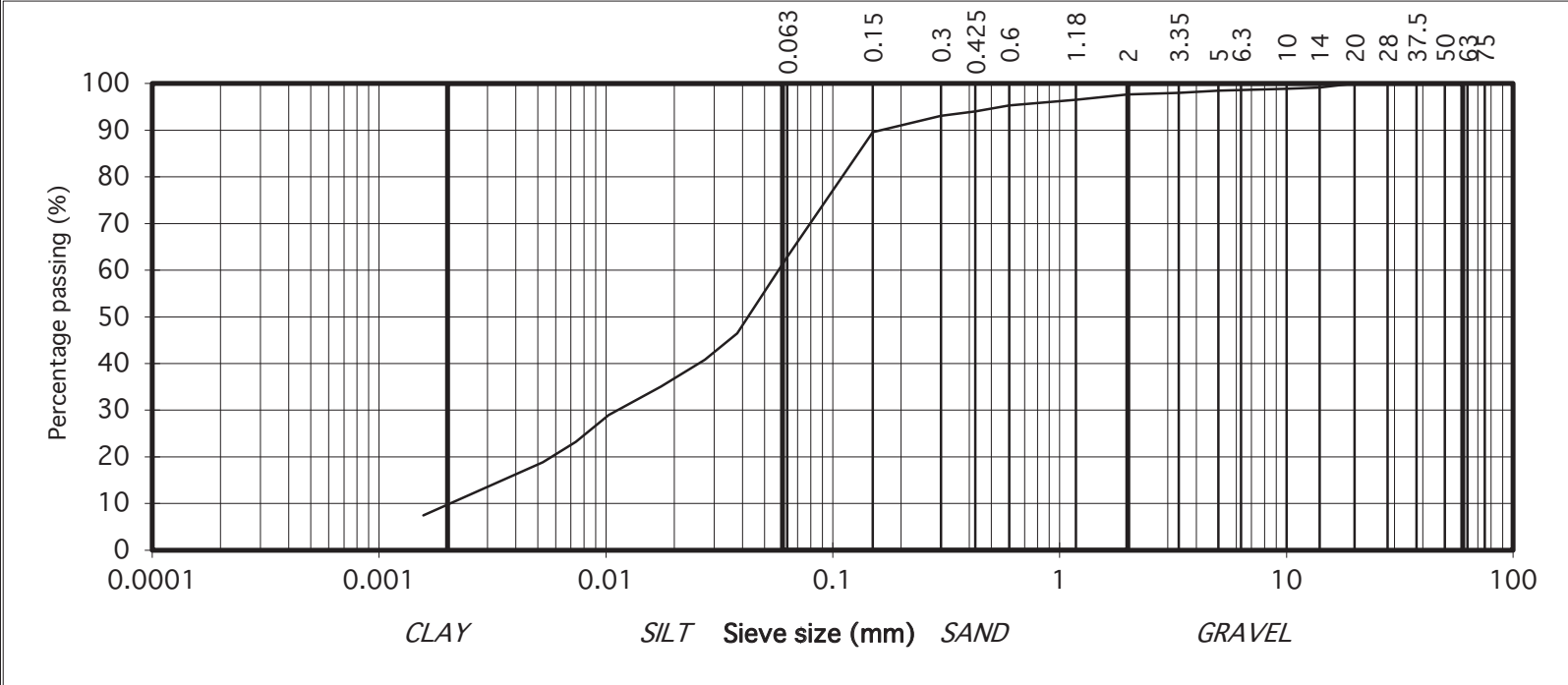
Percentage passing (%)

0.00010.0010.010.1110100

CLAYSILT

Sieve size (mm)

SANDGRAVEL



IGSL Ltd Materials Laboratory	Approved by:	Date:	Page no:
	<i>H Byrne</i>	17/01/24	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152613				
			Contract Name :	Sea Gardens , Bray , Co.Wicklow						
			BH/TP No.	BH302						
			Sample No.*	AA203041	Lab. Sample No.	A23/4820				
			Sample Type:	B						
			Depth* (m)	8.00	Customer:	Ballymore Group / Atkins				
			Date Received	06/11/2023	Date Testing started	29/11/2023				
			Description:	Grey slightly sandy, SILT/CLAY						
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .						
75	100	COBBLES	Percentage passing (%) CLAY SILT Sieve size (mm) SAND GRAVEL							
63	100									
50	100									
37.5	100									
28	100									
20	100									
14	100									
10	100									
6.3	100									
5	100									
3.35	100	GRAVEL								
2	100									
1.18	100									
0.6	99									
0.425	99									
0.3	99									
0.15	98									
0.063	96									
0.038	89									
0.027	78									
0.018	57	SAND								
0.010	46									
0.007	34									
0.005	26									
0.002	8									
		SILT/CLAY								

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)			

TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152614	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Sea Gardens , Bray , Co.Wicklow			
			BH/TP No.	BH302			
			Sample No.*	AA203045	Lab. Sample No.	A23/4822	
75	100	COBBLES	Sample Type:	B			
63	100						
50	100						
37.5	100						
28	98						
20	98	GRAVEL	Depth* (m)	11.00	Customer:	Ballymore Group / Atkins	
14	95						
10	91						
6.3	80						
5	75						
3.35	64	SAND	Date Received	06/11/2023	Date Testing started	08/12/2023	
2	47						
1.18	33						
0.6	18						
0.425	13						
0.3	9	SILT/CLAY	Description:	Brown slightly clayey/silty, very sandy, GRAVEL			
0.15	5						
0.063	3						
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			

Sieve size (mm)	Percentage passing (%)
0.063	3
0.15	5
0.3	9
0.425	13
0.6	18
1.18	33
2	47
3.35	64
5	75
6.3	80
10	91
14	95
20	98
28	98
37.5	100
50	100
63	100

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152615																																		
			Contract Name :	Sea Gardens , Bray , Co.Wicklow																																				
			BH/TP No.	BH303																																				
			Sample No.*	AA209323	Lab. Sample No.	A23/4824																																		
			Sample Type:	B																																				
			Depth* (m)	3.00	Customer:	Ballymore Group / Atkins																																		
			Date Received	06/11/2023	Date Testing started	29/11/2023																																		
			Description:	Grey slightly clayey/silty, very sandy, GRAVEL																																				
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .																																				
75	100	COBBLES	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.																																					
63	100																																							
50	100																																							
37.5	100																																							
28	100																																							
20	96																																							
14	90																																							
10	81																																							
6.3	70																																							
5	64																																							
3.35	53	GRAVEL																																						
2	39																																							
1.18	27																																							
0.6	15																																							
0.425	11																																							
0.3	8	SAND																																						
0.15	5																																							
0.063	3																																							
		SILT/CLAY	<table><thead><tr><th>Sieve size (mm)</th><th>Percentage passing (%)</th></tr></thead><tbody><tr><td>0.063</td><td>0</td></tr><tr><td>0.15</td><td>5</td></tr><tr><td>0.3</td><td>10</td></tr><tr><td>0.6</td><td>15</td></tr><tr><td>1.18</td><td>27</td></tr><tr><td>2</td><td>39</td></tr><tr><td>3.35</td><td>53</td></tr><tr><td>5</td><td>64</td></tr><tr><td>6.3</td><td>70</td></tr><tr><td>10</td><td>81</td></tr><tr><td>14</td><td>90</td></tr><tr><td>20</td><td>96</td></tr><tr><td>28</td><td>100</td></tr><tr><td>37.5</td><td>100</td></tr><tr><td>50</td><td>100</td></tr><tr><td>75</td><td>100</td></tr></tbody></table>				Sieve size (mm)	Percentage passing (%)	0.063	0	0.15	5	0.3	10	0.6	15	1.18	27	2	39	3.35	53	5	64	6.3	70	10	81	14	90	20	96	28	100	37.5	100	50	100	75	100
Sieve size (mm)	Percentage passing (%)																																							
0.063	0																																							
0.15	5																																							
0.3	10																																							
0.6	15																																							
1.18	27																																							
2	39																																							
3.35	53																																							
5	64																																							
6.3	70																																							
10	81																																							
14	90																																							
20	96																																							
28	100																																							
37.5	100																																							
50	100																																							
75	100																																							

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152616							
			Contract Name :	Sea Gardens , Bray , Co.Wicklow									
			BH/TP No.	BH303									
			Sample No.*	AA209333	Lab. Sample No.	A23/4828							
			Sample Type:	B									
			Depth* (m)	13.00	Customer:	Ballymore Group / Atkins							
			Date Received	06/11/2023	Date Testing started	05/12/2023							
			Description:	Grey slightly clayey/silty, slightly sandy, GRAVEL with many cobbles									
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2 Sample size did not meet the requirements of BS1377									
75	77	COBBLES											
63	67												
50	52												
37.5	36												
28	22												
20	16	GRAVEL											
14	12												
10	9												
6.3	7												
5	6												
3.35	5	SAND											
2	4												
1.18	3												
0.6	2												
0.425	1												
0.3	1	SILT/CLAY											
0.15	1												
0.063	1												

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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		17/01/24	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R155077																																				
			Contract Name :	Sea Gardens , Bray , Co.Wicklow																																						
			BH/TP No.	BH304																																						
			Sample No.*	AA209002	Lab. Sample No.	A23/4829																																				
			Sample Type:	B																																						
			Depth* (m)	2.00	Customer:	Ballymore Group / Atkins																																				
			Date Received	06/11/2023	Date Testing started	29/11/2023																																				
			Description:	Brown clayey/silty, slightly gravelly, SAND																																						
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .																																						
75	100	COBBLES	Percentage passing (%) <table><tr><th>Sieve size (mm)</th><th>Percentage passing (%)</th></tr><tr><td>0.063</td><td>0</td></tr><tr><td>0.15</td><td>5</td></tr><tr><td>0.3</td><td>20</td></tr><tr><td>0.425</td><td>37</td></tr><tr><td>0.6</td><td>57</td></tr><tr><td>1.18</td><td>88</td></tr><tr><td>2</td><td>95</td></tr><tr><td>3.35</td><td>97</td></tr><tr><td>5</td><td>97</td></tr><tr><td>6.3</td><td>97</td></tr><tr><td>10</td><td>97</td></tr><tr><td>14</td><td>98</td></tr><tr><td>20</td><td>99</td></tr><tr><td>28</td><td>100</td></tr><tr><td>37.5</td><td>100</td></tr><tr><td>50</td><td>100</td></tr><tr><td>75</td><td>100</td></tr></table>				Sieve size (mm)	Percentage passing (%)	0.063	0	0.15	5	0.3	20	0.425	37	0.6	57	1.18	88	2	95	3.35	97	5	97	6.3	97	10	97	14	98	20	99	28	100	37.5	100	50	100	75	100
Sieve size (mm)	Percentage passing (%)																																									
0.063	0																																									
0.15	5																																									
0.3	20																																									
0.425	37																																									
0.6	57																																									
1.18	88																																									
2	95																																									
3.35	97																																									
5	97																																									
6.3	97																																									
10	97																																									
14	98																																									
20	99																																									
28	100																																									
37.5	100																																									
50	100																																									
75	100																																									
63	100																																									
50	100																																									
37.5	100																																									
28	100																																									
20	100																																									
14	100																																									
10	99																																									
6.3	98																																									
5	97																																									
3.35	97																																									
2	95																																									
1.18	88																																									
0.6	57																																									
0.425	37																																									
0.3	20																																									
0.15	9																																									
0.063	5																																									
		GRAVEL																																								
		SAND																																								
		SILT/CLAY																																								

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TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152617
			Contract Name :	Sea Gardens , Bray , Co.Wicklow		
			BH/TP No.	BH304		
			Sample No.*	AA203005	Lab. Sample No.	A23/4830
			Sample Type:	B		
			Depth* (m)	4.00	Customer:	Ballymore Group / Atkins
			Date Received	06/11/2023	Date Testing started	30/11/2023
			Description:	Grey slightly sandy, SILT/CLAY		
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .		
75	100	COBBLES	Percentage passing (%) 0.0001 0.001 0.01 0.1 1 10 100 CLAY SILT Sieve size (mm) SAND GRAVEL			
63	100					
50	100					
37.5	100					
28	100					
20	100					
14	100					
10	100					
6.3	100					
5	100					
3.35	100	GRAVEL				
2	100					
1.18	100					
0.6	100					
0.425	100					
0.3	99					
0.15	98					
0.063	90					
0.038	83					
0.027	74					
0.018	62	SAND				
0.010	51					
0.007	41					
0.005	29					
0.002	7					
		SILT/CLAY				

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TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152618
			Contract Name :	Sea Gardens , Bray , Co.Wicklow		
			BH/TP No.	BH304		
			Sample No.*	AA203007	Lab. Sample No.	A23/4831
			Sample Type:	B		
			Depth* (m)	6.00	Customer:	Ballymore Group / Atkins
			Date Received	06/11/2023	Date Testing started	30/11/2023
			Description:	Grey clayey/silty, gravelly, SAND		
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .		
75	100	COBBLES	Percentage passing (%) 100 90 80 70 60 50 40 30 20 10 0 0.0001 0.001 0.01 0.1 1 10 100 CLAY SILT Sieve size (mm) SAND GRAVEL			
63	100					
50	100					
37.5	100					
28	100					
20	100					
14	100					
10	100					
6.3	99	GRAVEL				
5	99					
3.35	96					
2	91					
1.18	80					
0.6	61					
0.425	49					
0.3	41					
0.15	24	SAND				
0.063	10					
		SILT/CLAY				

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.

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					17/01/24	1 of 1
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)						

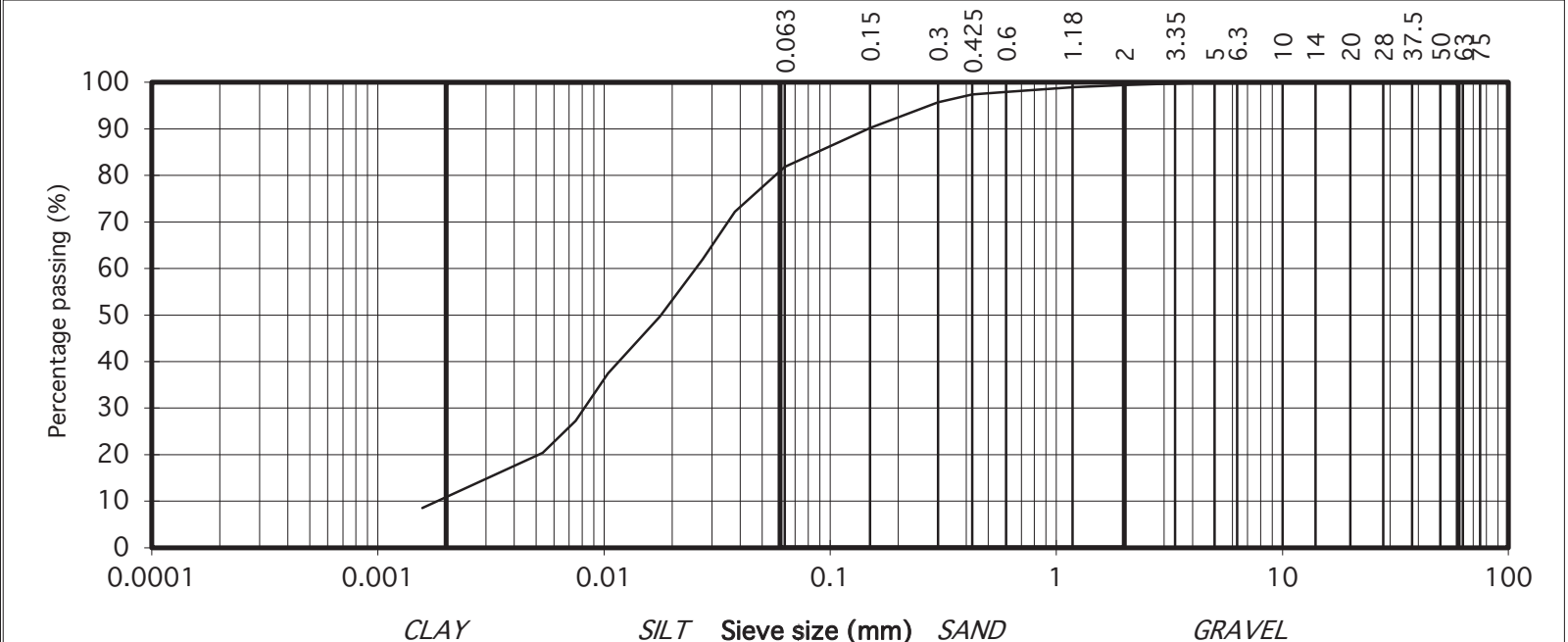
TEST REPORT

Determination of Particle Size Distribution

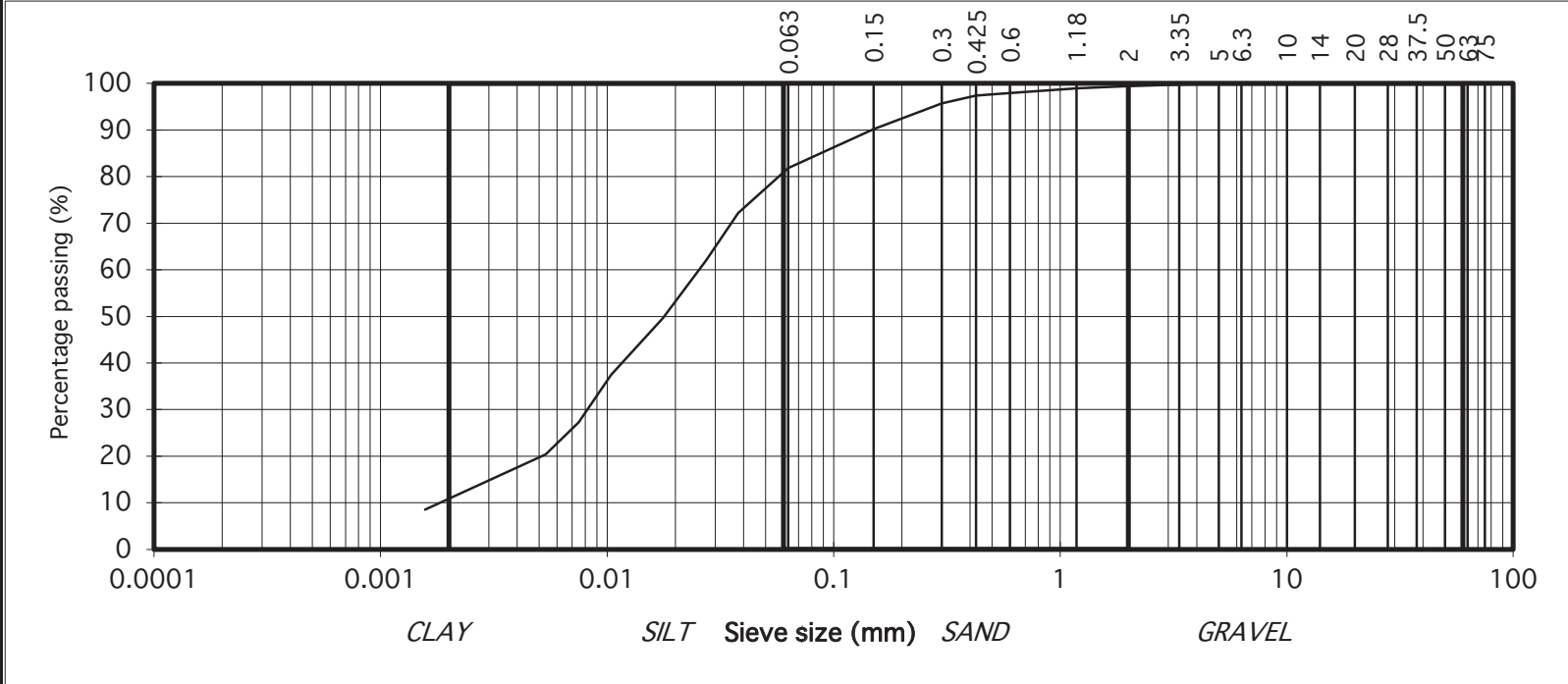
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



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particle size	% passing		Contract No.	24991	Report No.	R152619	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.		
			Contract Name :	Sea Gardens , Bray , Co.Wicklow					
			BH/TP No.	BH304					
			Sample No.*	AA203011	Lab. Sample No.	A23/4833			
			Sample Type:	B					
			Depth* (m)	9.00	Customer:	Ballymore Group / Atkins			
			Date Received	06/11/2023	Date Testing started	29/11/2023			
			Description:	Grey slightly sandy, slightly gravelly, SILT/CLAY					
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .					
75	100	COBBLES							
63	100								
50	100								
37.5	100								GRAVEL
28	100								
20	100								
14	100								
10	100								
6.3	100								
5	100								
3.35	100								
2	99								
1.18	99	SAND							
0.6	98								
0.425	97								
0.3	96								
0.15	90								
0.063	82								
0.038	72								
0.027	62								
0.018	50								
0.010	37								SILT/CLAY
0.007	27								
0.005	20								
0.002	9								

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152620	
			Contract Name :	Sea Gardens , Bray , Co.Wicklow			
			BH/TP No.	BH304			
			Sample No.*	AA203014	Lab. Sample No.	A23/4835	
			Sample Type:	B			
			Depth* (m)	11.00	Customer:	Ballymore Group / Atkins	
			Date Received	06/11/2023	Date Testing started	29/11/2023	
			Description:	Brown slightly clayey/silty, very sandy, GRAVEL with some cobbles			
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2 Sample size did not meet the requirements of BS1377			
75	100	COBBLES	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.				
63	86						
50	86						
37.5	77						
28	68						GRAVEL
20	62						
14	60						
10	58						
6.3	55						
5	52						
3.35	48						
2	38						
1.18	28	SAND					
0.6	13						
0.425	9						
0.3	7						
0.15	6						
0.063	5						
							SILT/CLAY

100	90	80	70	60	50	40	30	20	10	0																					
Percentage passing (%)																															
<table><tr><td>0.0001</td><td>0.001</td><td>0.01</td><td>0.1</td><td>1</td><td>10</td><td>100</td></tr><tr><td colspan="7">Sieve size (mm)</td></tr><tr><td colspan="3">CLAY</td><td>SILT</td><td>SAND</td><td colspan="2">GRAVEL</td></tr></table>											0.0001	0.001	0.01	0.1	1	10	100	Sieve size (mm)							CLAY			SILT	SAND	GRAVEL	
0.0001	0.001	0.01	0.1	1	10	100																									
Sieve size (mm)																															
CLAY			SILT	SAND	GRAVEL																										
0.063 0.15 0.3 0.425 0.6 1.18 2 3.35 5 6.3 10 14 20 28 37.5 50 75																															

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152621
			Contract Name :	Sea Gardens , Bray , Co.Wicklow		
			BH/TP No.	BH305		
			Sample No.*	AA197077	Lab. Sample No.	A23/4989
			Sample Type:	B		
			Depth* (m)	5.00	Customer:	Ballymore Group / Atkins
			Date Received	06/11/2023	Date Testing started	08/12/2023
			Description:	Grey/brown slightly sandy, slightly gravelly, SILT/CLAY		
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .		
75	100	COBBLES				
63	100					
50	100					
37.5	100					
28	100					
20	100					
14	100					
10	100					
6.3	98	GRAVEL				
5	96					
3.35	90					
2	85					
1.18	79					
0.6	73					
0.425	71					
0.3	69					
0.15	63	SAND				
0.063	52					
0.037	46					
0.027	40					
0.018	32					
0.010	26					
0.007	21					
0.005	17					
0.002	6	SILT/CLAY				

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

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

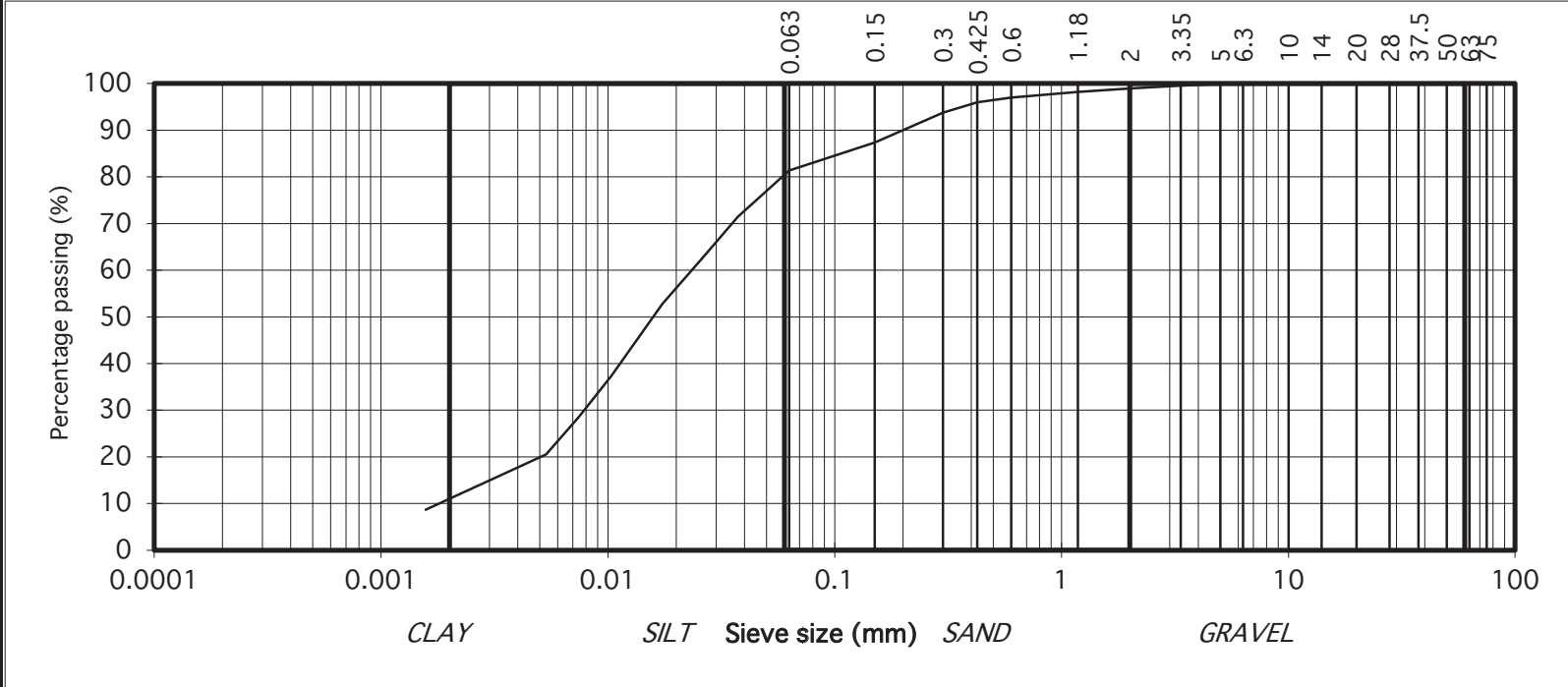


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particle size	% passing		Contract No.	24991	Report No.	R152622	RED: 2410322023 Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.			
			Contract Name :	Sea Gardens , Bray , Co.Wicklow						
			BH/TP No.	BH305						
			Sample No.*	AA197080	Lab. Sample No.	A23/4991				
			Sample Type:	B						
			Depth* (m)	7.00	Customer:	Ballymore Group / Atkins				
			Date Received	06/11/2023	Date Testing started	08/12/2023				
			Description:	Grey/brown slightly sandy, slightly gravelly, SILT/CLAY						
75	100	COBBLES	Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2 Shell Fragments in sample						
63	100									
50	100									
37.5	100									
28	100									
20	100									
14	100									
10	100									
6.3	100									
5	100									
3.35	100	GRAVEL								
2	99									
1.18	98									
0.6	97									
0.425	96									
0.3	94									
0.15	87									
0.063	81									
0.037	71									
0.027	63									
0.017	53	SAND								
0.010	37									
0.007	29									
0.005	21									
0.002	9									
		SILT/CLAY								

Sieve size (mm)	Percentage passing (%)
0.002	9
0.005	21
0.007	29
0.010	37
0.017	53
0.027	63
0.037	71
0.063	81
0.15	87
0.3	94
0.425	96
0.6	97
1.18	98
2	99
3.35	100
75	100

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	<i>H Byrne</i>	17/01/24	1 of 1
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)			

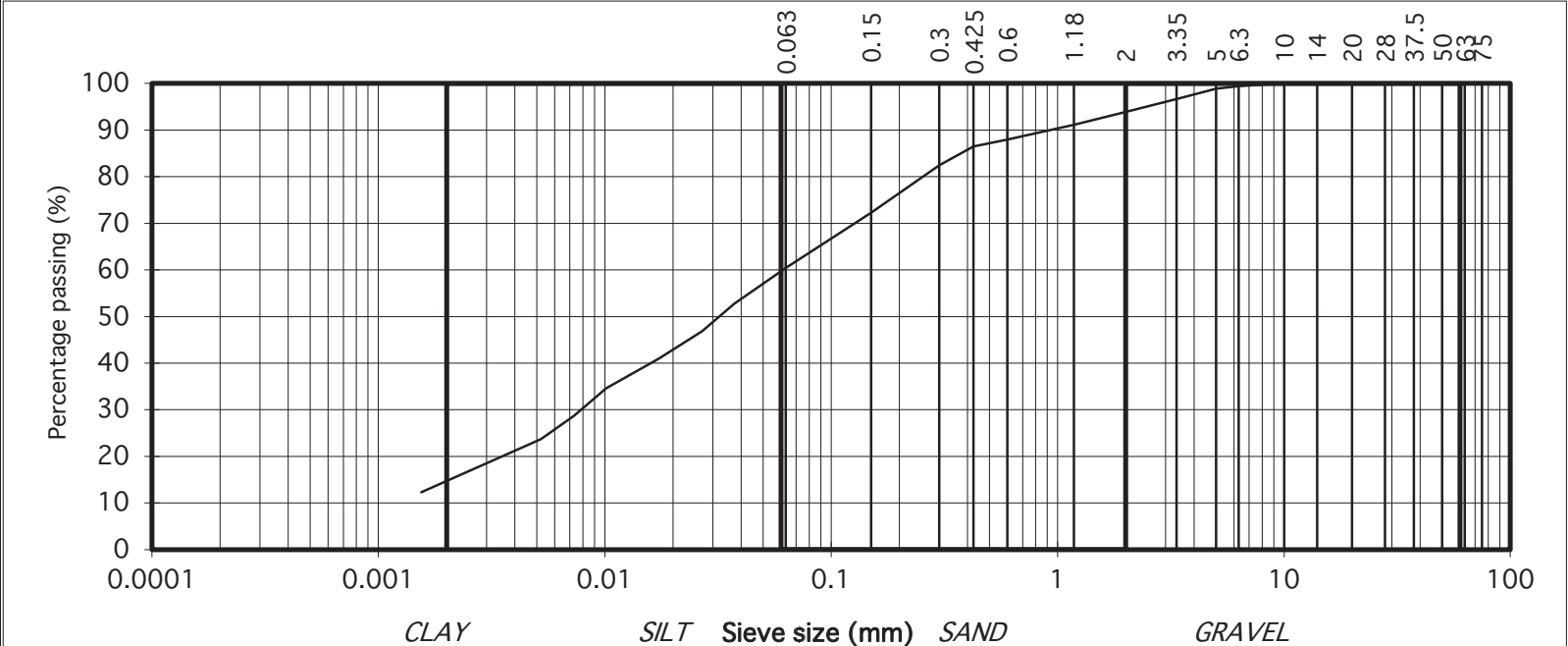
TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152623	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.	
			Contract Name :	Sea Gardens , Bray , Co.Wicklow				
			BH/TP No.	BH305				
			Sample No.*	AA197083	Lab. Sample No.	A23/4993		
			Sample Type:	B				
			Depth* (m)	9.00	Customer:	Ballymore Group / Atkins		
			Date Received	06/11/2023	Date Testing started	08/12/2023		
			Description:	Grey/brown slightly sandy, slightly gravelly, SILT/CLAY				
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2 Shell Fragments in sample				
75	100	COBBLES						
63	100							
50	100							
37.5	100							
28	100							
20	100							
14	100							
10	100	GRAVEL						
6.3	99							
5	99							
3.35	97							
2	94							
1.18	91							
0.6	88	SAND						
0.425	86							
0.3	82							
0.15	72							
0.063	60							
0.037	53							
0.027	47	SILT/CLAY						
0.017	41							
0.010	35							
0.007	29							
0.005	24							
0.002	12							

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

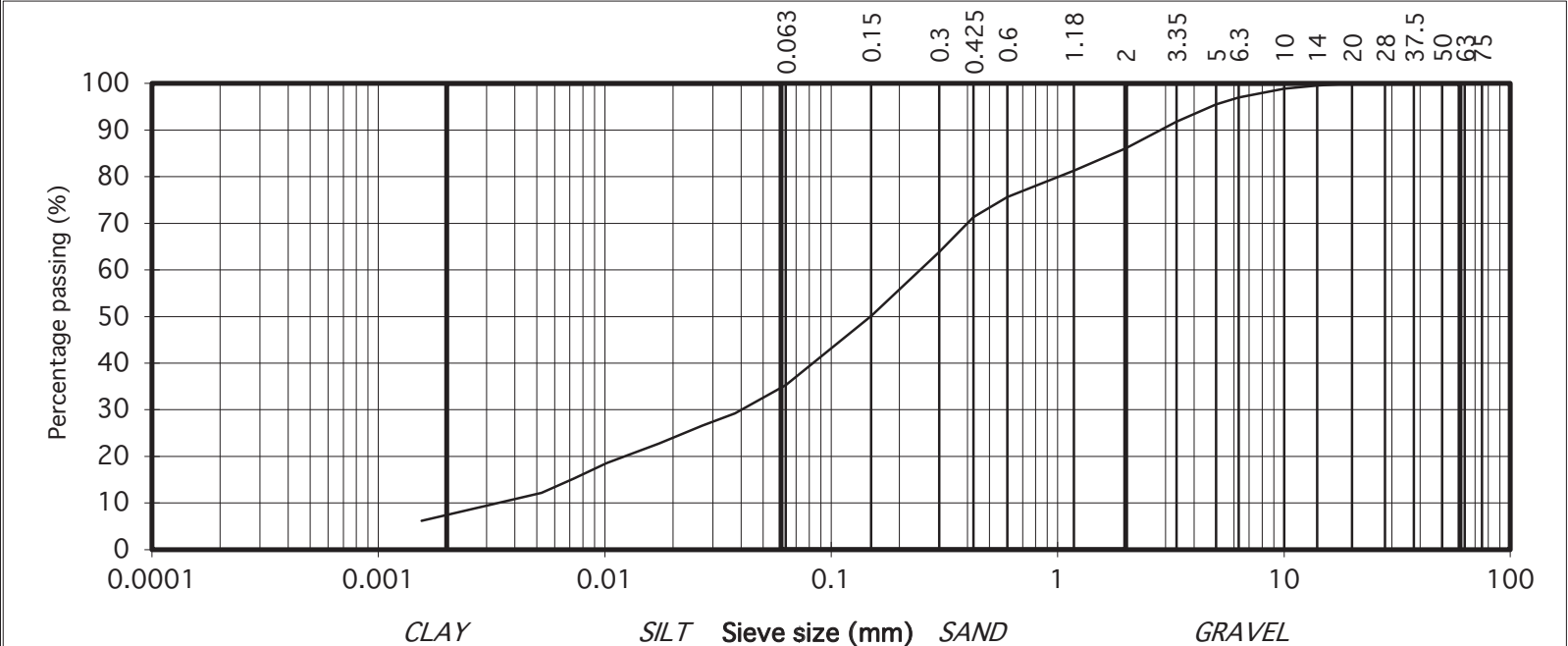
TEST REPORT

Determination of Particle Size Distribution

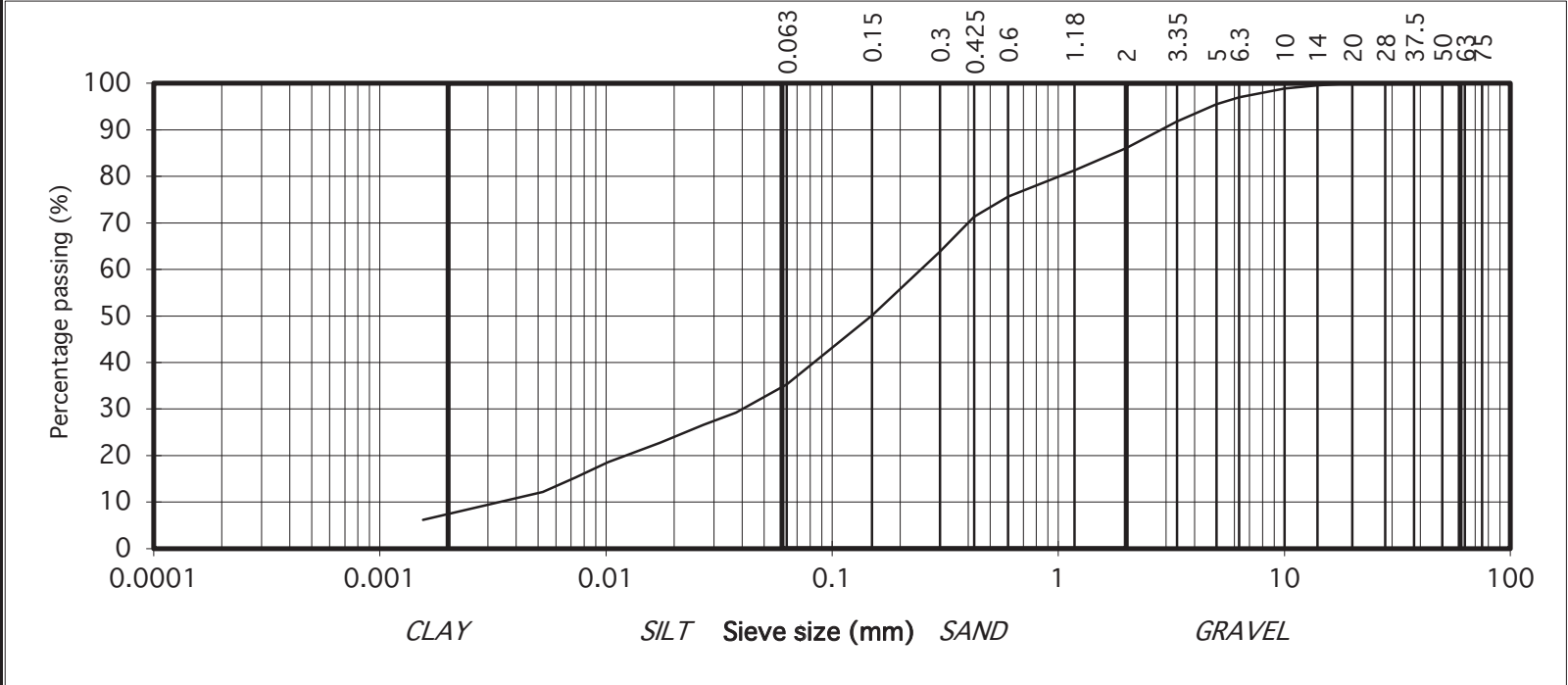
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



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particle size	% passing		Contract No.	24991	Report No.	R152624	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.		
			Contract Name :	Sea Gardens , Bray , Co.Wicklow					
			BH/TP No.	BH306					
			Sample No.*	AA197056	Lab. Sample No.	A23/4837			
			Sample Type:	B					
			Depth* (m)	2.00	Customer:	Ballymore Group / Atkins			
			Date Received	06/11/2023	Date Testing started	29/11/2023			
			Description:	Brown sandy, slightly gravelly, SILT/CLAY					
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .					
75	100	COBBLES							
63	100								
50	100								
37.5	100							GRAVEL	
28	100								
20	100								
14	100								
10	99								
6.3	97								
5	96								
3.35	92								
2	86								
1.18	81	SAND							
0.6	76								
0.425	71								
0.3	64								
0.15	50								
0.063	35								
0.038	29								
0.027	27								
0.017	23							SILT/CLAY	
0.010	19								
0.007	15								
0.005	12								
0.002	6								

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152625	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Sea Gardens , Bray , Co.Wicklow			
			BH/TP No.	BH306			
			Sample No.*	AA197059	Lab. Sample No.	A23/4839	
75	100	COBBLES	Sample Type:	B			
63	100						
50	100	GRAVEL	Depth* (m)	5.00	Customer:	Ballymore Group / Atkins	
37.5	100		Date Received	06/11/2023	Date Testing started	29/11/2023	
28	100		Description:	Grey slightly sandy, slightly gravelly, SILT/CLAY			
20	100						
14	100						
10	99						
6.3	98						
5	97						
3.35	96						
2	95						
1.18	94	SAND	Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2 Shell Fragments in sample			
0.6	92						
0.425	91						
0.3	90						
0.15	86	SILT/CLAY					
0.063	62						

Sieve size (mm)	Percentage passing (%)
0.063	100
0.15	100
0.3	100
0.425	100
0.6	100
1.18	100
2	100
3.35	100
5	100
6.3	100
10	100
14	100
20	100
28	100
37.5	100
50	100
63	100
75	100
93	100

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TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152626	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.														
			Contract Name :	Sea Gardens , Bray , Co.Wicklow																	
			BH/TP No.	BH306																	
			Sample No.*	AA197068	Lab. Sample No.	A234843															
			Sample Type:	B																	
			Depth* (m)	11.00	Customer:	Ballymore Group / Atkins															
			Date Received	06/11/2023	Date Testing started	29/11/2023															
			Description:	Black sandy, slightly gravelly, SILT/CLAY																	
75	100	COBBLES	Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			<table><tr><td>0.0001</td><td>0.001</td><td>0.01</td><td>0.1</td><td>1</td><td>10</td><td>100</td></tr><tr><td>CLAY</td><td></td><td>SILT</td><td>SAND</td><td colspan="3">GRAVEL</td></tr></table>	0.0001	0.001	0.01	0.1	1	10	100	CLAY		SILT	SAND	GRAVEL		
0.0001	0.001							0.01	0.1	1	10	100									
CLAY								SILT	SAND	GRAVEL											
63	100																				
50	100																				
37.5	100																				
28	100																				
20	100																				
14	100																				
10	99																				
6.3	98																				
5	97																				
3.35	96	GRAVEL																			
2	92																				
1.18	87																				
0.6	77																				
0.425	71																				
0.3	64	SAND																			
0.15	42																				
0.063	28																				
		SILT/CLAY																			

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					18/01/23	1 of 1
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)						

TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152627
			Contract Name :	Sea Gardens , Bray , Co.Wicklow		
			BH/TP No.	BH306		
			Sample No.*	AA197070	Lab. Sample No.	A23/4844
			Sample Type:	B		
			Depth* (m)	13.00	Customer:	Ballymore Group / Atkins
			Date Received	06/11/2023	Date Testing started	29/11/2023
			Description:	Grey slightly sandy, GRAVEL with many cobbles		
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2 Sample size did not meet the requirements of BS1377		
75	100	COBBLES	Percentage passing (%) 0.0001 0.001 0.01 0.1 1 10 100 CLAY SILT Sieve size (mm) SAND GRAVEL			
63	80					
50	45					
37.5	13					
28	7					
20	6					
14	5					
10	5					
6.3	4					
5	3					
3.35	3	GRAVEL				
2	3					
1.18	2					
0.6	2					
0.425	1					
0.3	1					
0.15	0					
0.063	0					
		SAND				
		SILT/CLAY				

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152628
			Contract Name :	Sea Gardens , Bray , Co.Wicklow		
			BH/TP No.	BH307		
			Sample No.*	AA192093	Lab. Sample No.	A23/4846
			Sample Type:	B		
			Depth* (m)	3.00	Customer:	Ballymore Group / Atkins
			Date Received	06/11/2023	Date Testing started	29/11/2023
			Description:	Grey clayey/silty, sandy, GRAVEL		
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .		
75	100	COBBLES	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.			
63	100					
50	91					
37.5	82					
28	70					
20	54					
14	41					
10	36					
6.3	31					
5	30					
3.35	28	GRAVEL				
2	25					
1.18	20					
0.6	15					
0.425	13					
0.3	11	SAND				
0.15	8					
0.063	6					
		SILT/CLAY				

100	90	80	70	60	50	40	30	20	10	0	
0.0001	0.001	0.01	0.1	1	10	100					
							CLAY	SILT	Sieve size (mm)	SAND	GRAVEL

0.063	0.15	0.3	0.425	0.6	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	75
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Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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					18/01/23	1 of 1
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)						

TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152629
			Contract Name :	Sea Gardens , Bray , Co.Wicklow		
			BH/TP No.	BH307		
			Sample No.*	AA192103	Lab. Sample No.	A23/4850
			Sample Type:	B		
			Depth* (m)	10.00	Customer:	Ballymore Group / Atkins
			Date Received	06/11/2023	Date Testing started	05/12/2023
			Description:	Grey slightly clayey/silty, slightly sandy, GRAVEL with many cobbles		
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2 Sample size did not meet the requirements of BS1377		
75	70	COBBLES	Percentage passing (%) CLAY SILT Sieve size (mm) SAND GRAVEL			
63	58					
50	58					
37.5	30					
28	22					
20	19					
14	15					
10	12	GRAVEL				
6.3	9					
5	8					
3.35	7					
2	5					
1.18	4					
0.6	3					
0.425	2	SAND				
0.3	2					
0.15	1					
0.063	1	SILT/CLAY				

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IGSL Ltd Materials Laboratory	Approved by:	Date:	Page no:
		18/01/23	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

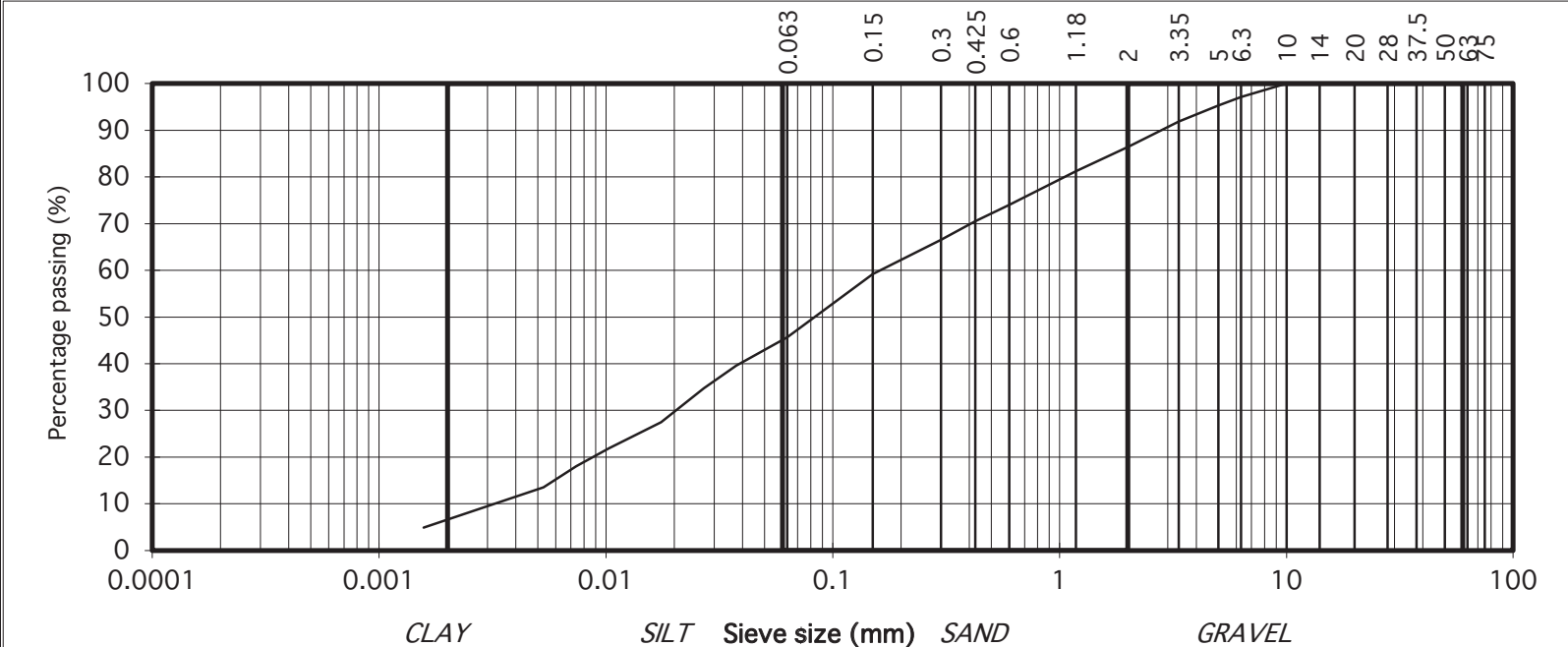
TEST REPORT

Determination of Particle Size Distribution

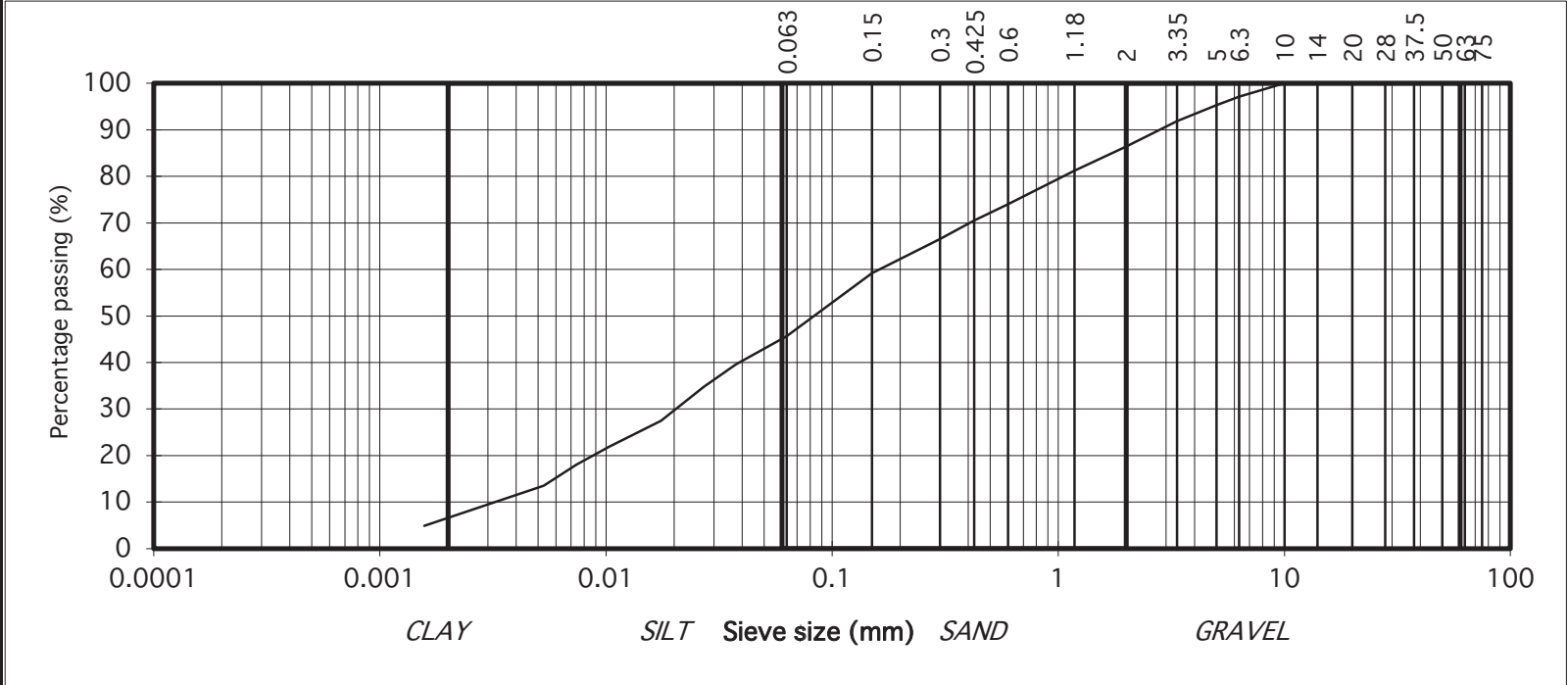
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



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particle size	% passing		Contract No.	24991	Report No.	R152630	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.	
			Contract Name :	Sea Gardens , Bray , Co.Wicklow				
			BH/TP No.	BH308				
			Sample No.*	A197088	Lab. Sample No.	A23/4994		
			Sample Type:	B				
			Depth* (m)	4.00	Customer:	Ballymore Group / Atkins		
			Date Received	06/11/2023	Date Testing started	08/12/2023		
			Description:	Grey/brown sandy, slightly gravelly, SILT				
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2 Possible organic Material in sample				
75	100	COBBLES						
63	100							
50	100							
37.5	100							
28	100							
20	100							
14	100							
10	100	GRAVEL						
6.3	97							
5	95							
3.35	92							
2	86							
1.18	81							
0.6	74							
0.425	71	SAND						
0.3	67							
0.15	59							
0.063	46							
0.037	40							
0.027	35							
0.018	27							
0.010	22	SILT/CLAY						
0.007	18							
0.005	14							
0.002	5							

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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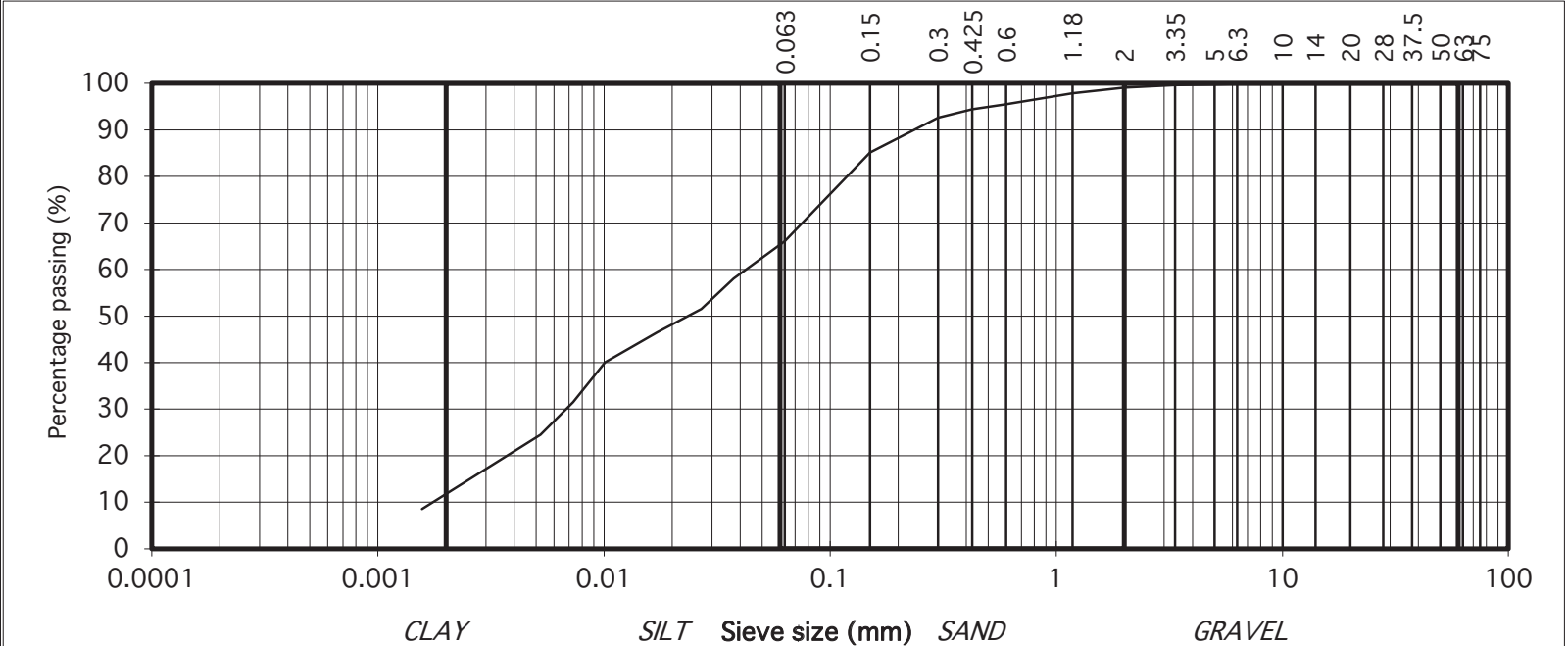
TEST REPORT

Determination of Particle Size Distribution

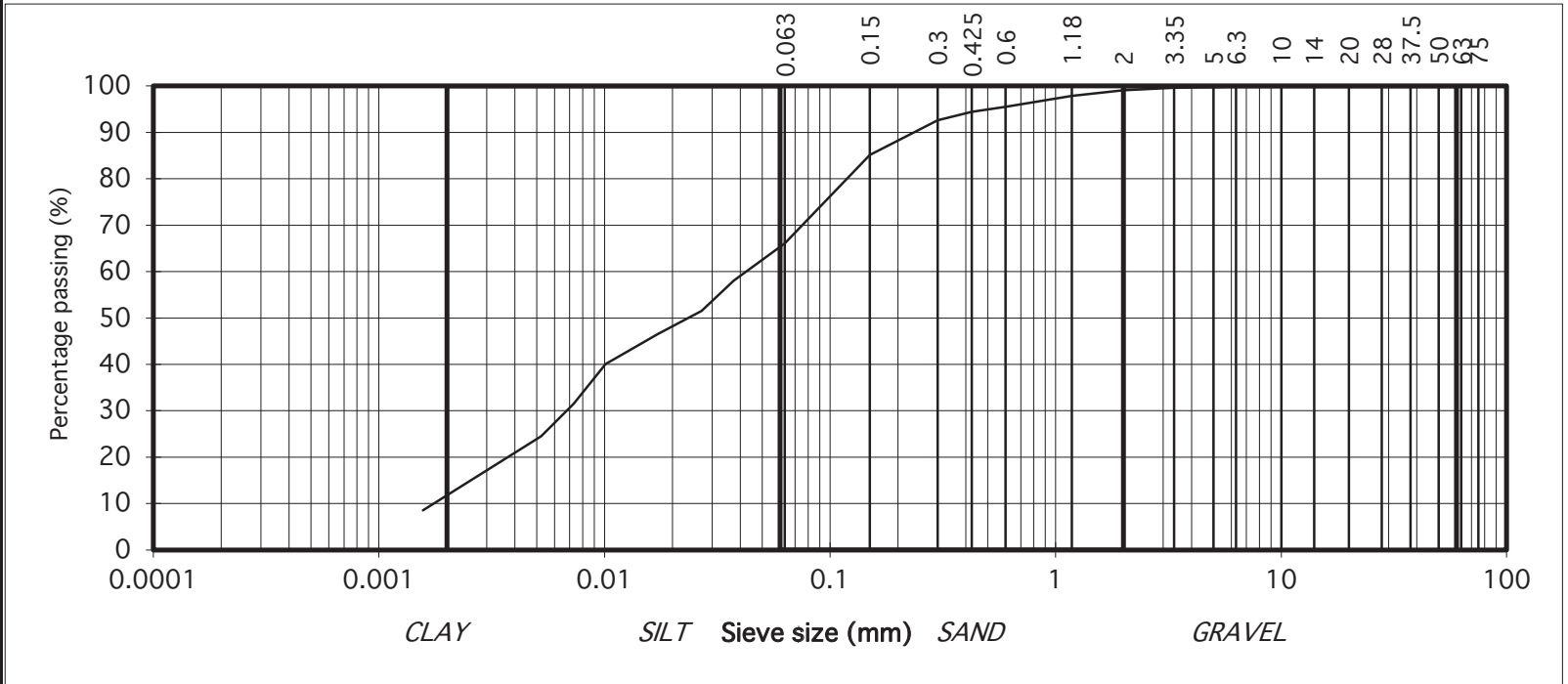
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5**
(note: Sedimentation stage not accredited)



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particle size	% passing		Contract No.	24991	Report No.	R152631	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Sea Gardens , Bray , Co.Wicklow			
			BH/TP No.	BH308			
			Sample No.*	AA197093	Lab. Sample No.	A23/4995	
			Sample Type:	B			
			Depth* (m)	7.00	Customer:	Ballymore Group / Atkins	
			Date Received	06/11/2023	Date Testing started	08/12/2023	
			Description:	Grey/brown slightly sandy, slightly gravelly, SILT/CLAY			
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			
75	100	COBBLES					
63	100						
50	100						
37.5	100						
28	100						
20	100						
14	100						
10	100						
6.3	100						
5	100						
3.35	100	GRAVEL					
2	99						
1.18	98						
0.6	95						
0.425	94						
0.3	93						
0.15	85						
0.063	66						
0.037	58						
0.027	52						
0.017	47	SAND					
0.010	40						
0.007	32						
0.005	25						
0.002	9						
		SILT/CLAY					

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IGSL Ltd Materials Laboratory	Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

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



RECEIVED: 27/02/2023

particle size	% passing		Contract No.	24991	Report No.	R1552632
			Contract Name :	Sea Gardens , Bray , Co.Wicklow		
			BH/TP No.	BH308		
			Sample No.*	AA197097	Lab. Sample No.	A23/4996
			Sample Type:	B		
			Depth* (m)	10.00	Customer:	Ballymore Group / Atkins
			Date Received	06/11/2023	Date Testing started	08/12/2023
			Description:	Grey/brown slightly sandy, slightly gravelly, CLAY		
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .		
75	100	COBBLES	Percentage passing (%) 0.063 0.15 0.3 0.425 0.6 1.18 2 3.35 5 6.3 10 14 20 28 37.5 50 63 0.0001 0.001 0.01 0.1 1 10 100 CLAY SILT Sieve size (mm) SAND GRAVEL			
63	100					
50	100					
37.5	100					
28	100					
20	100					
14	100					
10	100					
6.3	100					
5	100					
3.35	100	GRAVEL				
2	99					
1.18	98					
0.6	97					
0.425	96					
0.3	95					
0.15	90					
0.063	83					
0.038	72					
0.027	57					
0.018	45	SAND				
0.010	35					
0.007	27					
0.005	22					
0.002	11					
		SILT/CLAY				

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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152633	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Sea Gardens , Bray , Co.Wicklow			
			BH/TP No.	BH308			
			Sample No.*	AA197099	Lab. Sample No.	A23/4997	
75	100	COBBLES	Sample Type:	B			
63	100		Depth* (m)	11.50	Customer:	Ballymore Group / Atkins	
50	100		Date Received	06/11/2023	Date Testing started	08/12/2023	
37.5	100		Description:	Brown slightly sandy, slightly gravelly, SILT/CLAY			
28	99		GRAVEL	Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .		
20	97						
14	94						
10	91						
6.3	88						
5	86						
3.35	83						
2	80						
1.18	78	SAND					
0.6	75						
0.425	74						
0.3	72						
0.15	66						
0.063	55	SILT/CLAY					
0.037	47						
0.027	41						
0.017	37						
0.010	32						
0.007	29						
0.005	25						
0.002	19						

Sieve size (mm)	Percentage passing (%)
75	100
63	100
50	100
37.5	100
28	99
20	97
14	94
10	91
6.3	88
5	86
3.35	83
2	80
1.18	78
0.6	75
0.425	74
0.3	72
0.15	66
0.063	55
0.037	47
0.027	41
0.017	37
0.010	32
0.007	29
0.005	25
0.002	19

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

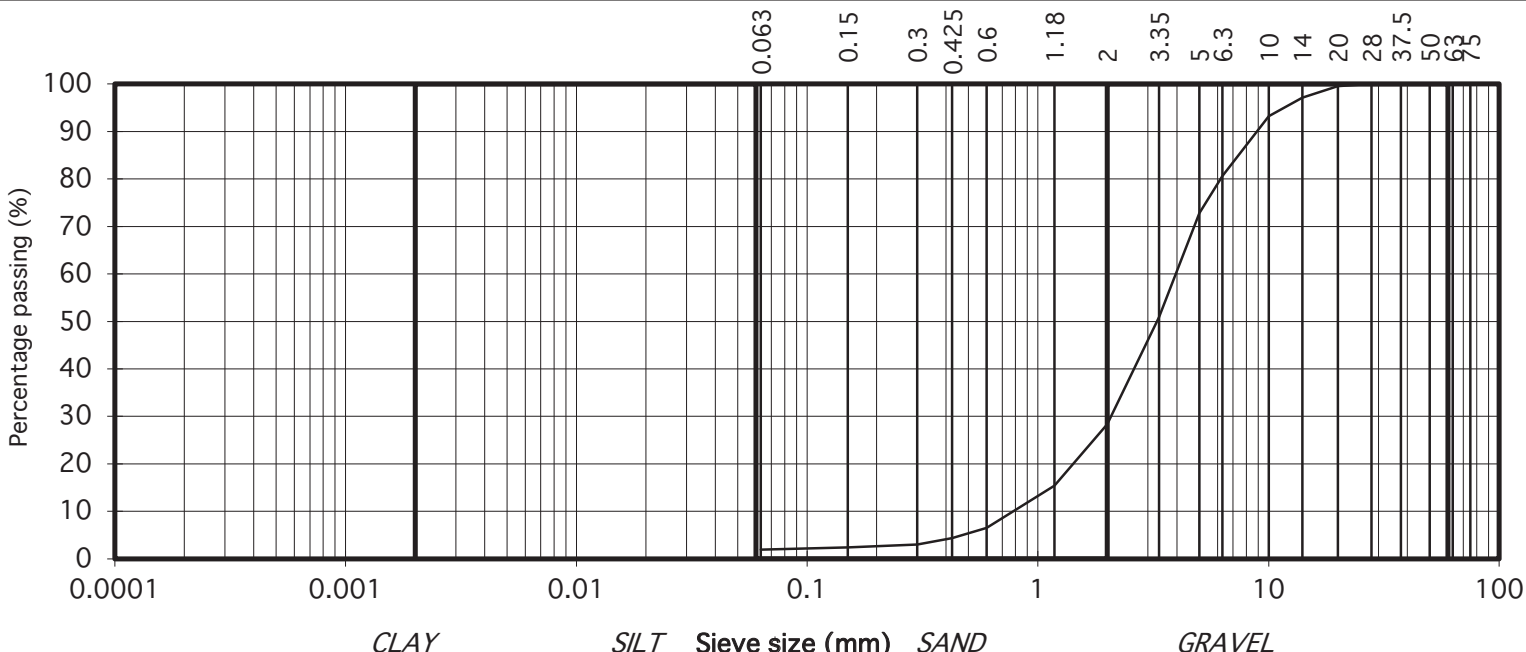
TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R152634	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Sea Gardens , Bray , Co.Wicklow			
			BH/TP No.	BH309			
			Sample No.*	AA191719	Lab. Sample No.	A23/5001	
			Sample Type:	B			
			Depth* (m)	11.00	Customer:	Ballymore Group / Atkins	
			Date Received	06/11/2023	Date Testing started	08/12/2023	
			Description:	Brown slightly clayey/silty, very sandy, GRAVEL			
75	100	COBBLES	Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .			
63	100						
50	100						
37.5	100						
28	100						
20	100						
14	97						
10	93						
6.3	81						
5	73						
3.35	51	GRAVEL					
2	28						
1.18	15						
0.6	7						
0.425	4						
0.3	3	SAND					
0.15	2						
0.063	2						
		SILT/CLAY					

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)						

TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R155075	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Sea Gardens , Bray , Co.Wicklow			
			BH/TP No.	BH310			
			Sample No.*	AA197284	Lab. Sample No.	A23/5003	
75	100	COBBLES	Sample Type:	B			
63	100		Depth* (m)	5.00	Customer:	Ballymore Group / Atkins	
50	100	GRAVEL	Date Received	06/11/2023	Date Testing started	29/11/2023	
37.5	100		Description:	Grey silty, slightly gravelly, SAND			
28	100						
20	100						
14	100						
10	99						
6.3	99						
5	98						
3.35	98						
2	97						
1.18	97	SAND	Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .				
0.6	97						
0.425	96						
0.3	96						
0.15	86	SILT/CLAY					
0.063	19						

Percentage passing (%)

Sieve size (mm)

CLAY SILT SAND GRAVEL

Sieve size (mm)	Percentage passing (%)
75	100
63	100
50	100
37.5	100
28	100
20	100
14	100
10	99
6.3	99
5	98
3.35	98
2	97
1.18	97
0.6	97
0.425	96
0.3	96
0.15	86
0.063	19

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		18/01/23	1 of 1
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)			

TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R155076	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.
			Contract Name :	Sea Gardens , Bray , Co.Wicklow			
			BH/TP No.	BH310			
			Sample No.*	AA197289	Lab. Sample No.	A23/5004	
75	100	COBBLES	Sample Type:	B			
63	91			Depth* (m)	10.00	Customer:	Ballymore Group / Atkins
50	68	GRAVEL	Date Received	06/11/2023	Date Testing started	29/11/2023	
37.5	58		Description:	Grey slightly clayey/silty, sandy, GRAVEL with some cobbles			
28	54						
20	42						
14	33						
10	25						
6.3	19						
5	16						
3.35	13						
2	12						
1.18	11	SAND	Remarks Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .				
0.6	10						
0.425	10						
0.3	10						
0.15	9	SILT/CLAY					
0.063	4						

Sieve size (mm)	Percentage passing (%)
75	100
63	91
50	68
37.5	58
28	54
20	42
14	33
10	25
6.3	19
5	16
3.35	13
2	12
1.18	11
0.6	10
0.425	10
0.3	10
0.15	9
0.063	4

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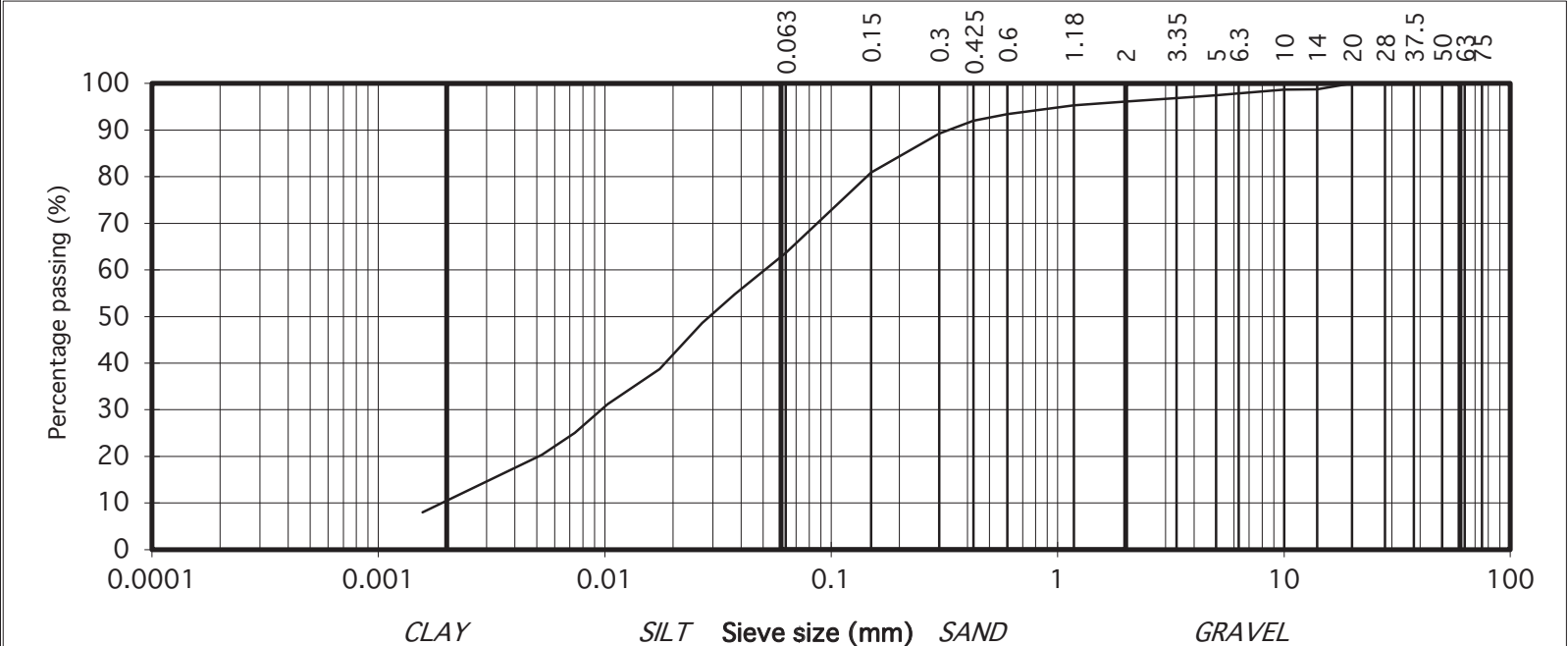
TEST REPORT

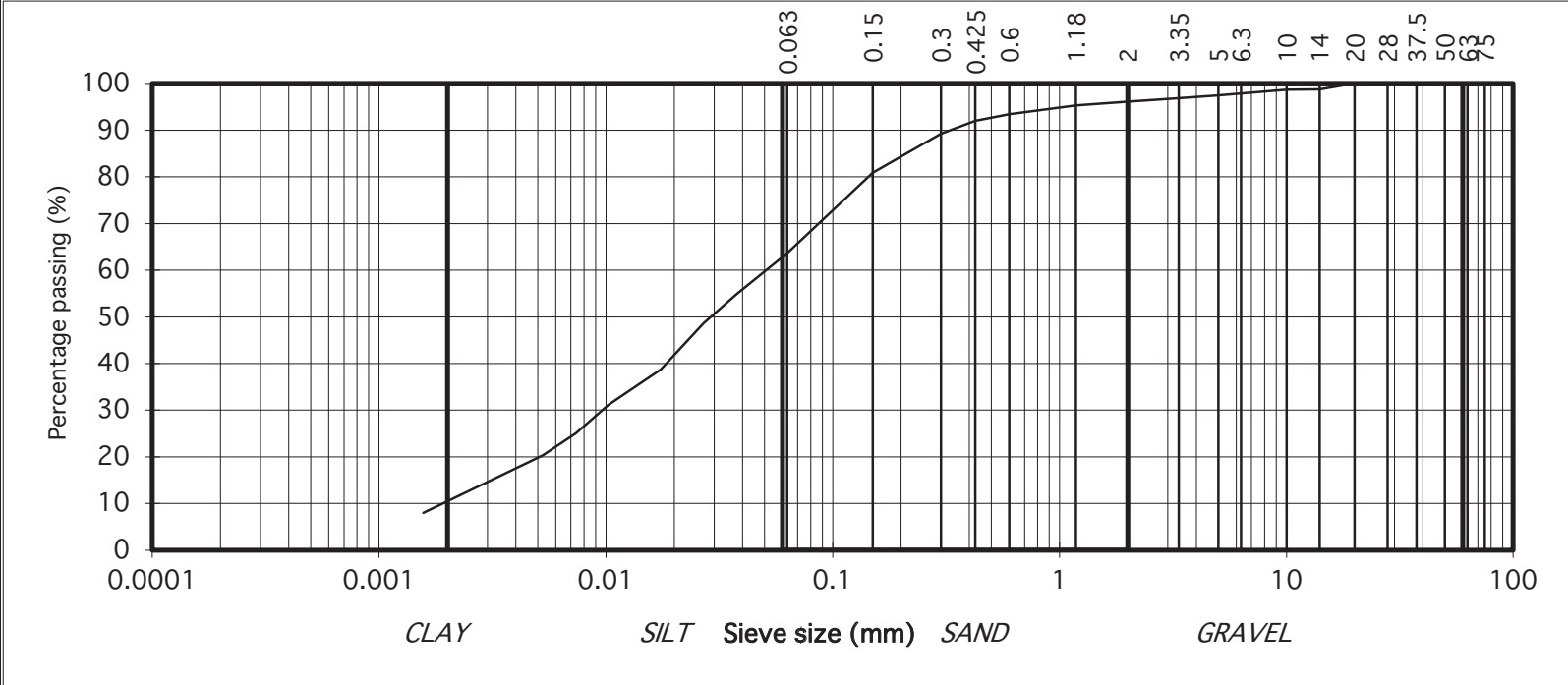
Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R155078
			Contract Name :	Sea Gardens , Bray , Co.Wicklow		
			BH/TP No.	BH312		
			Sample No.*	AA192501	Lab. Sample No.	A23/5011
			Sample Type:	B		
			Depth* (m)	6.00	Customer:	Ballymore Group / Atkins
			Date Received	06/11/2023	Date Testing started	29/11/2023
			Description:	Brown slightly sandy, slightly gravelly, SILT/CLAY		
			Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .		
75	100	COBBLES				
63	100					
50	100					
37.5	100					
28	100					
20	100					
14	99					
10	99					
6.3	98					
5	97					
3.35	97	GRAVEL				
2	96					
1.18	95					
0.6	93					
0.425	92					
0.3	89					
0.15	81					
0.063	64					
0.037	55					
0.027	49					
0.017	39	SAND				
0.010	31					
0.007	25					
0.005	20					
0.002	8					
		SILT/CLAY				



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IGSL Ltd Materials Laboratory	Approved by:	Date:	Page no:
	<i>H Byrne</i>	18/01/23	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

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



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particle size	% passing		Contract No.	24991	Report No.	R155079	Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory.				
			Contract Name :	Sea Gardens , Bray , Co.Wicklow							
			BH/TP No.	BH313							
			Sample No.*	AA204385	Lab. Sample No.	A23/5015					
			Sample Type:	B							
			Depth* (m)	6.00	Customer:	Ballymore Group / Atkins					
			Date Received	06/11/2023	Date Testing started	29/11/2023					
			Description:	Grey sandy, slightly gravelly, SILT/CLAY							
75	100	COBBLES	Remarks	Note: **Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 .							
63	100										
50	100										
37.5	100										
28	100										
20	100										
14	100										
10	99										
6.3	98										
5	98										
3.35	97	GRAVEL									
2	96										
1.18	94										
0.6	89										
0.425	85										
0.3	80										
0.15	65										
0.063	49										
0.037	41										
0.027	37										
0.018	29	SAND									
0.010	23										
0.007	19										
0.005	15										
0.002	7										
		SILT/CLAY									

Percentage passing (%)

0.00010.0010.010.1110100

CLAYSILT

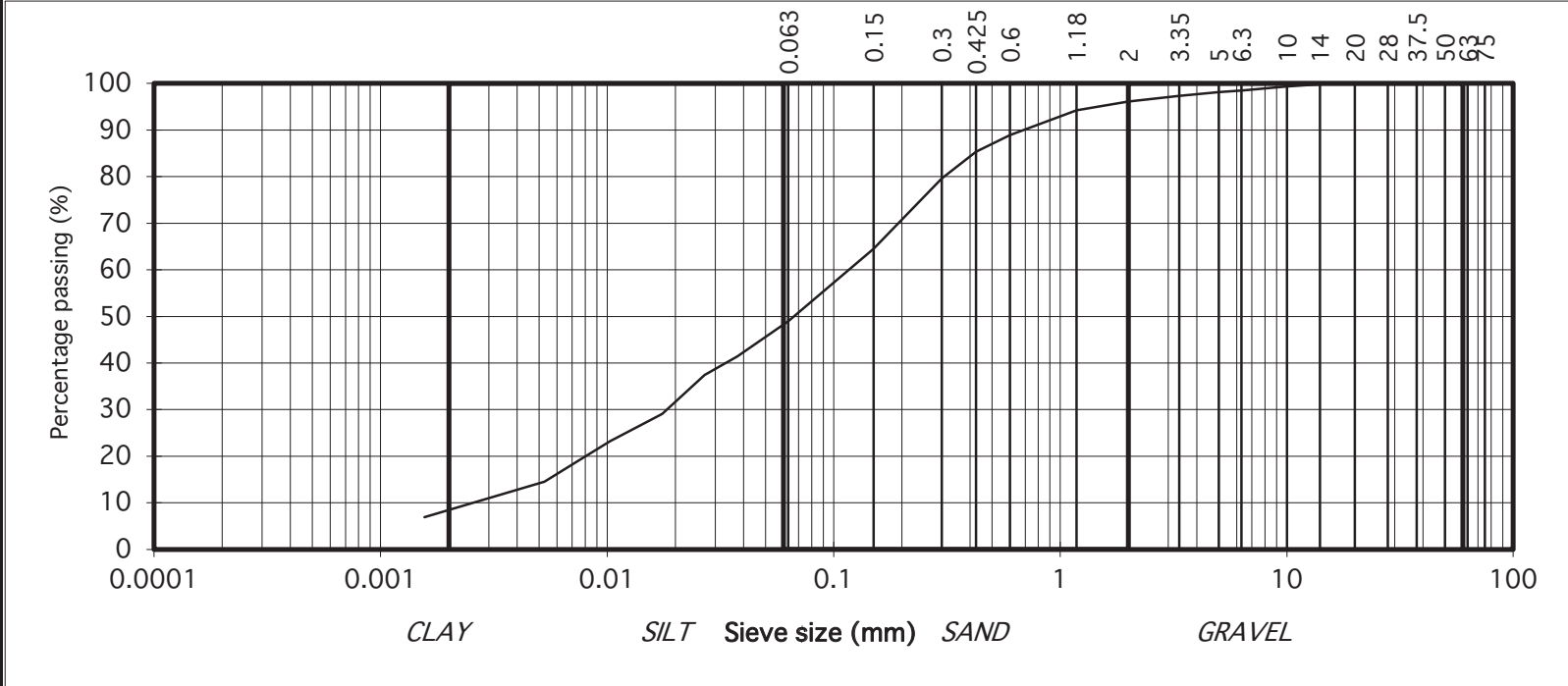
0.0630.150.30.4250.61.1823.3556.31014202837.55093

SANDGRAVEL

Sieve size (mm)

Sieve Size (mm)	Percentage Passing (%)
0.075	7
0.15	15
0.3	23
0.6	37
1.18	41
2.5	49
5.0	65
10	80
20	89
40	94
75	97
150	98
300	98
600	99
75	100

Results relate only to the specimen tested in as received condition unless otherwise noted. * denotes Customer supplied information. Opinions and interpretations are outside the scope of accreditation.
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IGSL Ltd
Materials Laboratory
Unit F, M7 Business Park
Naas
Co. Kildare
045-899324

Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R149776

Contract Name: Sea Gardens Bray

Contract No: 24991

Location*: BH301 3.5m

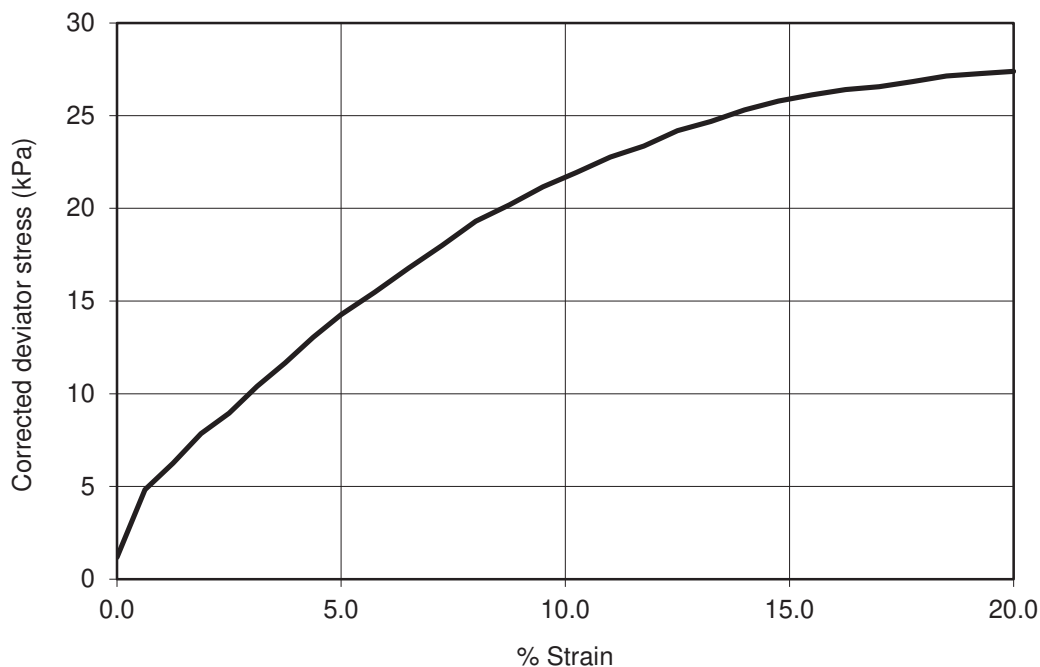
Sample No*: 203019

Description: Dark grey/brown sandy SILT with some organic material

Customer: Ballymore/Atkins

Height (mm) 200 Diameter 103 Cell pressure(kPa) 70

Moisture Content % 58 Bulk density (Mg/m³) 1.62 Dry density (Mg/m³) 1.03



Strain at failure % 20 Cohesion C_u (kPa) 14

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.74

Date received - Date tested 07/12/23

Results relate only to the specimen tested, in as received condition unless otherwise noted. Opinions and interpretations are outside the scope of accreditation.

* denotes Customer supplied information

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**This Standard has been superseded by ISO17892-8:2018

Person authorised to approve report: J Barrett (Quality Manager)



IGSL Materials Laboratory

Approved by

J Barrett

Date

12/12/23

Page

1 of 1

IGSL Ltd
Materials Laboratory
Unit F, M7 Business Park
Naas
Co. Kildare
045-899324

Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R149777

Contract Name: Sea Gardens Bray

Contract No: 24991

Location*: BH302 5.8m

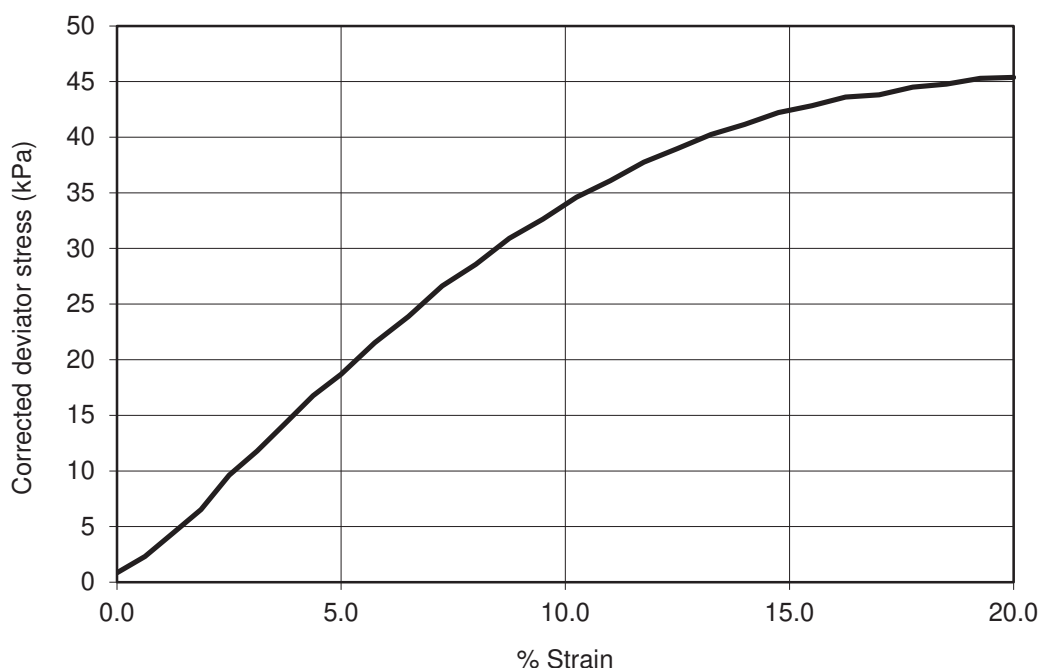
Sample No*: 203038

Description: Dark grey very sandy SILT/CLAY with some shell fragments and organic material

Customer: Ballymore/Atkins

Height (mm) 200 Diameter 103 Cell pressure(kPa) 115

Moisture Content % 37 Bulk density (Mg/m³) 1.83 Dry density (Mg/m³) 1.34



Strain at failure % 20 Cohesion C_u (kPa) 23

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.74

Date received - Date tested 05/12/23

Results relate only to the specimen tested, in as received condition unless otherwise noted. Opinions and interpretations are outside the scope of accreditation.

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**This Standard has been superseded by ISO17892-8:2018

Person authorised to approve report: J Barrett (Quality Manager)



IGSL Materials Laboratory

Approved by

J Barrett

Date

12/12/23

Page

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IGSL Ltd
Materials Laboratory
Unit F, M7 Business Park
Naas
Co. Kildare
045-899324

Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R149778

Contract Name: Sea Gardens Bray

Contract No: 24991

Location*: BH302 8.0m

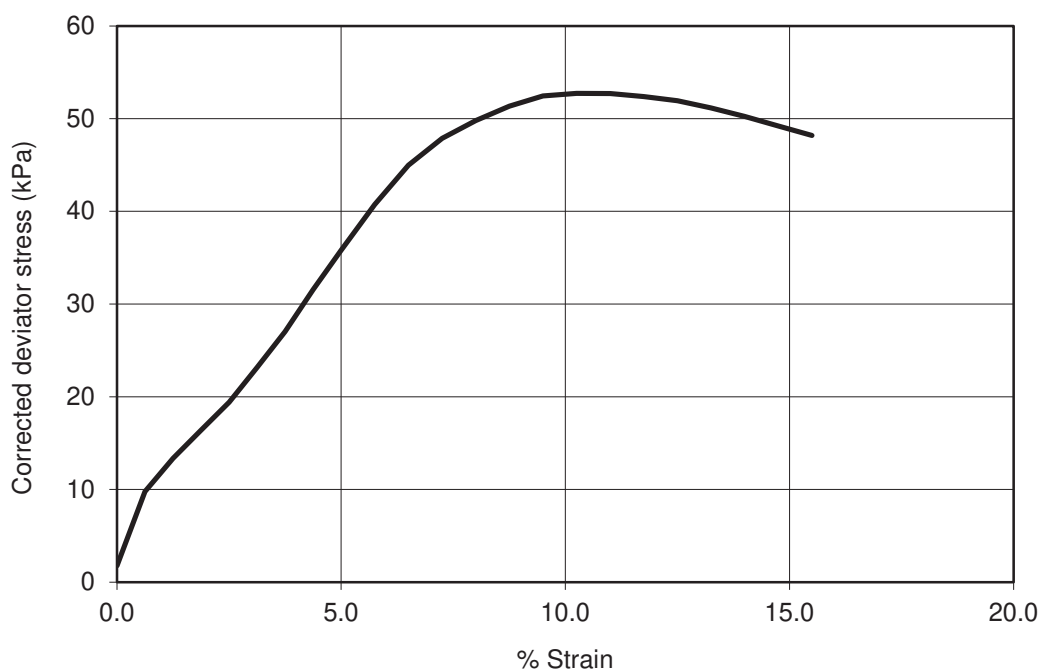
Sample No*: 203041

Description: Dark grey/brown slightly sandy SILT/CLAY with some shell fragments and organic material

Customer: Ballymore/Atkins

Height (mm) 200 Diameter 103 Cell pressure(kPa) 160

Moisture Content % 59 Bulk density (Mg/m³) 1.64 Dry density (Mg/m³) 1.03



Strain at failure % 10.3 Cohesion C_u (kPa) 26

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.44

Date received - Date tested 04/12/23

Results relate only to the specimen tested, in as received condition unless otherwise noted. Opinions and interpretations are outside the scope of accreditation.

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IGSL Ltd
Materials Laboratory
Unit F, M7 Business Park
Naas
Co. Kildare
045-899324

Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R149779

Contract Name: Sea Gardens Bray

Contract No: 24991

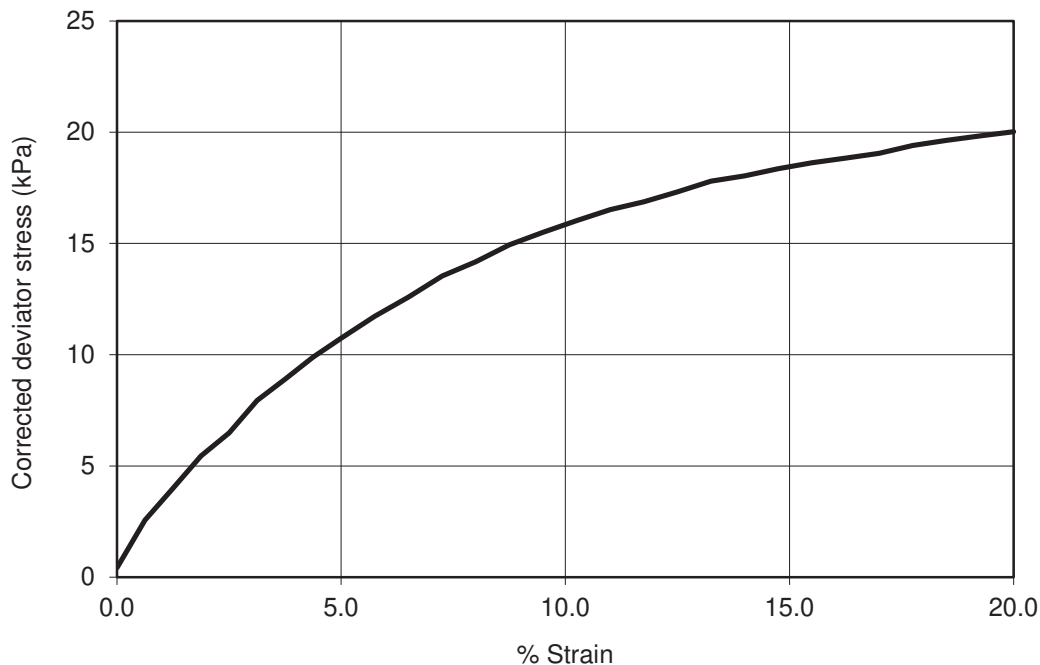
Location*: BH303 6.0m

Sample No*. 209326

Description: Dark grey SILT with some organic material

Customer: Ballymore/Atkins

Height (mm)	200	Diameter	103	Cell pressure(kPa)	120
Moisture Content %	55	Bulk density (Mg/m ³)	1.68	Dry density (Mg/m ³)	1.08



Strain at failure %	20	Cohesion C_u (kPa)	10
(Undrained shear strength kPa)			

Rate of strain (%/minute) 2.0

Thickness of membrane	0.2	Membrane correction (at failure)	0.74
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Date received	-	Date tested	07/12/23
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045-899324

Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R149780

Contract Name: Sea Gardens Bray

Contract No: 24991

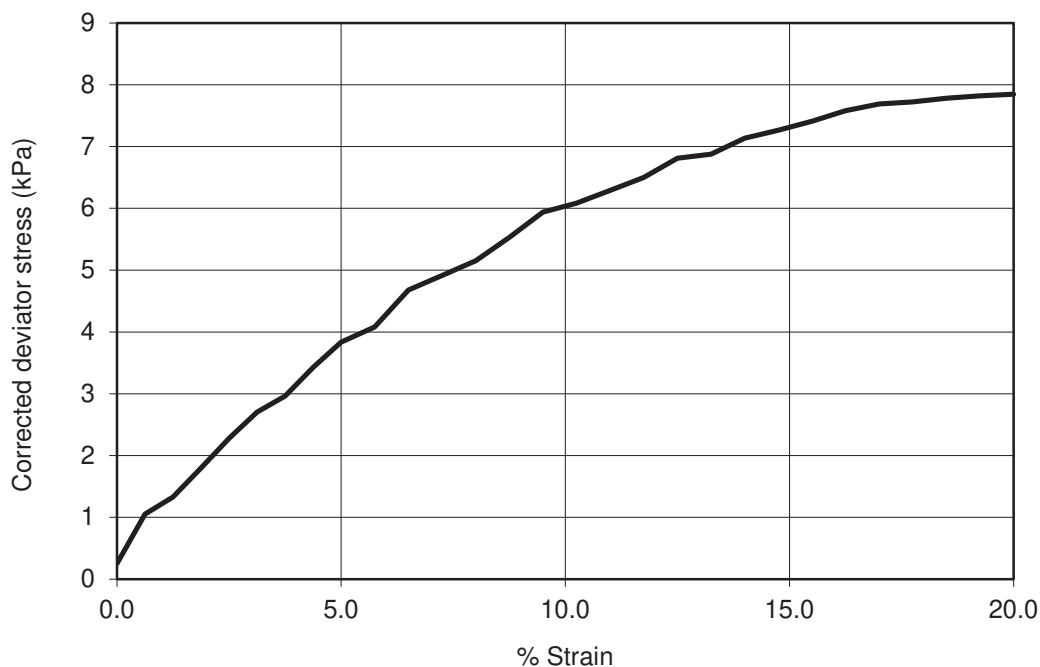
Location*: BH303 8.0m

Sample No*: 209358

Description: Dark grey/brown SILT/CLAY with some shell fragments and organic material

Customer: Ballymore/Atkins

Height (mm)	200	Diameter	103	Cell pressure(kPa)	160
Moisture Content %	69	Bulk density (Mg/m ³)	1.56	Dry density (Mg/m ³)	0.92



Strain at failure %	20	Cohesion C_u (kPa)	4
		(Undrained shear strength kPa)	

Rate of strain (%/minute) 2.0

Thickness of membrane	0.2	Membrane correction (at failure)	0.74
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Date received	-	Date tested	11/12/23
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045-899324

Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R149781

Contract Name: Sea Gardens Bray

Contract No: 24991

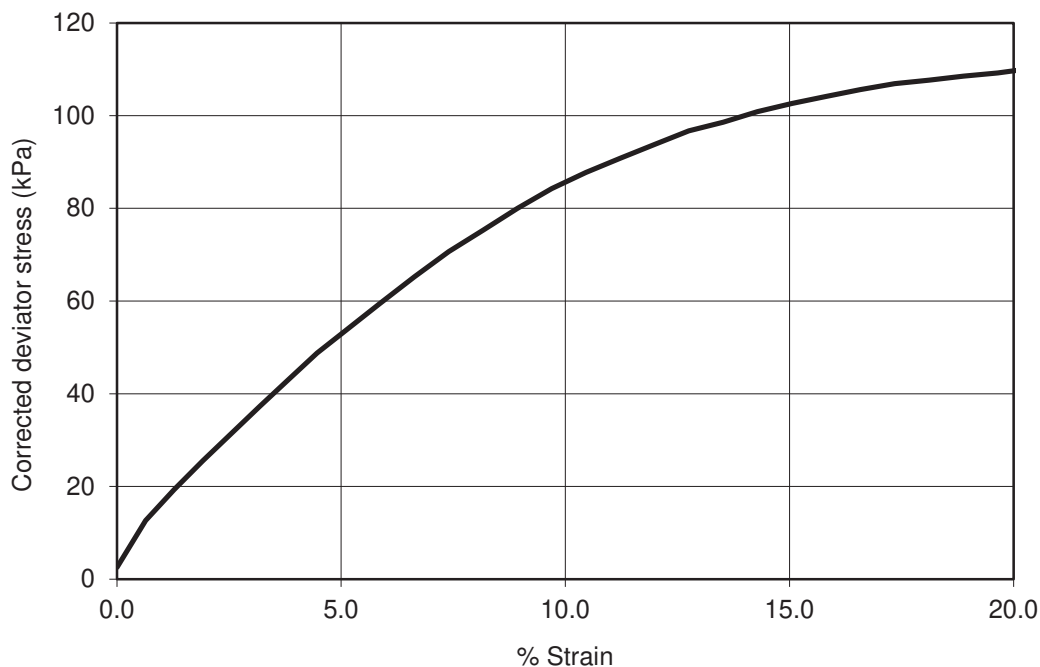
Location*: BH304 2.1m

Sample No*: 203002

Description: Dark brown mottled orange silty/clayey slightly gravelly SAND

Customer: Ballymore/Atkins

Height (mm)	196	Diameter	101	Cell pressure(kPa)	40
Moisture Content %	24	Bulk density (Mg/m ³)	2.12	Dry density (Mg/m ³)	1.72



Strain at failure %	20.4	Cohesion C_u (kPa)	55
		(Undrained shear strength kPa)	

Rate of strain (%/minute) 2.0

Thickness of membrane	0.2	Membrane correction (at failure)	0.75
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Date received	-	Date tested	22/11/23
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045-899324

Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R149782

Contract Name: Sea Gardens Bray

Contract No: 24991

Location*: BH304 7.5m

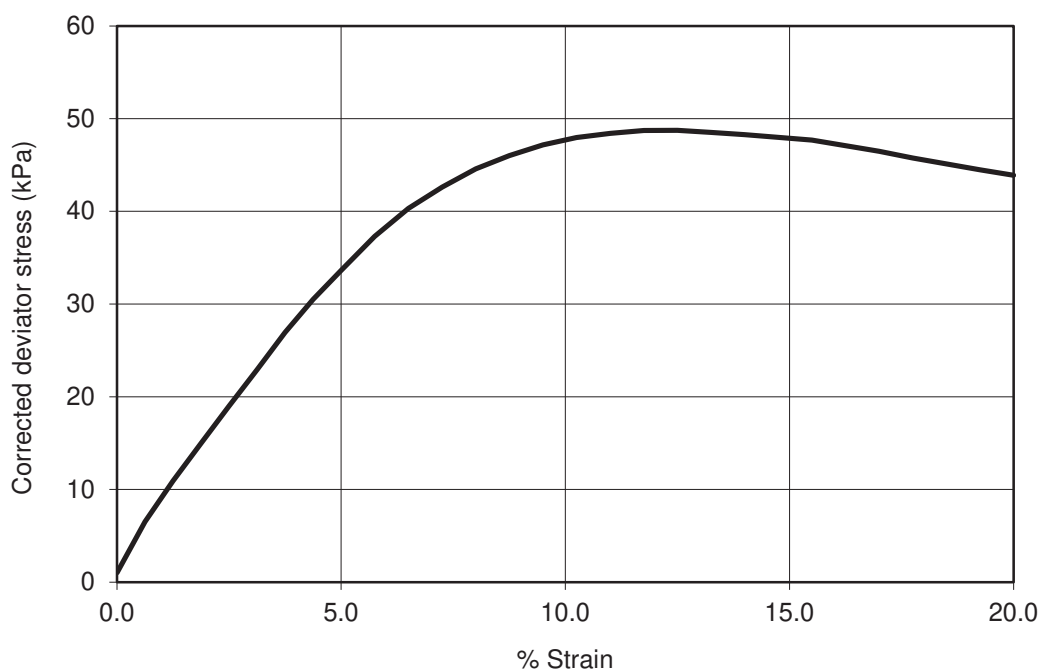
Sample No*: 203009

Description: Dark grey sandy SILT with some shell fragments and organic material

Customer: Ballymore/Atkins

Height (mm) 200 Diameter 103 Cell pressure(kPa) 150

Moisture Content % 55 Bulk density (Mg/m³) 1.66 Dry density (Mg/m³) 1.07



Strain at failure % 12.5 Cohesion C_u (kPa) 24

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.51

Date received - Date tested 23/11/23

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045-899324

Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R149783

Contract Name: Sea Gardens Bray

Contract No: 24991

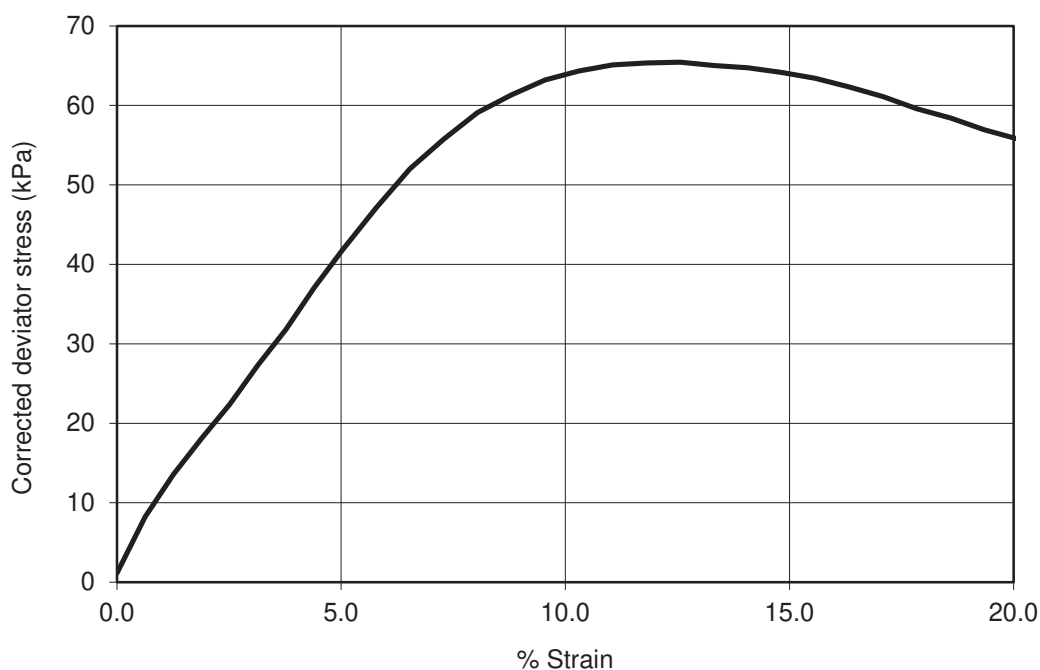
Location*: BH304 9.5m

Sample No*: 203012

Description: Dark grey/brown SILT/CLAY with some shell fragments and organic material

Customer: Ballymore/Atkins

Height (mm)	199	Diameter	103	Cell pressure(kPa)	190
Moisture Content %	62	Bulk density (Mg/m ³)	1.61	Dry density (Mg/m ³)	0.99



Strain at failure % 12.6 Cohesion C_u (kPa) 33

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.51

Date received - Date tested 23/11/23

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Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R152284

Contract Name: Sea Gardens Bray

Contract No: 24991

Location*: BH305 4.5m

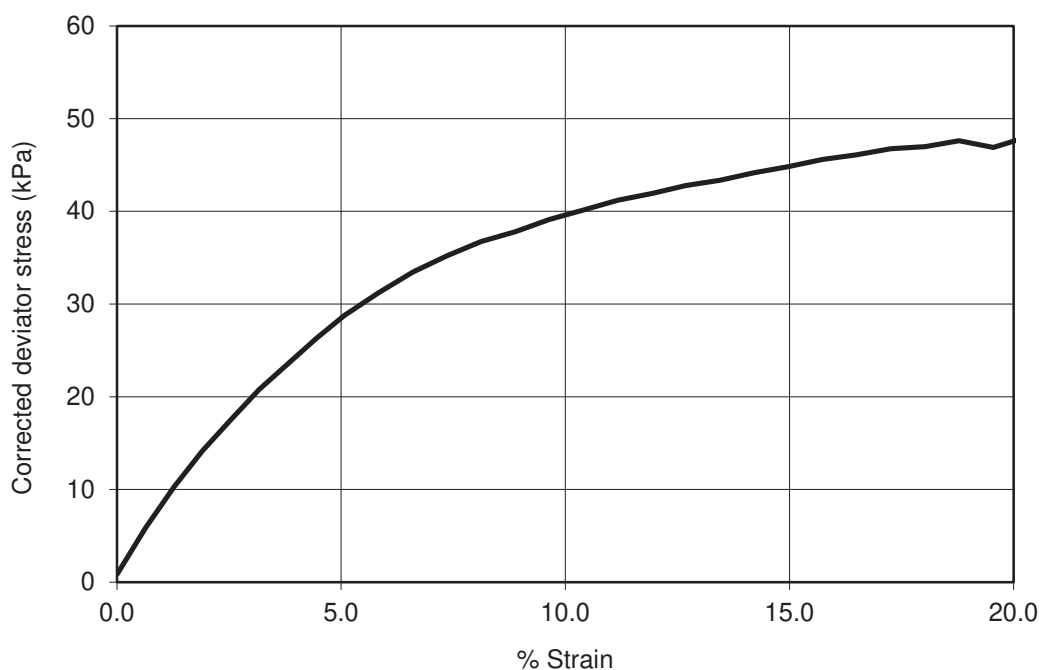
Sample No*: 197076

Description: Dark grey sandy SILT with some organic material

Customer: Ballymore/Atkins

Height (mm) 197 Diameter 103 Cell pressure(kPa) 90

Moisture Content % 54 Bulk density (Mg/m³) 1.68 Dry density (Mg/m³) 1.09



Strain at failure % 20.3 Cohesion C_u (kPa) 24

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.74

Date received - Date tested 18/12/23

Results relate only to the specimen tested, in as received condition unless otherwise noted. Opinions and interpretations are outside the scope of accreditation.

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IGSL Ltd Materials Laboratory Unit F, M7 Business Park Naas Co. Kildare 045-899324	Test Report		
	Undrained shear strength in triaxial compression (without pore pressure measurement) Tested in accordance with BS1377:Part 7:1990 clause 8 (definitive method)**		

Report no: R152285

Contract Name: Sea Gardens Bray Contract No: 24991

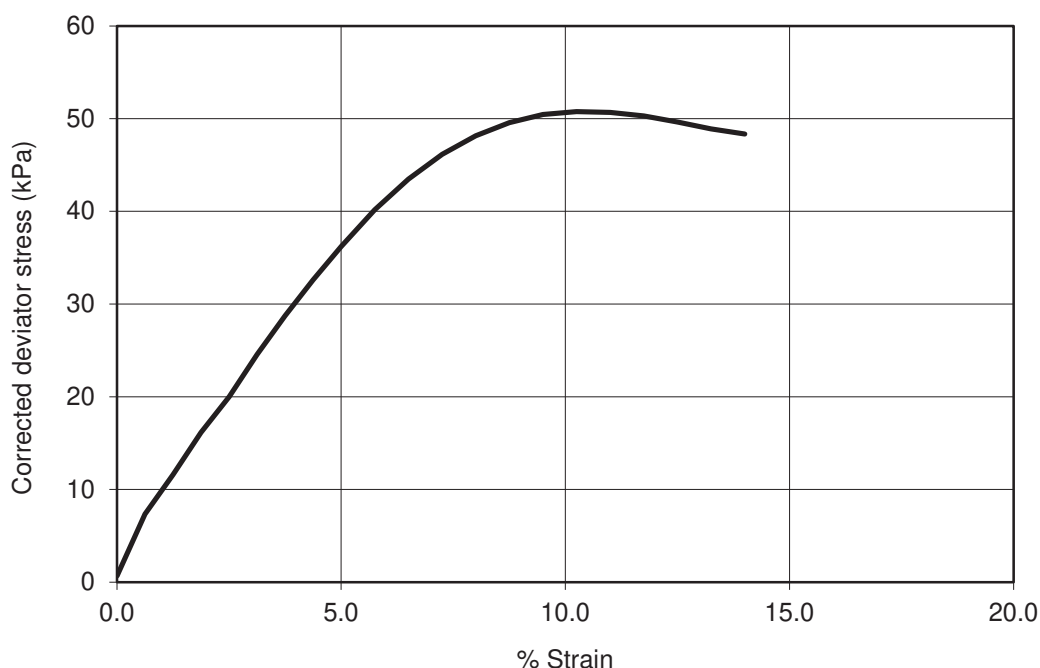
Location*: BH305 6.5m Sample No*: 197079

Description: Grey sandy SILT/CLAY with some organic material and shell fragments

Customer: Ballymore/Atkins

Height (mm) 200 Diameter 103 Cell pressure(kPa) 130

Moisture Content % 76 Bulk density (Mg/m³) 1.54 Dry density (Mg/m³) 0.88



Strain at failure % 10.3 Cohesion C_u (kPa) 25

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.44

Date received - Date tested 18/12/23

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Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R149784

Contract Name: Sea Gardens Bray

Contract No: 24991

Location*: BH306 5.5m

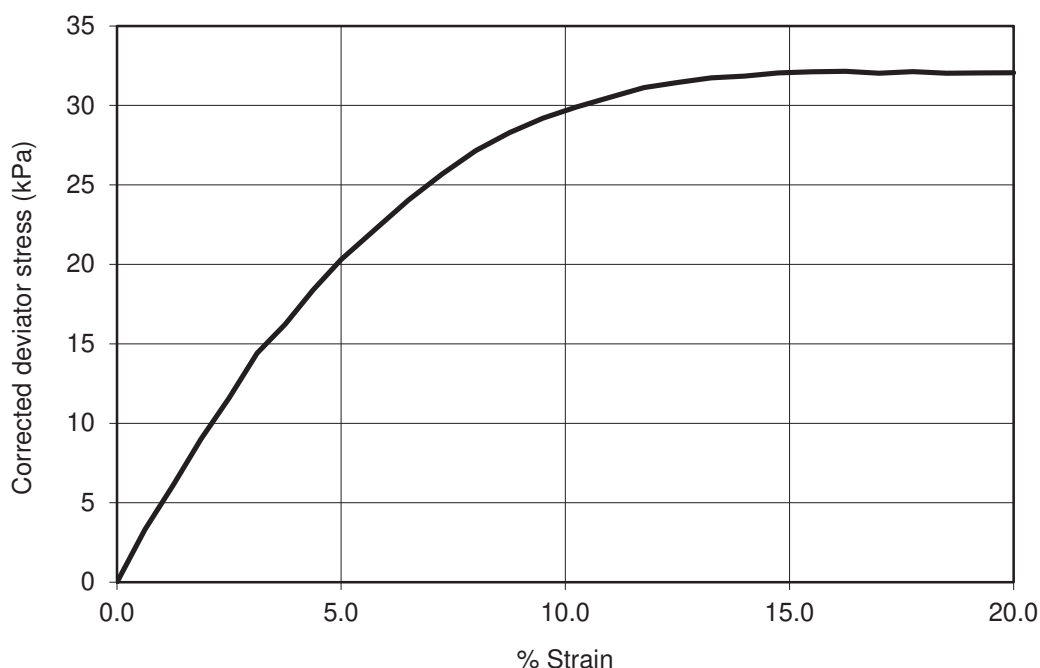
Sample No*: 197060

Description: Dark grey slightly sandy SILT with some shell fragments and organic material

Customer: Ballymore/Atkins

Height (mm) 200 Diameter 103 Cell pressure(kPa) 110

Moisture Content % 42 Bulk density (Mg/m³) 1.78 Dry density (Mg/m³) 1.25



Strain at failure % 16.3 Cohesion C_u (kPa) 16

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.63

Date received - Date tested 27/11/23

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Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R149785

Contract Name: Sea Gardens Bray

Contract No: 24991

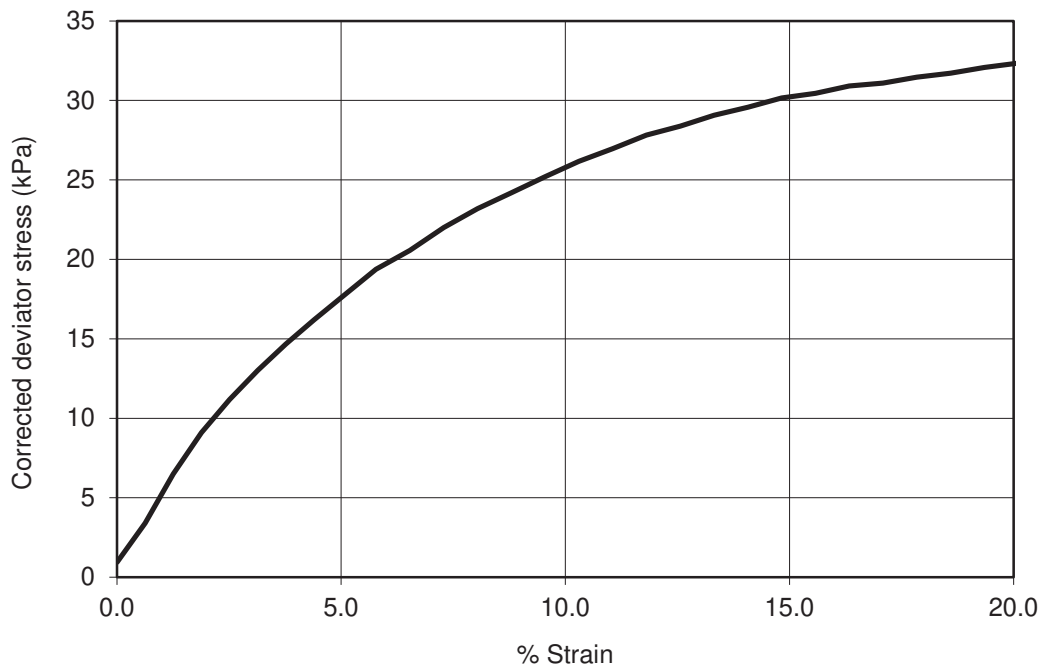
Location*: BH306 6.5m

Sample No*. 197062

Description: Dark grey/brown slightly sandy SILT/CLAY with some organic material

Customer: Ballymore/Atkins

Height (mm)	199	Diameter	103	Cell pressure(kPa)	130
Moisture Content %	71	Bulk density (Mg/m ³)	1.54	Dry density (Mg/m ³)	0.90



Strain at failure %	20.1	Cohesion C_u (kPa)	16
		(Undrained shear strength kPa)	

Rate of strain (%/minute) 2.0

Thickness of membrane	0.2	Membrane correction (at failure)	0.74
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Date received	-	Date tested	27/11/23
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IGSL Ltd Materials Laboratory Unit F, M7 Business Park Naas Co. Kildare 045-899324	Test Report		
	Undrained shear strength in triaxial compression (without pore pressure measurement) Tested in accordance with BS1377:Part 7:1990 clause 8 (definitive method)**		

Report no: R149786

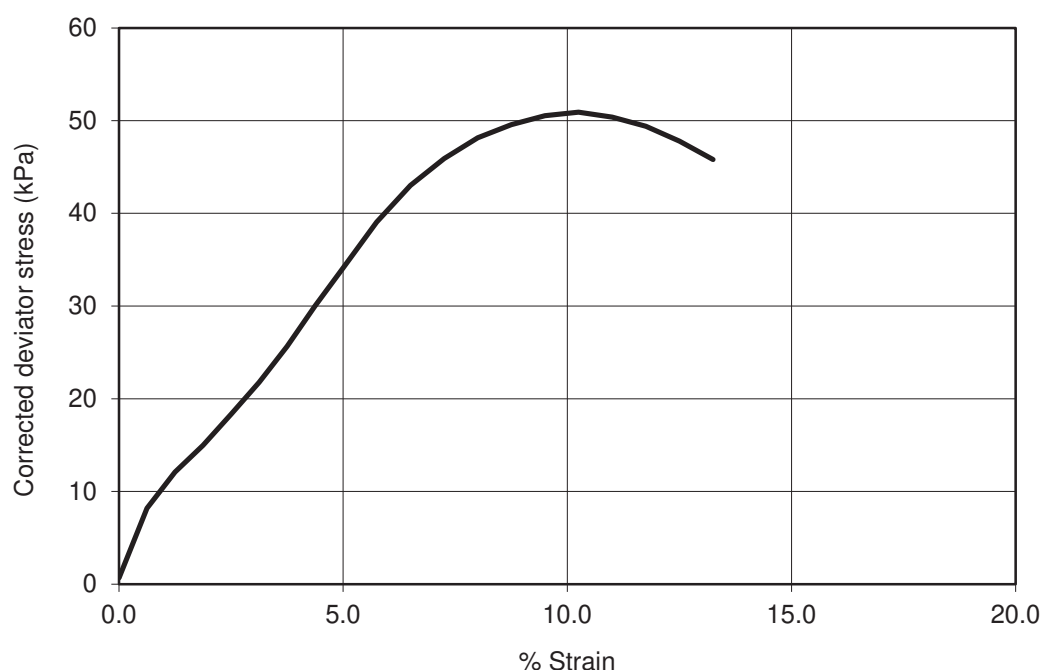
Contract Name: Sea Gardens Bray Contract No: 24991

Location*: BH306 8.5m Sample No*: 197065

Description: Dark brown slightly sandy SILT with some shell fragments

Customer: Ballymore/Atkins

Height (mm)	200	Diameter	103	Cell pressure(kPa)	170
Moisture Content %	62	Bulk density (Mg/m ³)	1.61	Dry density (Mg/m ³)	0.99



Strain at failure %	10.3	Cohesion C _u (kPa)	25
		(Undrained shear strength kPa)	
Rate of strain (%/minute)	2.0		
Thickness of membrane	0.2	Membrane correction (at failure)	0.44
Date received	-	Date tested	04/12/23

Results relate only to the specimen tested, in as received condition unless otherwise noted. Opinions and interpretations are outside the scope of accreditation.

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045-899324

Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R149787

Contract Name: Sea Gardens Bray

Contract No: 24991

Location*: BH307 5.5m

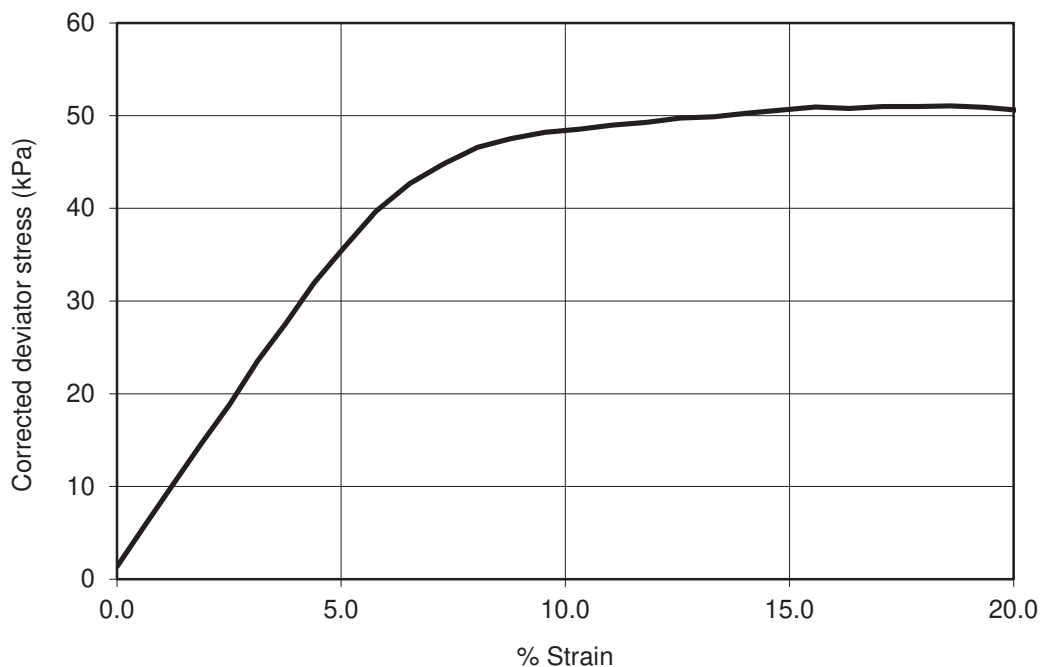
Sample No*. 192096

Description: Dark grey/brown SILT/CLAY with some organic material

Customer: Ballymore/Atkins

Height (mm) 199 Diameter 103 Cell pressure(kPa) 110

Moisture Content % 80 Bulk density (Mg/m³) 1.50 Dry density (Mg/m³) 0.83



Strain at failure % 18.6 Cohesion C_u (kPa) 26

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.69

Date received - Date tested 27/11/23

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Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R149788

Contract Name: Sea Gardens Bray

Contract No: 24991

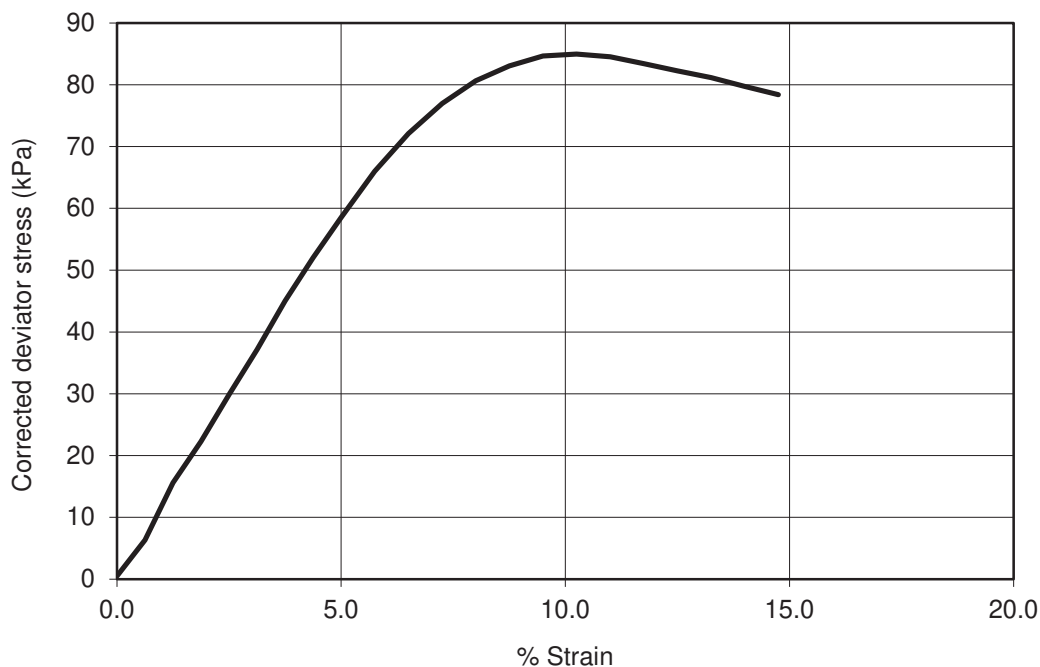
Location*: BH307 8.5m

Sample No*: 197051

Description: Dark grey/brown SILT/CLAY with some shell fragments and organic material

Customer: Ballymore/Atkins

Height (mm)	200	Diameter	103	Cell pressure(kPa)	170
Moisture Content %	82	Bulk density (Mg/m ³)	1.49	Dry density (Mg/m ³)	0.82



Strain at failure % 10.3 Cohesion C_u (kPa) 42

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2

Membrane correction (at failure) 0.44

Date received -

Date tested 27/11/23

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045-899324

Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R152286

Contract Name: Sea Gardens Bray

Contract No: 24991

Location*: BH308 5.5m

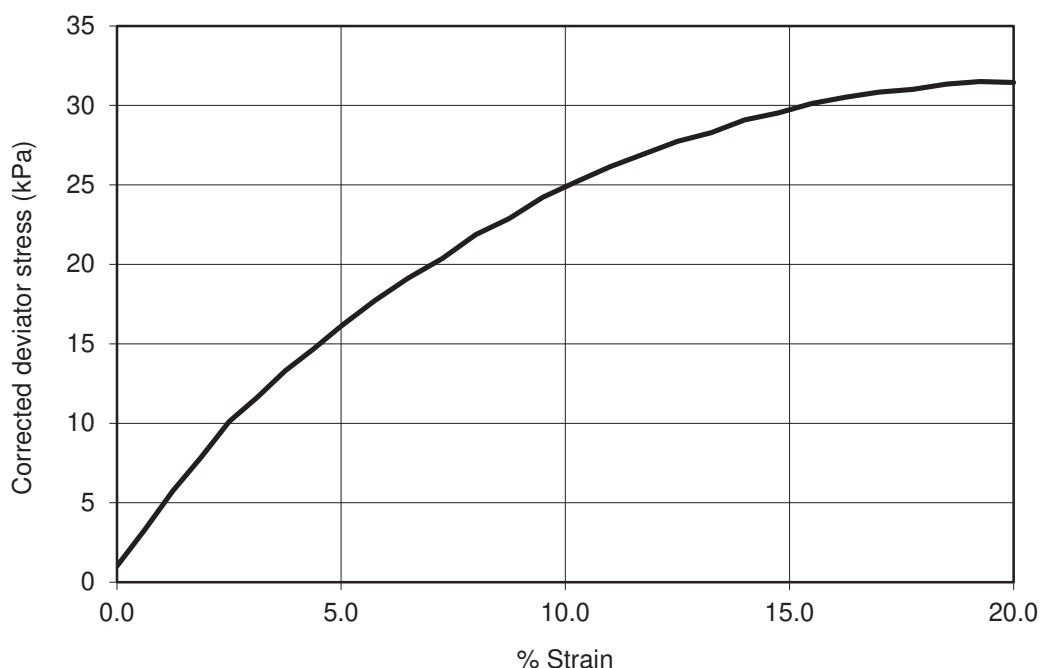
Sample No*: 197091

Description: Dark grey sandy SILT/CLAY with some organic material

Customer: Ballymore/Atkins

Height (mm) 200 Diameter 103 Cell pressure(kPa) 110

Moisture Content % 39 Bulk density (Mg/m³) 1.81 Dry density (Mg/m³) 1.30



Strain at failure % 19.3 Cohesion C_u (kPa) 16

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.71

Date received - Date tested 18/12/23

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Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R152287

Contract Name: Sea Gardens Bray

Contract No: 24991

Location*: BH308 8.5m

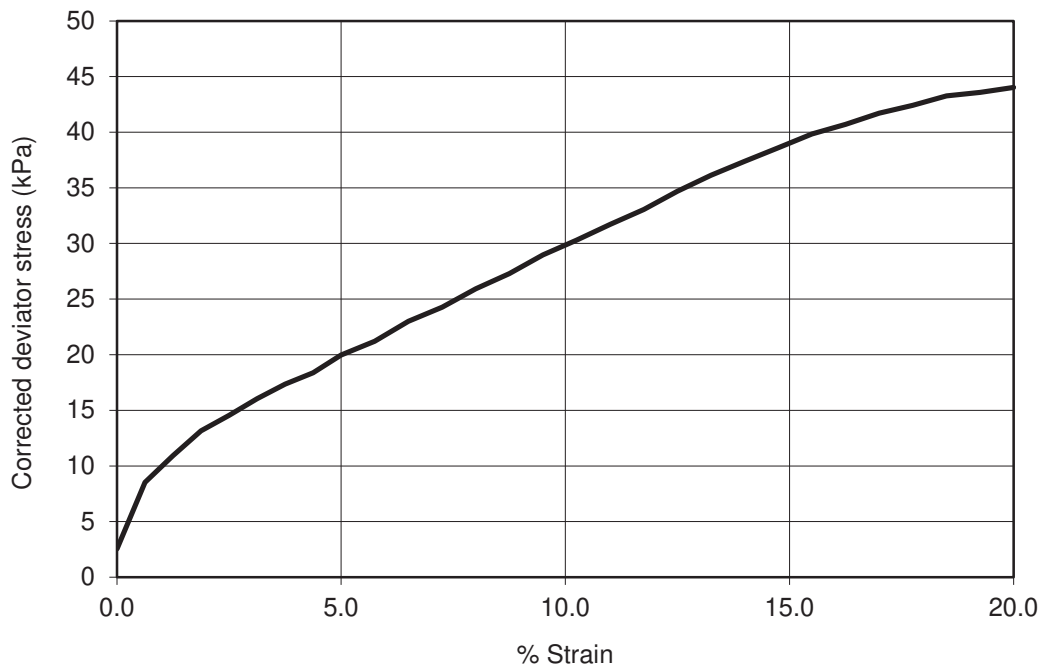
Sample No*: 197095

Description: Dark grey sandy SILT/CLAY with some organic material and shell fragments

Customer: Ballymore/Atkins

Height (mm) 200 Diameter 103 Cell pressure(kPa) 170

Moisture Content % 61 Bulk density (Mg/m³) 1.59 Dry density (Mg/m³) 0.99



Strain at failure % 20 Cohesion C_u (kPa) 22

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.74

Date received - Date tested 18/12/23

Results relate only to the specimen tested, in as received condition unless otherwise noted. Opinions and interpretations are outside the scope of accreditation.

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IGSL Ltd Materials Laboratory Unit F, M7 Business Park Naas Co. Kildare 045-899324	Test Report		
	Undrained shear strength in triaxial compression (without pore pressure measurement) Tested in accordance with BS1377:Part 7:1990 clause 8 (definitive method)**		

Report no: R152288

Contract Name: Sea Gardens Bray Contract No: 24991

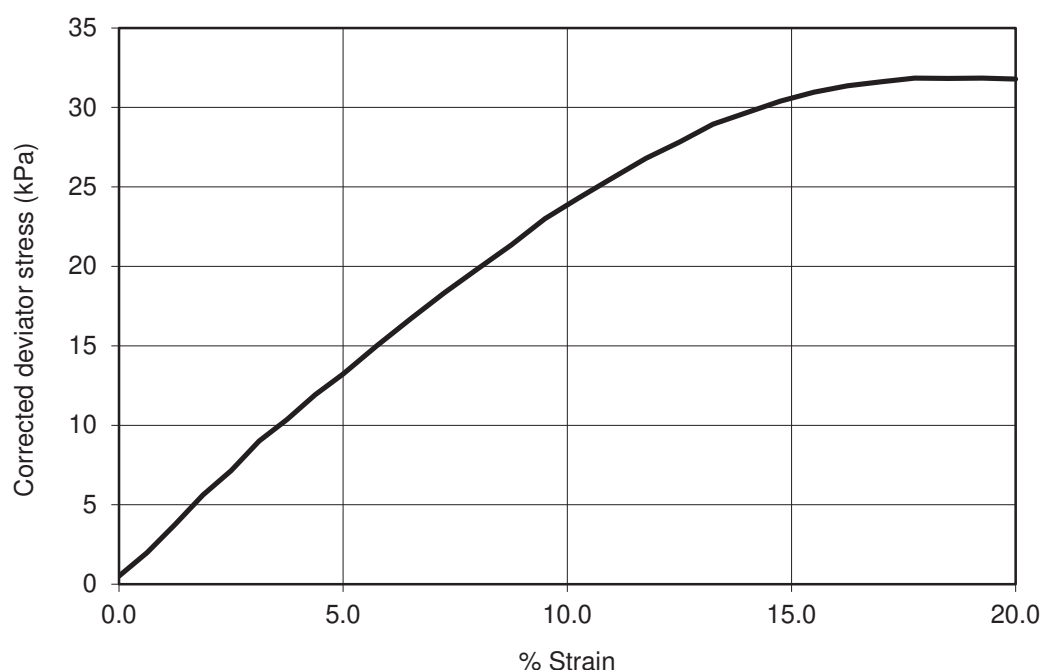
Location*: BH309 6.0m Sample No*: 191714

Description: Dark grey sandy SILT/CLAY with some organic material and shell fragments

Customer: Ballymore/Atkins

Height (mm) 200 Diameter 103 Cell pressure(kPa) 120

Moisture Content % 41 Bulk density (Mg/m³) 1.80 Dry density (Mg/m³) 1.28



Strain at failure % 19.3 Cohesion C_u (kPa) 16

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.71

Date received - Date tested 19/12/23

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Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R152289

Contract Name: Sea Gardens Bray

Contract No: 24991

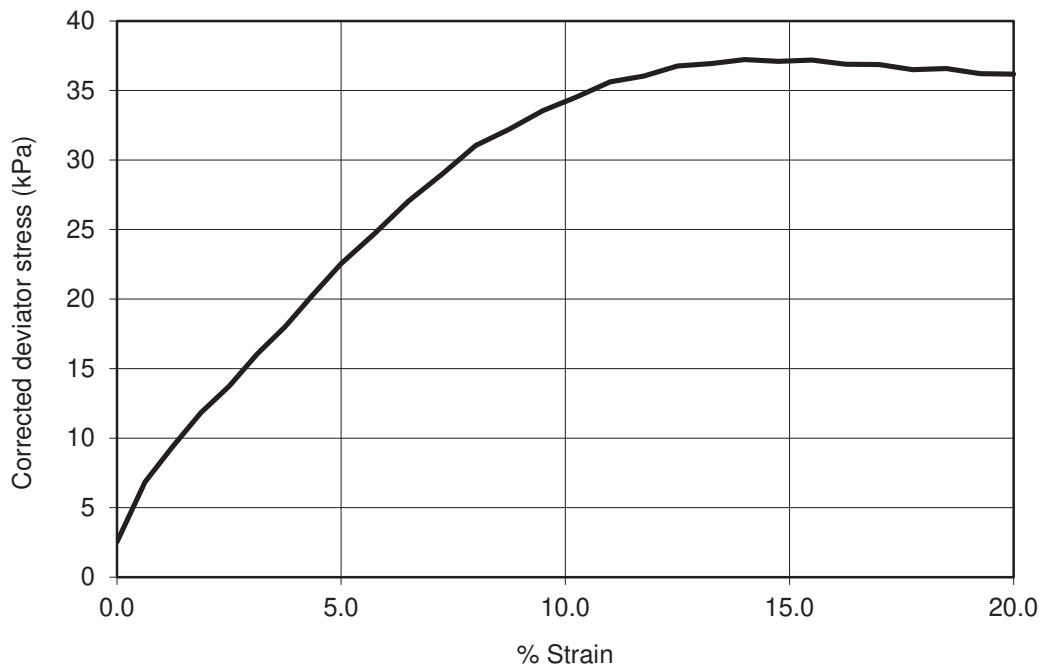
Location*: BH310 8.0m

Sample No*. 197287

Description: Dark grey sandy SILT/CLAY with some organic material and shell fragments

Customer: Ballymore/Atkins

Height (mm)	200	Diameter	103	Cell pressure(kPa)	160
Moisture Content %	70	Bulk density (Mg/m ³)	1.56	Dry density (Mg/m ³)	0.92



Strain at failure %	14	Cohesion C_u (kPa)	19
		(Undrained shear strength kPa)	

Rate of strain (%/minute) 2.0

Thickness of membrane	0.2	Membrane correction (at failure)	0.57
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Date received	-	Date tested	21/12/23
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Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)**



Report no: R152290

Contract Name: Sea Gardens Bray

Contract No: 24991

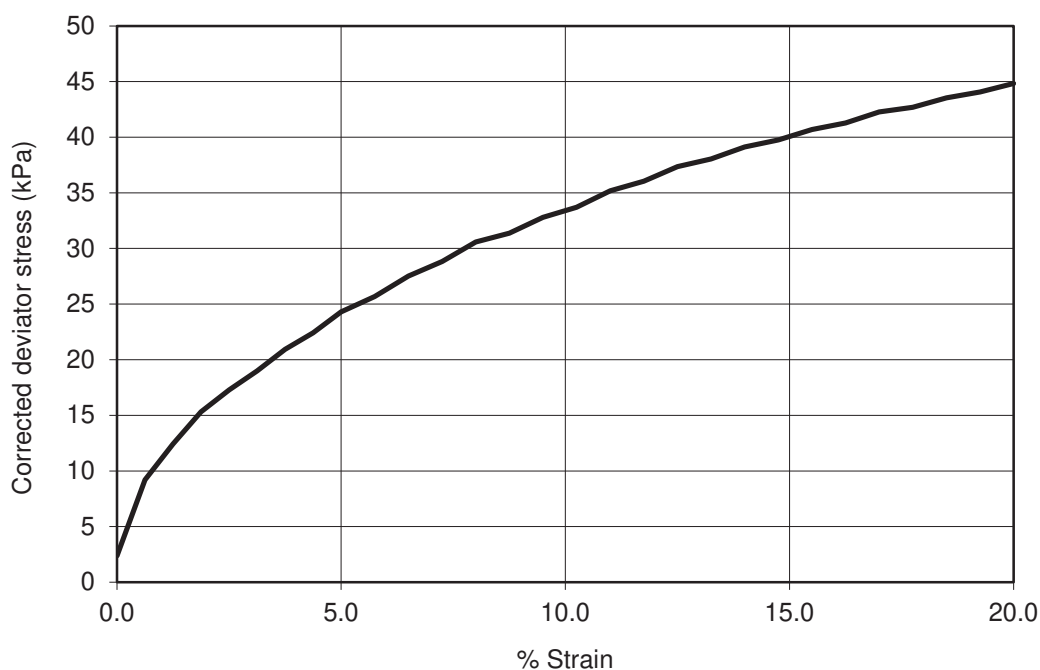
Location*: BH311 7.0m

Sample No*: 197258

Description: Brown sandy SILT/CLAY with some organic material

Customer: Ballymore/Atkins

Height (mm)	200	Diameter	103	Cell pressure(kPa)	140
Moisture Content %	95	Bulk density (Mg/m ³)	1.43	Dry density (Mg/m ³)	0.73



Strain at failure % 20 Cohesion C_u (kPa) 22

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.74

Date received - Date tested 21/12/23

Results relate only to the specimen tested, in as received condition unless otherwise noted. Opinions and interpretations are outside the scope of accreditation.

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J Barrett

Date

27/02/24

Page

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IGSL Ltd Materials Laboratory Unit F, M7 Business Park Naas Co. Kildare 045-899324	Test Report		
	Undrained shear strength in triaxial compression (without pore pressure measurement) Tested in accordance with BS1377:Part 7:1990 clause 8 (definitive method)**		

Report no: R152291

Contract Name: Sea Gardens Bray Contract No: 24991

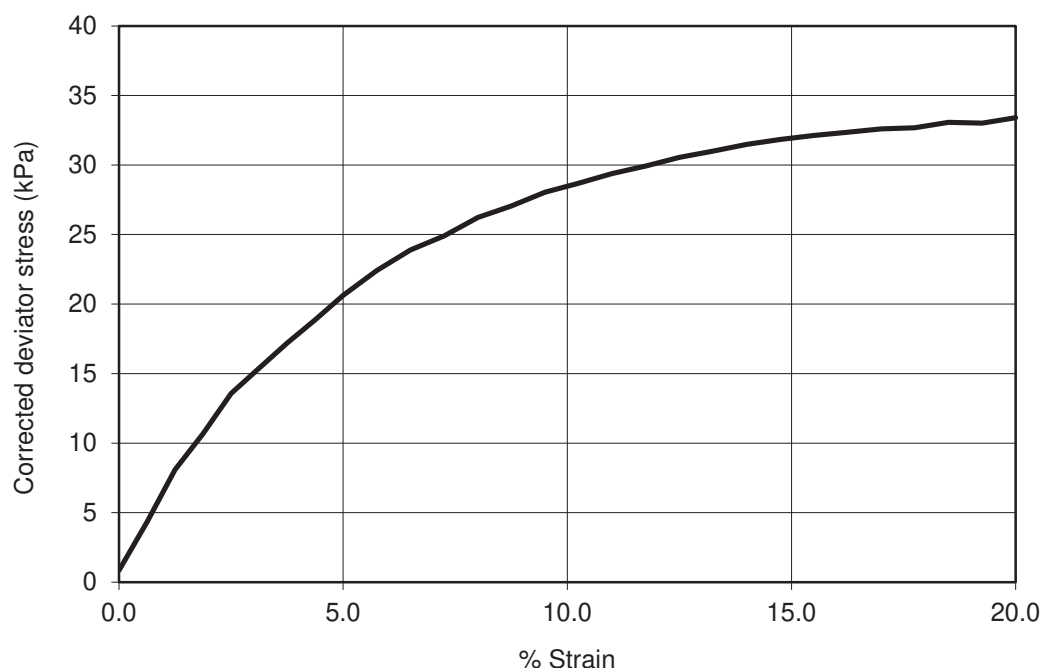
Location*: BH312 8.0m Sample No*: 192503

Description: Grey sandy SILT/CLAY with some organic material and shell fragments

Customer: Ballymore/Atkins

Height (mm) 200 Diameter 103 Cell pressure(kPa) 160

Moisture Content % 30 Bulk density (Mg/m³) 1.92 Dry density (Mg/m³) 1.48



Strain at failure % 20 Cohesion C_u (kPa) 17

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.74

Date received - Date tested 10/01/24

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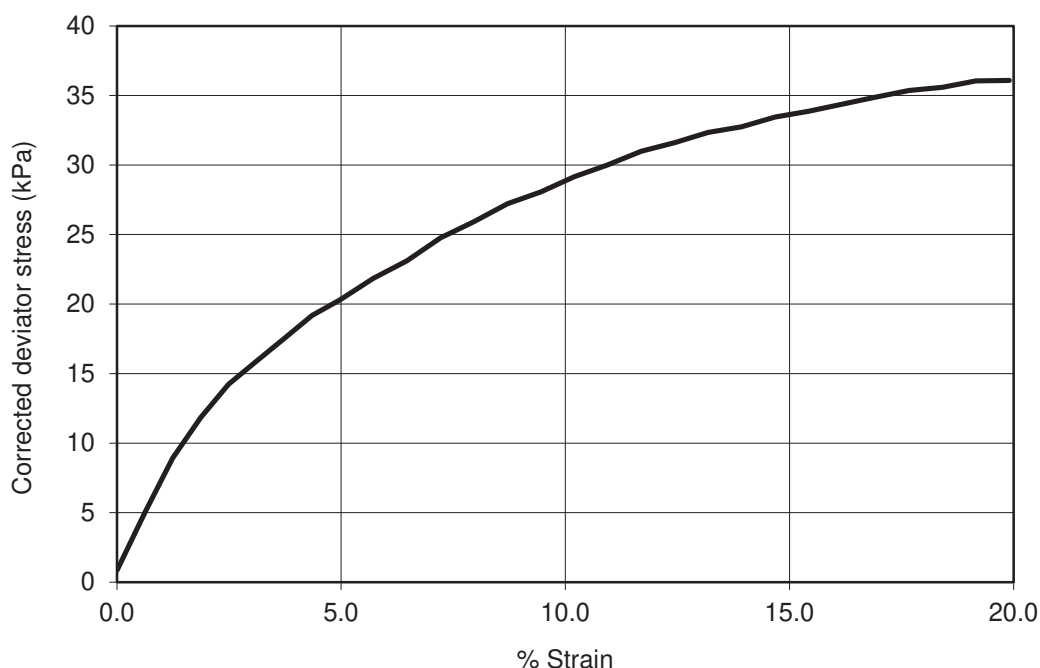
	IGSL Materials Laboratory	Approved by	Date	Page
			27/02/24	1 of 1

IGSL Ltd Materials Laboratory Unit F, M7 Business Park Naas Co. Kildare 045-899324	Test Report		
	Undrained shear strength in triaxial compression (without pore pressure measurement) Tested in accordance with BS1377:Part 7:1990 clause 8 (definitive method)**		

Report no: R152292

Contract Name: Sea Gardens Bray Contract No: 24991
 Location*: BH313 5.0m Sample No*: 204384
 Description: Grey sandy SILT/CLAY with some organic material and shell fragments
 Customer: Ballymore/Atkins

Height (mm) 201 Diameter 103 Cell pressure(kPa) 100
 Moisture Content % 44 Bulk density (Mg/m³) 1.68 Dry density (Mg/m³) 1.17



Strain at failure % 19.9 Cohesion C_u (kPa) 18
 (Undrained shear strength kPa)
 Rate of strain (%/minute) 2.0
 Thickness of membrane 0.2 Membrane correction (at failure) 0.74
 Date received - Date tested 10/01/24

Results relate only to the specimen tested, in as received condition unless otherwise noted. Opinions and interpretations are outside the scope of accreditation.

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	IGSL Materials Laboratory	Approved by	Date	Page
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IGSL Ltd Materials Laboratory Unit F, M7 Business Park Naas Co. Kildare 045-899324	Test Report		
	Undrained shear strength in triaxial compression (without pore pressure measurement) Tested in accordance with BS1377:Part 7:1990 clause 8 (definitive method)**		

Report no: R152293

Contract Name: Sea Gardens Bray Contract No: 24991

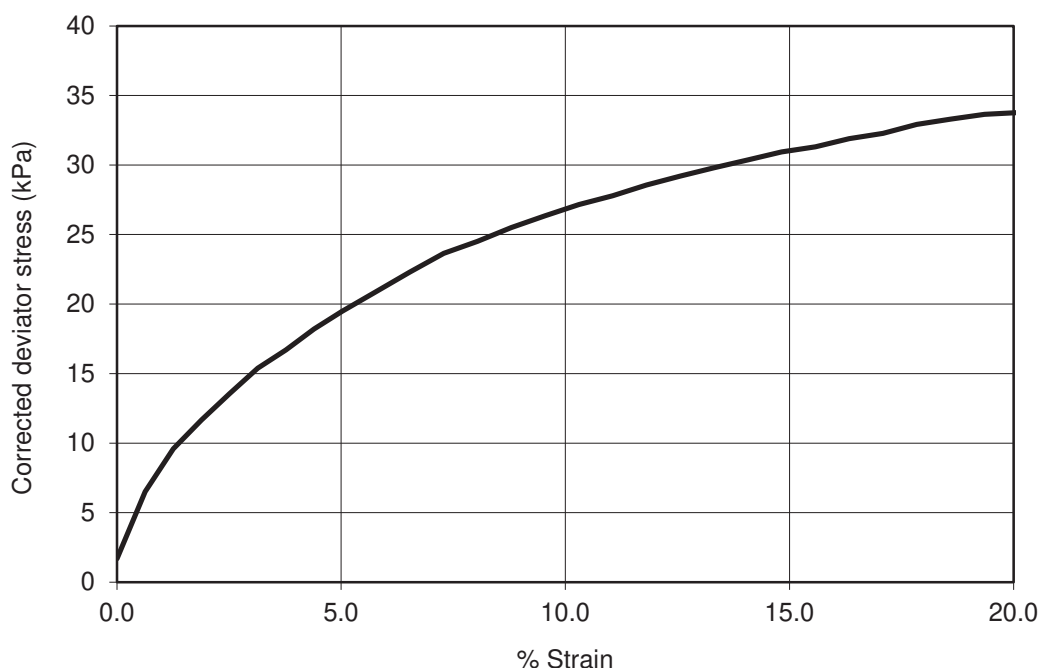
Location*: BH314 7.0m Sample No*: 167266

Description: Grey sandy SILT/CLAY with some organic material

Customer: Ballymore/Atkins

Height (mm) 199 Diameter 103 Cell pressure(kPa) 140

Moisture Content % 71 Bulk density (Mg/m³) 1.50 Dry density (Mg/m³) 0.88



Strain at failure % 20.1 Cohesion C_u (kPa) 17
 (Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.74

Date received - Date tested 11/01/24

Results relate only to the specimen tested, in as received condition unless otherwise noted. Opinions and interpretations are outside the scope of accreditation.

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IGSL Ltd Materials Laboratory Unit F, M7 Business Park Naas Co. Kildare 045-899324	Test Report		
	Undrained shear strength in triaxial compression (without pore pressure measurement) Tested in accordance with BS1377:Part 7:1990 clause 8 (definitive method)**		

Report no: R152294

Contract Name: Sea Gardens Bray Contract No: 24991

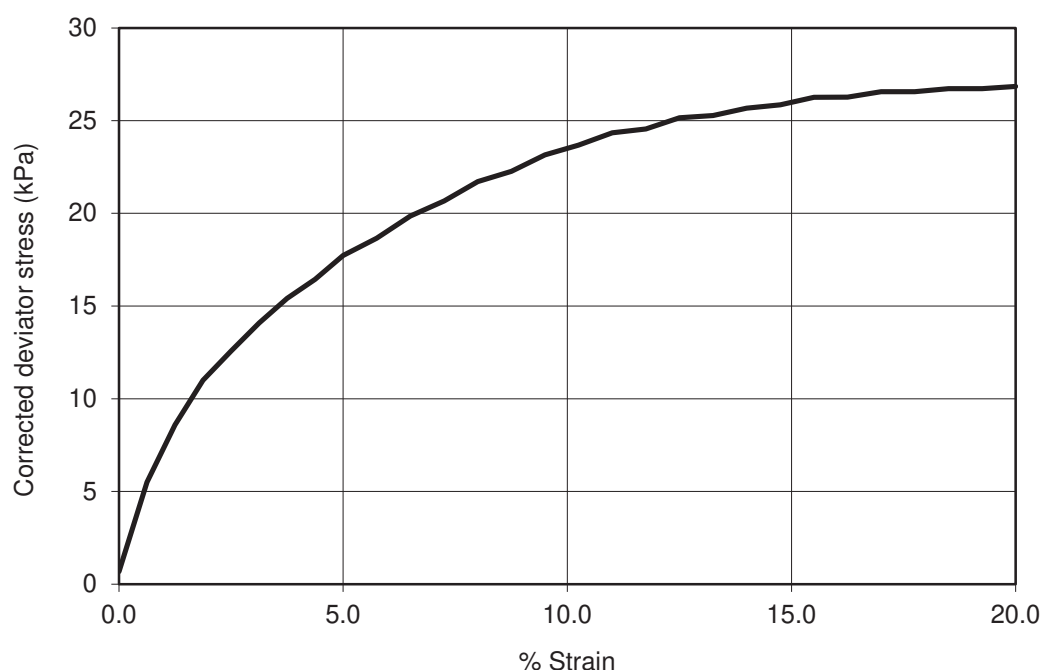
Location*: BH315 6.0m Sample No*: 197278

Description: Grey sandy SILT/CLAY with some organic material and shell fragments

Customer: Ballymore/Atkins

Height (mm) 200 Diameter 103 Cell pressure(kPa) 120

Moisture Content % 55 Bulk density (Mg/m³) 1.61 Dry density (Mg/m³) 1.04



Strain at failure % 20 Cohesion C_u (kPa) 13

(Undrained shear strength kPa)

Rate of strain (%/minute) 2.0

Thickness of membrane 0.2 Membrane correction (at failure) 0.74

Date received - Date tested 11/01/24

Results relate only to the specimen tested, in as received condition unless otherwise noted. Opinions and interpretations are outside the scope of accreditation.

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Test Report

Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152314

Contract Sea Gardens Bray

Contract Number 24991

Tested using ACONS automatic consolidation system

Client Ballymore/Atkins

BH: 301 Sample No. 203019 Depth (m): 3.50

Description Grey/brown sandy SILT with occasional fresh organics

Initial Height (mm) 20.0 Diameter (mm) 75.0 Initial Voids Ratio 1.042

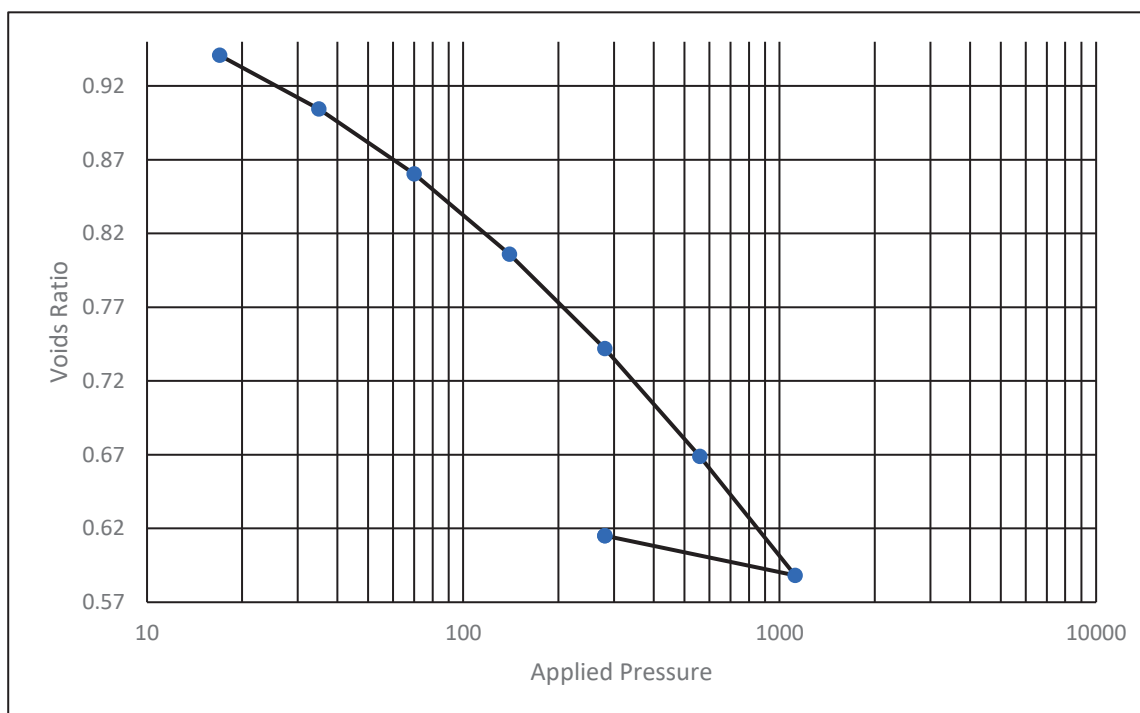
Initial Water Content (%) 48.3 Assumed Particle Density (Mg/m^3) 2.40

Initial Bulk Density (Mg/m^3) 1.74 Initial Dry Density (Mg/m^3) 1.18

Laboratory Temperature: 20 +/- 4 degrees C unless otherwise stated

Preparation: Cutting Ring pushed vertically into sample. Water Content derived from trimmings

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/Year)	Voids Ratio
17	2.904	6.000	0.94078
35	1.044	5.300	0.90433
70	0.661	4.800	0.86030
140	0.417	4.500	0.80602
280	0.253	4.200	0.74204
560	0.150	3.600	0.66894
1120	0.086	3.100	0.58822
280	-	-	0.61510



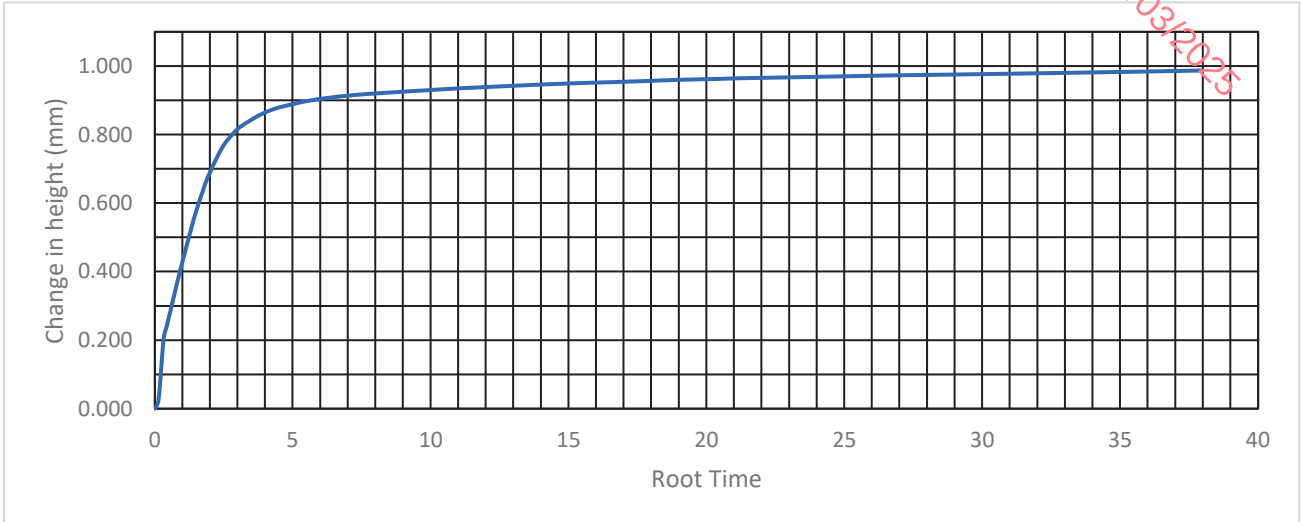


Test Report

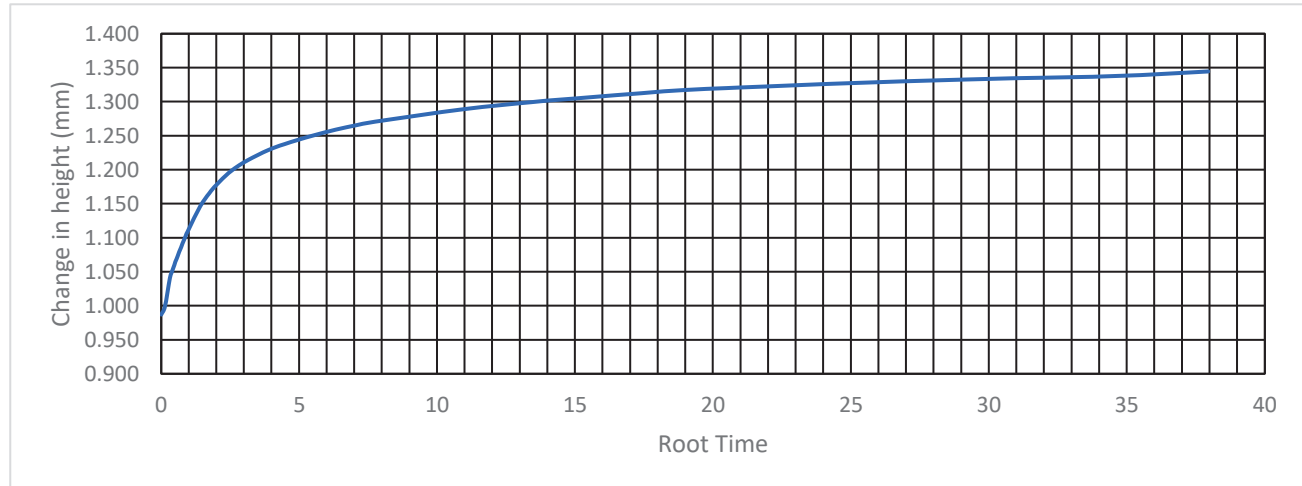
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152314

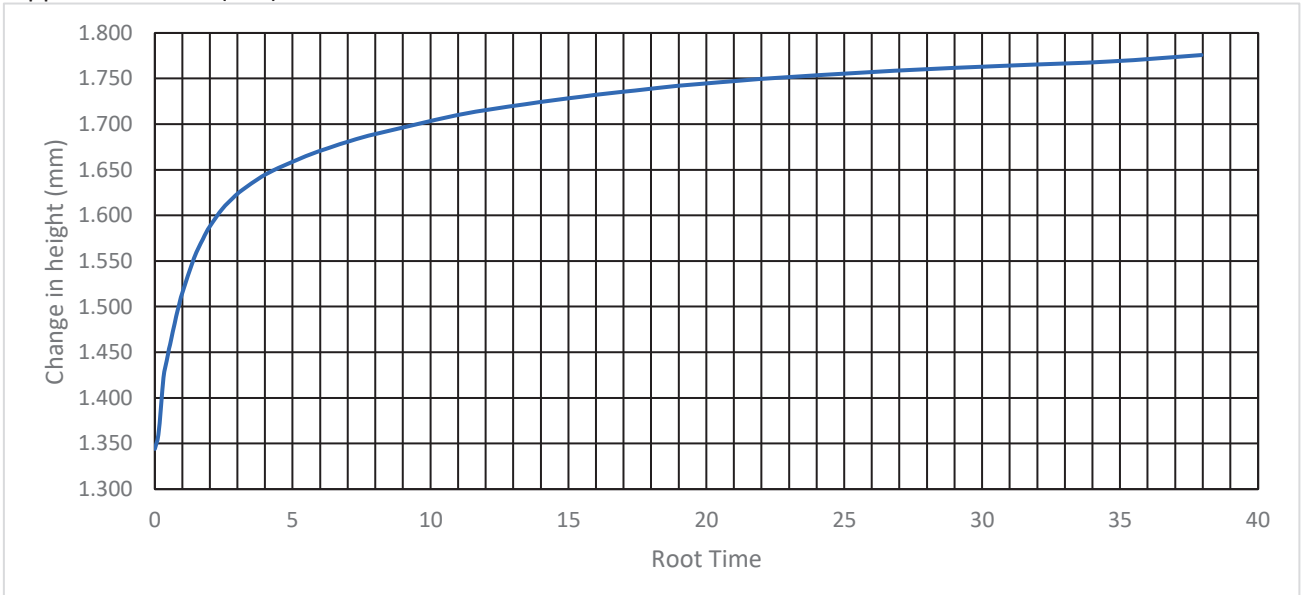
Applied Pressure (kPa) 17



Applied Pressure (kPa) 35



Applied Pressure (kPa) 70



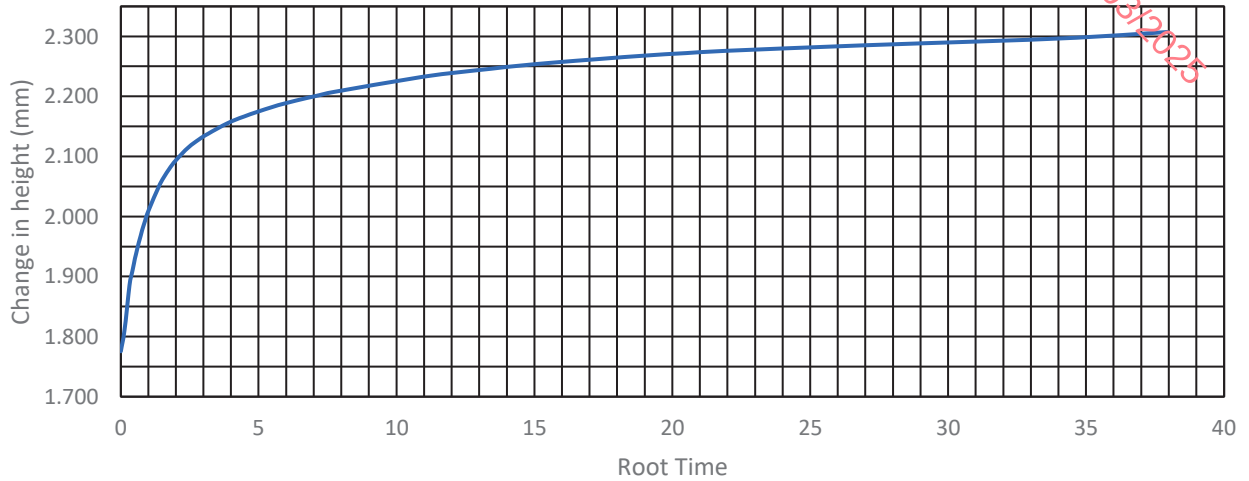


Test Report

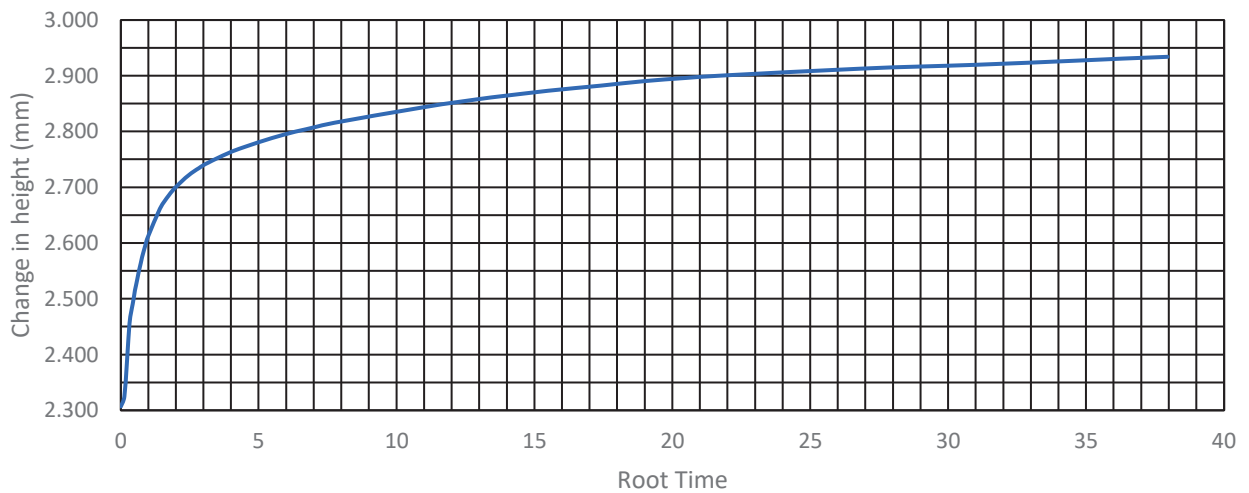
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152314

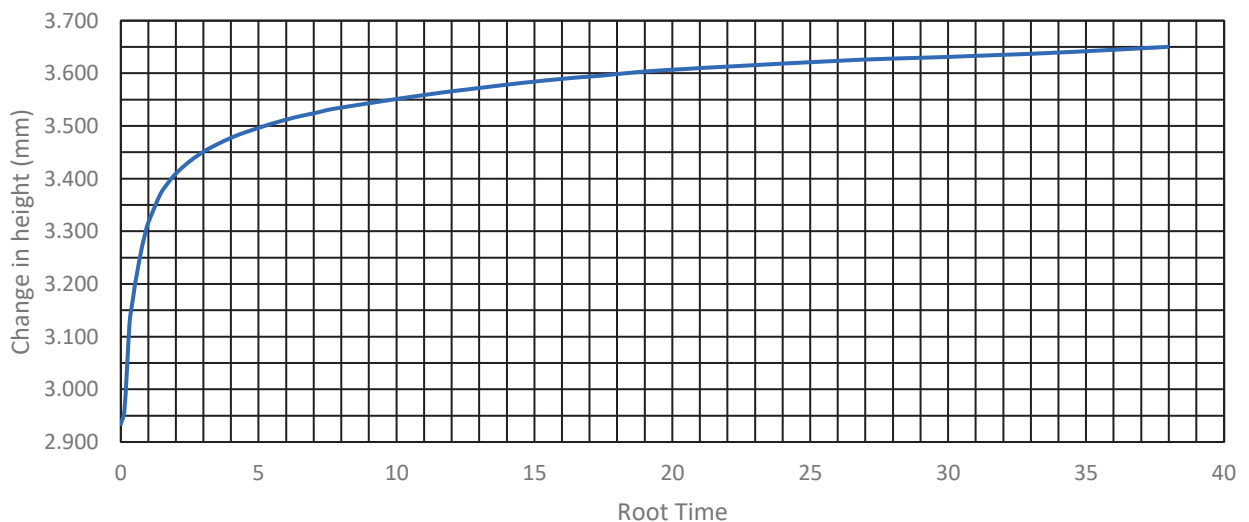
Applied Pressure (kPa) 140



Applied Pressure (kPa) 280



Applied Pressure (kPa) 560



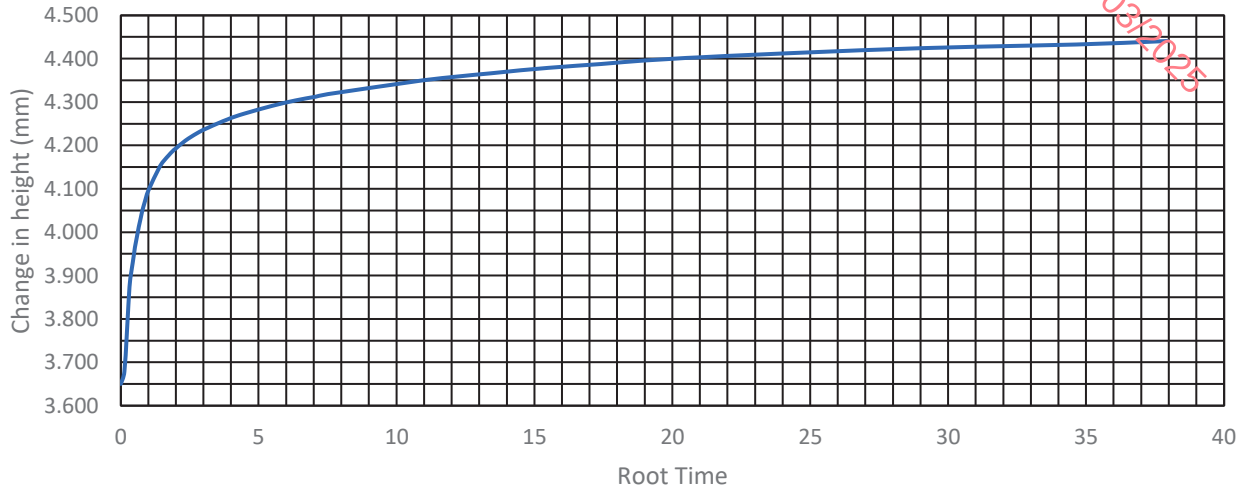


Test Report

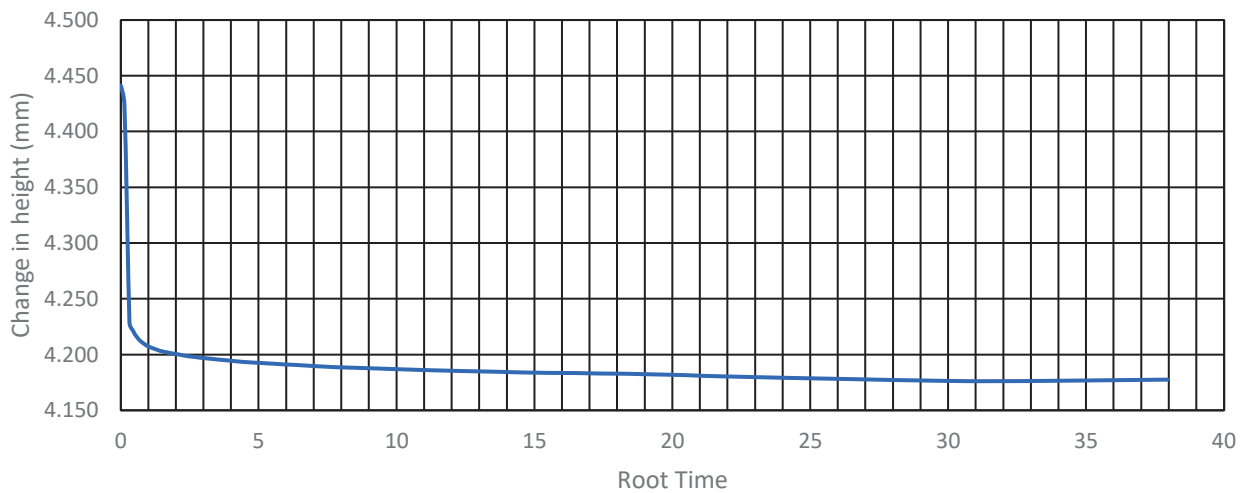
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152314

Applied Pressure (kPa) 1120



Applied Pressure (kPa) 280





Test Report

Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152315

Contract Sea Gardens Bray

Contract Number 24991

Tested using ACONS automatic consolidation system

Client Ballymore/Atkins

BH: 301 Sample No. 203021 Depth (m): 4.50

Description Grey very silty SAND

Initial Height (mm) 20.0 Diameter (mm) 75.0 Initial Voids Ratio 0.573

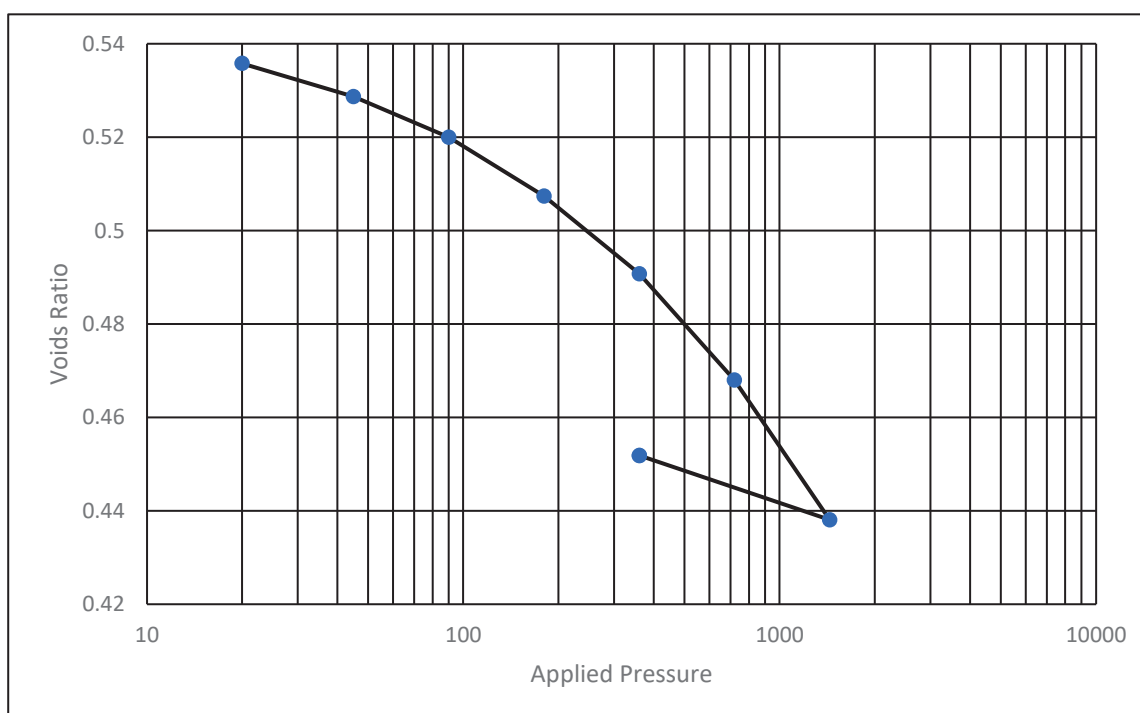
Initial Water Content (%) 29.1 Assumed Particle Density (Mg/m^3) 2.40

Initial Bulk Density (Mg/m^3) 1.97 Initial Dry Density (Mg/m^3) 1.53

Laboratory Temperature: 20 +/- 4 degrees C unless otherwise stated

Preparation: Cutting Ring pushed vertically into sample. Water Content derived from trimmings

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/Year)	Voids Ratio
20	1.193	81.200	0.53579
45	0.185	35.200	0.52868
90	0.126	21.500	0.51999
180	0.092	11.500	0.50736
360	0.061	14.300	0.49076
720	0.042	12.300	0.46801
1440	0.028	10.500	0.43810
360	-	-	0.45183



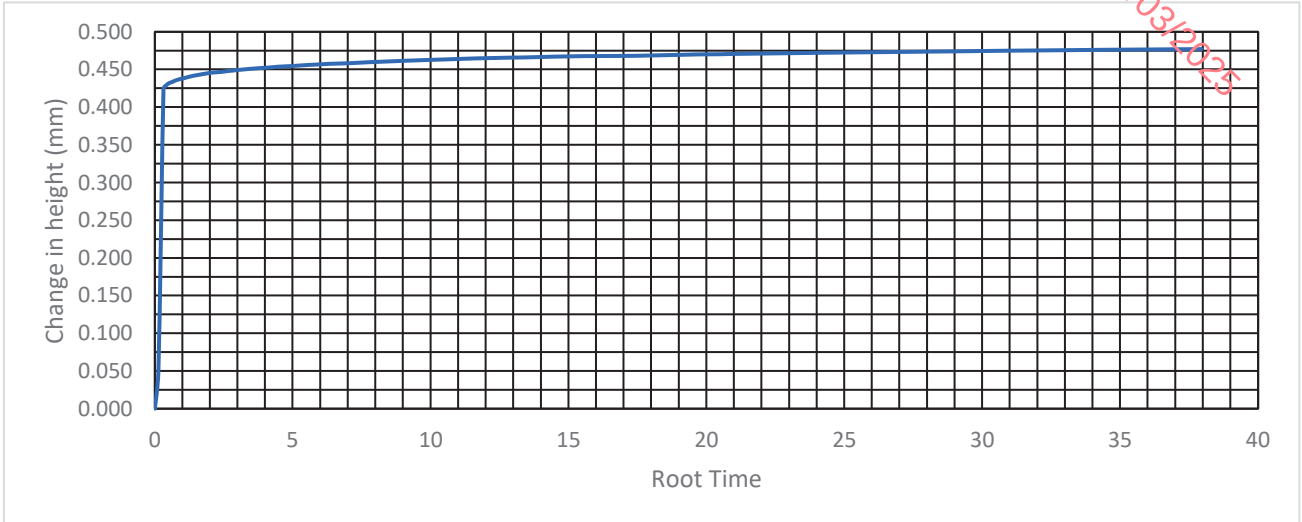


Test Report

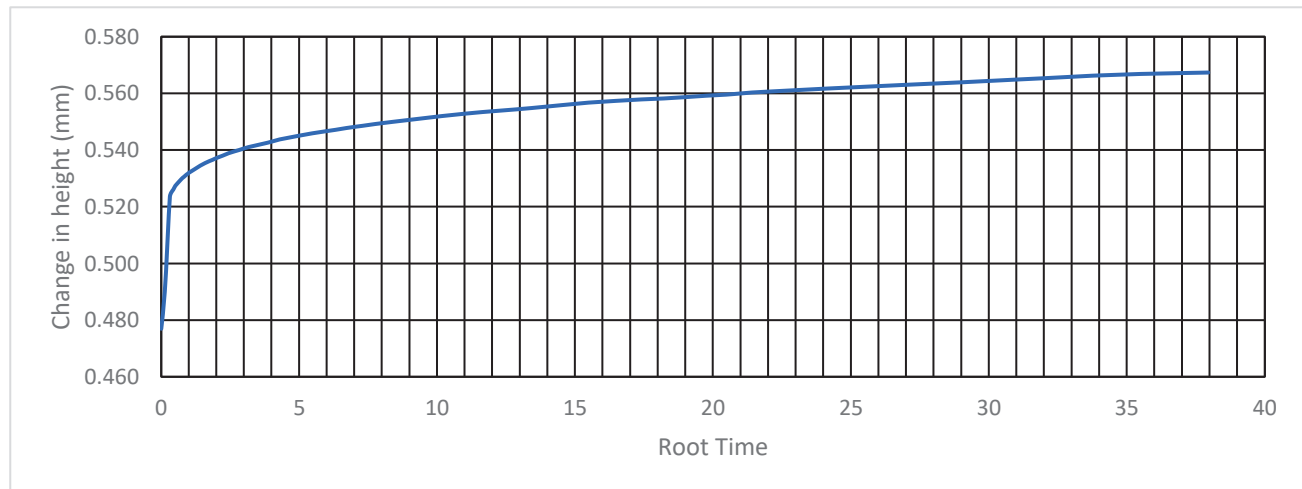
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152315

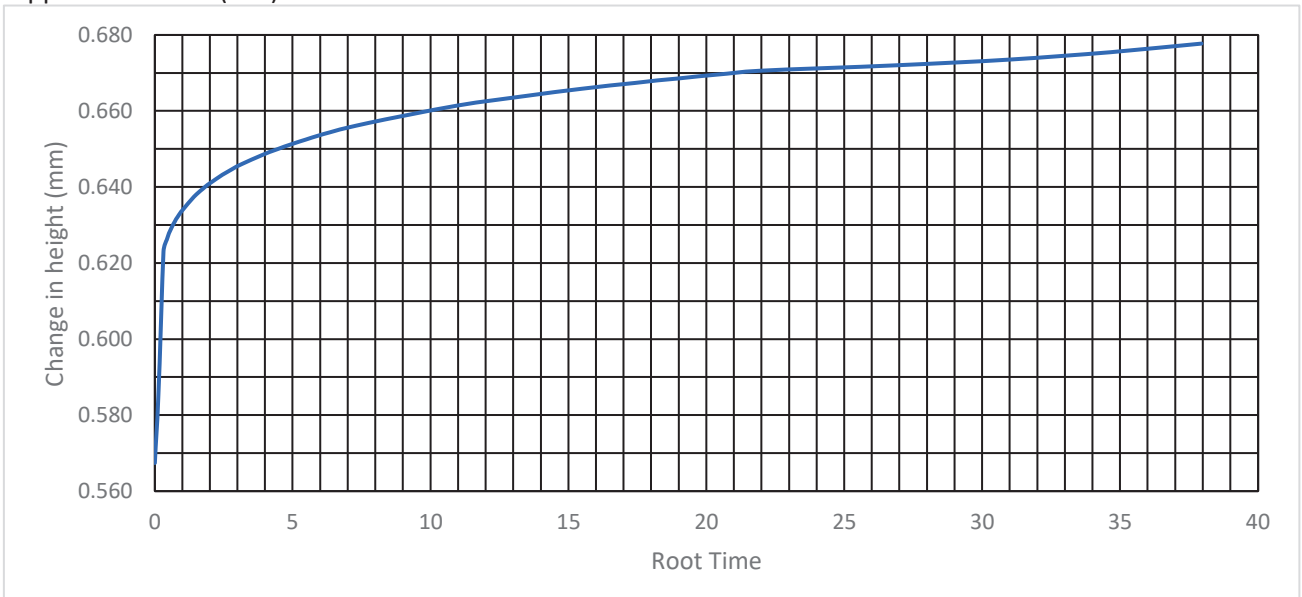
Applied Pressure (kPa) 20



Applied Pressure (kPa) 45



Applied Pressure (kPa) 90



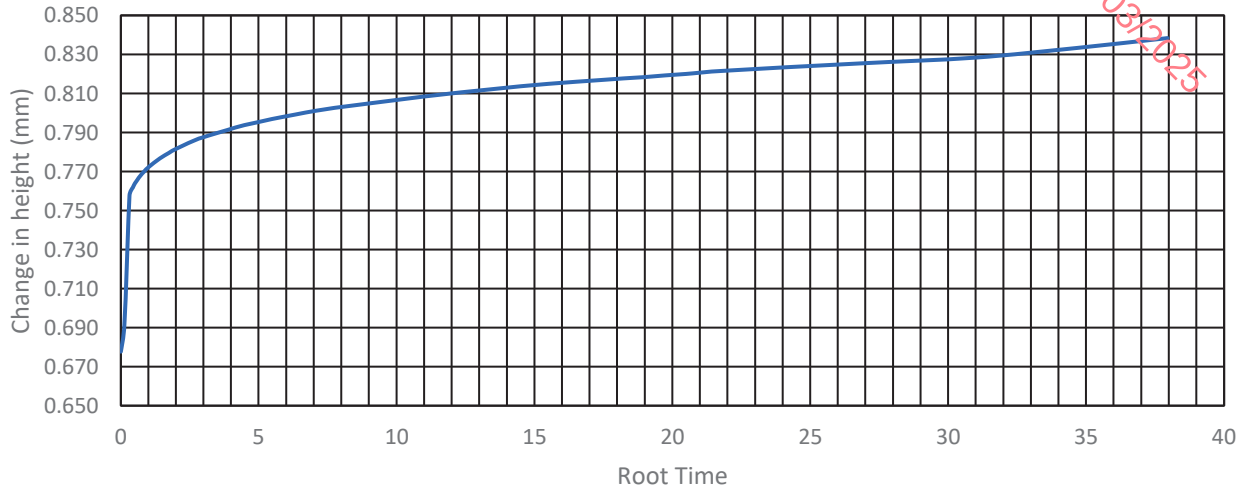


Test Report

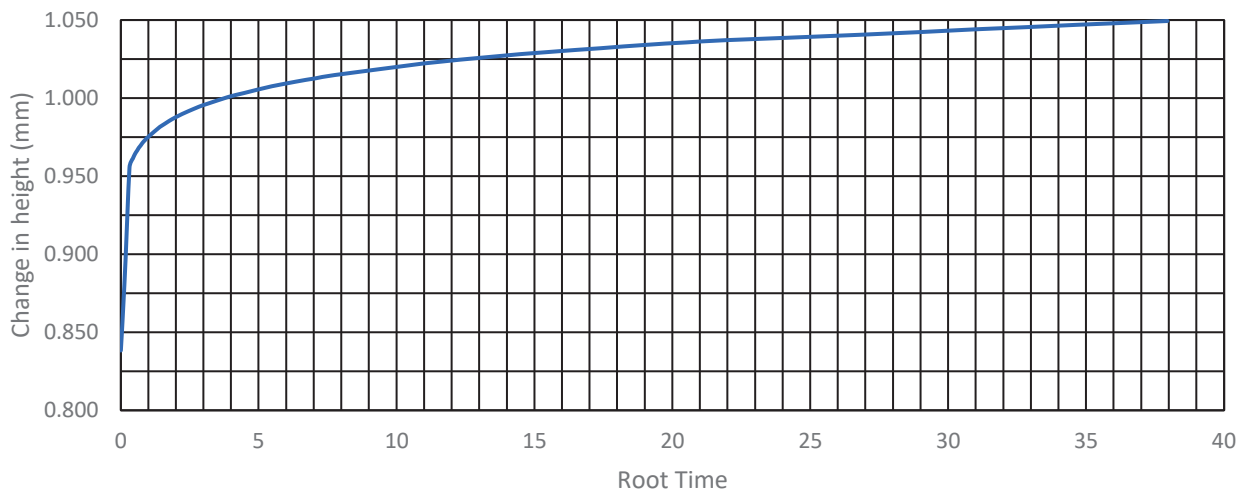
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Report Number R152315

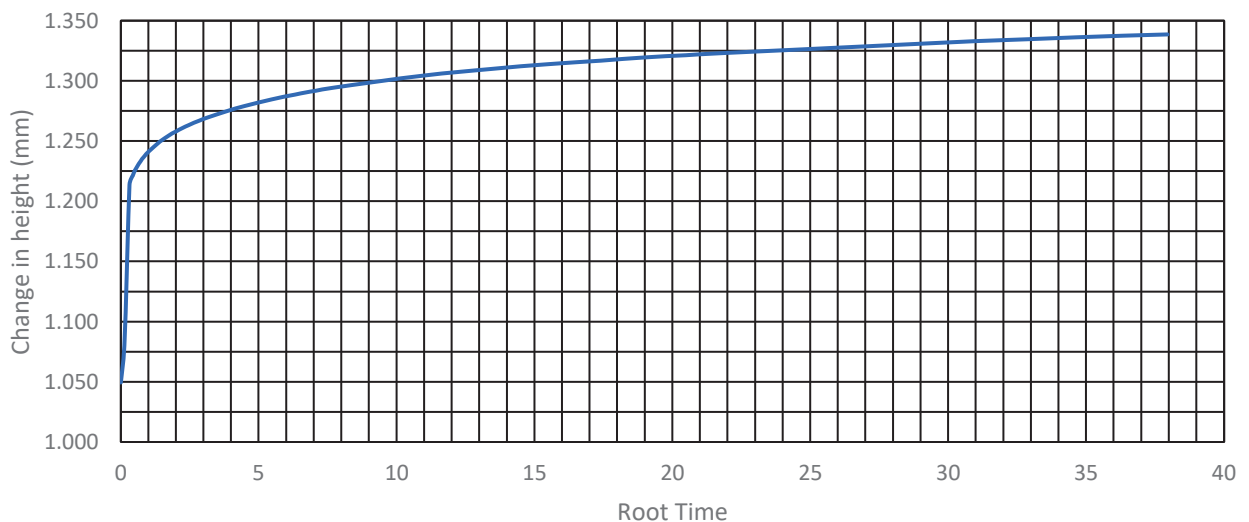
Applied Pressure (kPa) 180



Applied Pressure (kPa) 360



Applied Pressure (kPa) 720



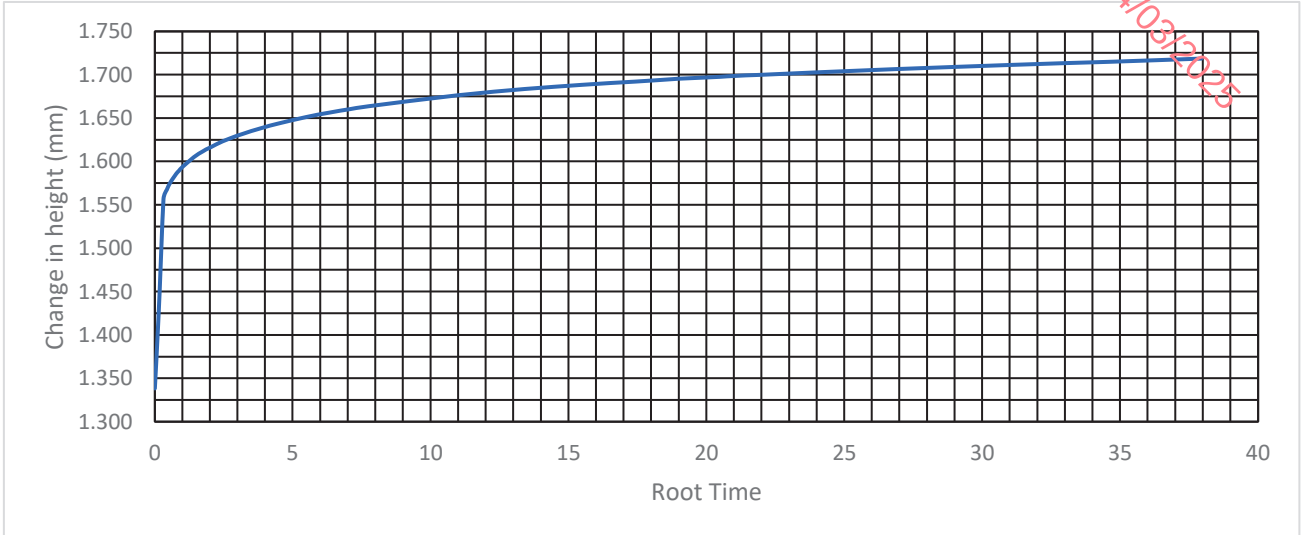


Test Report

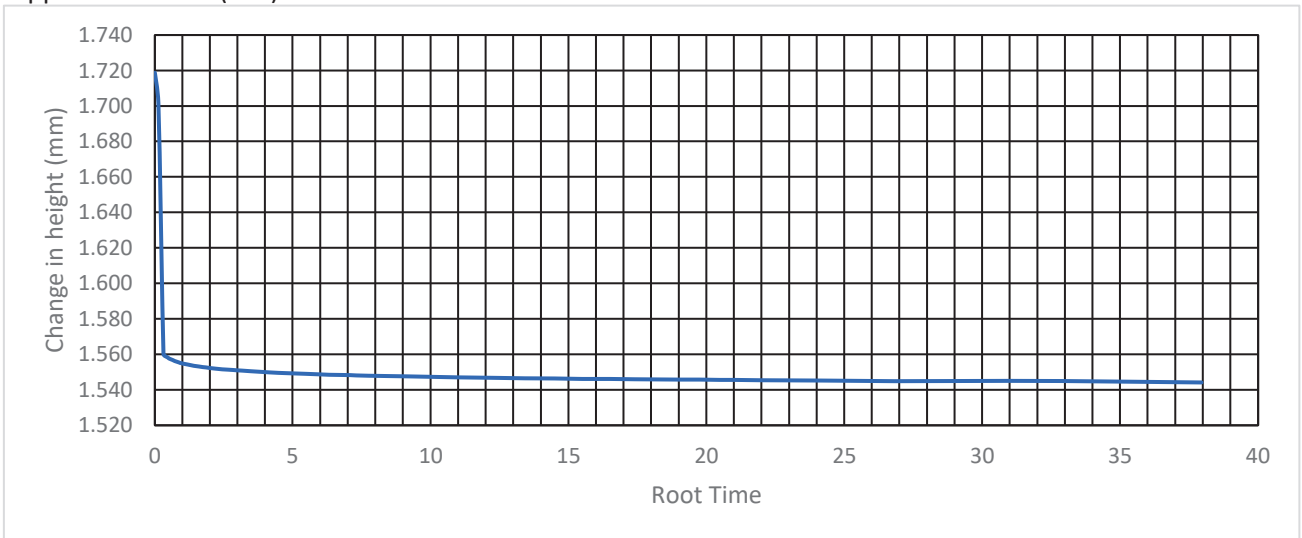
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152315

Applied Pressure (kPa) 1440



Applied Pressure (kPa) 360





Test Report

Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152316

Contract Sea Gardens Bray

Contract Number 24991

Tested using ACONS automatic consolidation system

Client Ballymore/Atkins

BH: 302 Sample No. 203038 Depth (m): 5.80

Description Grey/brown very sandy SILT with shell fragments

Initial Height (mm) 20.0 Diameter (mm) 75.0 Initial Voids Ratio 0.721

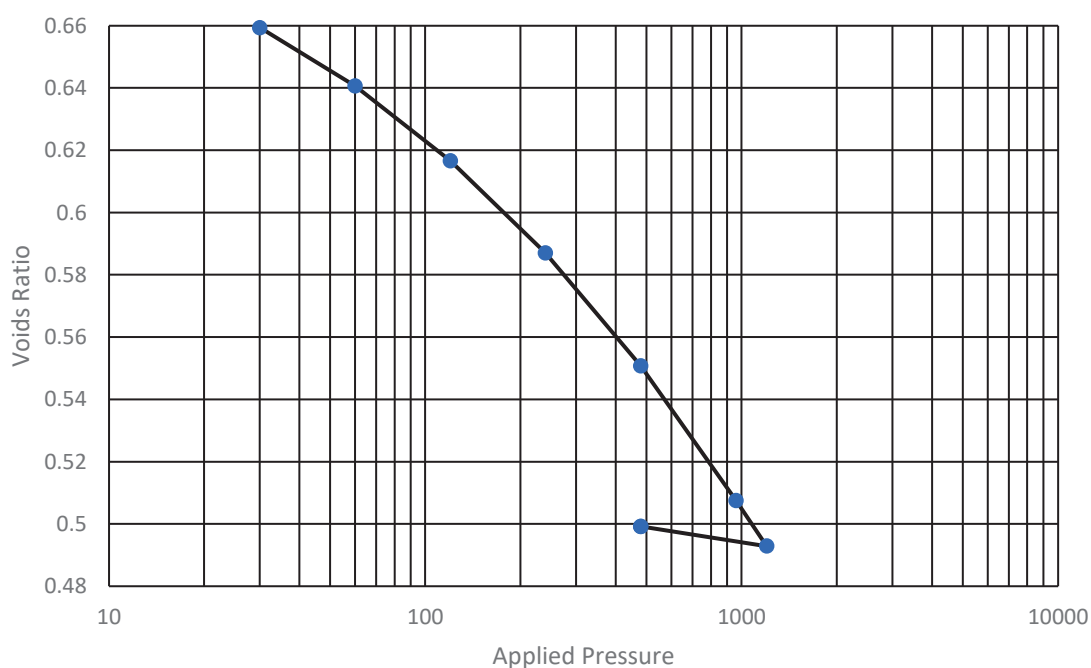
Initial Water Content (%) 34.8 Assumed Particle Density (Mg/m^3) 2.40

Initial Bulk Density (Mg/m^3) 1.88 Initial Dry Density (Mg/m^3) 1.39

Laboratory Temperature: 20 +/- 4 degrees C unless otherwise stated

Preparation: Cutting Ring pushed vertically into sample. Water Content derived from trimmings

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/Year)	Voids Ratio
30	1.199	12.000	0.65937
60	0.375	11.400	0.64070
120	0.245	9.900	0.61659
240	0.153	8.600	0.58700
480	0.095	6.200	0.55078
960	0.058	5.600	0.50755
1200	0.041	1.800	0.49289
480	-	-	0.49925



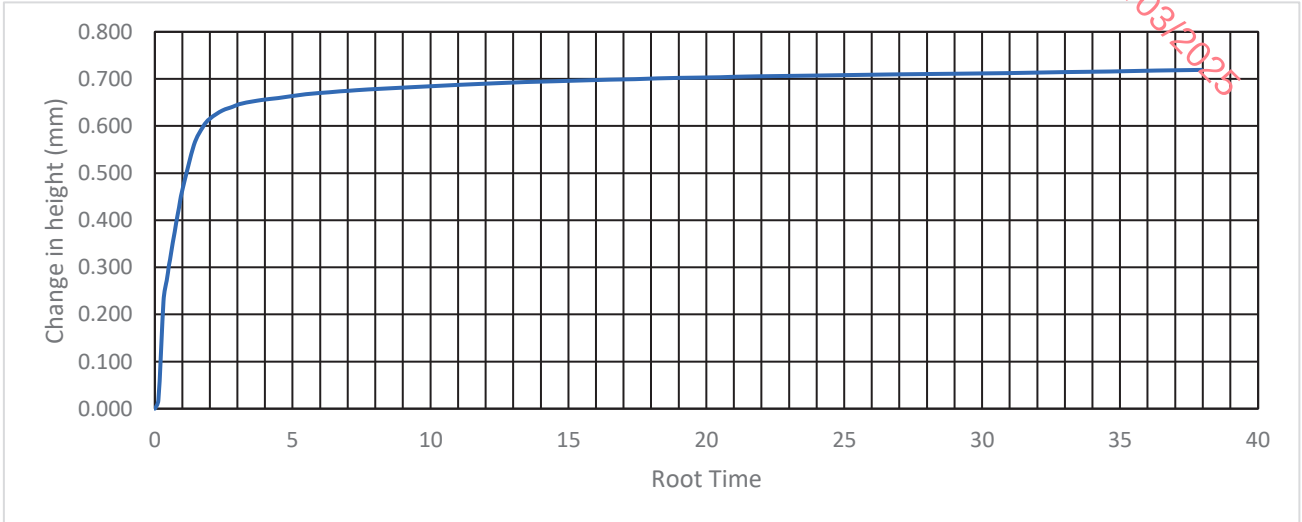


Test Report

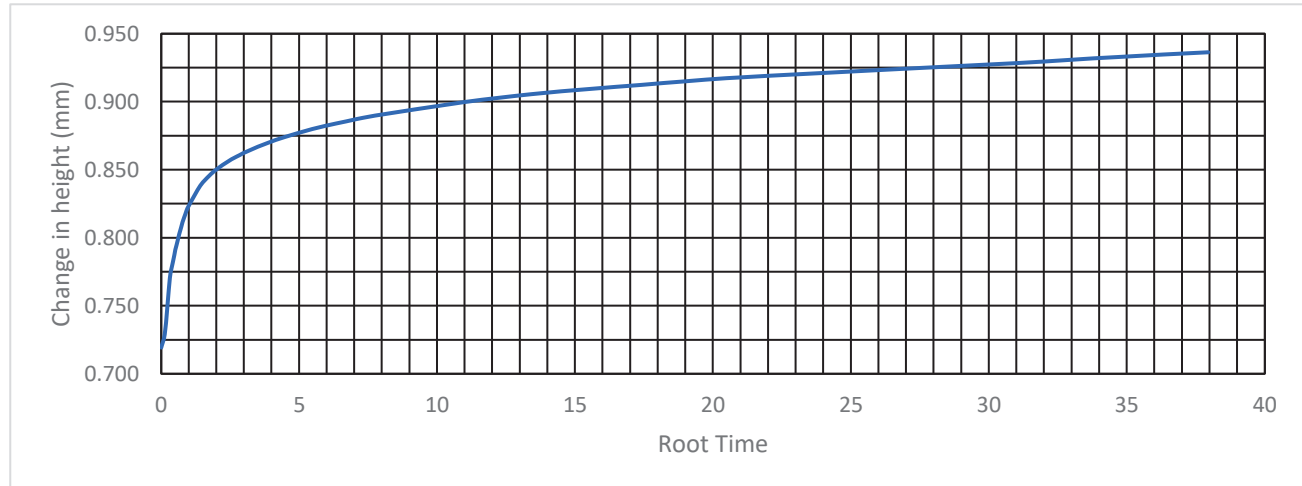
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152316

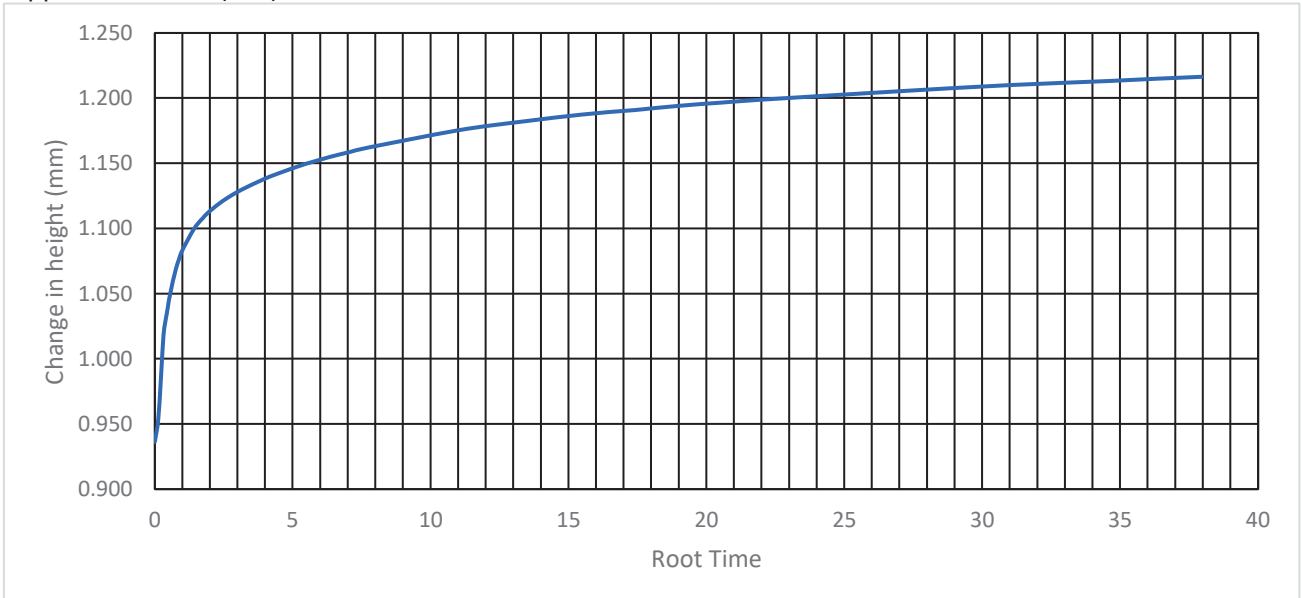
Applied Pressure (kPa) 30



Applied Pressure (kPa) 60



Applied Pressure (kPa) 120



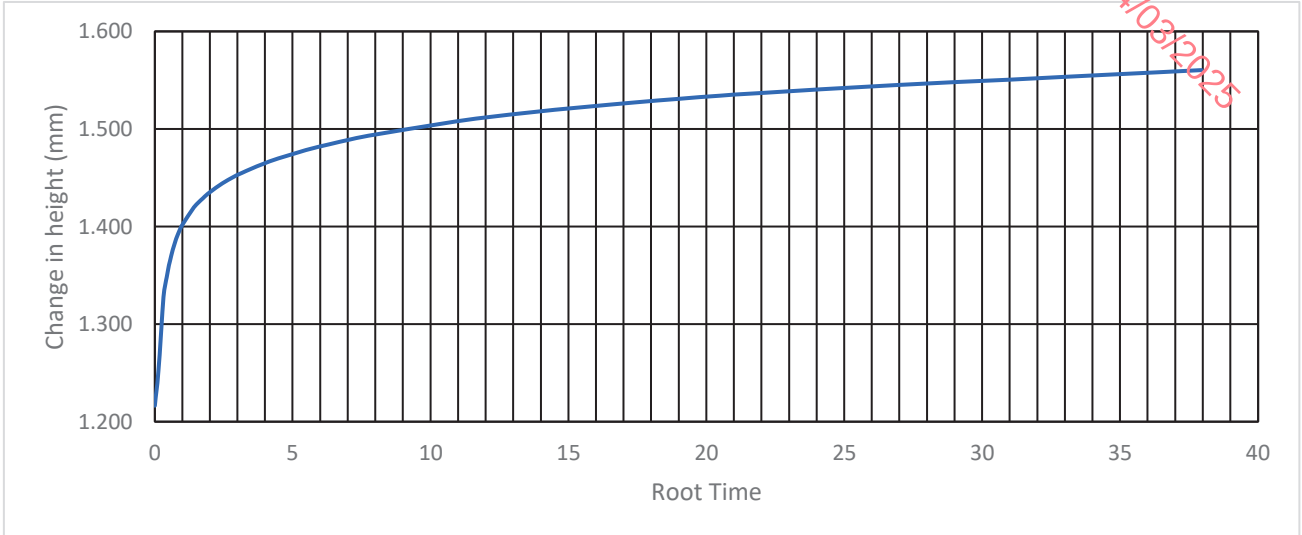


Test Report

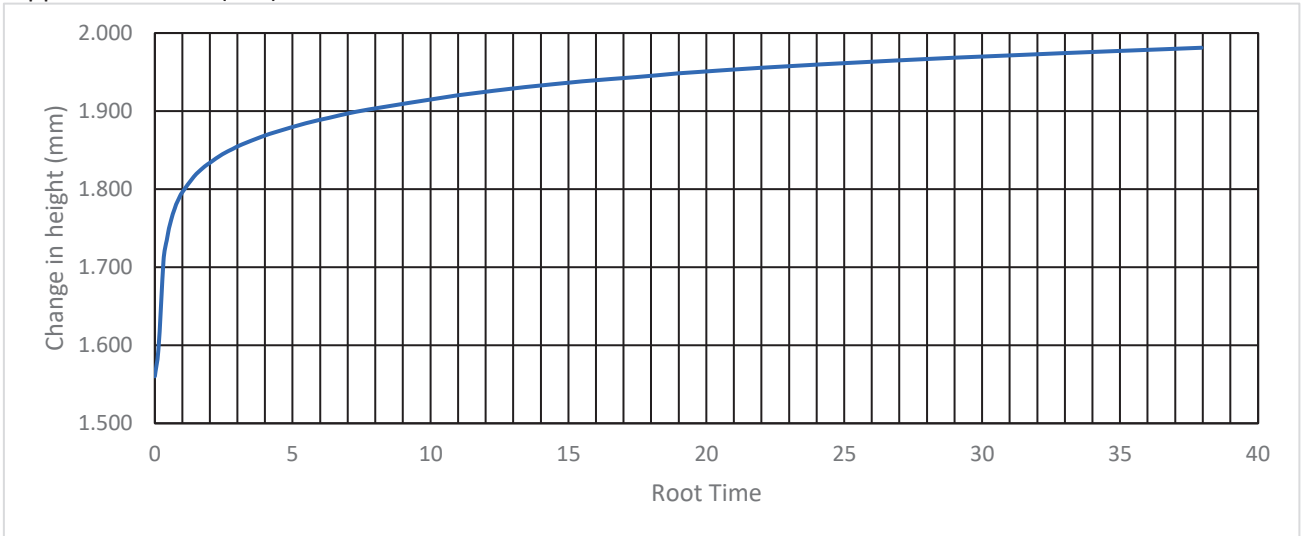
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Report Number R152316

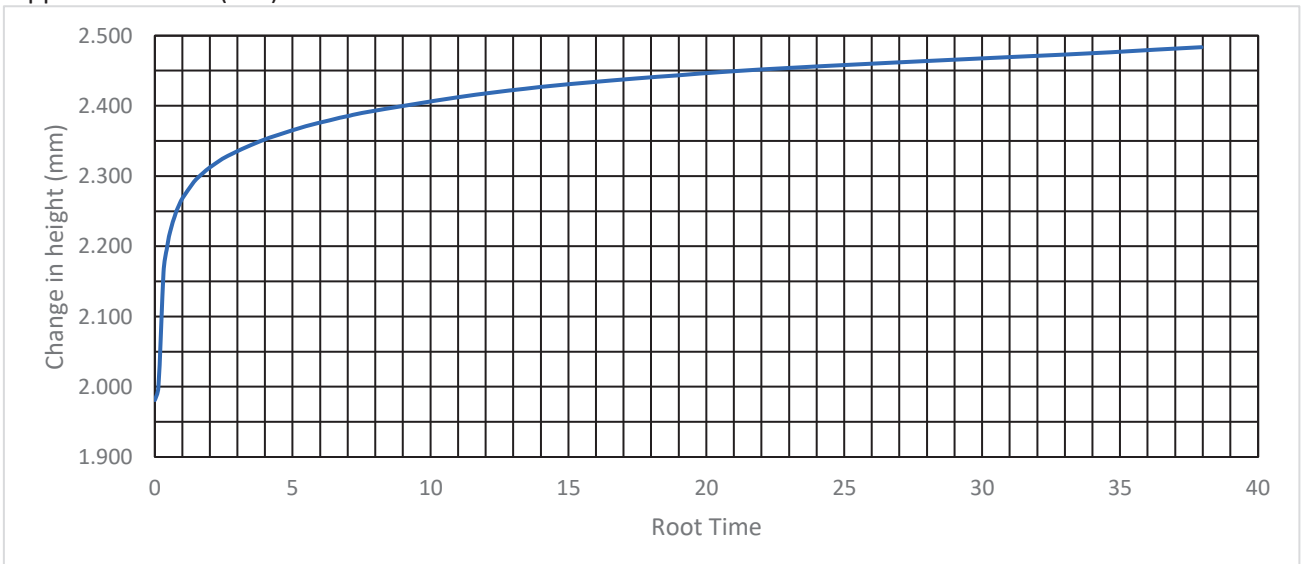
Applied Pressure (kPa) 240



Applied Pressure (kPa) 480



Applied Pressure (kPa) 960



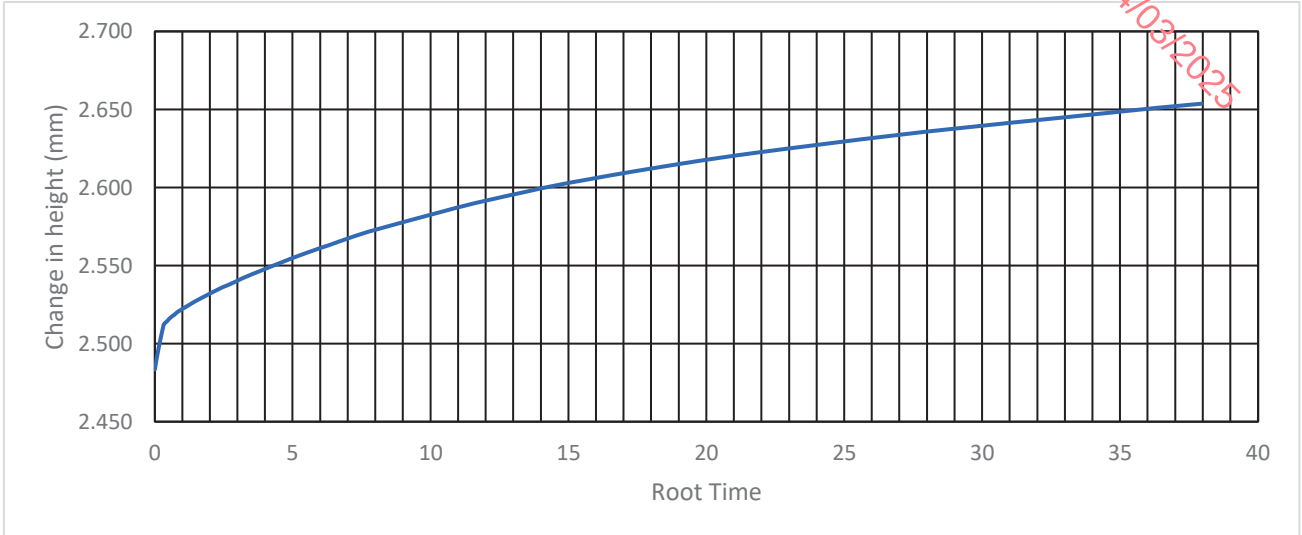


Test Report

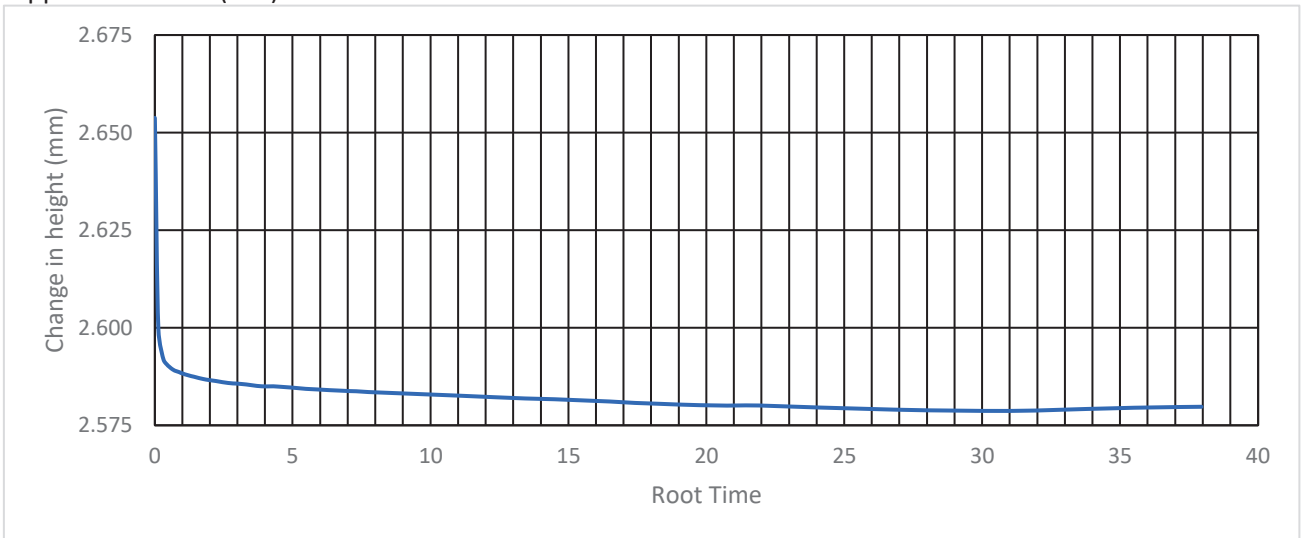
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152316

Applied Pressure (kPa) 1200



Applied Pressure (kPa) 480





One dimensional Consolidation

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Report No. R152317

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH302 Sample number: 203041

Depth (m): 8.0

Description Grey SILT/CLAY with some shell fragments

Specimen Height (mm) 20.07 Specimen diameter (mm) 75.07

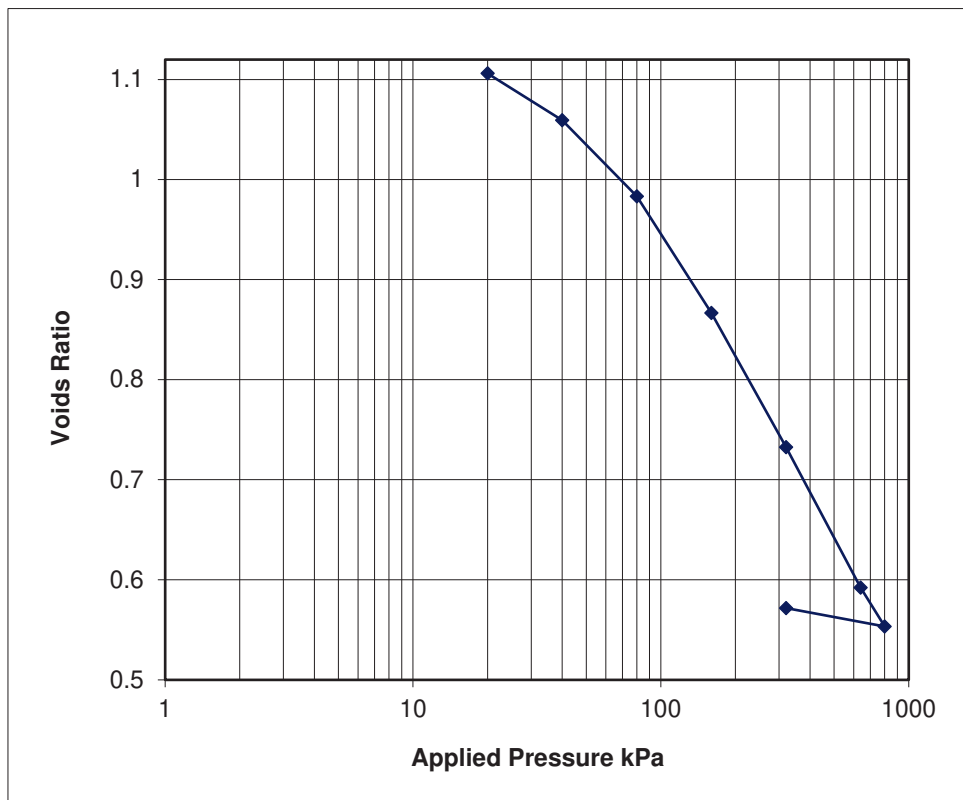
Water content %
Bulk density Mg/m^3
Dry density Mg/m^3
Voids ratio

Initial
55.9
1.69
1.08
1.214

Specimen Preparation:
The cutting ring was
pushed vertically into
an undisturbed sample.
Initial water content was
determined from the
trimmings.

Assumed Particle density Mg/m^3 2.40

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/year)	Voids Ratio
0 - 20	2.441	5.428	1.10607
20 - 40	1.111	4.395	1.05929
40 - 80	0.924	3.223	0.98317
80 - 160	0.734	1.597	0.86667
160 - 320	0.449	1.396	0.73251
320 - 640	0.253	1.141	0.59218
640 - 800	0.152	0.979	0.55335
800 - 320	-	-	0.57166





One dimensional Consolidation

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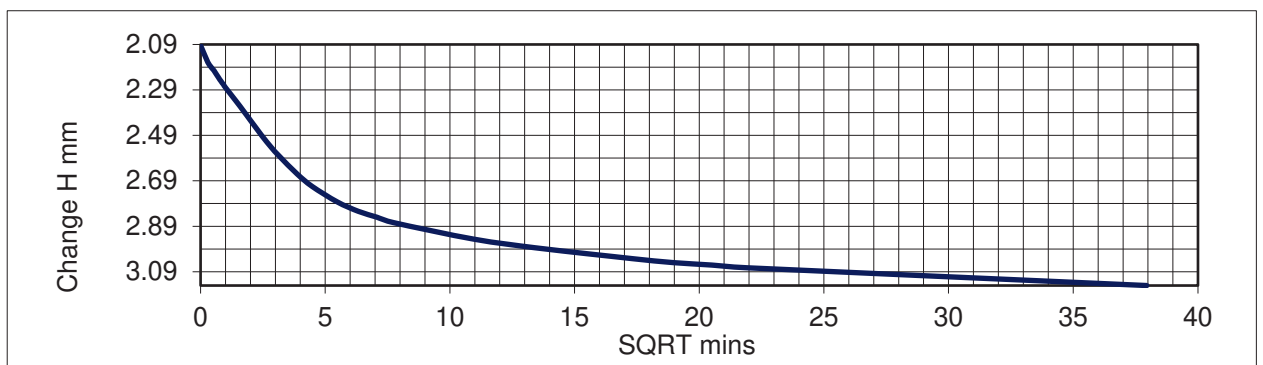
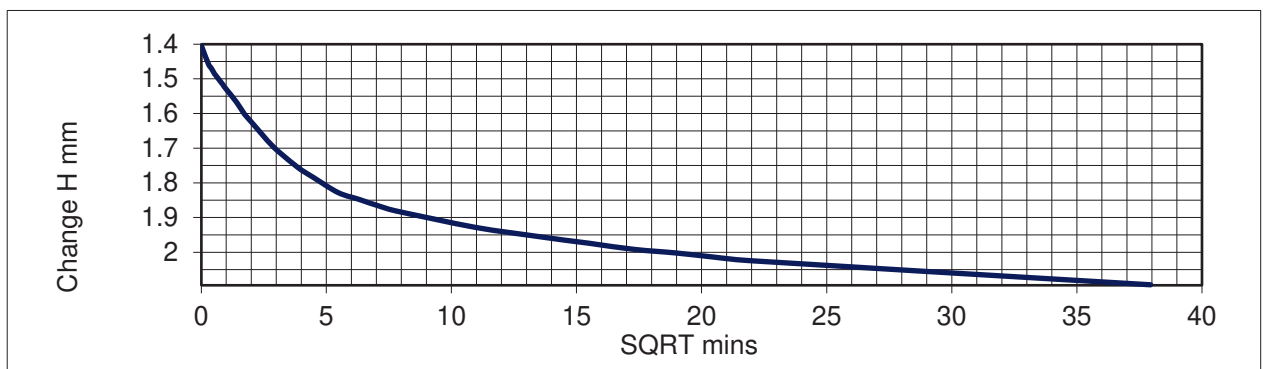
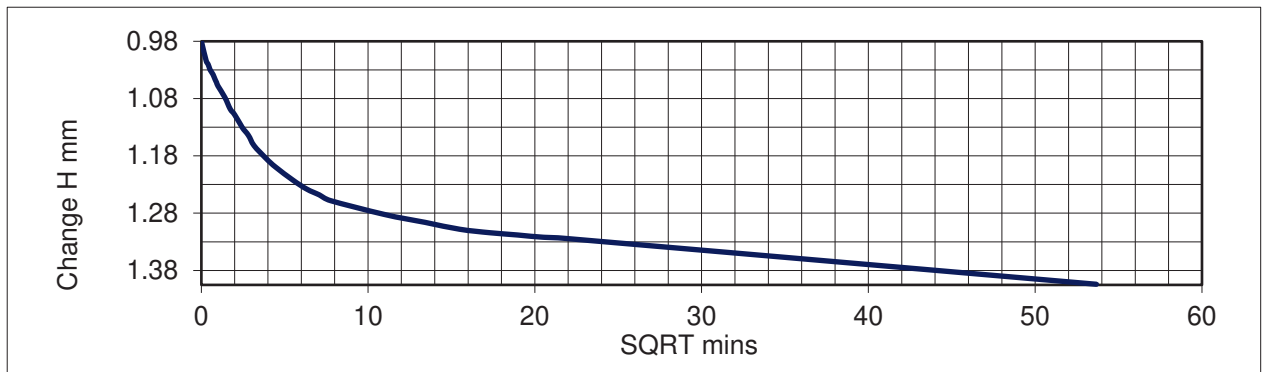
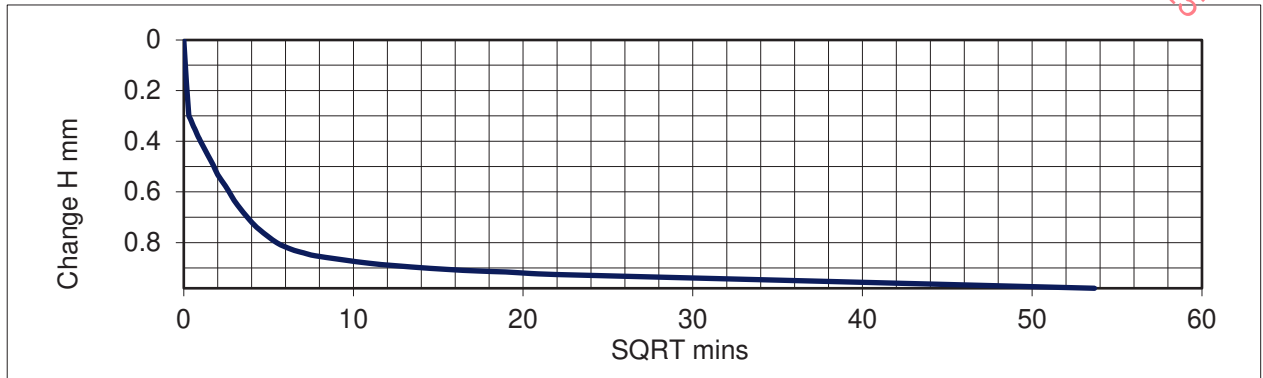
Report No. R152317

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH302 Sample number: 203041

Depth (m): 8.0





One dimensional Consolidation

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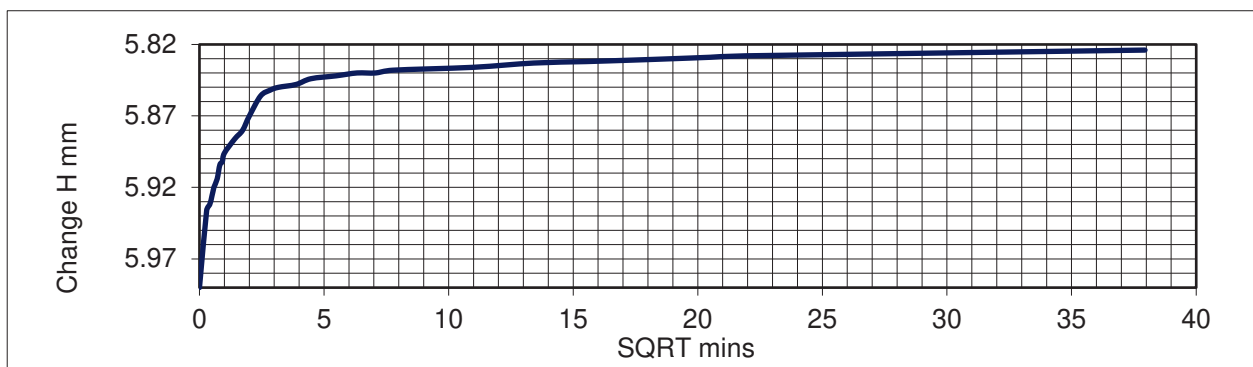
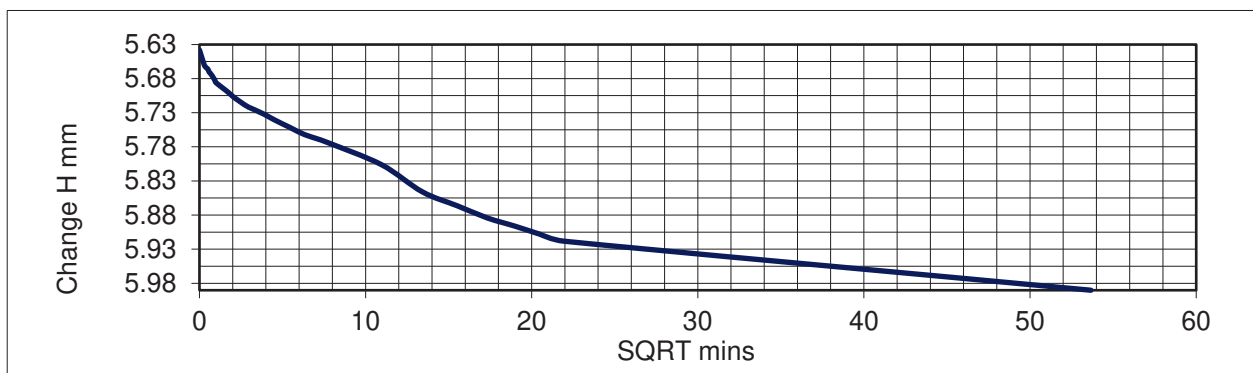
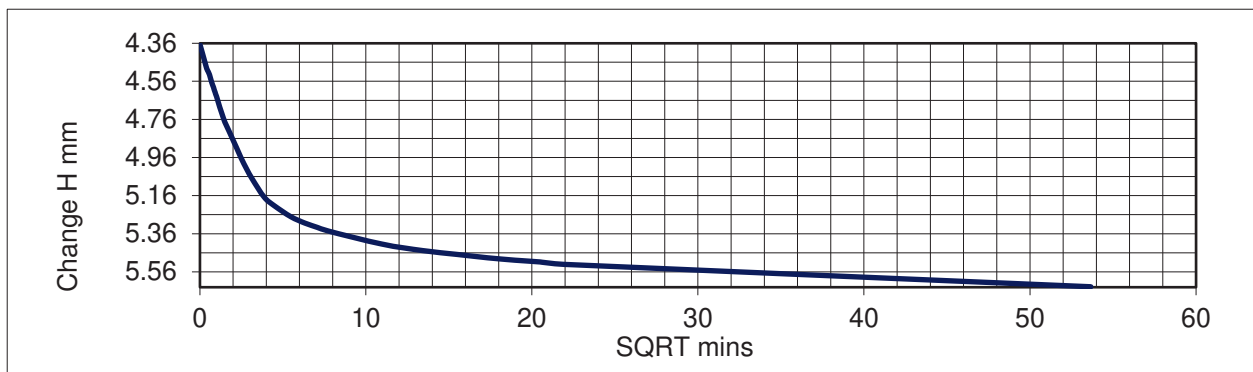
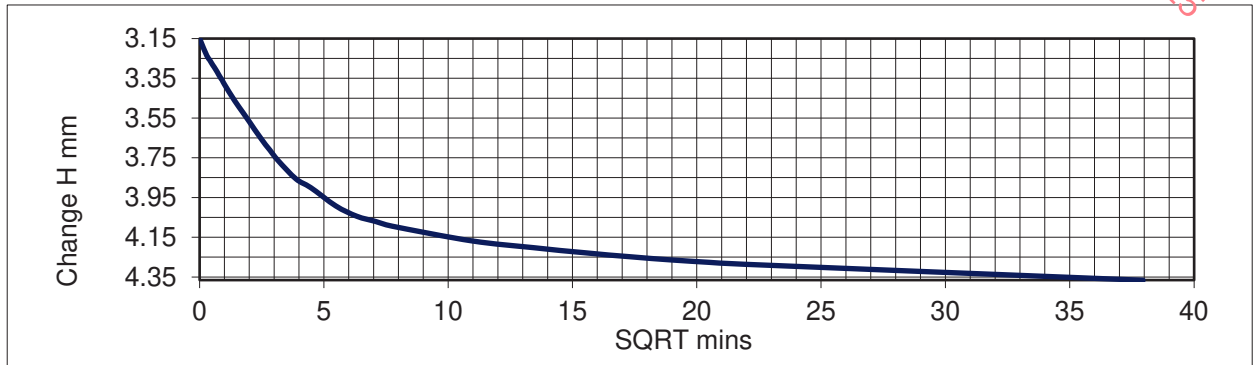
Report No. R152317

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH302 Sample number: 203041

Depth (m): 8.0





One dimensional Consolidation

ISO 17892-5:2017

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Report No. R152318

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH303 Sample number: 209326

Depth (m): 6.0

Description Grey/brown SILT/CLAY

Specimen Height (mm) 20.01 Specimen diameter (mm) 74.98

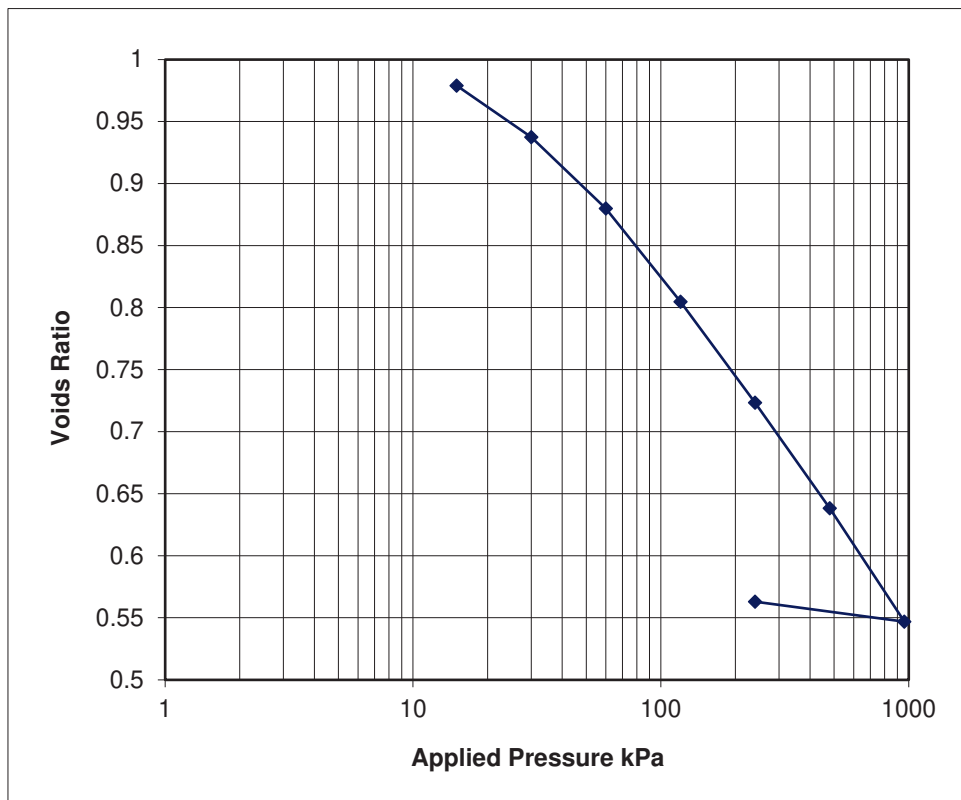
Water content %
Bulk density Mg/m^3
Dry density Mg/m^3
Voids ratio

Initial
59.9
1.81
1.13
1.117

Specimen Preparation:
The cutting ring was
pushed vertically into
an undisturbed sample.
Initial water content was
determined from the
trimmings.

Assumed Particle density Mg/m^3 2.40

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/year)	Voids Ratio
0 - 15	4.344	21.222	0.97888
15 - 30	1.397	4.226	0.93741
30 - 60	0.990	3.760	0.87986
60 - 120	0.666	2.598	0.80475
120 - 240	0.376	2.255	0.72330
240 - 480	0.206	1.940	0.63824
480 - 960	0.116	1.742	0.54684
960 - 240	-	-	0.56292





One dimensional Consolidation

ISO 17892-5:2017

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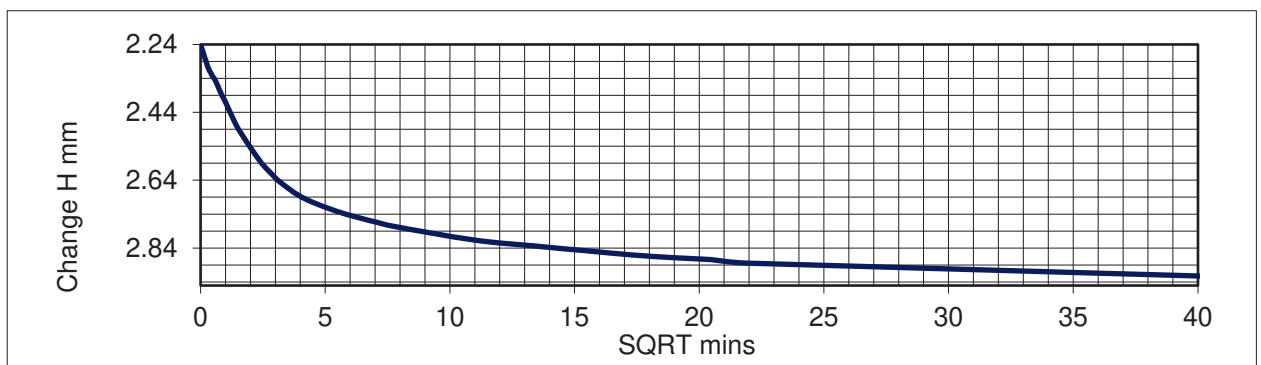
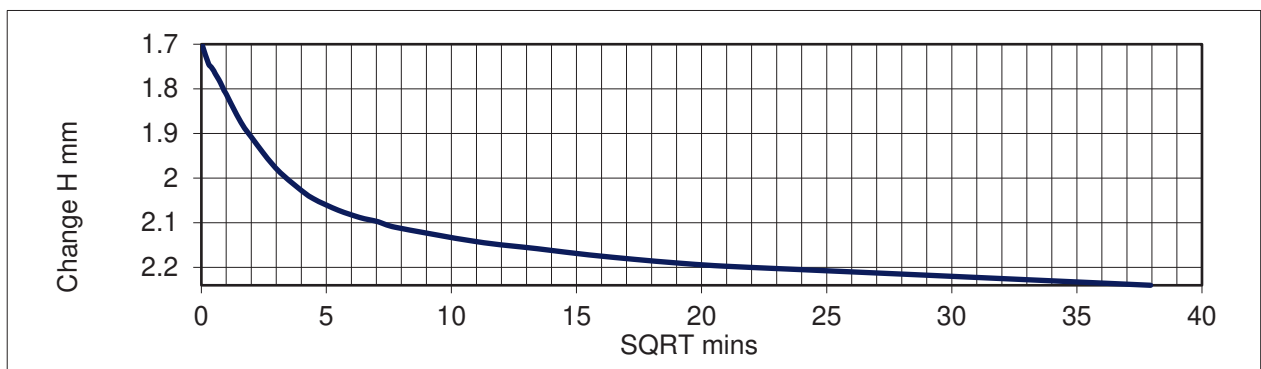
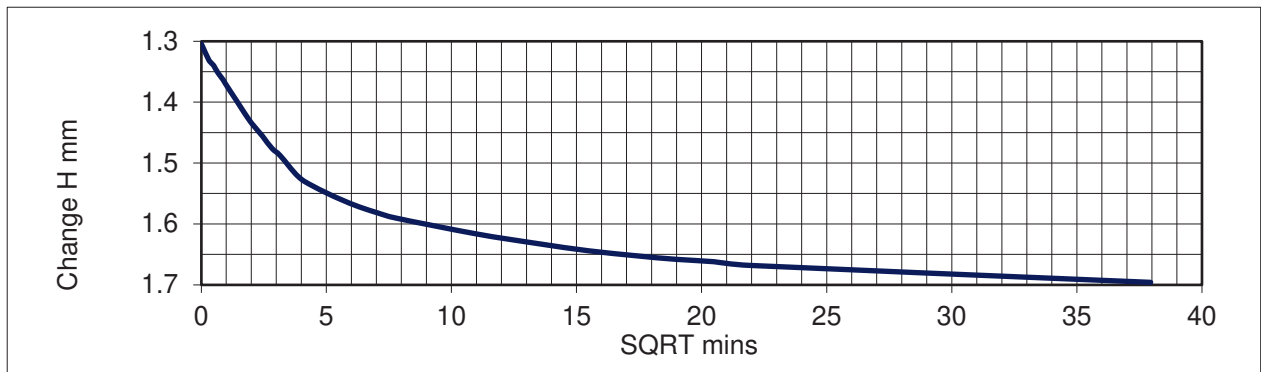
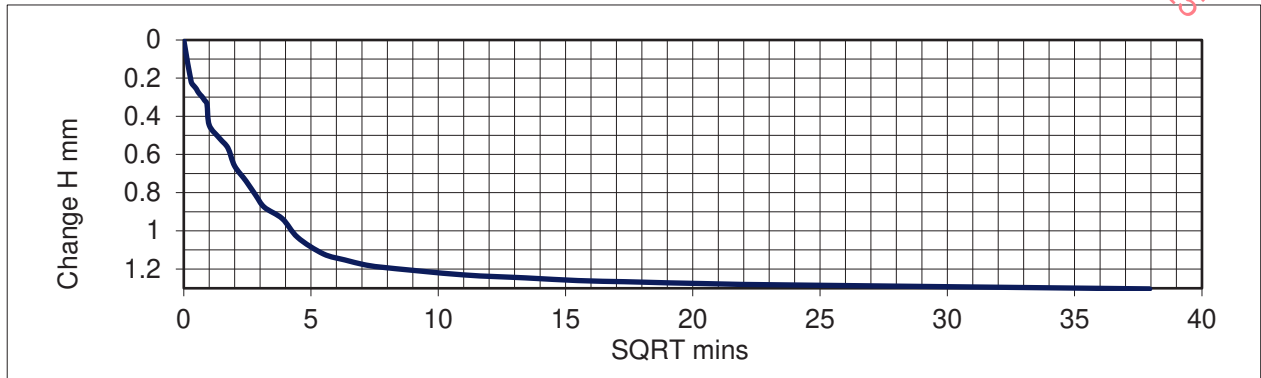
Report No. R152318

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH303 Sample number: 209326

Depth (m): 6.0





One dimensional Consolidation

ISO 17892-5:2017

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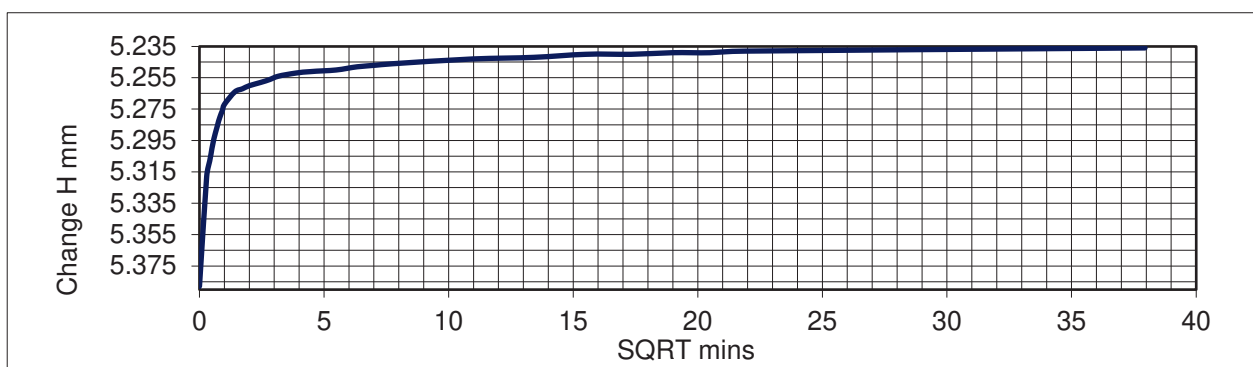
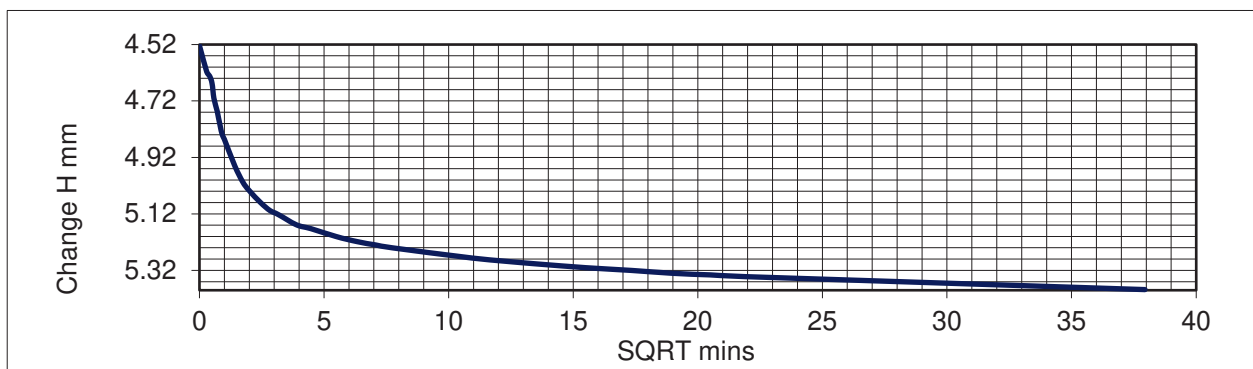
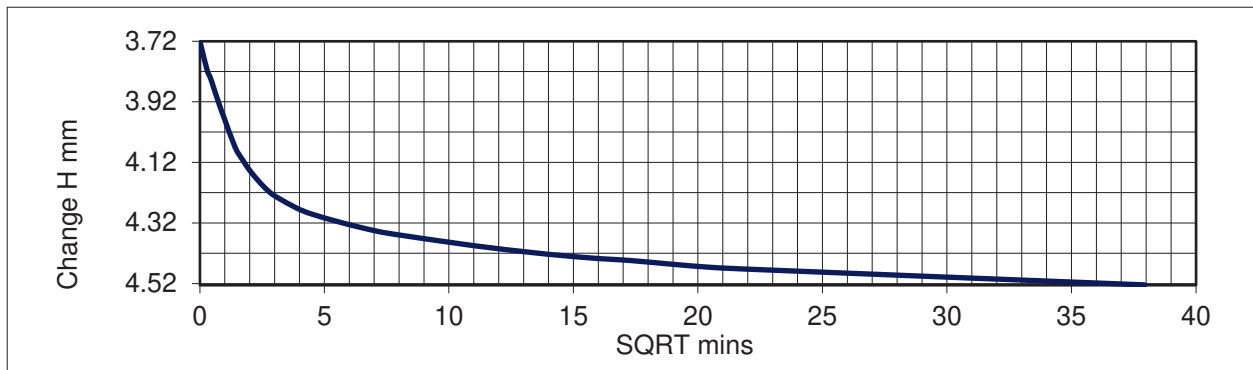
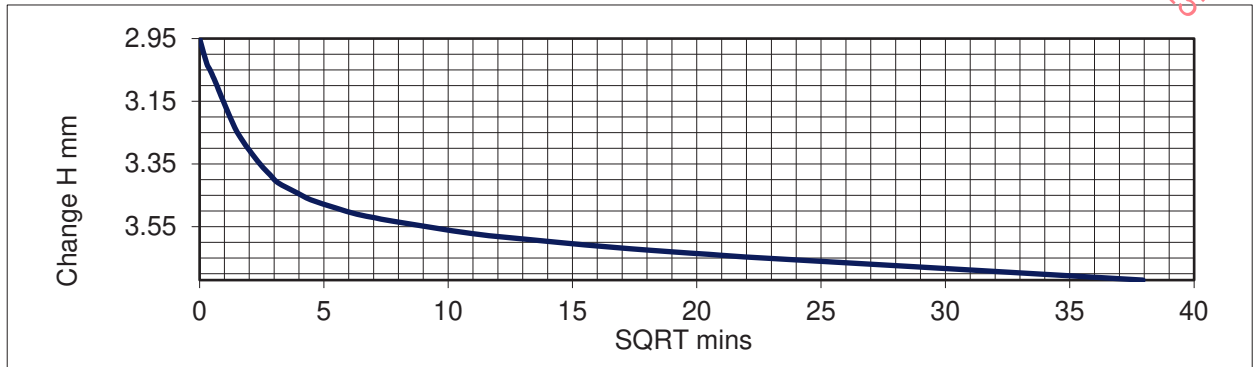
Report No. R152318

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH303 Sample number: 209326

Depth (m): 6.0





Test Report

Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152319

Contract Sea Gardens Bray

Contract Number 24991

Tested using ACONS automatic consolidation system

Client Ballymore/Atkins

BH: 304

Sample No.

203002

Depth (m):

2.10

Description Brown SILT/CLAY with occasional roots

Initial Height (mm)

20.0

Diameter (mm)

75.0

Initial Voids Ratio

0.599

Initial Water Content (%)

20.0

Assumed Particle Density (Mg/m^3)

2.65

Initial Bulk Density (Mg/m^3)

1.99

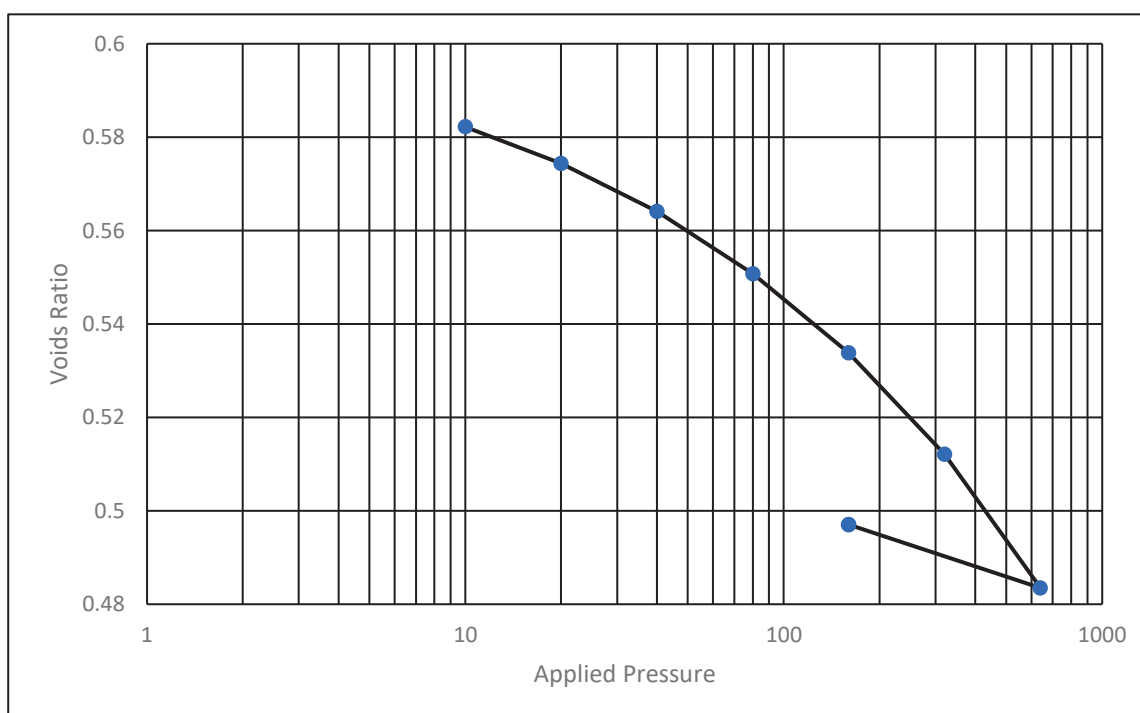
Initial Dry Density (Mg/m^3)

1.66

Laboratory Temperature: 20 +/- 4 degrees C unless otherwise stated

Preparation: Cutting Ring pushed vertically into sample. Water Content derived from trimmings

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/Year)	Voids Ratio
10	1.078	23.700	0.58222
20	0.496	7.800	0.57437
40	0.327	7.000	0.56408
80	0.213	6.600	0.55077
160	0.137	5.300	0.53383
320	0.089	3.200	0.51209
640	0.059	2.300	0.48349
160	-	-	0.49707



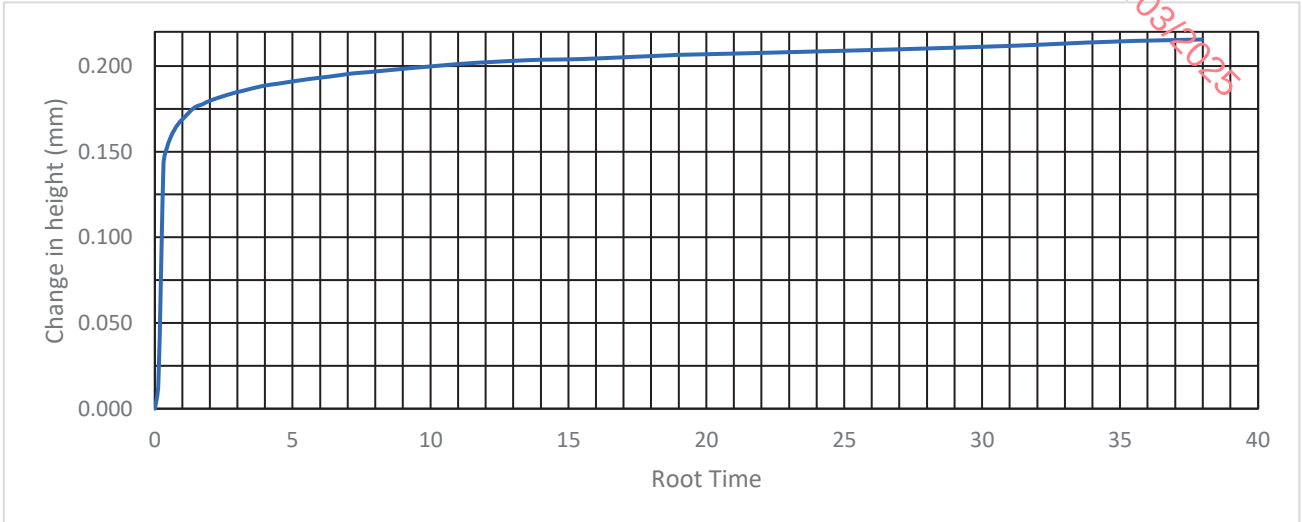


Test Report

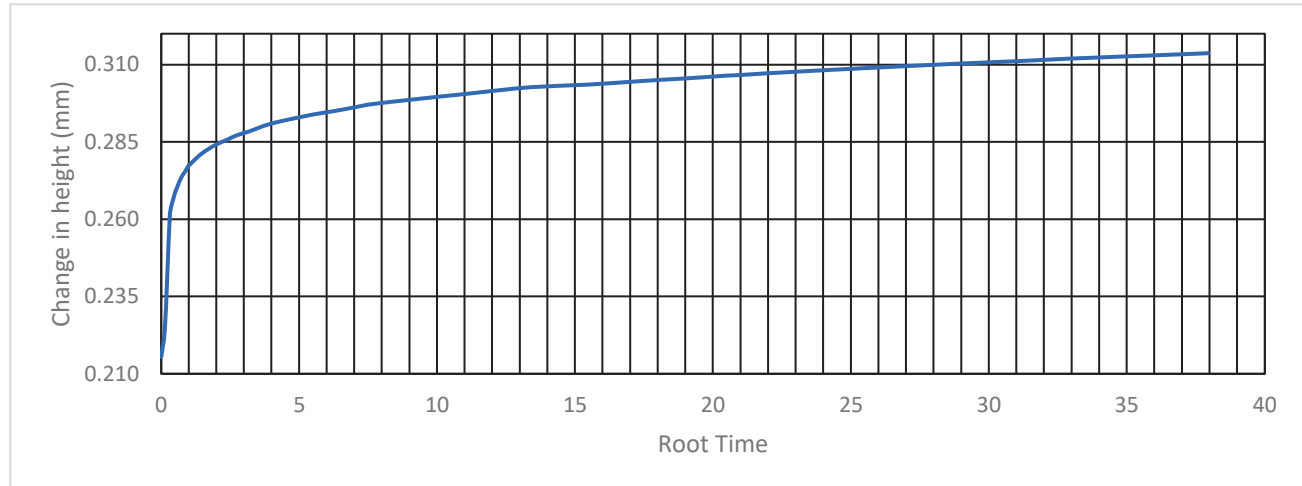
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152319

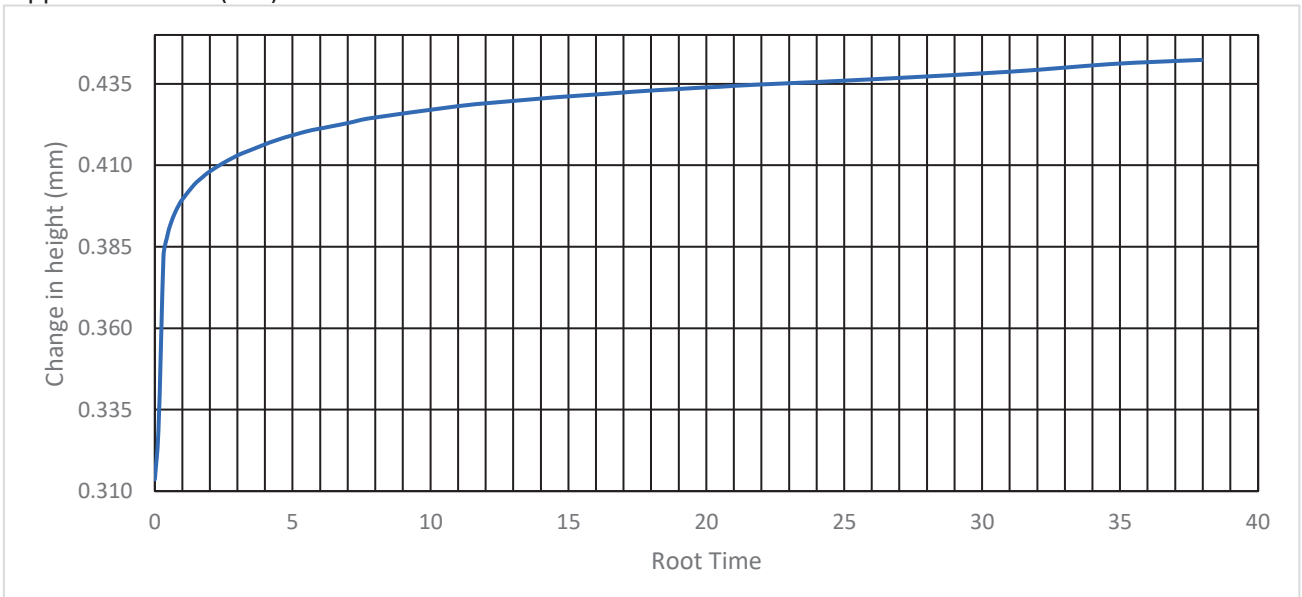
Applied Pressure (kPa) 10



Applied Pressure (kPa) 20



Applied Pressure (kPa) 40



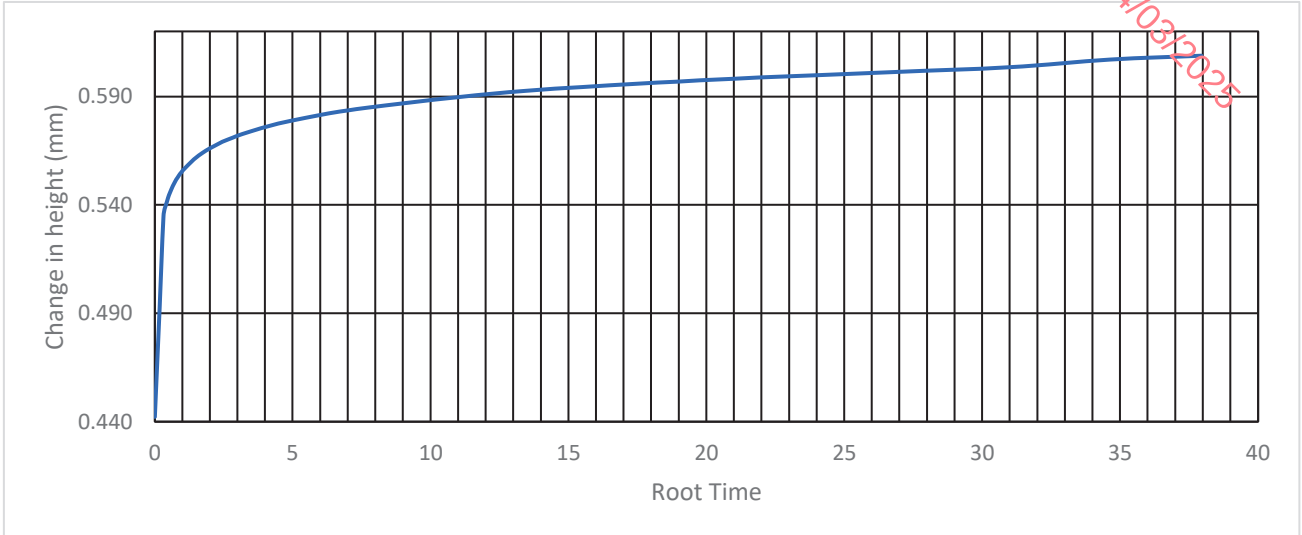


Test Report

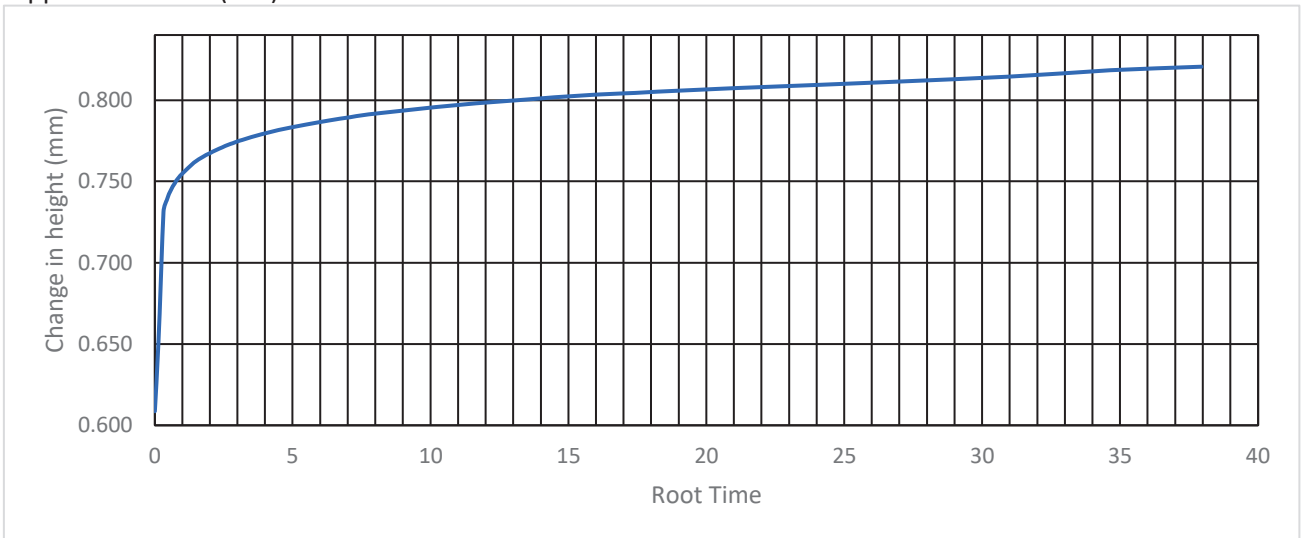
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152319

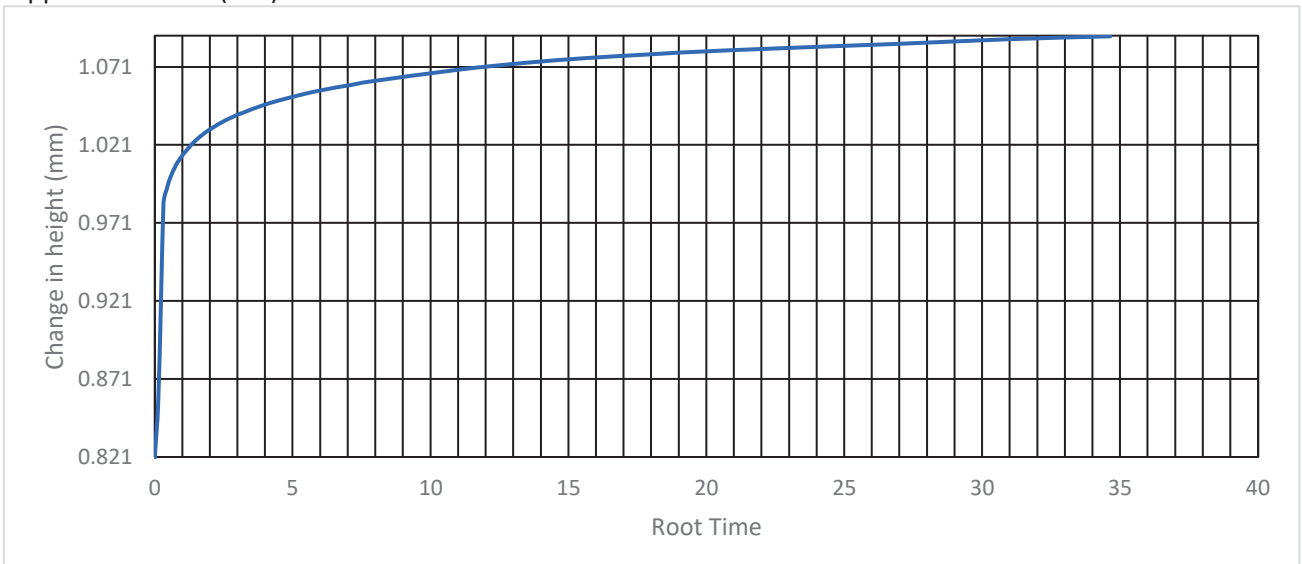
Applied Pressure (kPa) 80



Applied Pressure (kPa) 160



Applied Pressure (kPa) 320



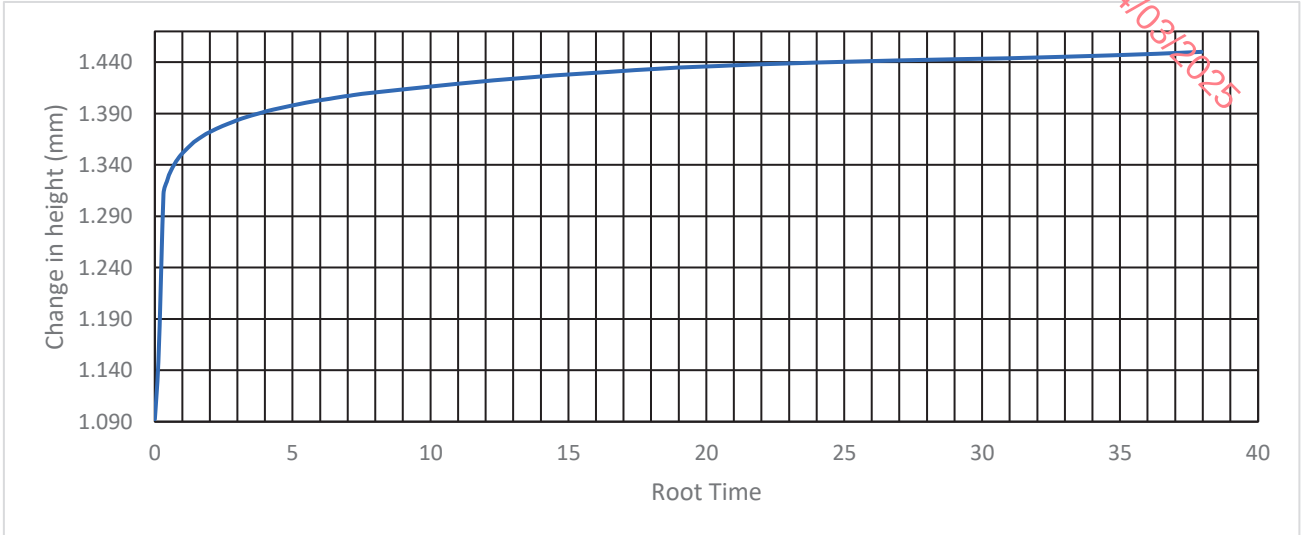


Test Report

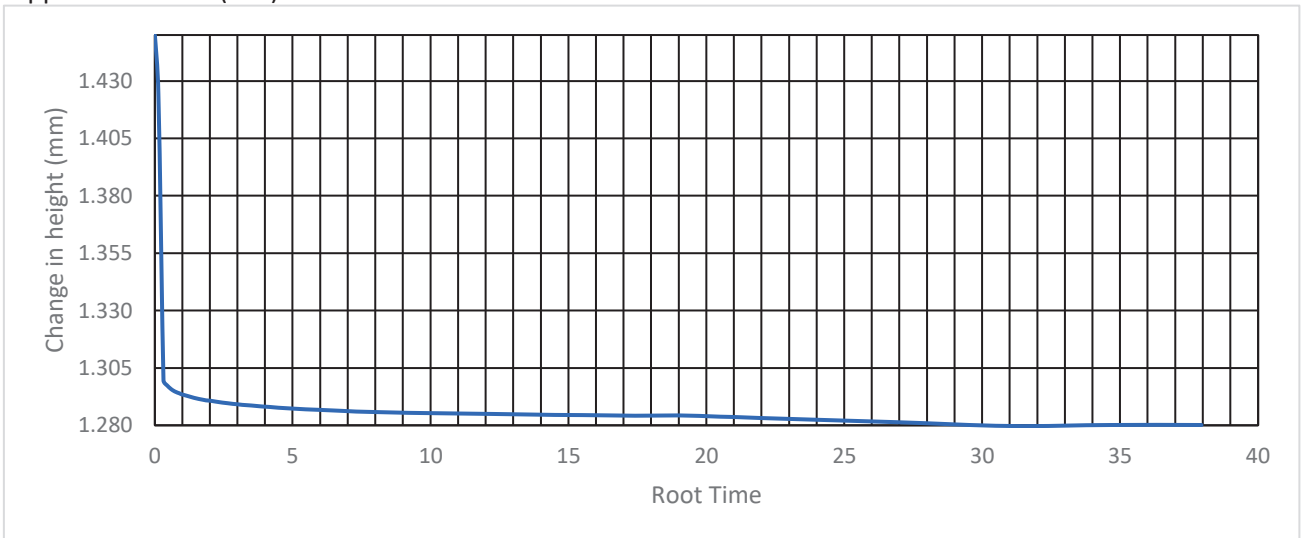
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152319

Applied Pressure (kPa) 640



Applied Pressure (kPa) 160





One dimensional Consolidation

ISO 17892-5:2017

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Report No. R152320

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH304 Sample number: 203009

Depth (m): 7.5

Description Grey SILT/CLAY with some organic material & shell fragments

Specimen Height (mm) 20.07 Specimen diameter (mm) 75.07

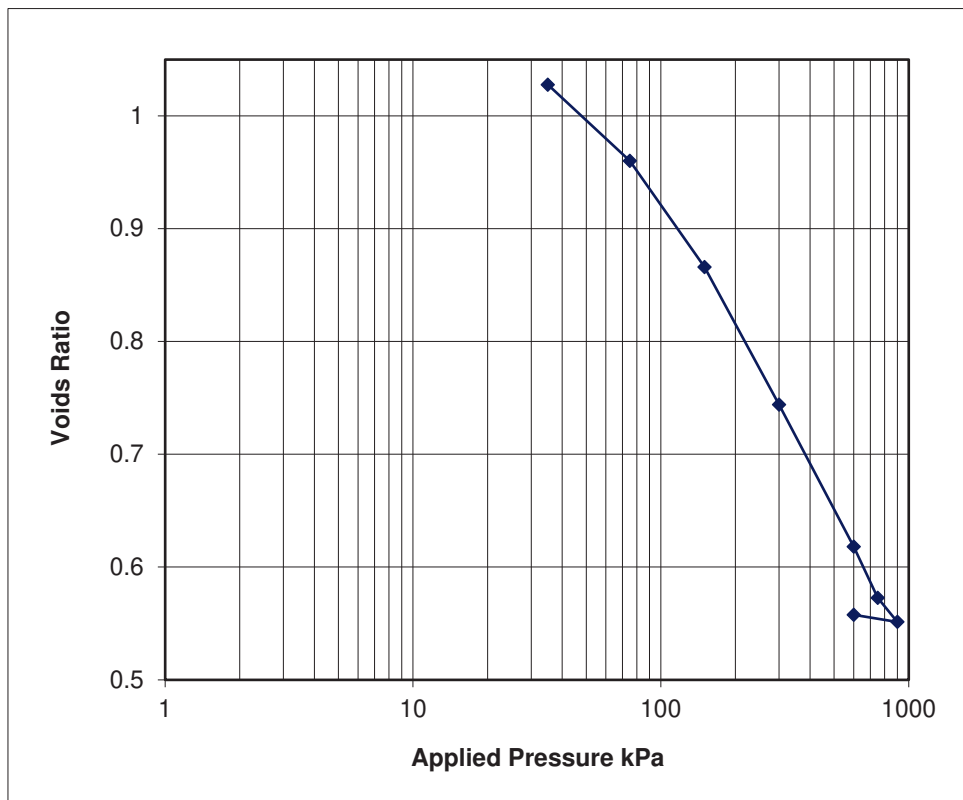
Water content %
Bulk density Mg/m^3
Dry density Mg/m^3
Voids ratio

Initial
51.6
1.68
1.11
1.160

Specimen Preparation:
The cutting ring was
pushed vertically into
an undisturbed sample.
Initial water content was
determined from the
trimmings.

Assumed Particle density Mg/m^3 2.40

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/year)	Voids Ratio
0 - 35	1.748	4.996	1.02762
35 - 75	0.833	3.296	0.96004
75 - 150	0.640	1.897	0.86598
150 - 300	0.436	1.414	0.74395
300 - 600	0.241	1.226	0.61805
600 - 750	0.187	0.806	0.57263
750 - 900	0.090	0.935	0.55133
900 - 600	-	-	0.55757





One dimensional Consolidation

ISO 17892-5:2017

RECEIVED: 24/03/2025

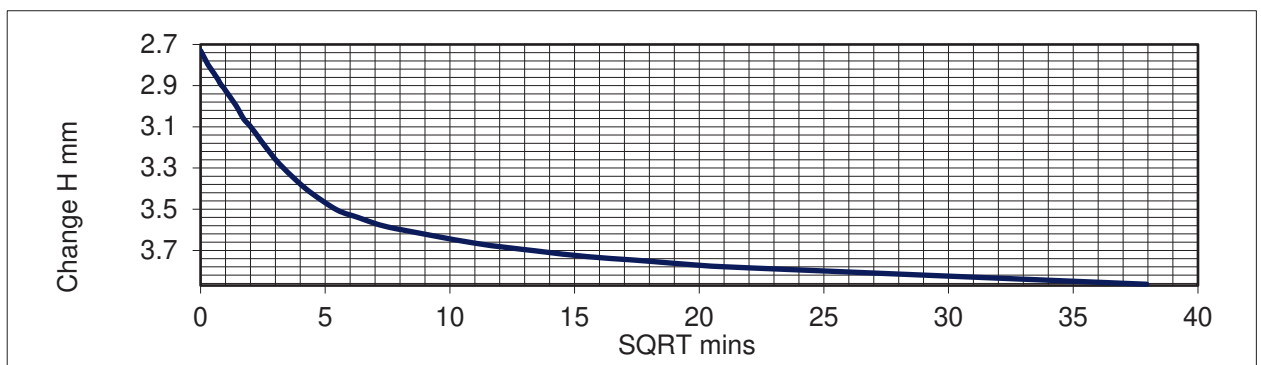
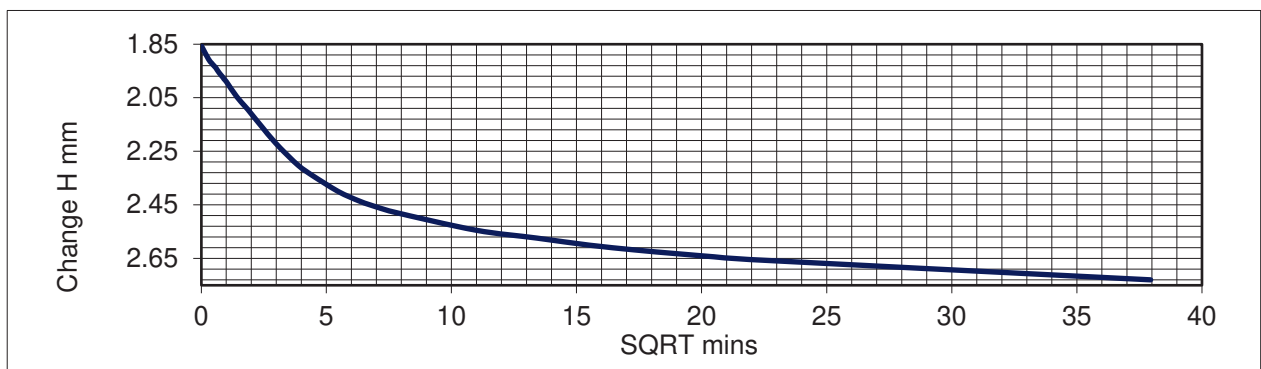
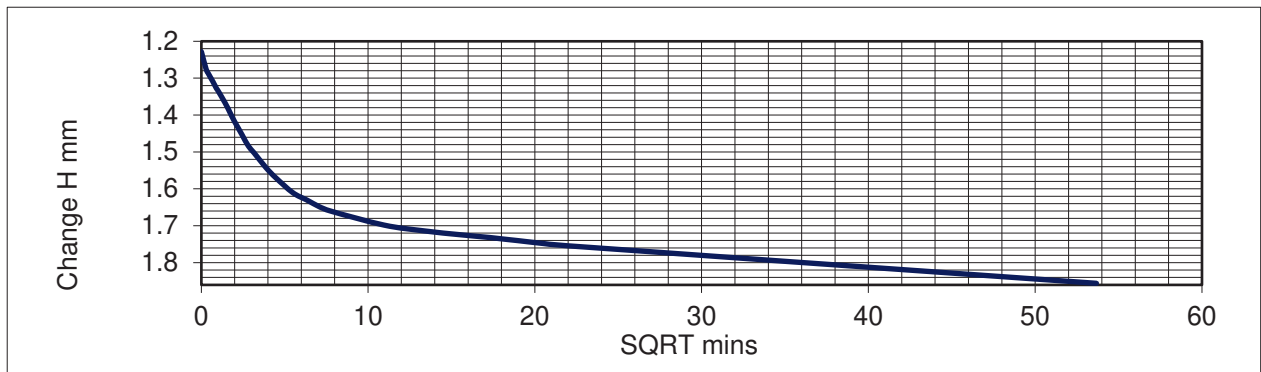
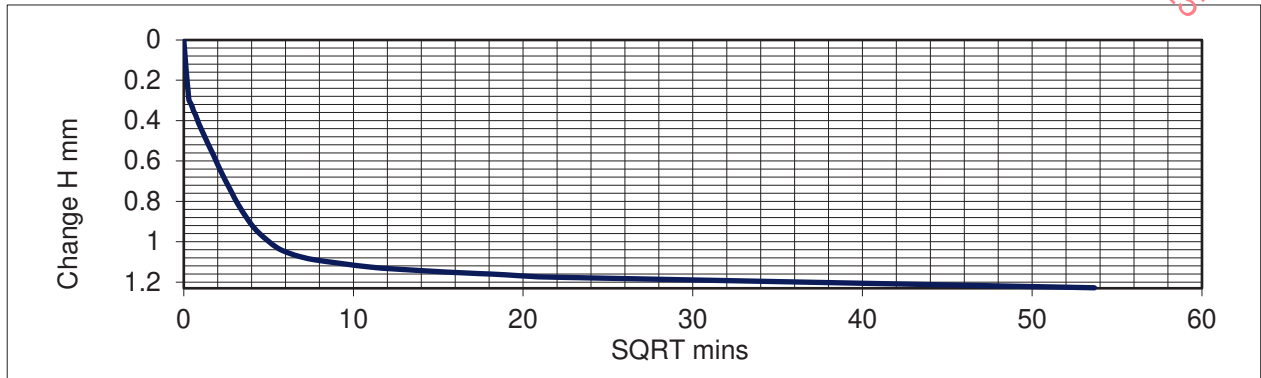
Report No. R152320

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH304 Sample number: 203009

Depth (m): 7.5





One dimensional Consolidation

ISO 17892-5:2017

RECEIVED: 24/03/2025

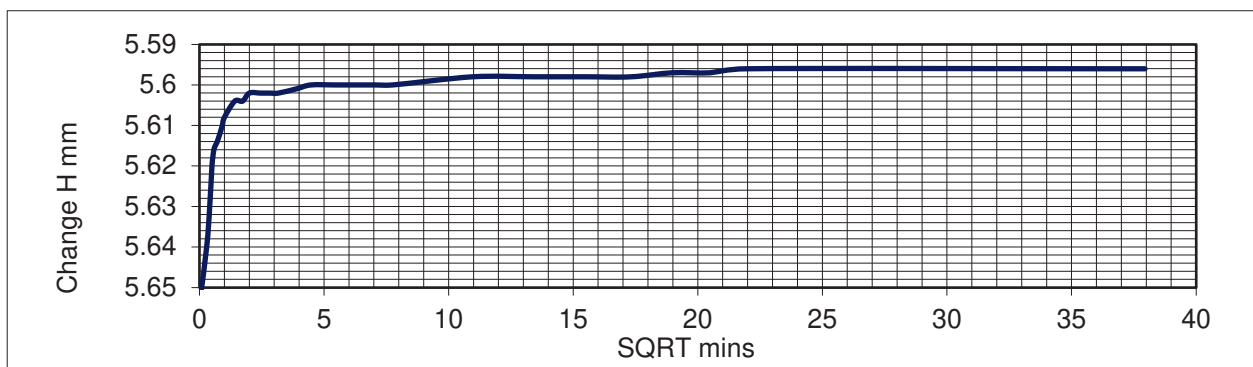
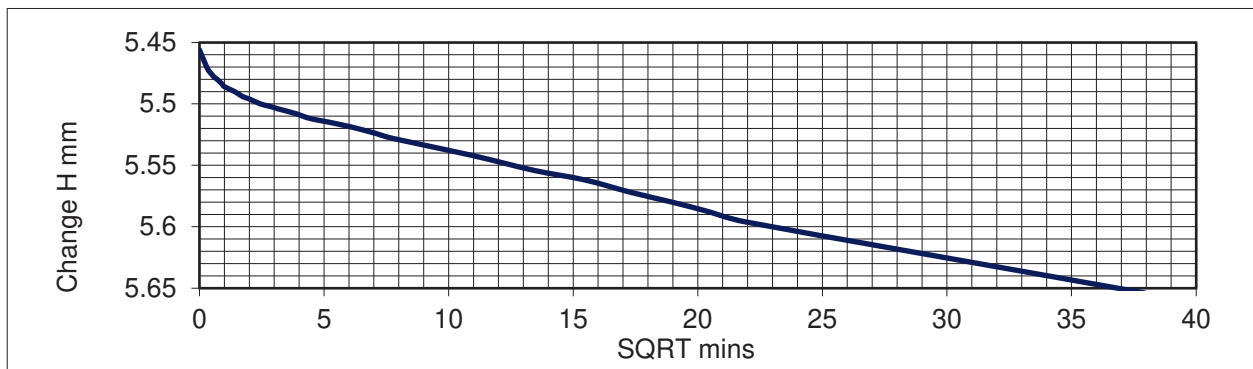
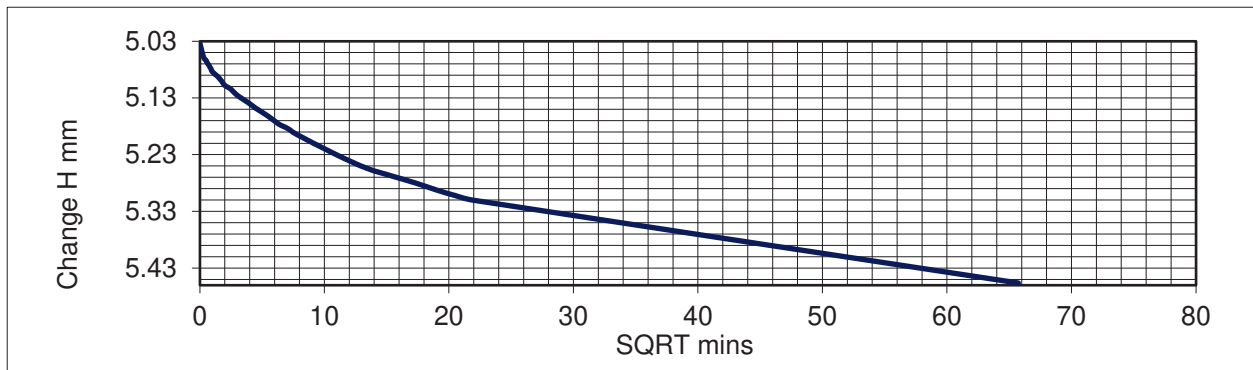
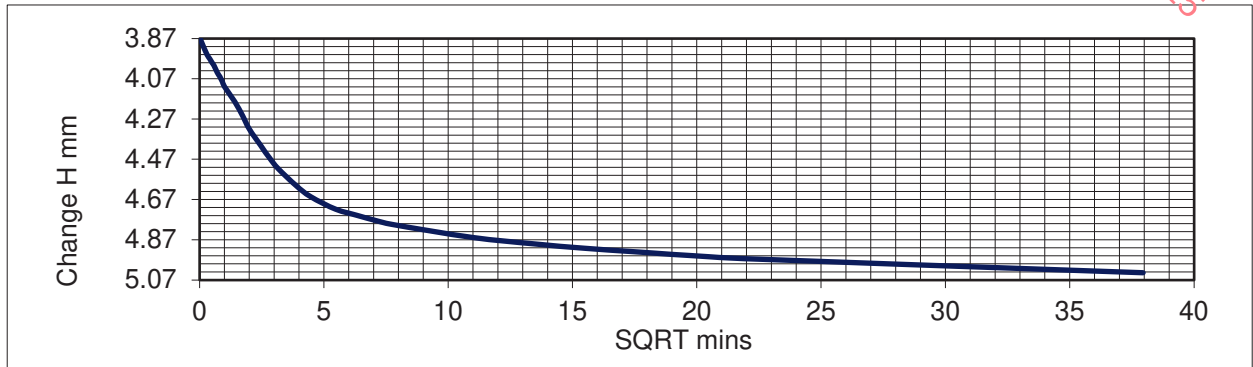
Report No. R152320

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH304 Sample number: 203009

Depth (m): 7.5





Test Report

Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152321

Contract Sea Gardens Bray

Contract Number 24991

Tested using ACONS automatic consolidation system

Client Ballymore/Atkins

BH: 304 Sample No. 203012 Depth (m): 9.50

Description Grey/brown SILT/CLAY with shell fragments

Initial Height (mm) 20.0 Diameter (mm) 75.0 Initial Voids Ratio 1.744

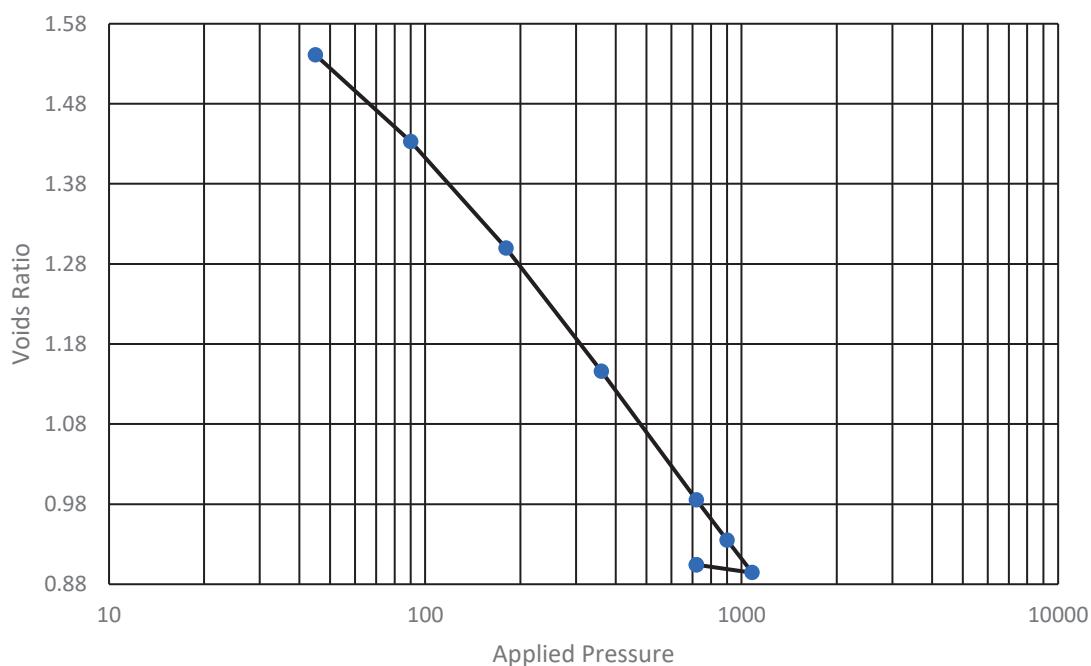
Initial Water Content (%) 65.5 Assumed Particle Density (Mg/m^3) 2.65

Initial Bulk Density (Mg/m^3) 1.60 Initial Dry Density (Mg/m^3) 0.97

Laboratory Temperature: 20 +/- 4 degrees C unless otherwise stated

Preparation: Cutting Ring pushed vertically into sample. Water Content derived from trimmings

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/Year)	Voids Ratio
45	1.648	1.100	1.54096
90	0.947	0.800	1.43273
180	0.608	0.700	1.29965
360	0.371	0.600	1.14595
720	0.208	0.500	0.98559
900	0.142	0.200	0.93493
1080	0.116	0.100	0.89464
720	-	-	0.90437



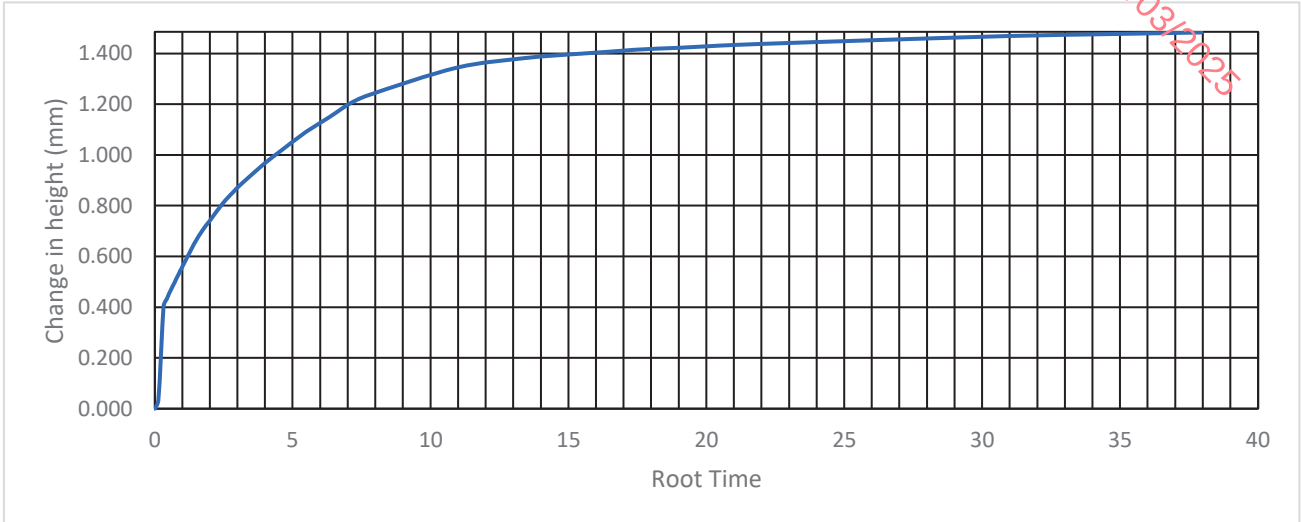


Test Report

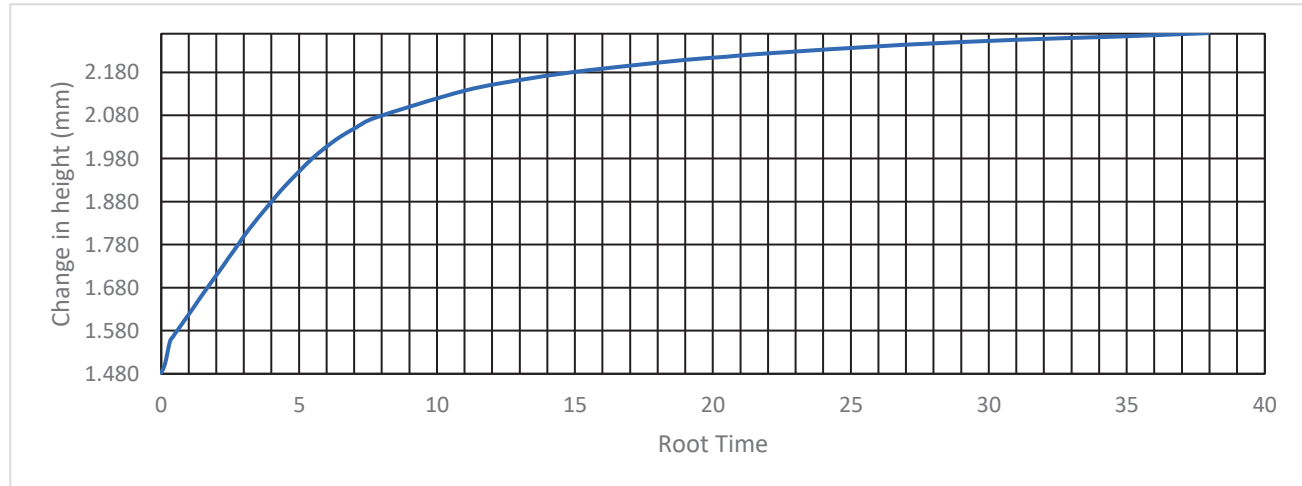
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152321

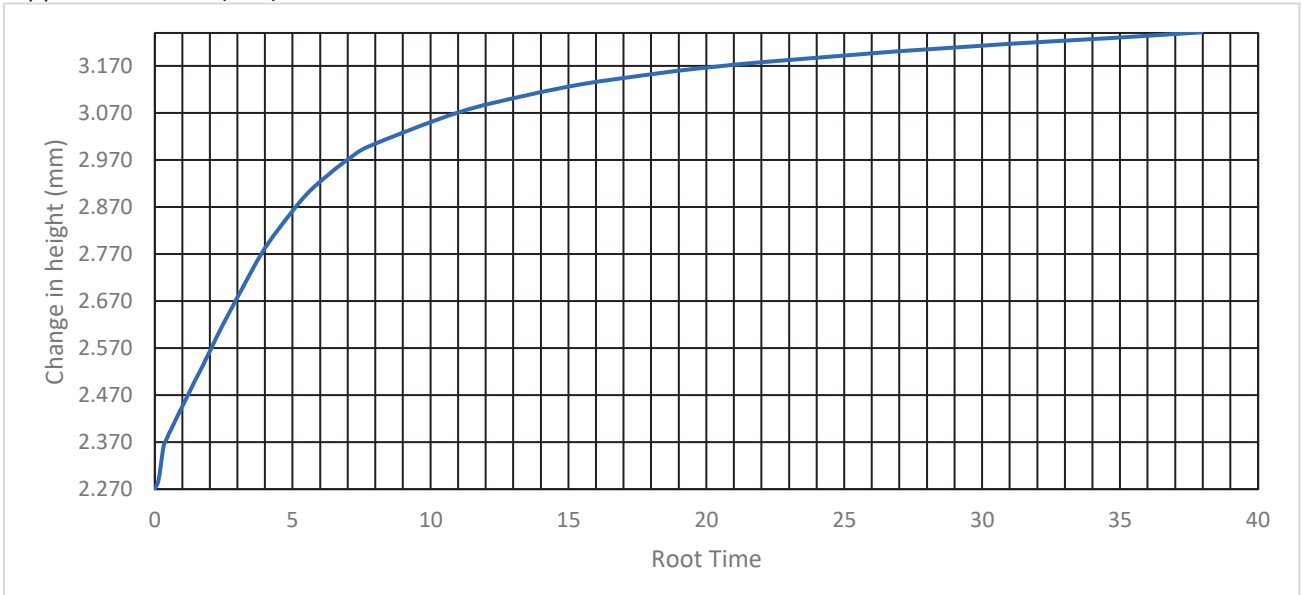
Applied Pressure (kPa) 45



Applied Pressure (kPa) 90



Applied Pressure (kPa) 180



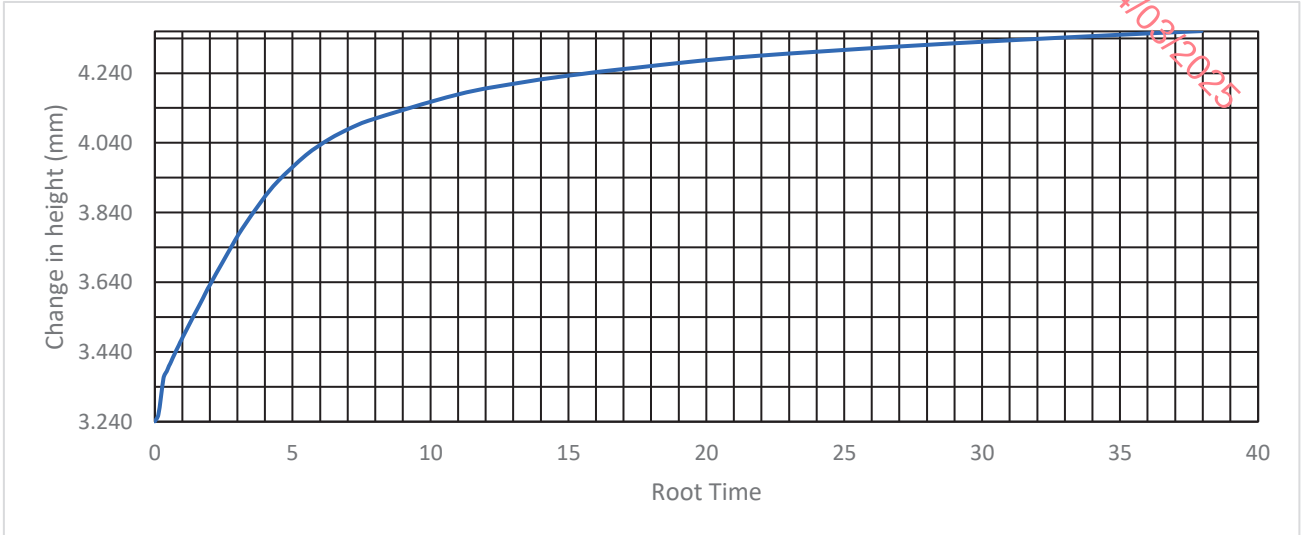


Test Report

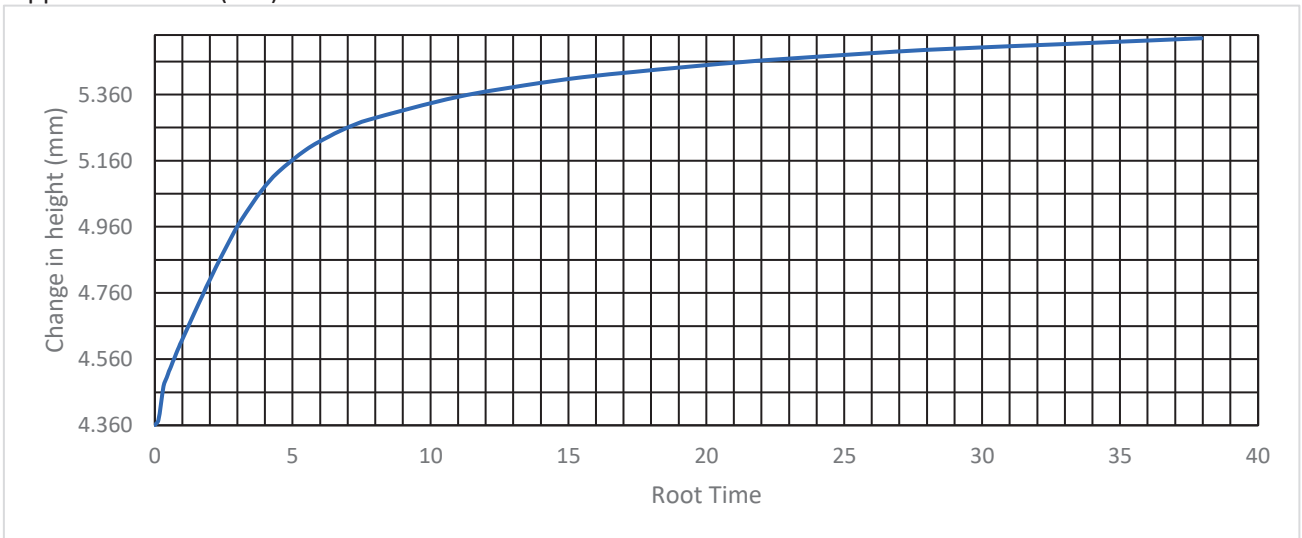
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152321

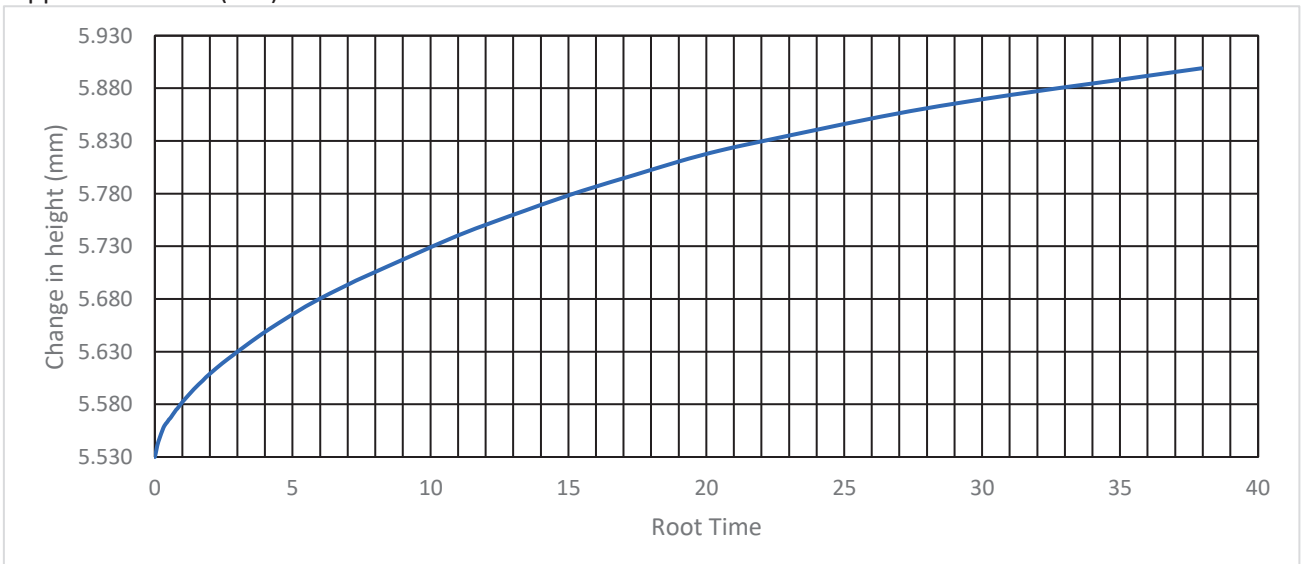
Applied Pressure (kPa) 360



Applied Pressure (kPa) 720



Applied Pressure (kPa) 900



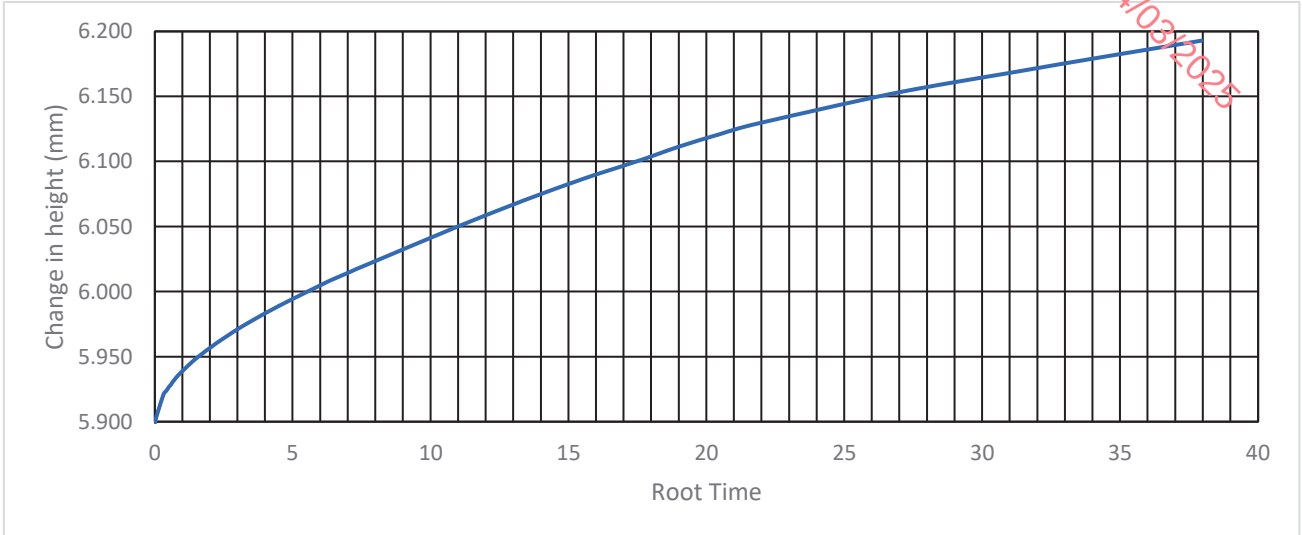


Test Report

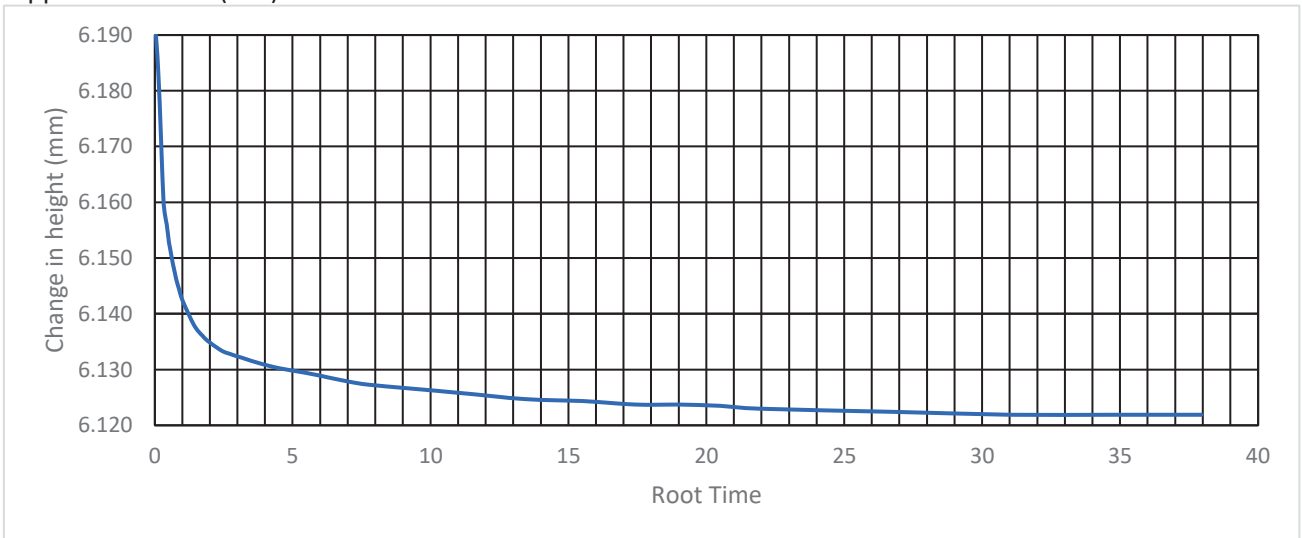
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152321

Applied Pressure (kPa) 1080



Applied Pressure (kPa) 720





Test Report

Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152322

Contract Sea Gardens Bray

Contract Number 24991

Tested using ACONS automatic consolidation system

Client Ballymore/Atkins

BH: 305

Sample No.

197076

Depth (m):

4.50

Description Grey very sandy SILT/CLAY with fresh organics

Initial Height (mm)

20.0

Diameter (mm)

75.0

Initial Voids Ratio

1.232

Initial Water Content (%)

52.8

Assumed Particle Density (Mg/m^3)

2.40

Initial Bulk Density (Mg/m^3)

1.64

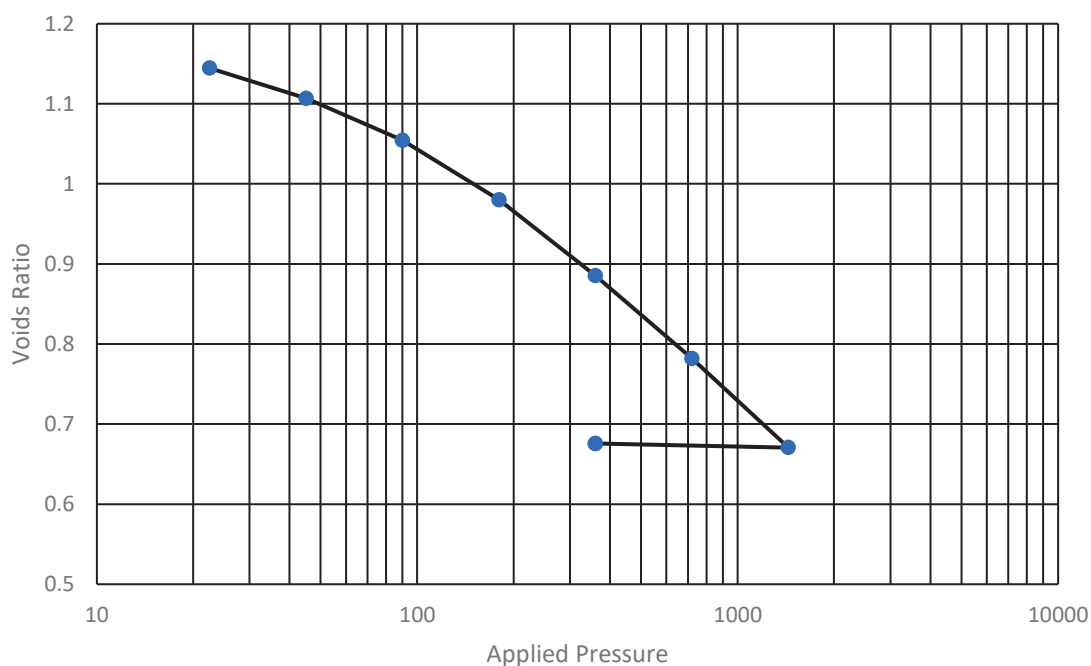
Initial Dry Density (Mg/m^3)

1.08

Laboratory Temperature: 20 +/- 4 degrees C unless otherwise stated

Preparation: Cutting Ring pushed vertically into sample. Water Content derived from trimmings

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/Year)	Voids Ratio
22.5	1.733	188.000	1.14468
45	0.783	100.100	1.10692
90	0.554	87.400	1.05443
180	0.402	60.000	0.98019
360	0.266	37.000	0.88529
720	0.152	33.100	0.78183
1440	0.086	26.000	0.67095
360	-	-	0.67593



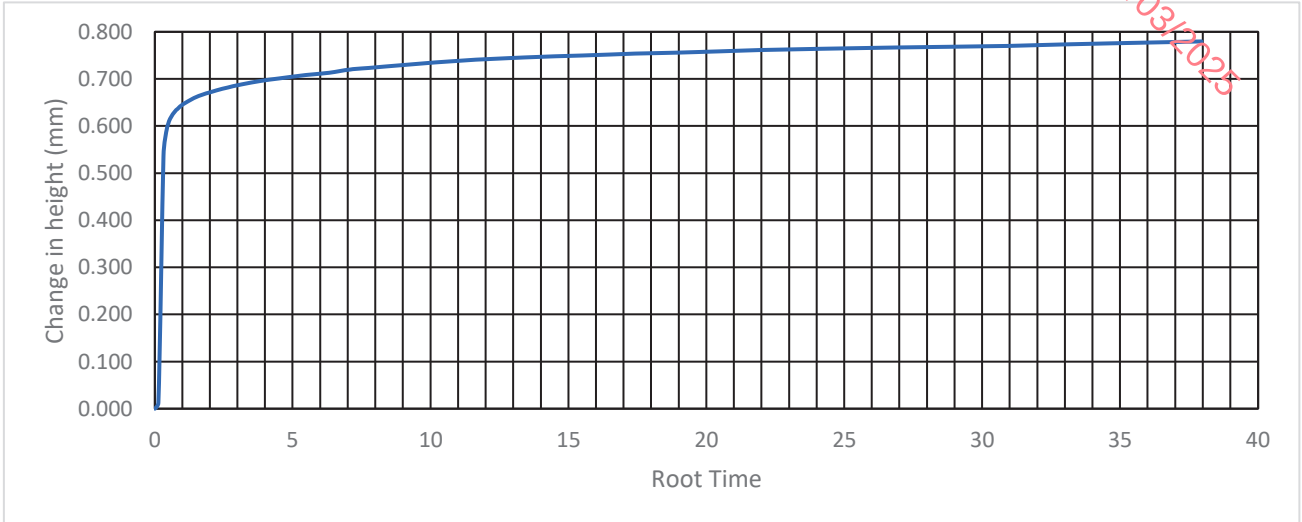


Test Report

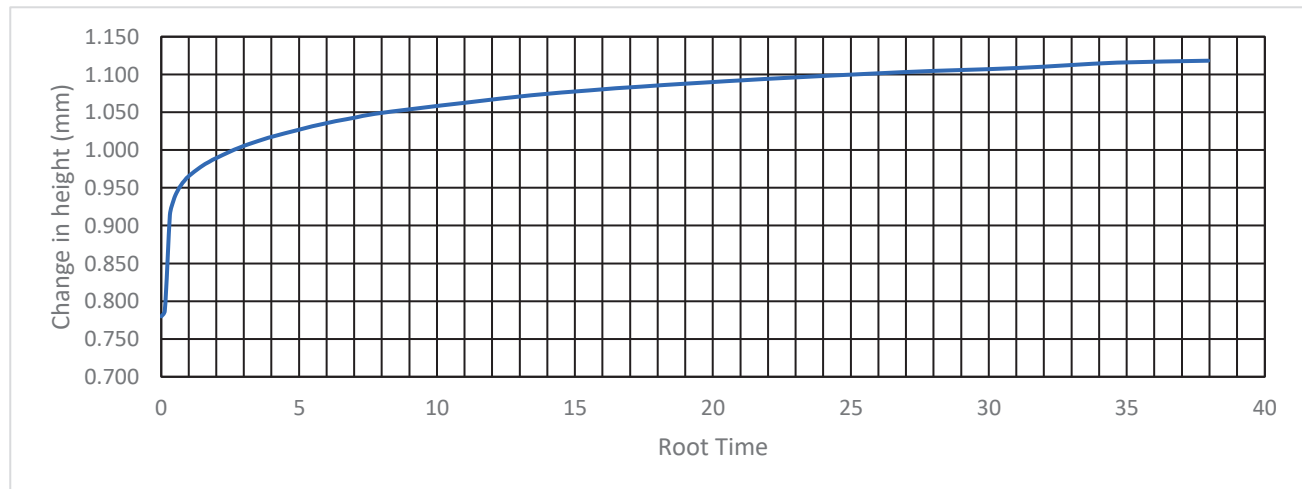
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152322

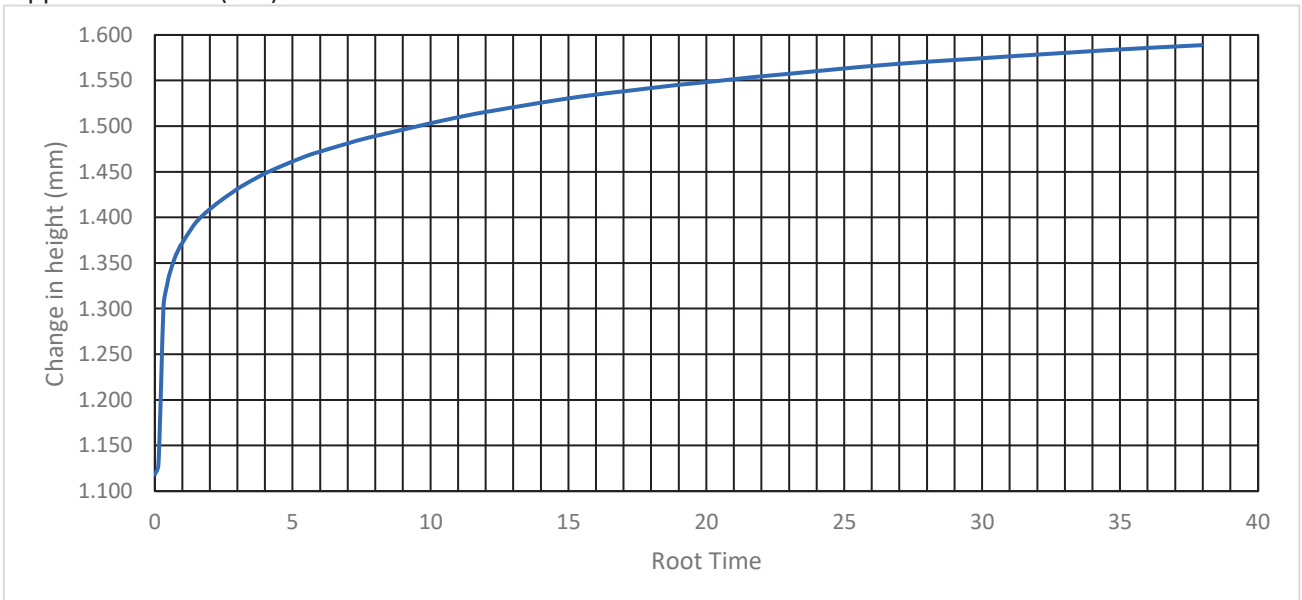
Applied Pressure (kPa) 22.5



Applied Pressure (kPa) 45



Applied Pressure (kPa) 90



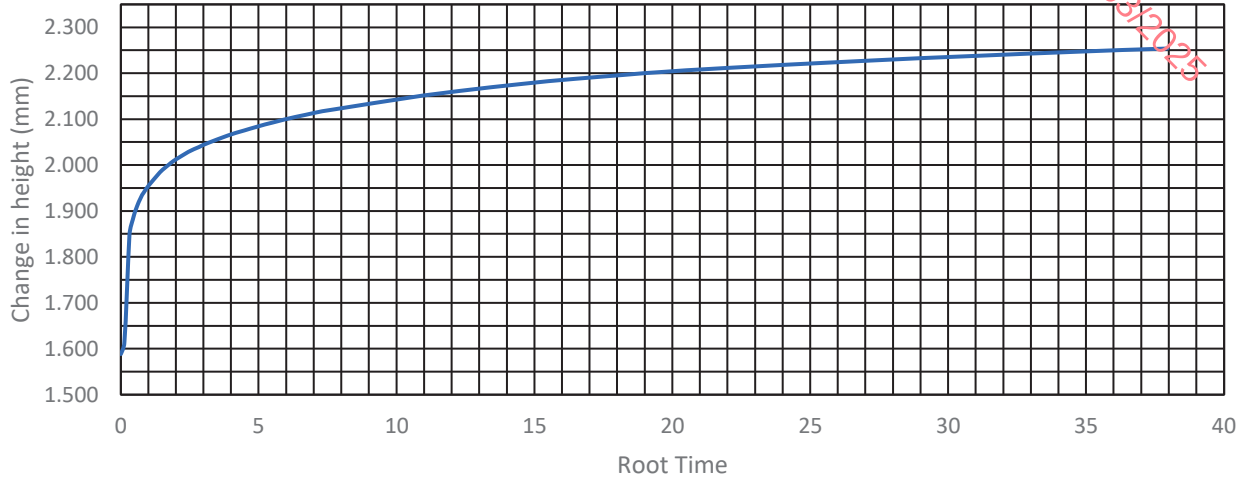


Test Report

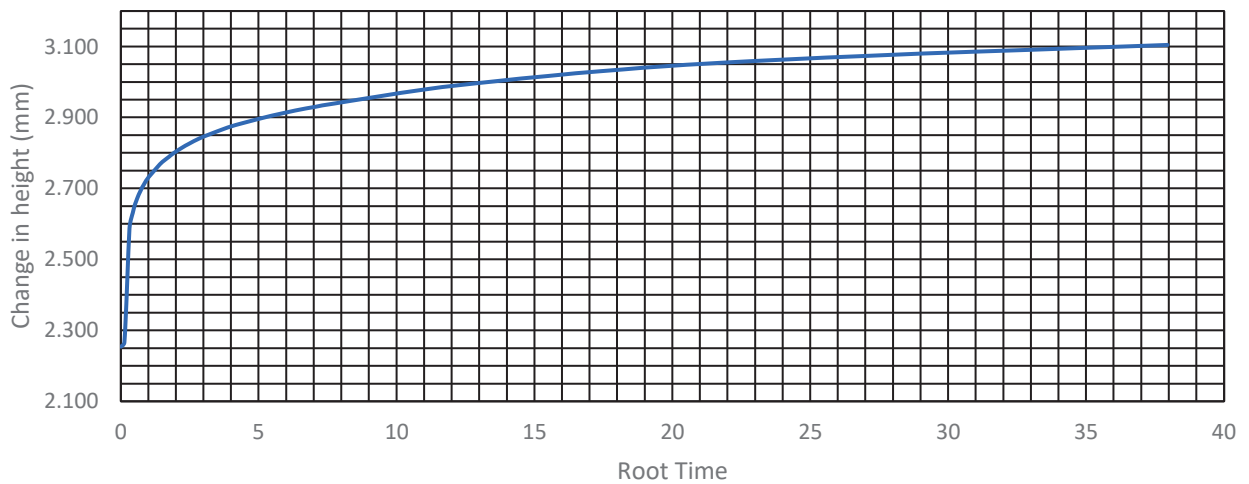
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152322

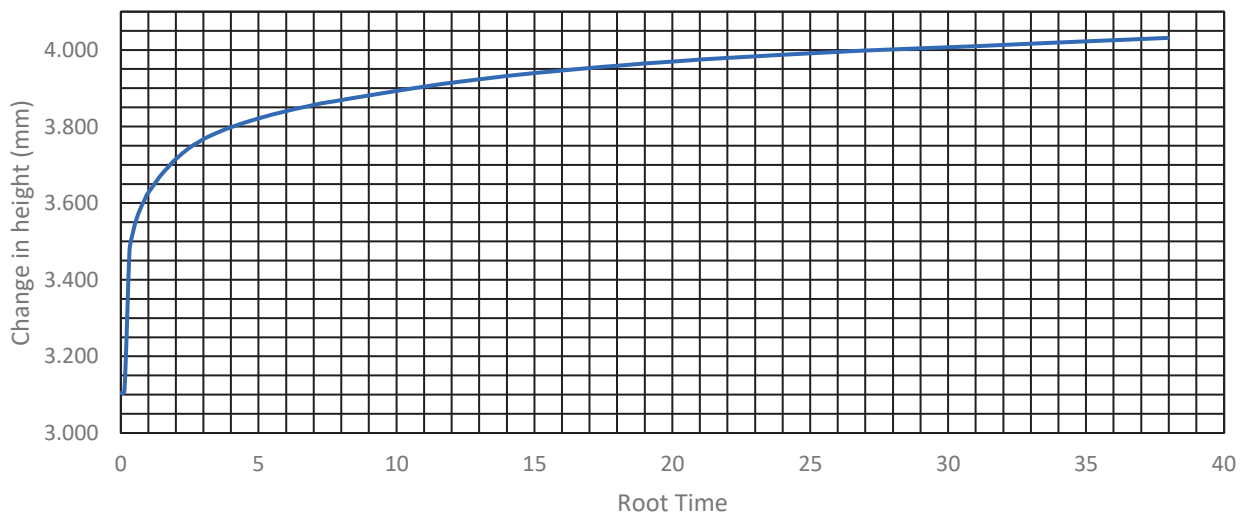
Applied Pressure (kPa) 180



Applied Pressure (kPa) 360



Applied Pressure (kPa) 720



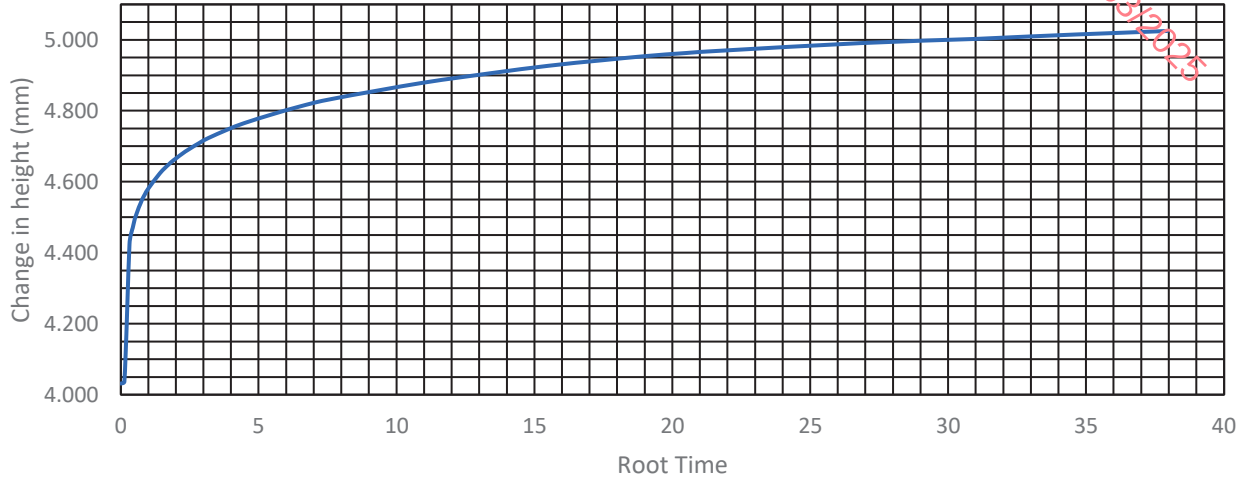


Test Report

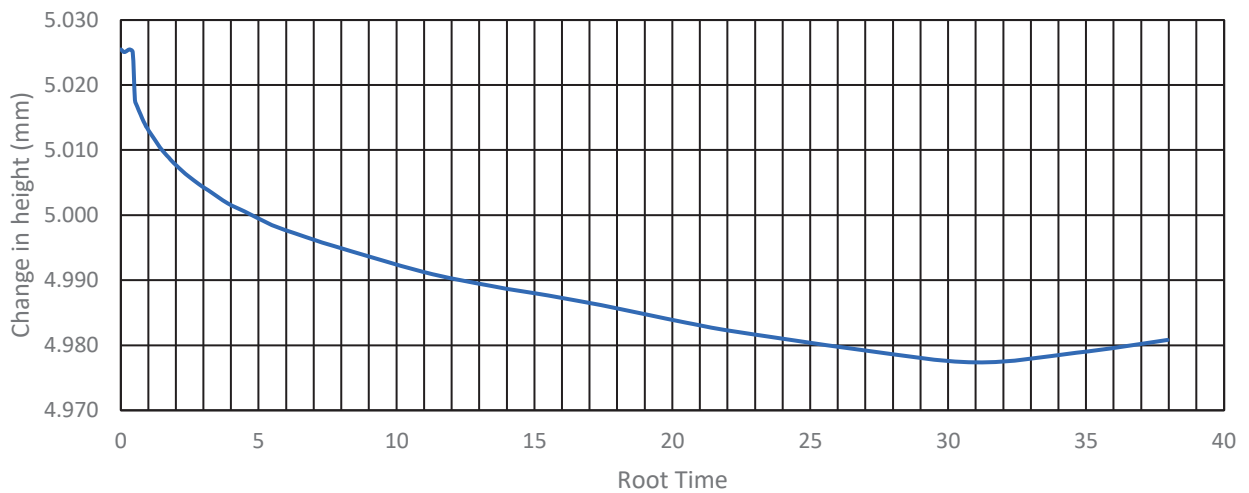
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152322

Applied Pressure (kPa) 1440



Applied Pressure (kPa) 360





Test Report

Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152323

Contract Sea Gardens Bray

Contract Number 24991

Tested using ACONS automatic consolidation system

Client Ballymore/Atkins

BH: 305 Sample No. 197079 Depth (m): 6.50

Description Grey/brown slightly sandy CLAY with very occasional shell fragments

Initial Height (mm) 20.0 Diameter (mm) 75.0 Initial Voids Ratio 1.126

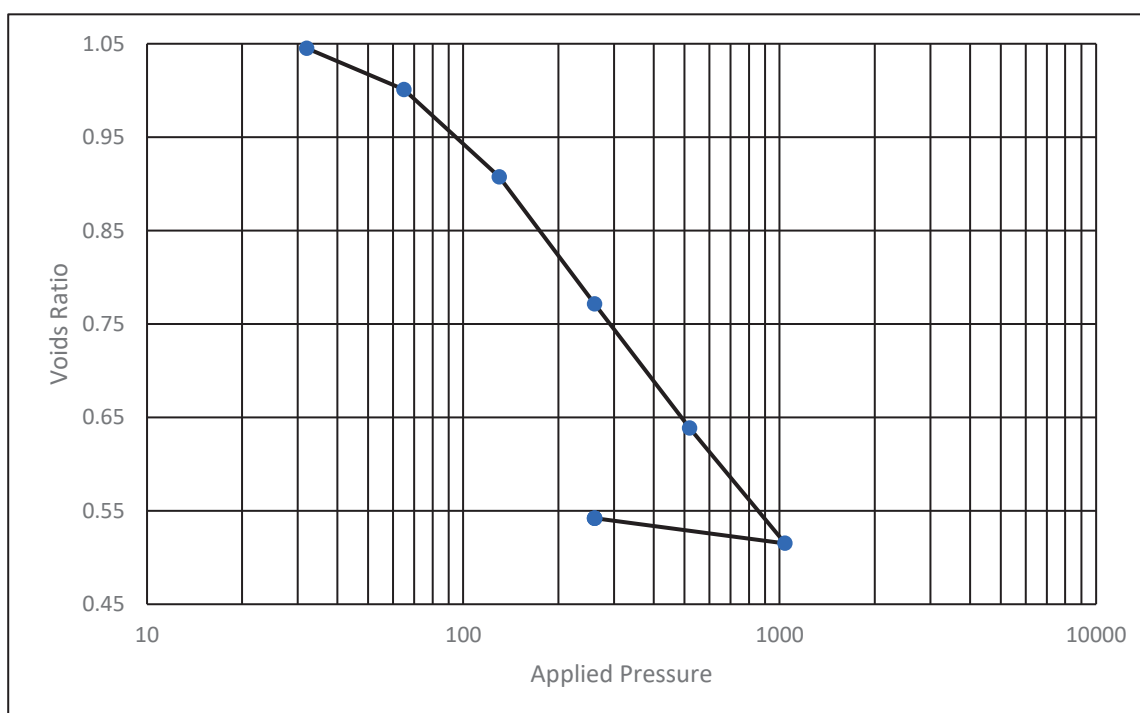
Initial Water Content (%) 52.1 Assumed Particle Density (Mg/m^3) 2.40

Initial Bulk Density (Mg/m^3) 1.72 Initial Dry Density (Mg/m^3) 1.13

Laboratory Temperature: 20 +/- 4 degrees C unless otherwise stated

Preparation: Cutting Ring pushed vertically into sample. Water Content derived from trimmings

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/Year)	Voids Ratio
32	1.185	5.400	1.04512
65	0.657	4.000	1.00077
130	0.718	2.300	0.90742
260	0.548	1.700	0.77145
520	0.288	1.400	0.63860
1040	0.145	1.200	0.51528
260	0.023	-	0.54202



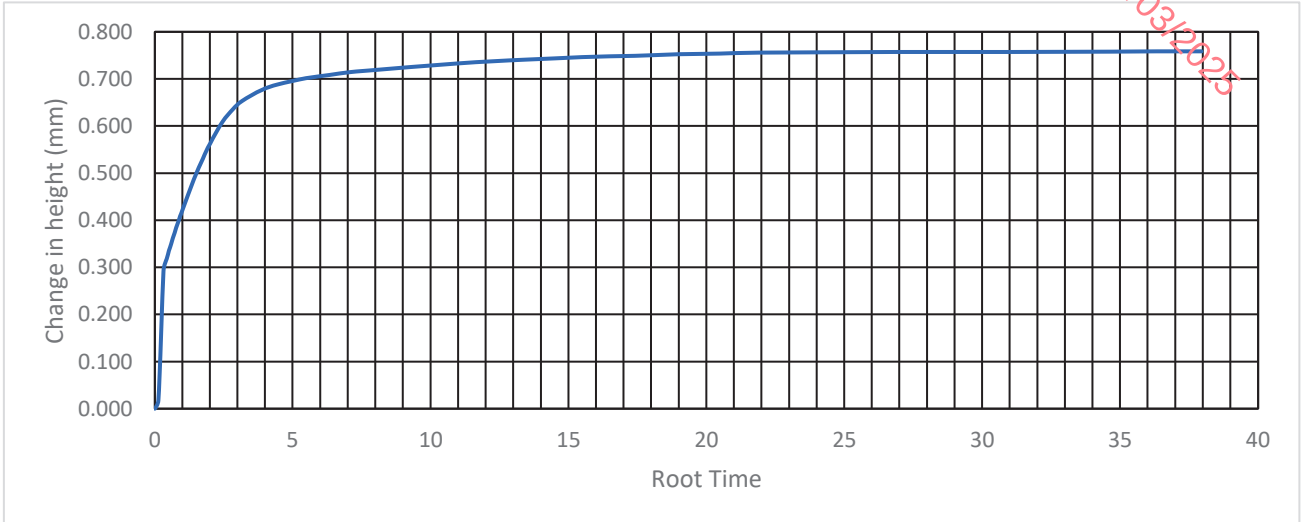


Test Report

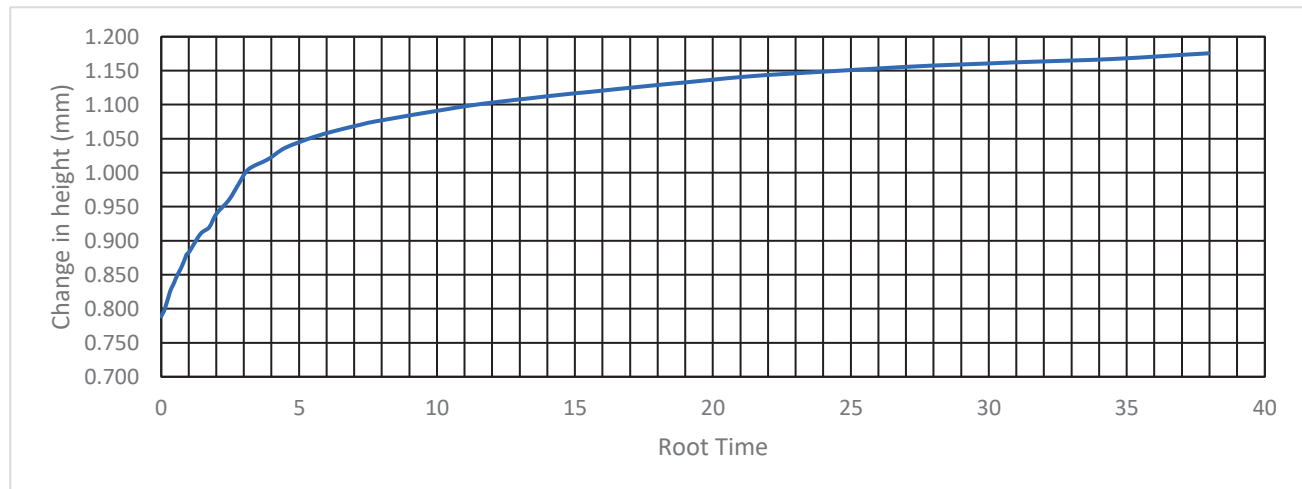
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152323

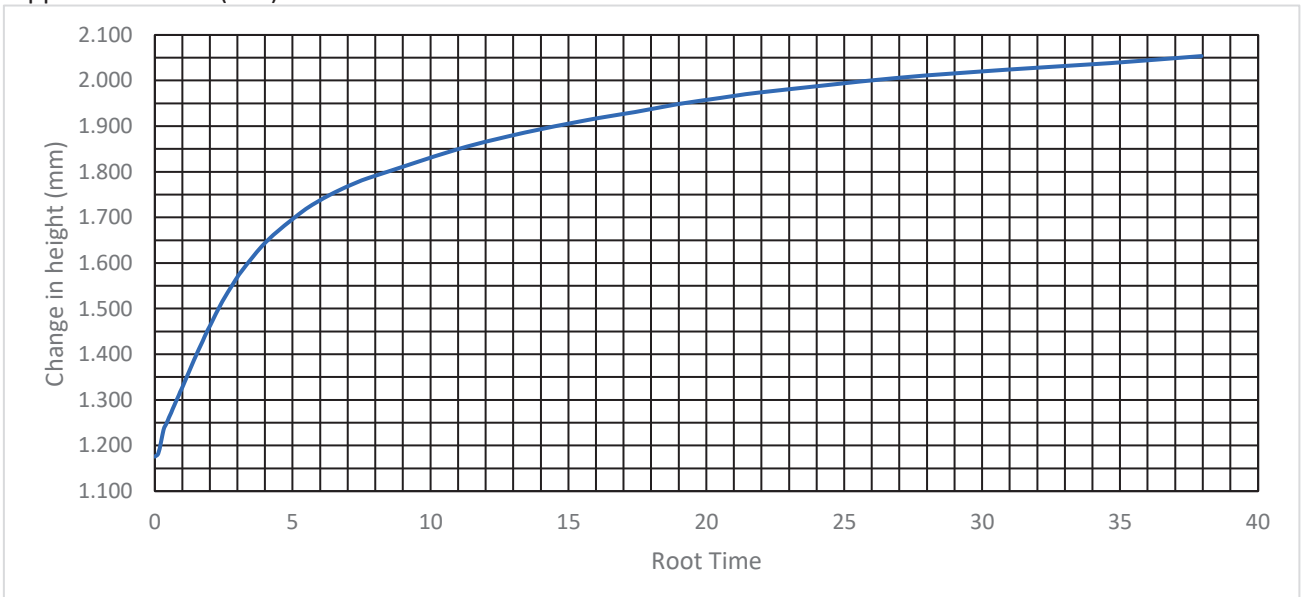
Applied Pressure (kPa) 32



Applied Pressure (kPa) 65



Applied Pressure (kPa) 130



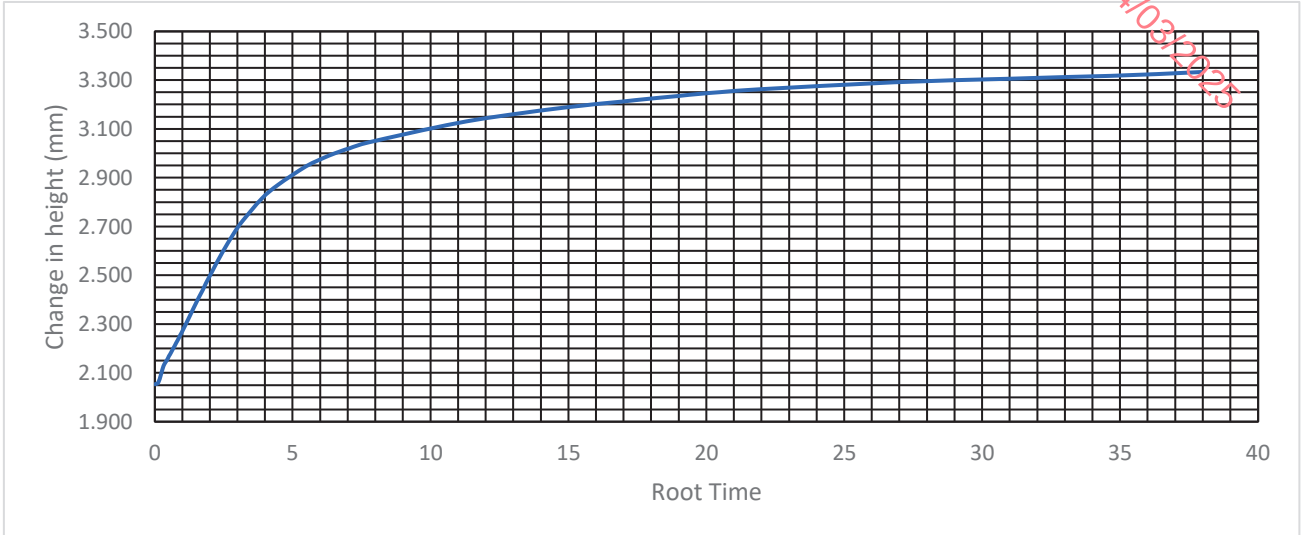


Test Report

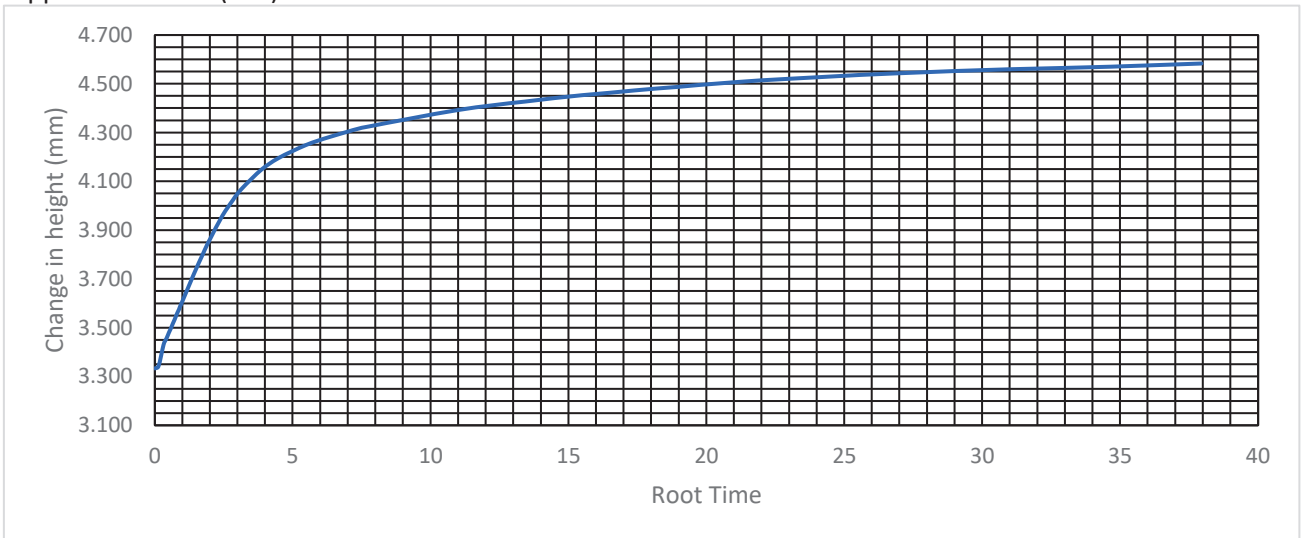
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152323

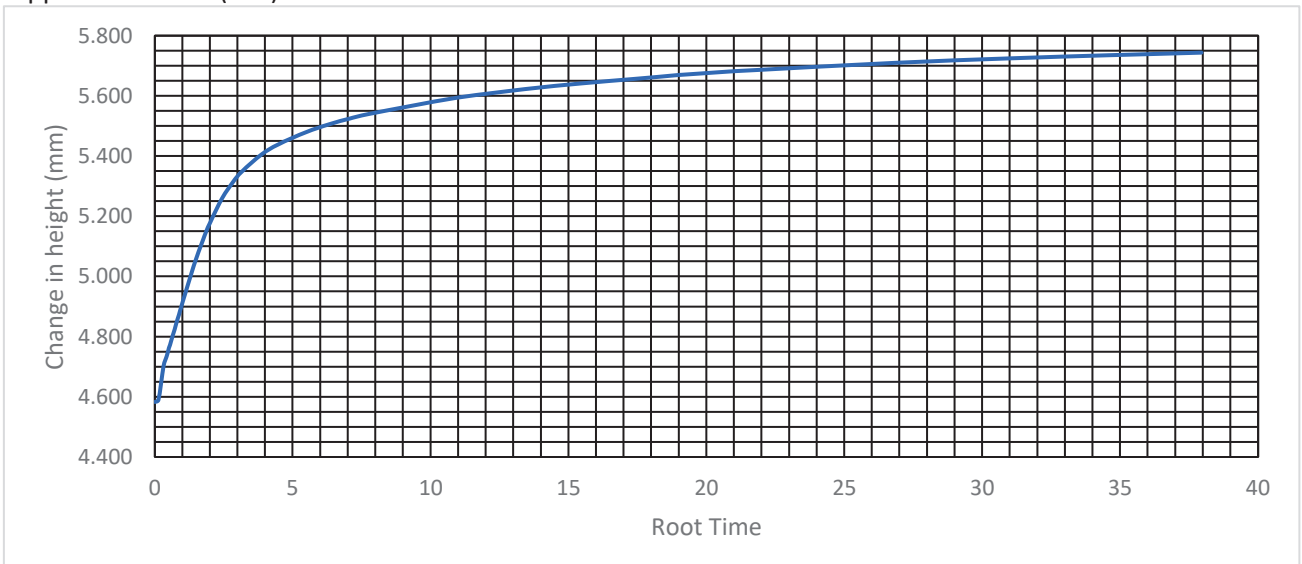
Applied Pressure (kPa) 260



Applied Pressure (kPa) 520



Applied Pressure (kPa) 1040



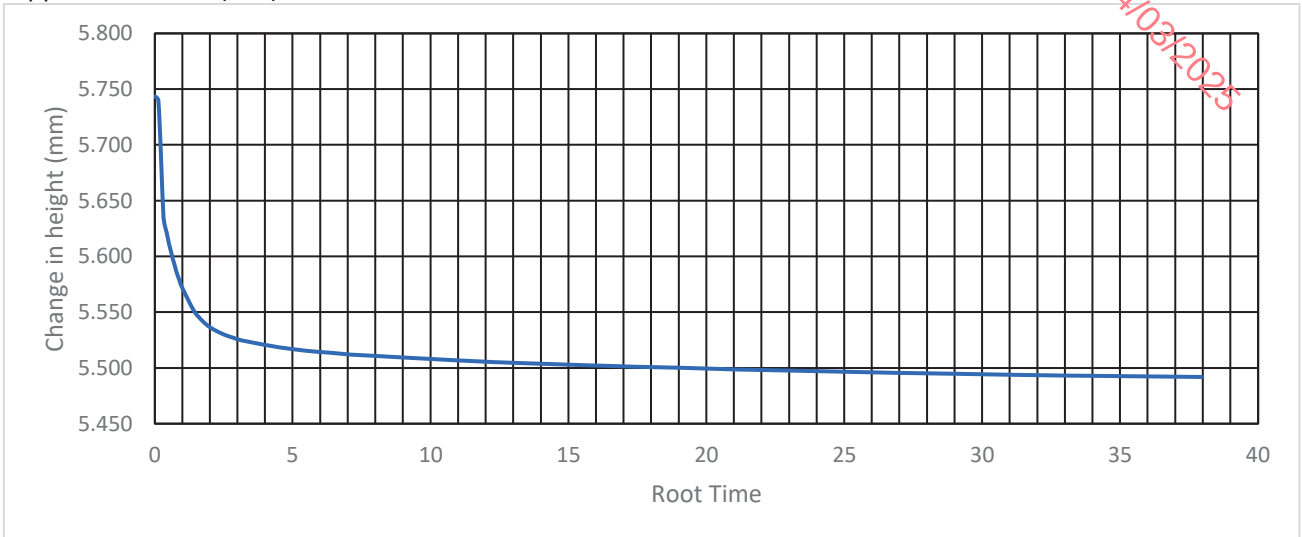


Test Report

Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152323

Applied Pressure (kPa) 260





Test Report

Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152324

Contract Sea Gardens Bray

Contract Number 24991

Tested using ACONS automatic consolidation system

Client Ballymore/Atkins

BH: 306 Sample No. 197060 Depth (m): 5.50

Description Dark grey/brown slightly sandy SILT/CLAY with shell fragments

Initial Height (mm) 20.0 Diameter (mm) 75.0 Initial Voids Ratio 0.891

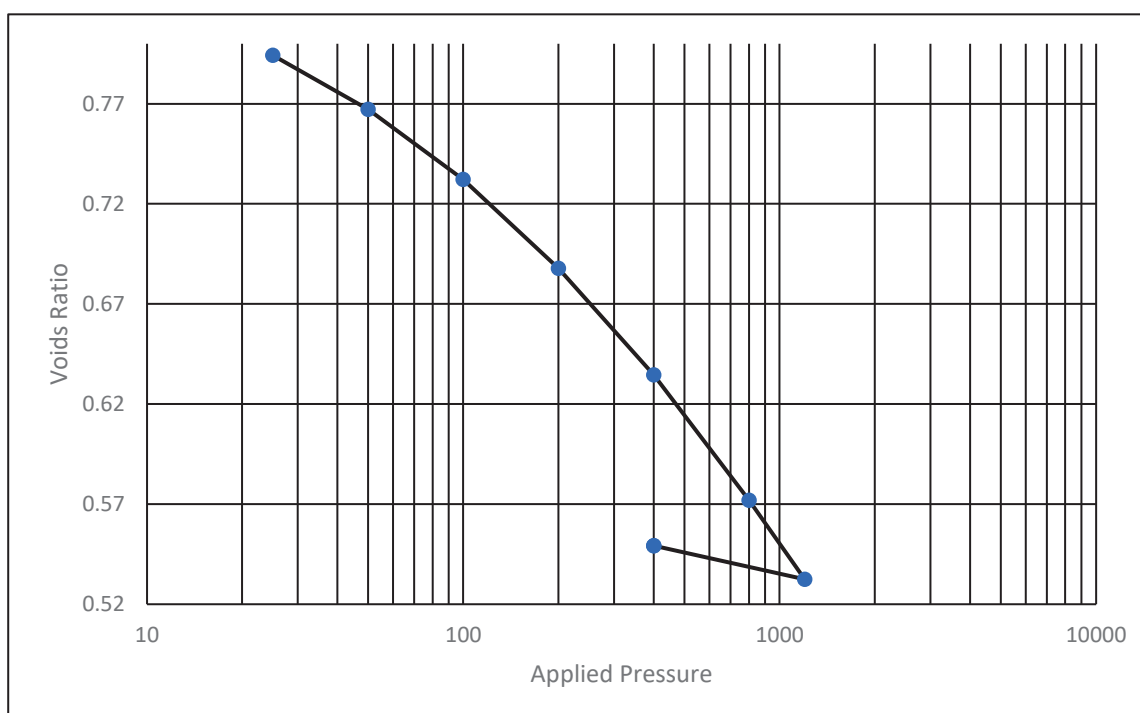
Initial Water Content (%) 43.5 Assumed Particle Density (Mg/m^3) 2.40

Initial Bulk Density (Mg/m^3) 1.82 Initial Dry Density (Mg/m^3) 1.27

Laboratory Temperature: 20 +/- 4 degrees C unless otherwise stated

Preparation: Cutting Ring pushed vertically into sample. Water Content derived from trimmings

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/Year)	Voids Ratio
25	2.054	3.500	0.79425
50	0.605	3.300	0.76712
100	0.395	3.100	0.73219
200	0.257	2.400	0.68773
400	0.158	2.000	0.63449
800	0.096	1.300	0.57192
1200	0.063	0.900	0.53251
400	-	-	0.54931



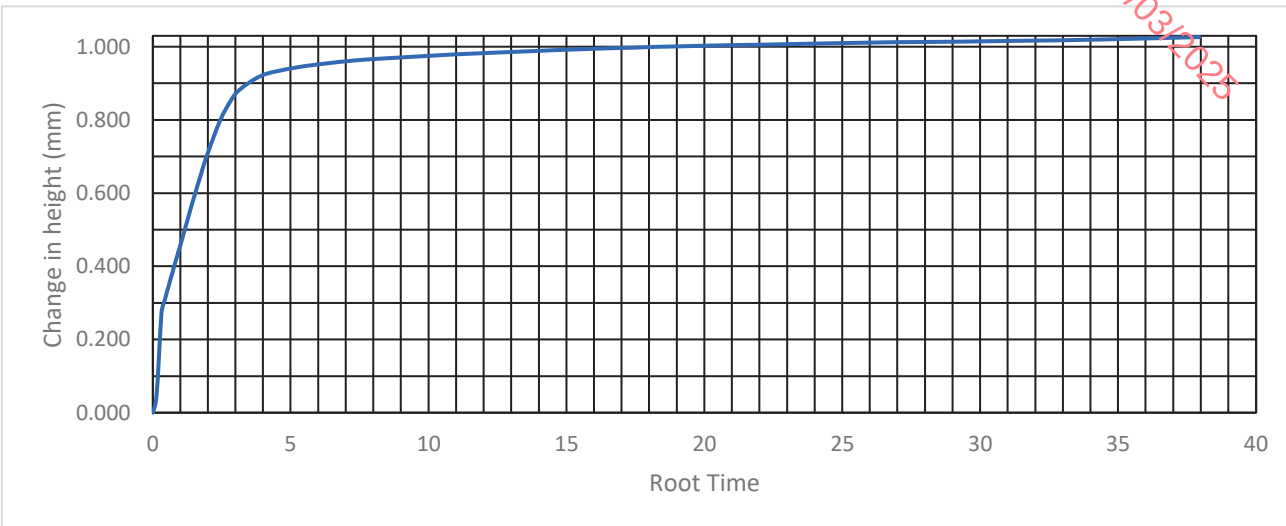


Test Report

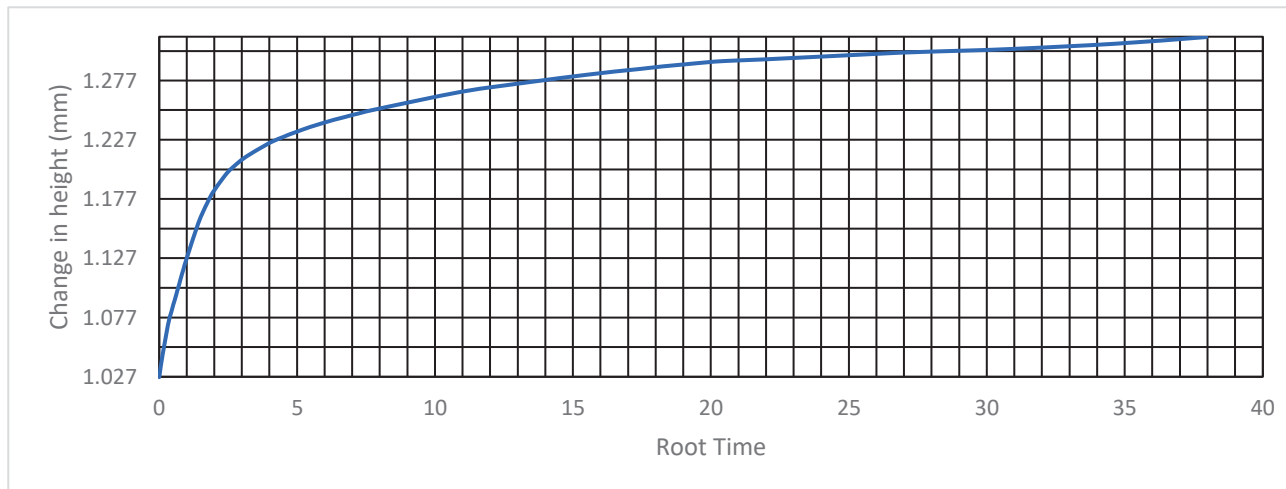
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152324

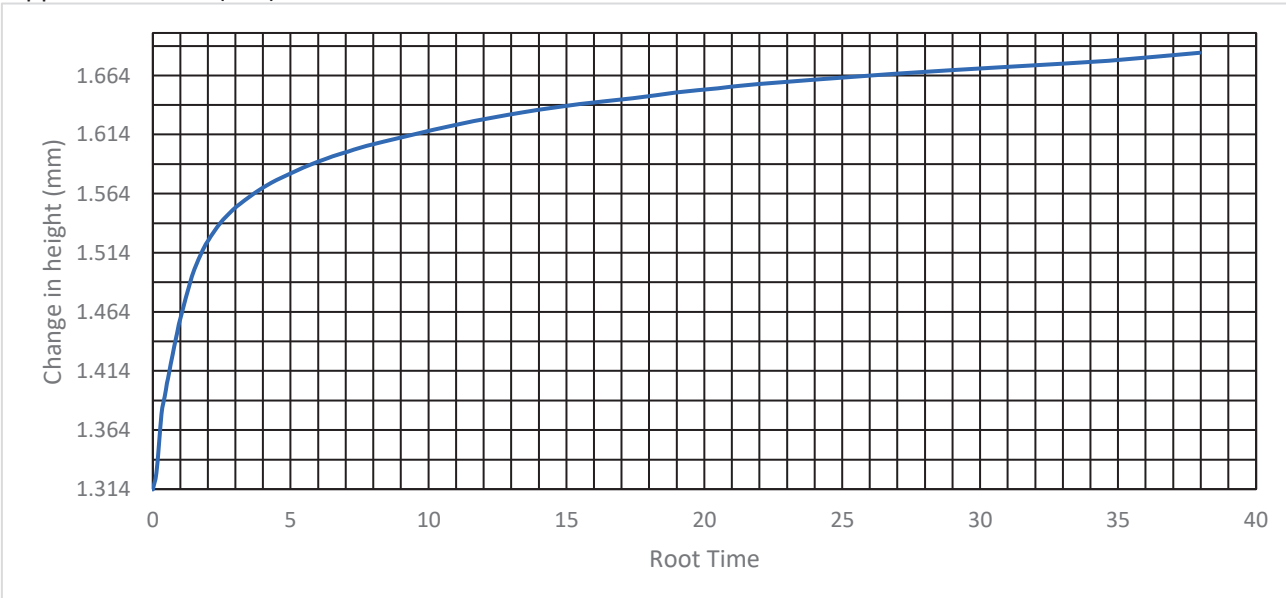
Applied Pressure (kPa) 25



Applied Pressure (kPa) 50



Applied Pressure (kPa) 100



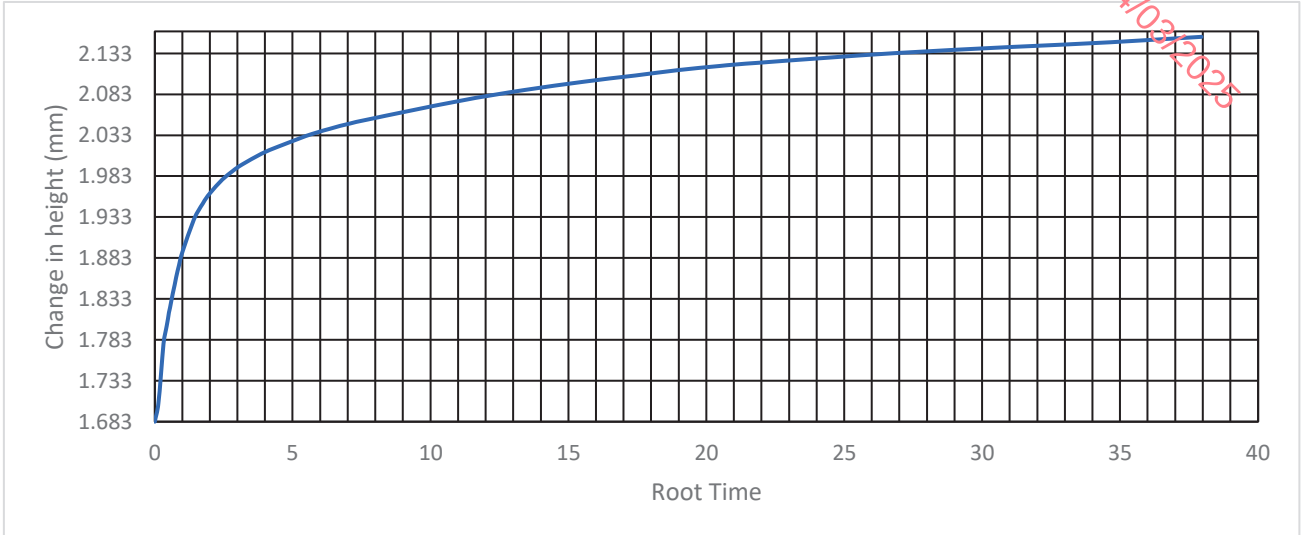


Test Report

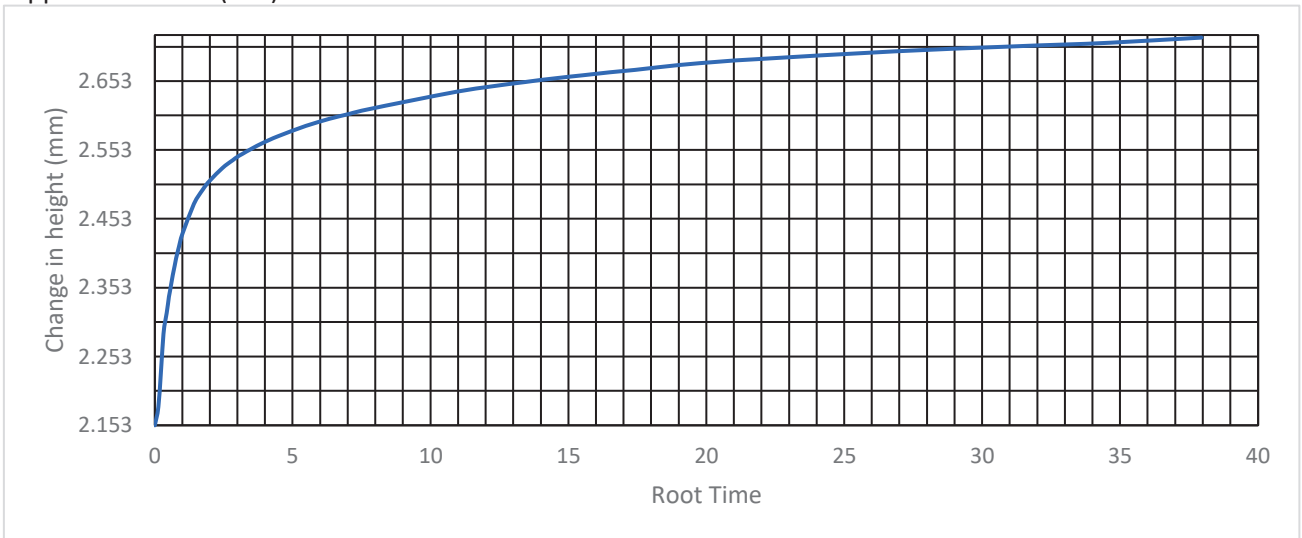
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152324

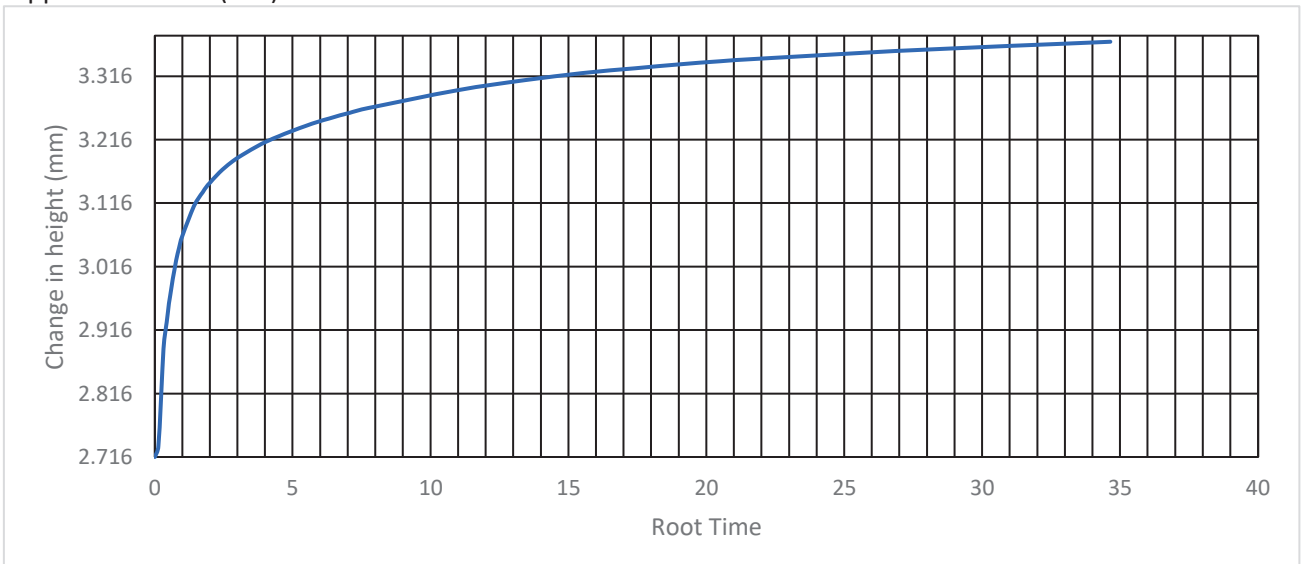
Applied Pressure (kPa) 200



Applied Pressure (kPa) 400



Applied Pressure (kPa) 800



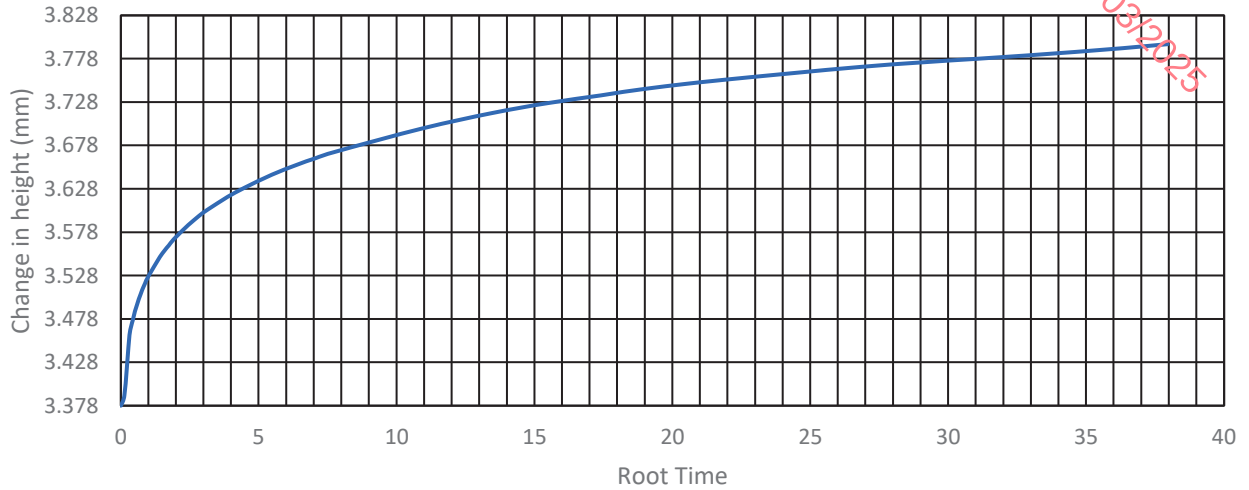


Test Report

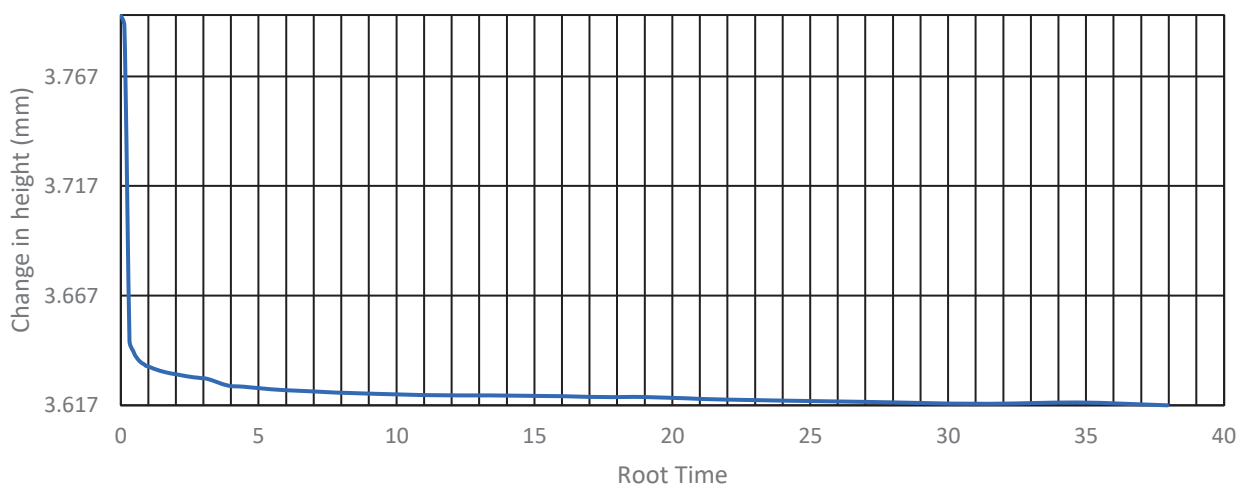
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152324

Applied Pressure (kPa) 1200



Applied Pressure (kPa) 400





One dimensional Consolidation

ISO 17892-5:2017

RECEIVED: 24/03/2025

Report No. R152325

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH306 Sample number: 197062

Depth (m): 6.5

Description Brown slightly sandy organic SILT/CLAY

Specimen Height (mm) 20.00 Specimen diameter (mm) 75.10

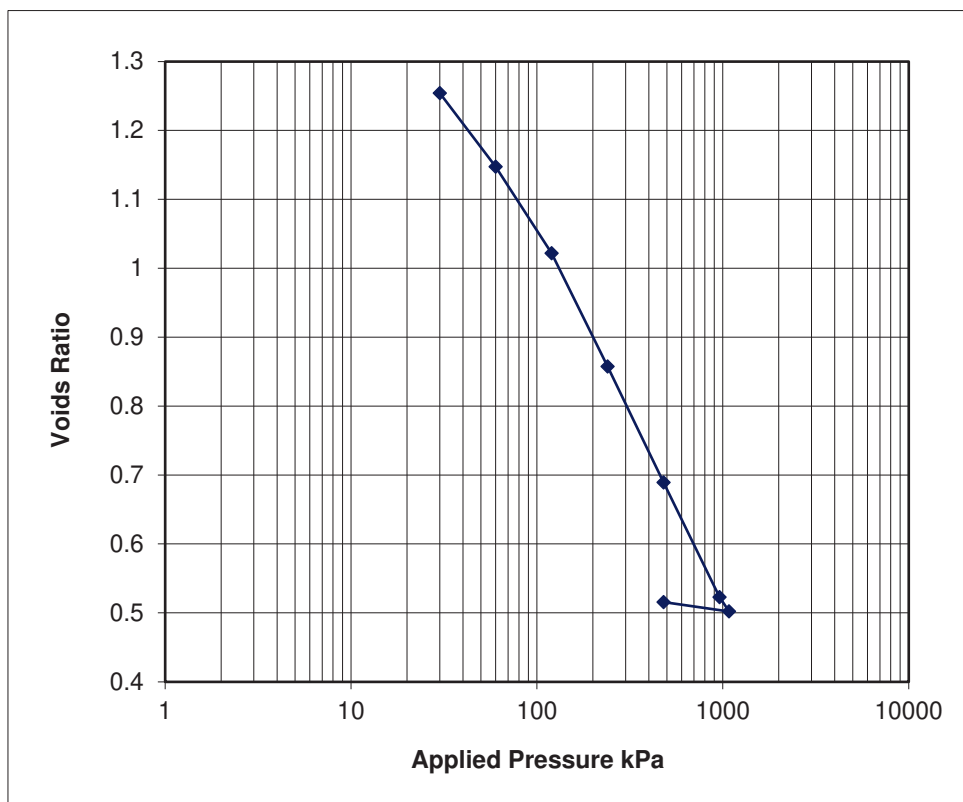
Water content %
Bulk density Mg/m^3
Dry density Mg/m^3
Voids ratio

Initial
60.4
1.59
0.99
1.419

Specimen Preparation:
The cutting ring was
pushed vertically into
an undisturbed sample.
Initial water content was
determined from the
trimmings.

Assumed Particle density Mg/m^3 2.40

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/year)	Voids Ratio
0 - 30	2.273	41.424	1.25419
30 - 60	1.581	25.516	1.14726
60 - 120	0.975	10.174	1.02170
120 - 240	0.677	7.135	0.85744
240 - 480	0.377	3.817	0.68931
480 - 960	0.205	2.895	0.52287
960 - 1080	0.114	1.695	0.50207
1080 - 480	-	-	0.51561





One dimensional Consolidation

ISO 17892-5:2017

RECEIVED: 24/03/2025

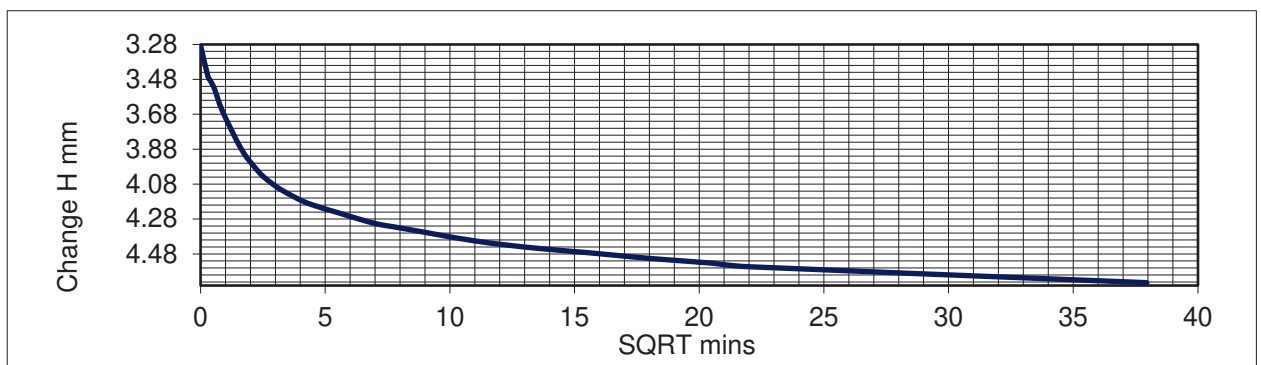
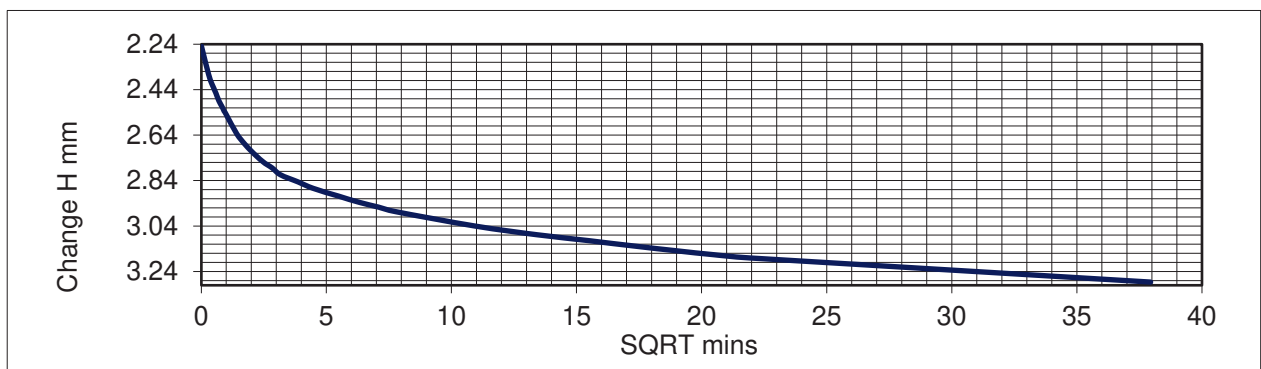
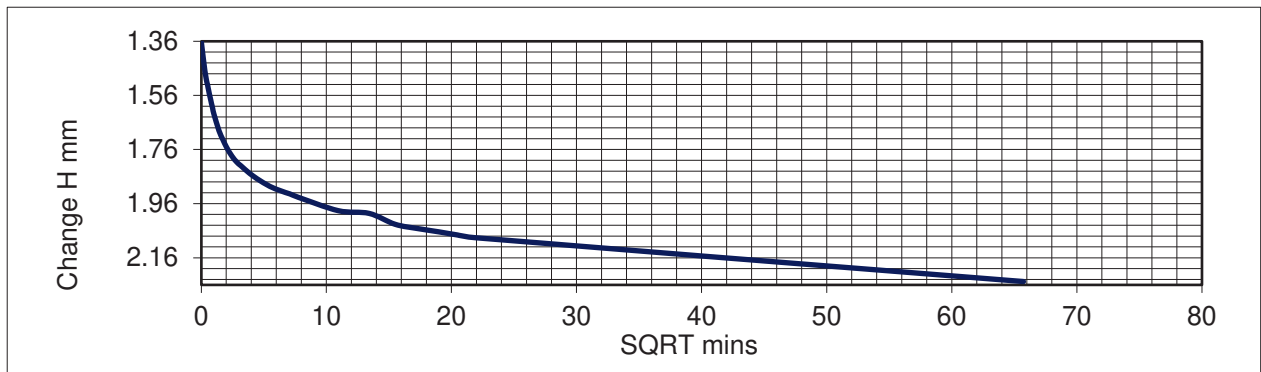
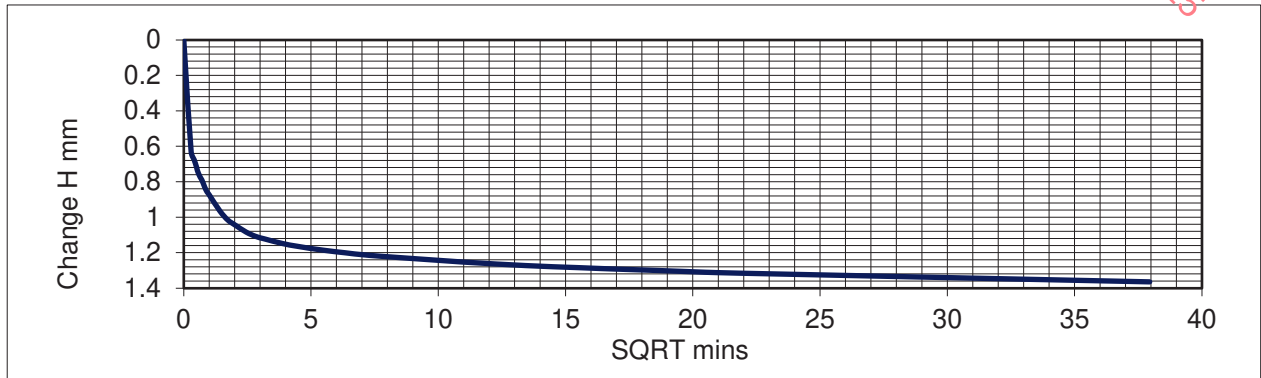
Report No. R152325

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH306 Sample number: 197062

Depth (m): 6.5





One dimensional Consolidation

ISO 17892-5:2017

RECEIVED: 24/03/2025

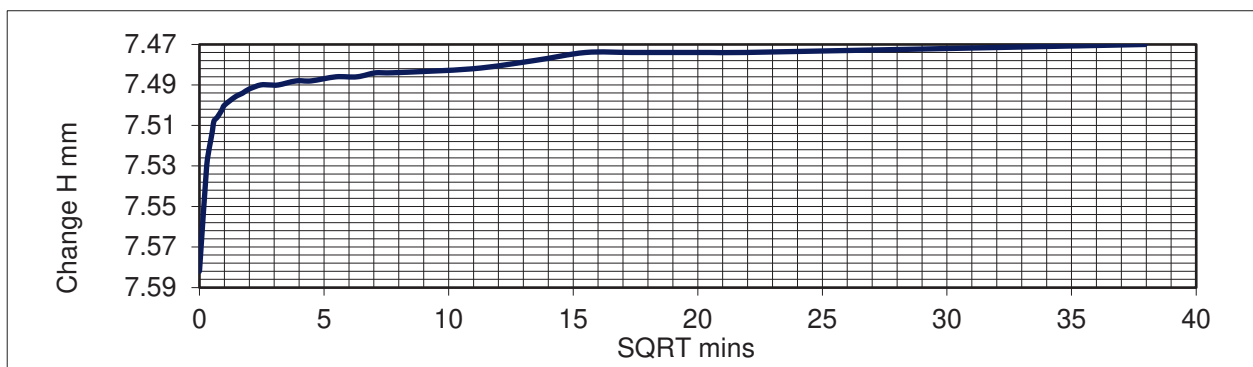
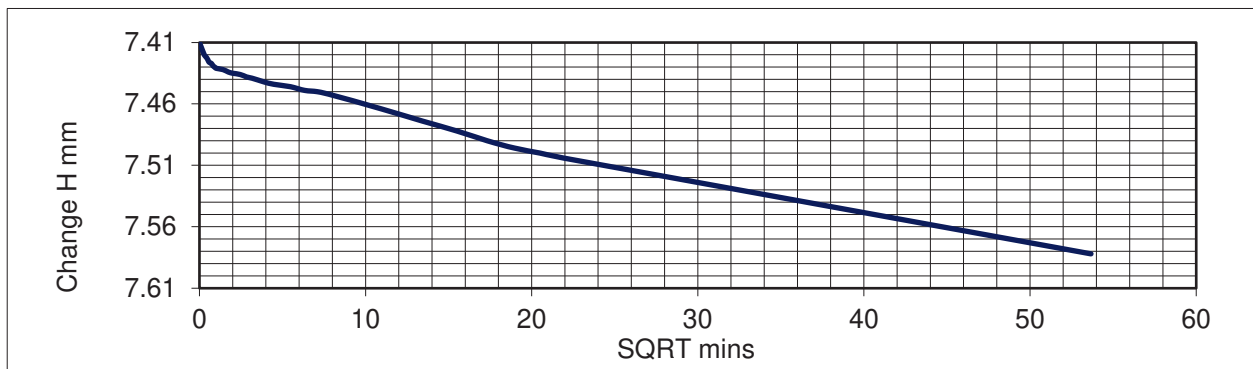
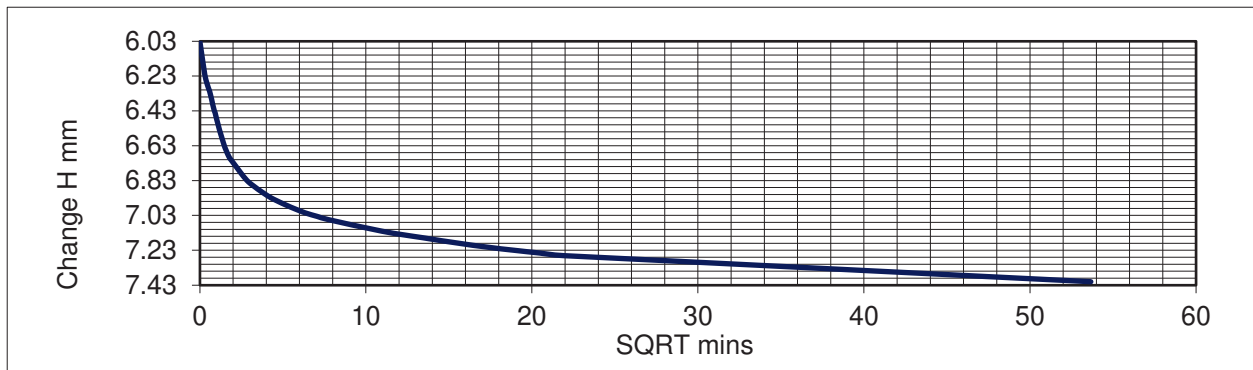
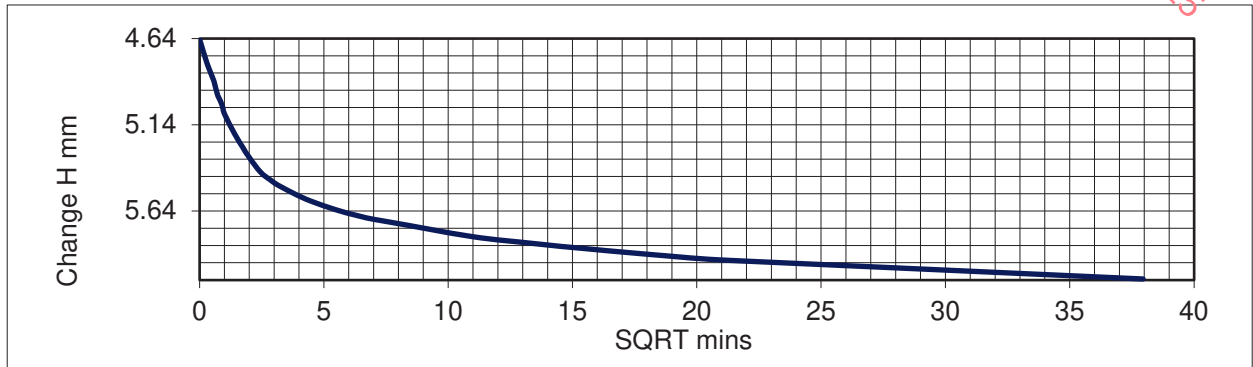
Report No. R152325

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH306 Sample number: 197062

Depth (m): 6.5





Test Report

Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152326

Contract Sea Gardens Bray

Contract Number 24991

Tested using ACONS automatic consolidation system

Client Ballymore/Atkins

BH: 306 Sample No. 197065 Depth (m): 8.50

Description Dark brown slightly sandy SILT with organic material and shell fragments

Initial Height (mm) 20.0 Diameter (mm) 75.0 Initial Voids Ratio 1.607

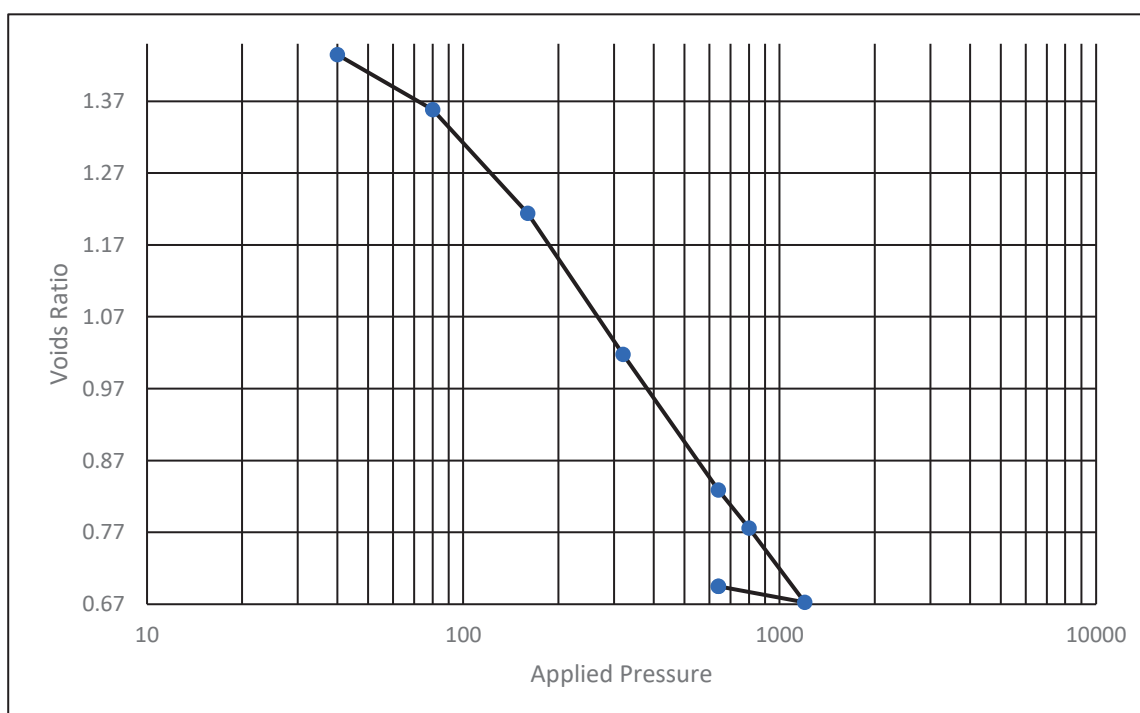
Initial Water Content (%) 71.2 Assumed Particle Density (Mg/m^3) 2.40

Initial Bulk Density (Mg/m^3) 1.58 Initial Dry Density (Mg/m^3) 0.92

Laboratory Temperature: 20 +/- 4 degrees C unless otherwise stated

Preparation: Cutting Ring pushed vertically into sample. Water Content derived from trimmings

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/Year)	Voids Ratio
40	1.655	98.100	1.43473
80	0.784	92.100	1.35834
160	0.765	81.100	1.21393
320	0.554	67.400	1.01778
640	0.293	55.400	0.82876
800	0.181	52.200	0.77590
1200	0.145	46.300	0.67282
640	-	-	0.69507



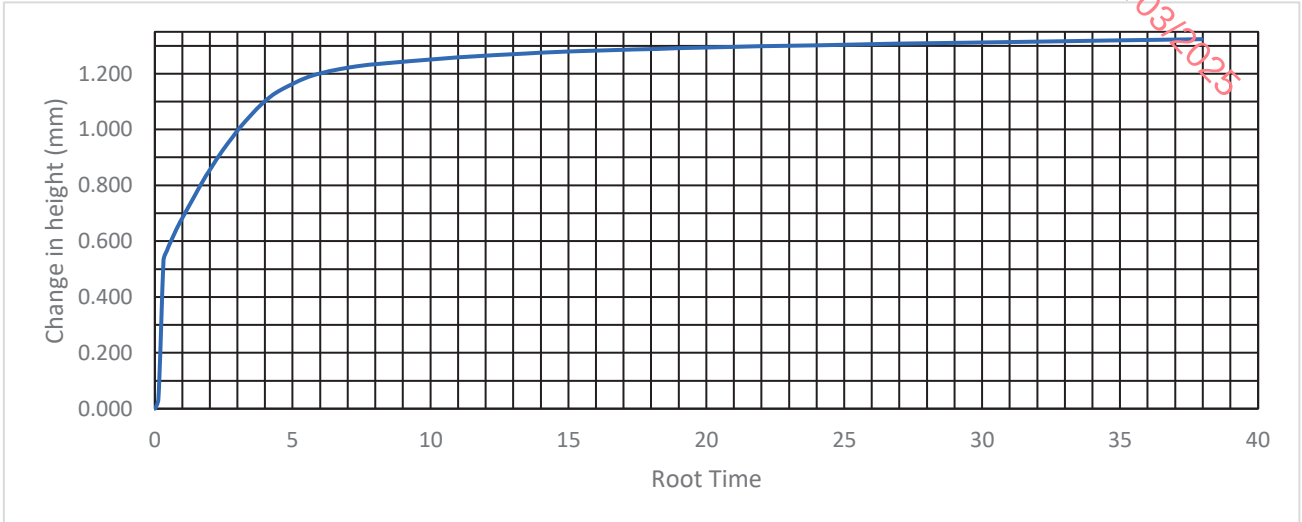


Test Report

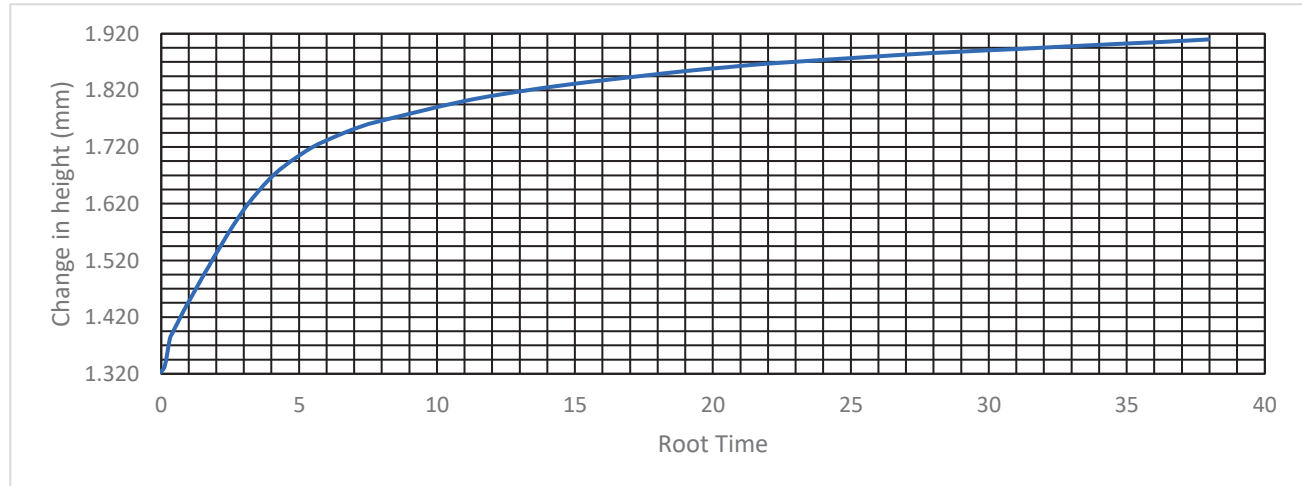
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152326

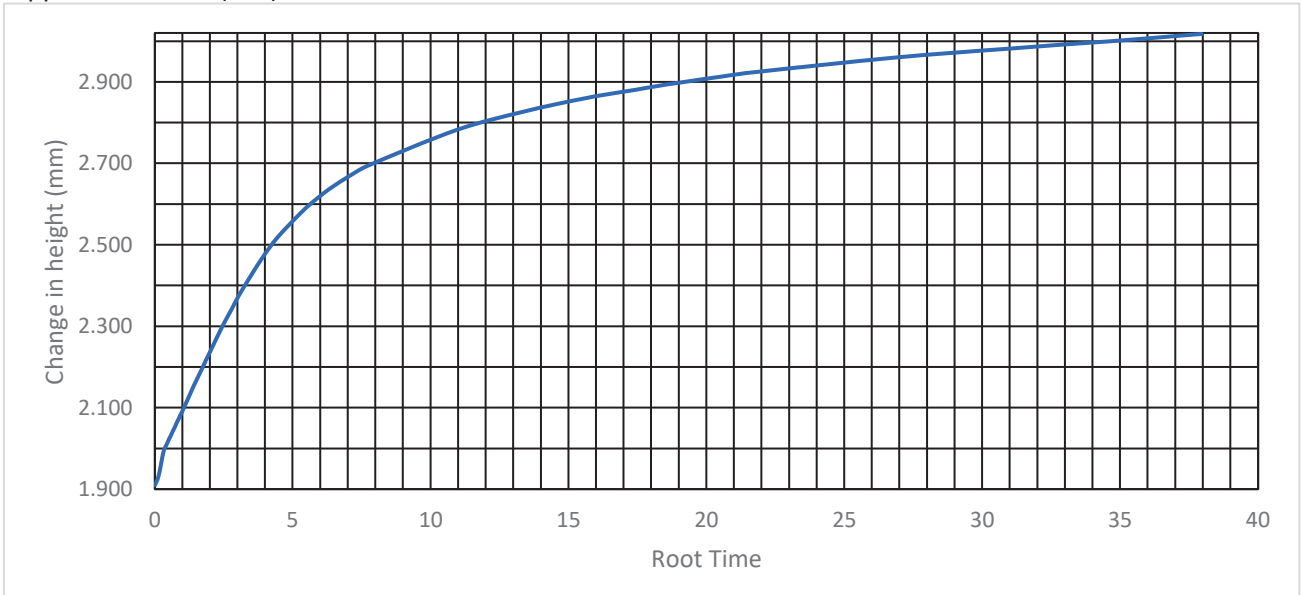
Applied Pressure (kPa) 40



Applied Pressure (kPa) 80



Applied Pressure (kPa) 160



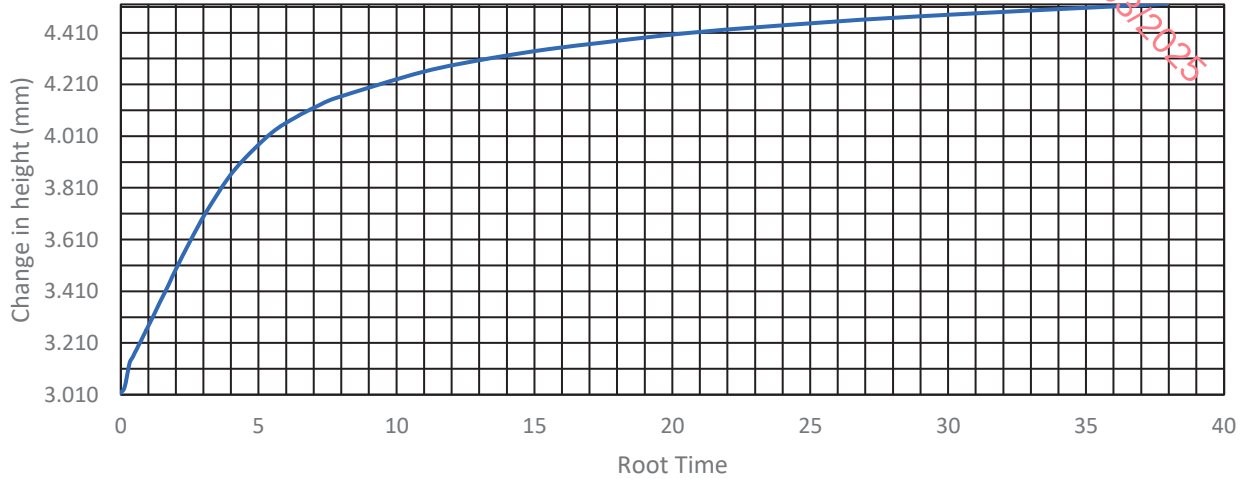


Test Report

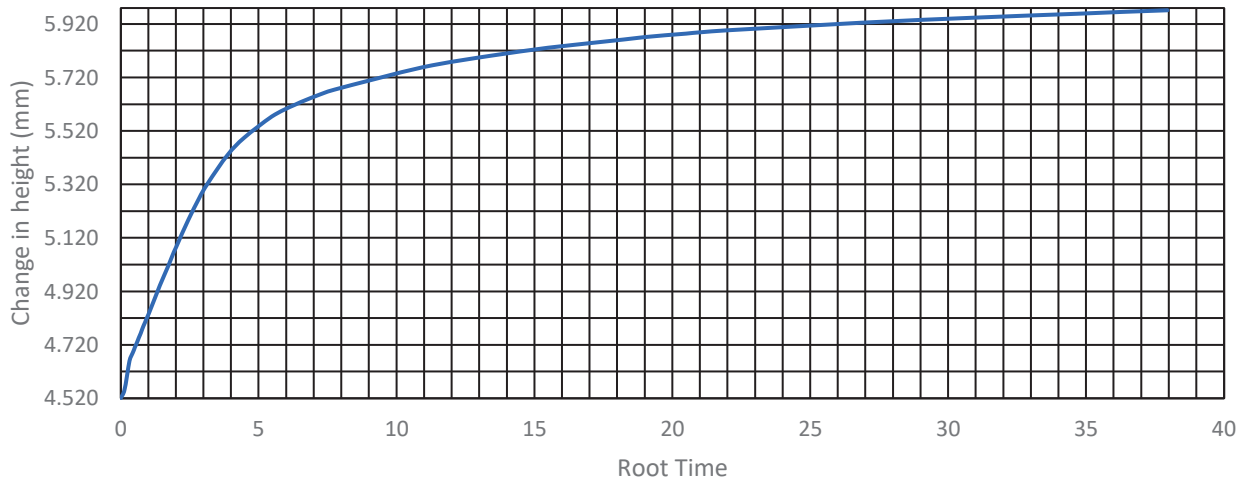
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152326

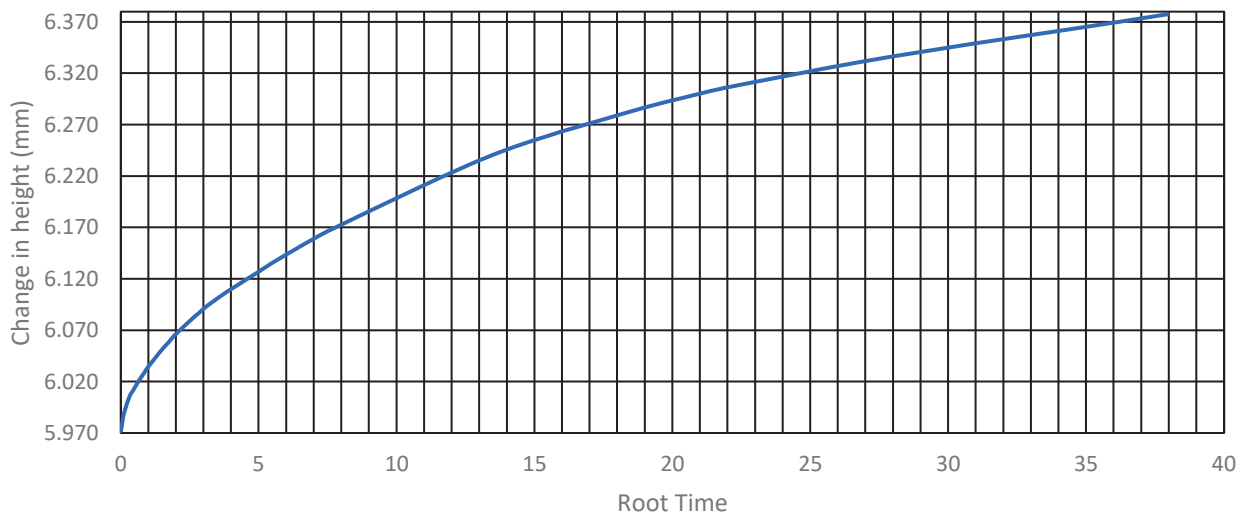
Applied Pressure (kPa) 320



Applied Pressure (kPa) 640



Applied Pressure (kPa) 800



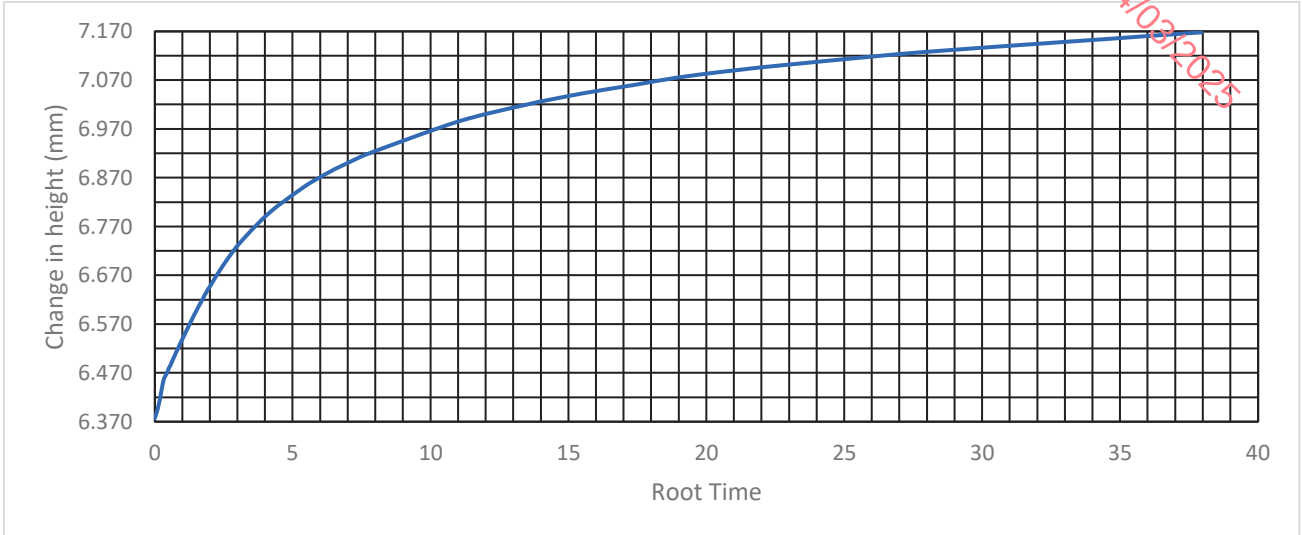


Test Report

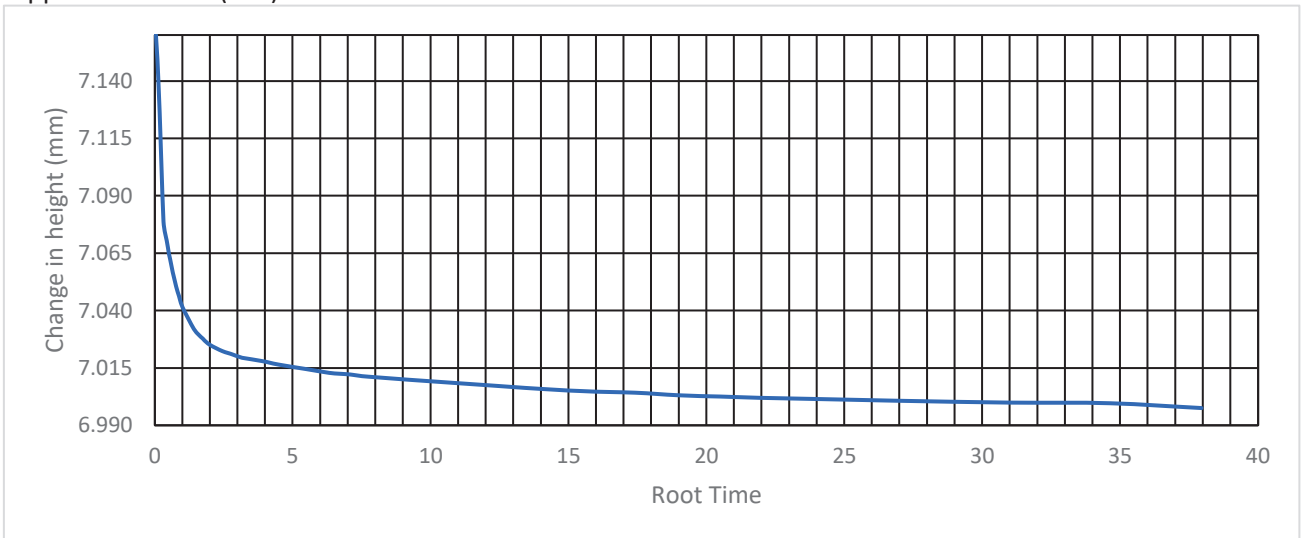
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152326

Applied Pressure (kPa) 1200



Applied Pressure (kPa) 640





One dimensional Consolidation

ISO 17892-5:2017

RECEIVED: 24/03/2025

Report No. R152327

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH307 Sample number: 192096

Depth (m): 5.5

Description Brown organic SILT

Specimen Height (mm) 20.01

Specimen diameter (mm) 75.06

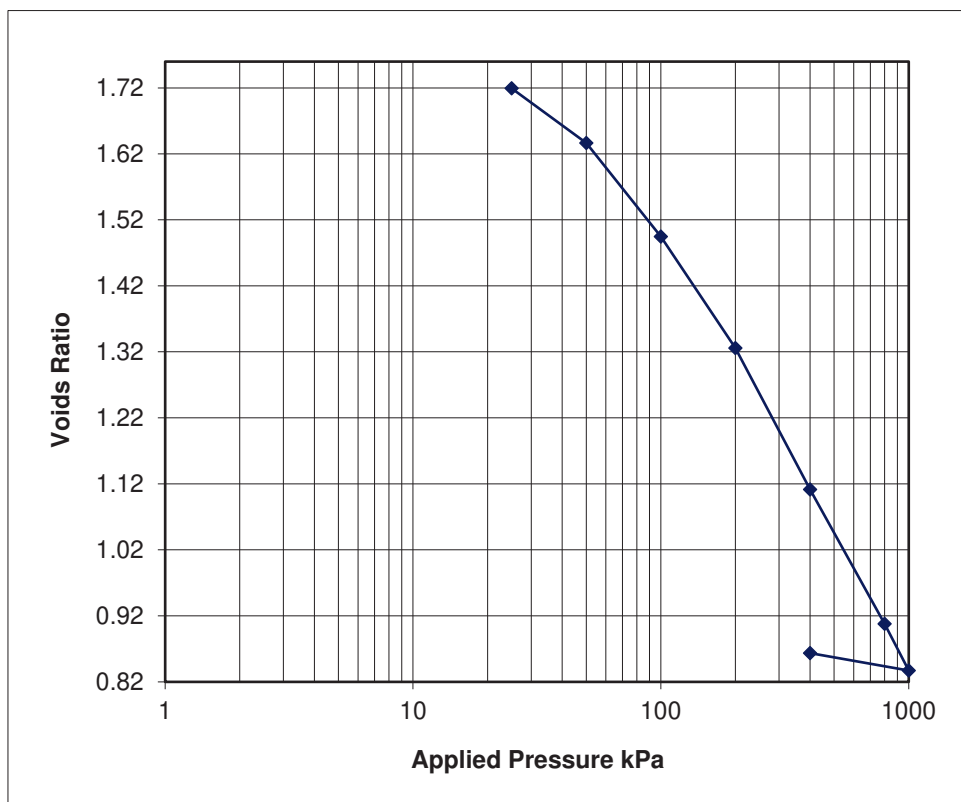
Water content %
Bulk density Mg/m^3
Dry density Mg/m^3
Voids ratio

Initial
88.0
1.56
0.83
1.885

Specimen Preparation:
The cutting ring was
pushed vertically into
an undisturbed sample.
Initial water content was
determined from the
trimmings.

Assumed Particle density Mg/m^3 2.40

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/year)	Voids Ratio
0 - 25	2.299	18.634	1.71921
25 - 50	1.217	14.957	1.63646
50 - 100	1.076	13.729	1.49458
100 - 200	0.677	7.754	1.32561
200 - 400	0.461	3.888	1.11136
400 - 800	0.241	2.750	0.90778
800 - 1000	0.185	2.080	0.83713
1000 - 400	-	-	0.86337





One dimensional Consolidation

ISO 17892-5:2017

RECEIVED: 24/03/2025

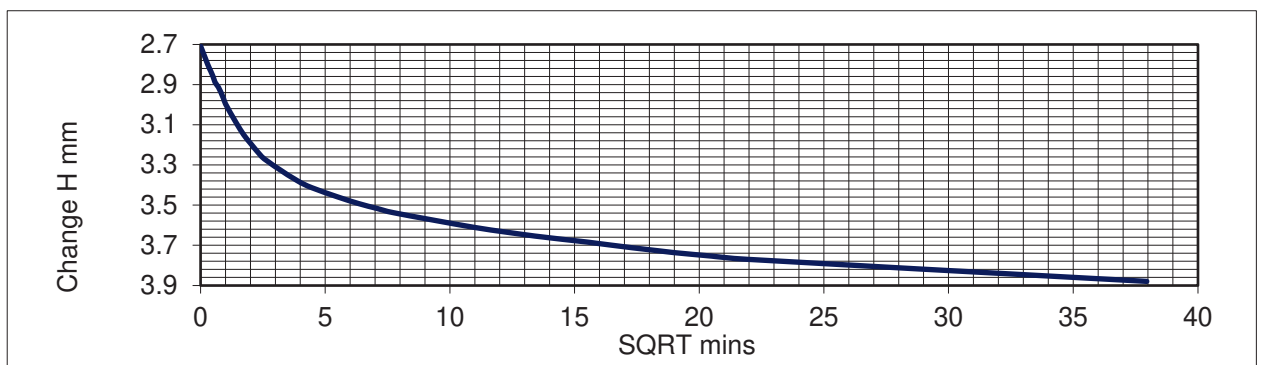
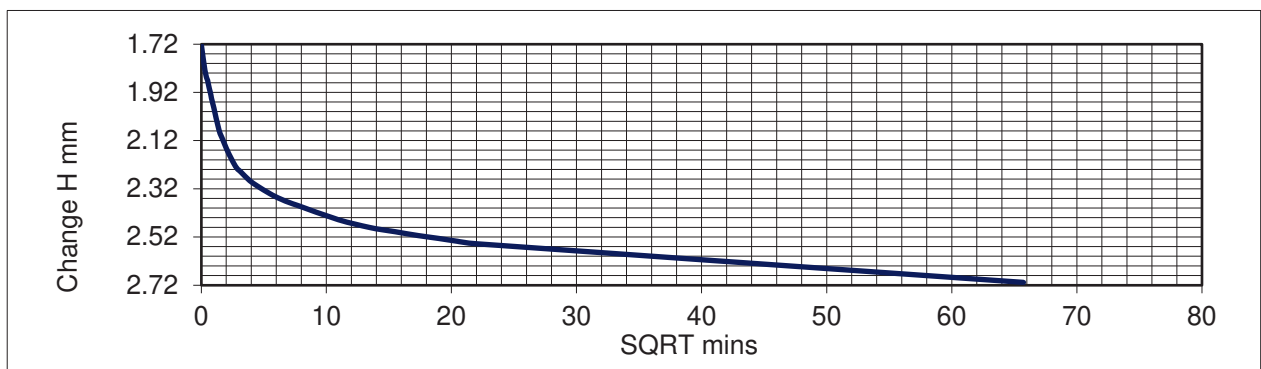
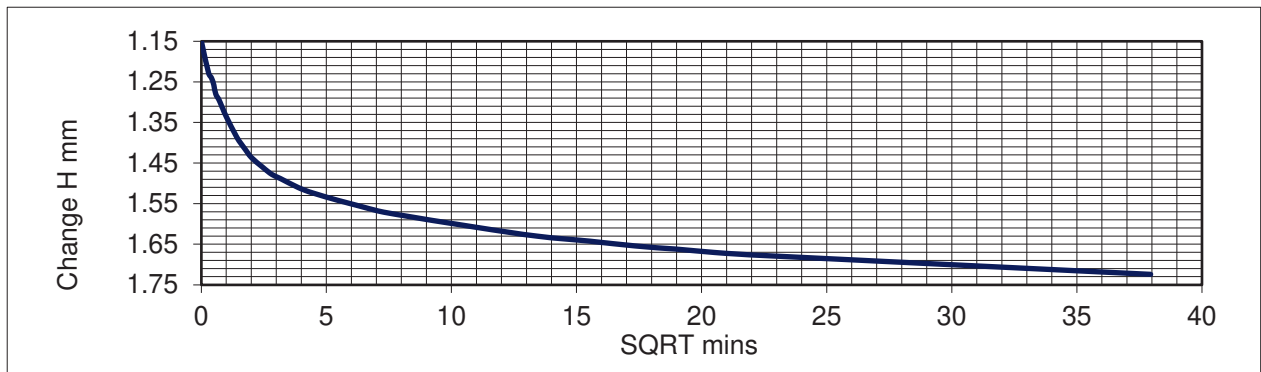
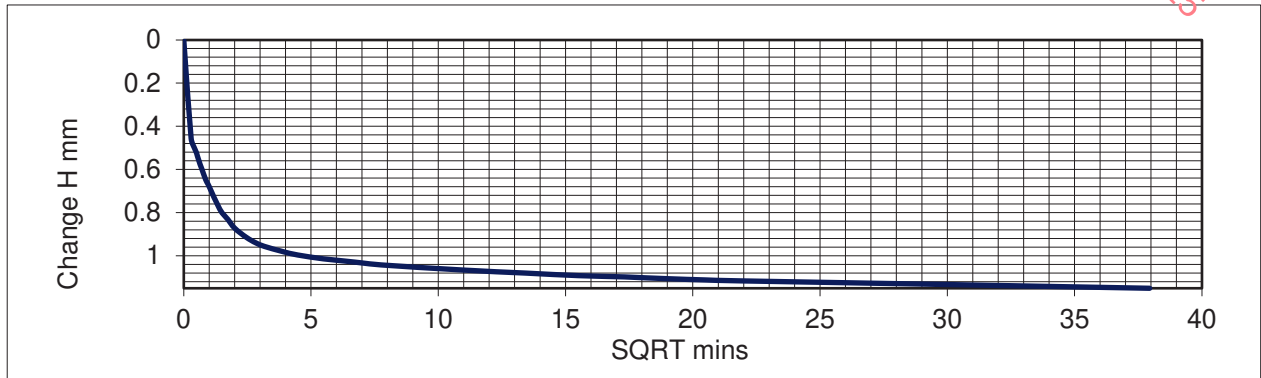
Report No. R152327

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH307 Sample number: 192096

Depth (m): 5.5





One dimensional Consolidation

ISO 17892-5:2017

RECEIVED: 24/03/2025

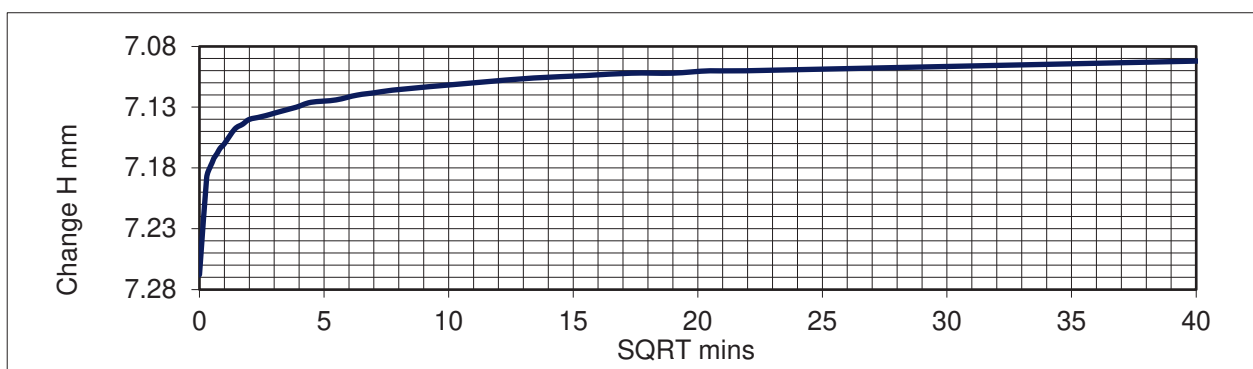
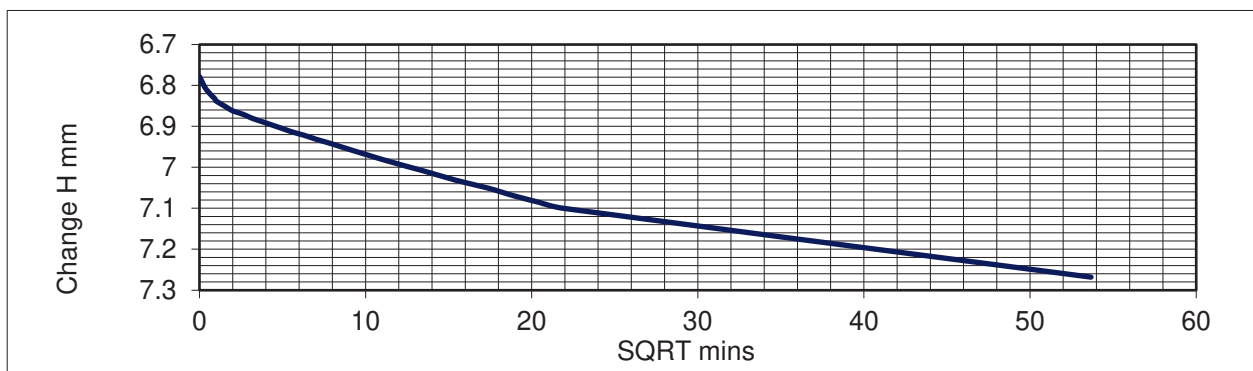
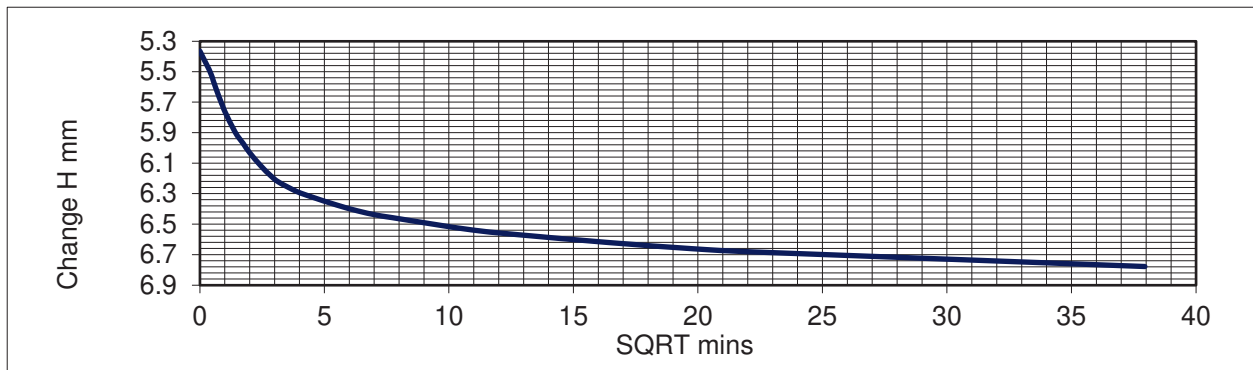
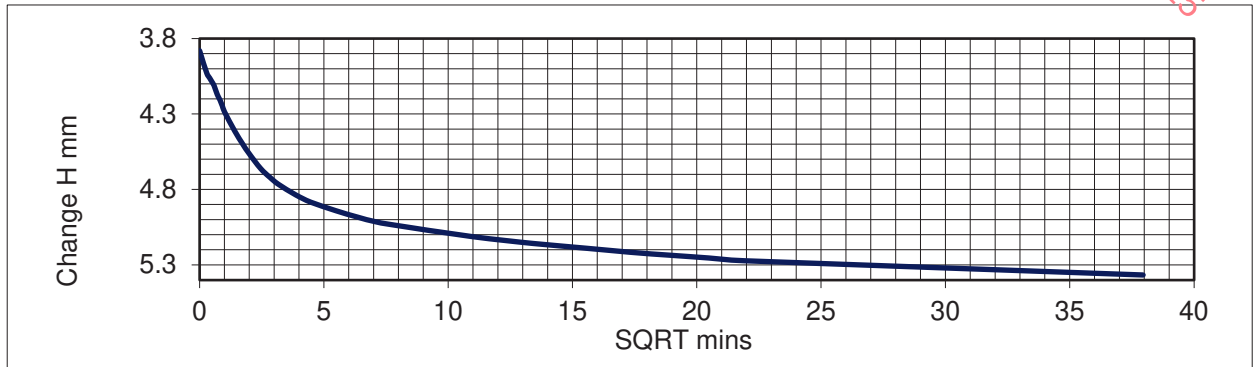
Report No. R152327

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH307 Sample number: 192096

Depth (m): 5.5





One dimensional Consolidation

ISO 17892-5:2017

RECEIVED: 24/03/2025

Report No. R152328

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH307 Sample number: 192101

Depth (m): 8.5

Description Brown organic SILT

Specimen Height (mm) 20.01 Specimen diameter (mm) 74.98

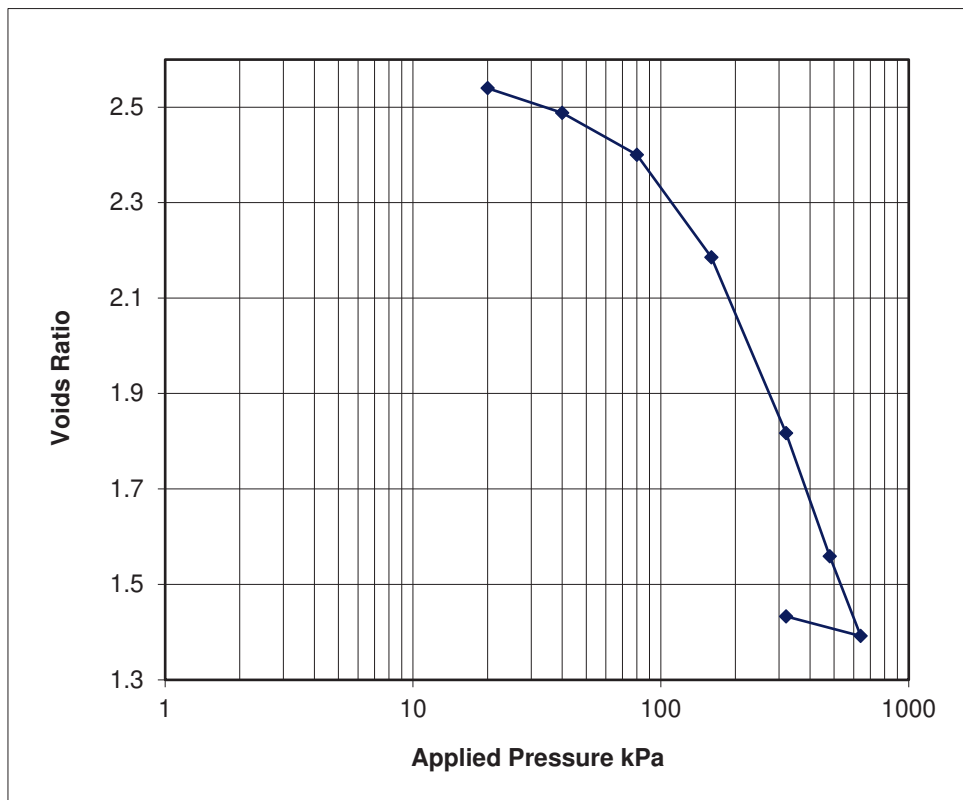
Water content %
Bulk density Mg/m^3
Dry density Mg/m^3
Voids ratio

Initial
109.4
1.39
0.66
2.619

Specimen Preparation:
The cutting ring was
pushed vertically into
an undisturbed sample.
Initial water content was
determined from the
trimmings.

Assumed Particle density Mg/m^3 2.40

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/year)	Voids Ratio
0 - 20	1.094	67.933	2.53996
20 - 40	0.731	29.098	2.48823
40 - 80	0.630	15.724	2.40033
80 - 160	0.790	9.198	2.18546
160 - 320	0.723	3.396	1.81685
320 - 480	0.572	1.532	1.55893
480 - 640	0.408	1.299	1.39181
640 - 320	-	-	1.43268





One dimensional Consolidation

ISO 17892-5:2017

RECEIVED: 24/03/2025

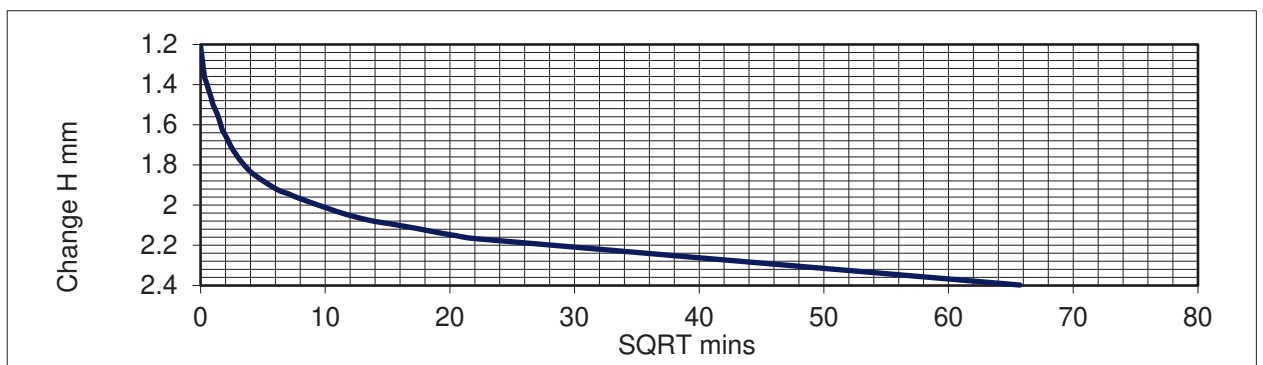
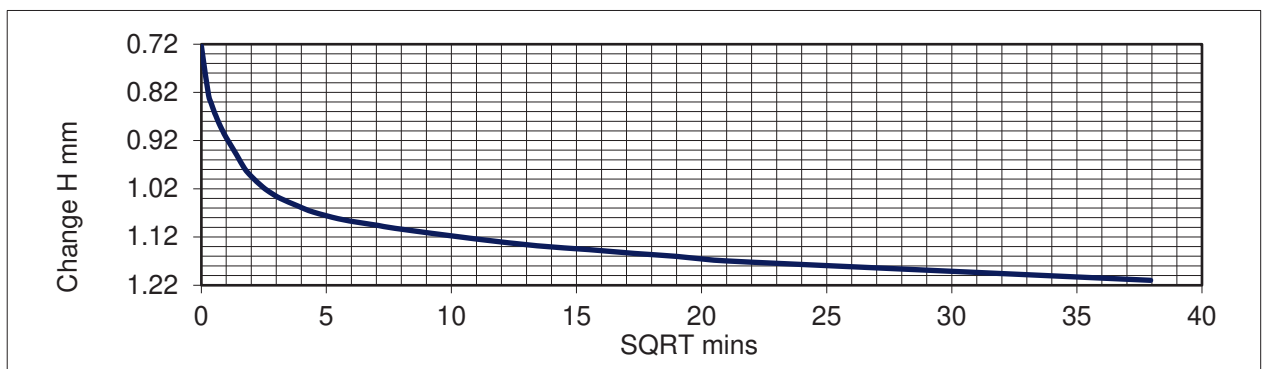
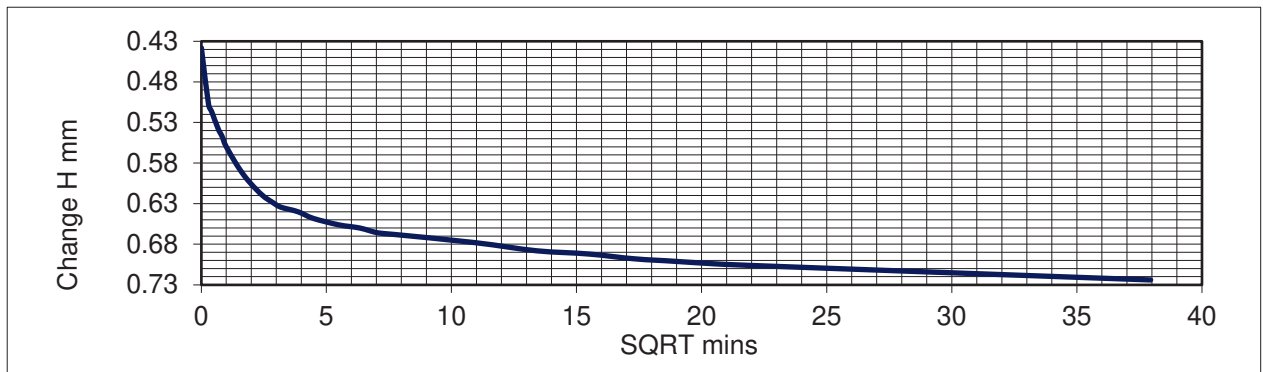
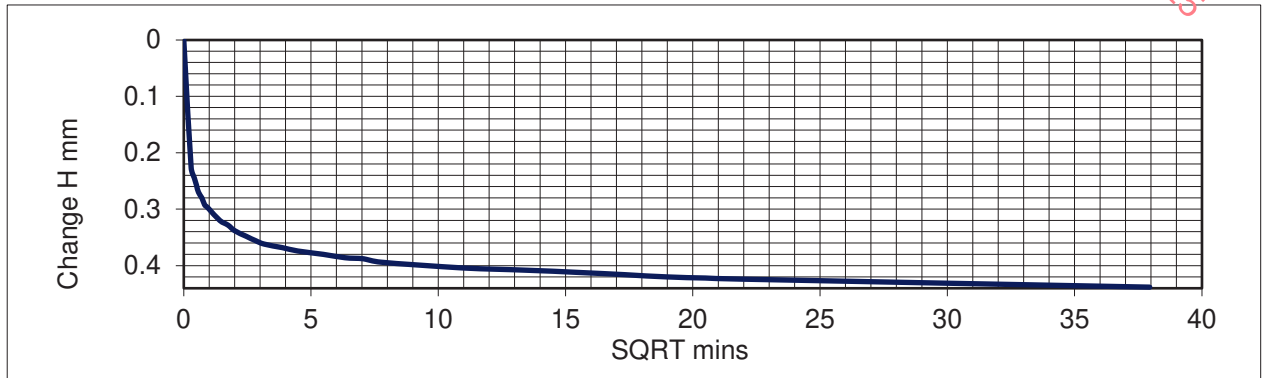
Report No. R152328

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH307 Sample number: 192101

Depth (m): 8.5





One dimensional Consolidation

ISO 17892-5:2017

RECEIVED: 24/03/2025

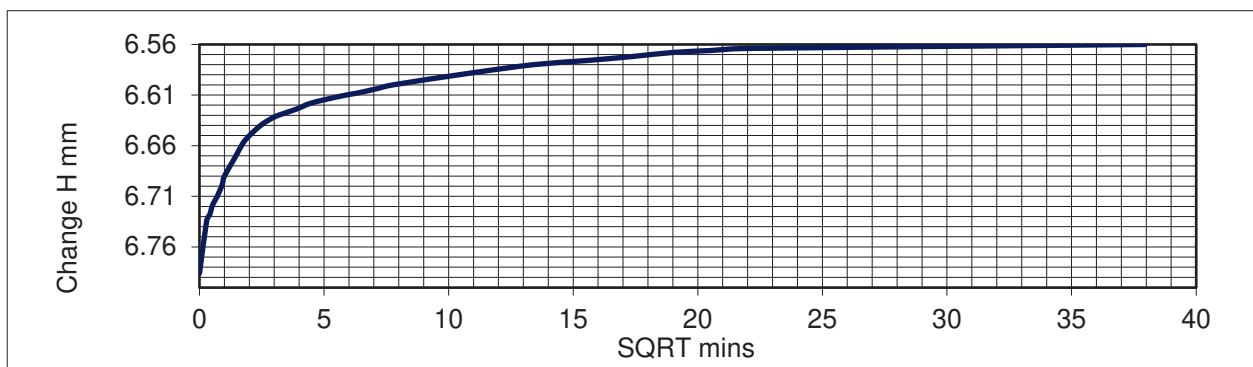
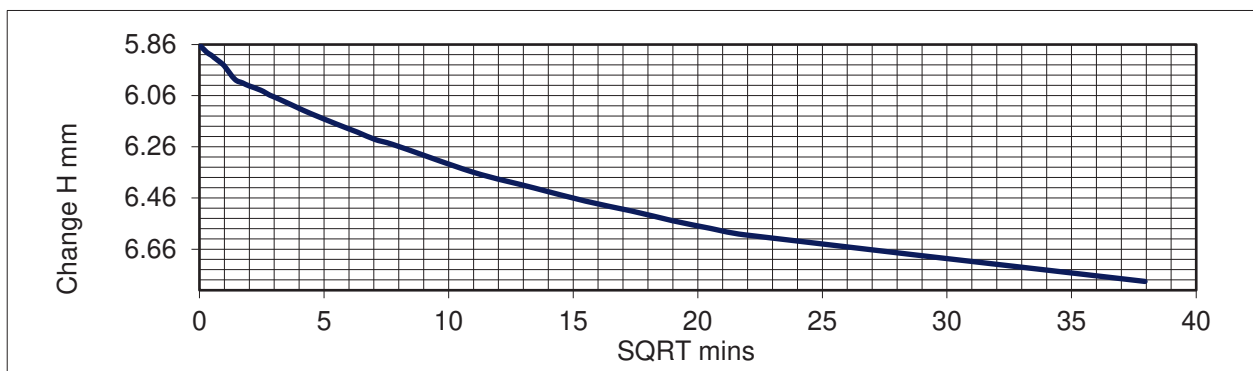
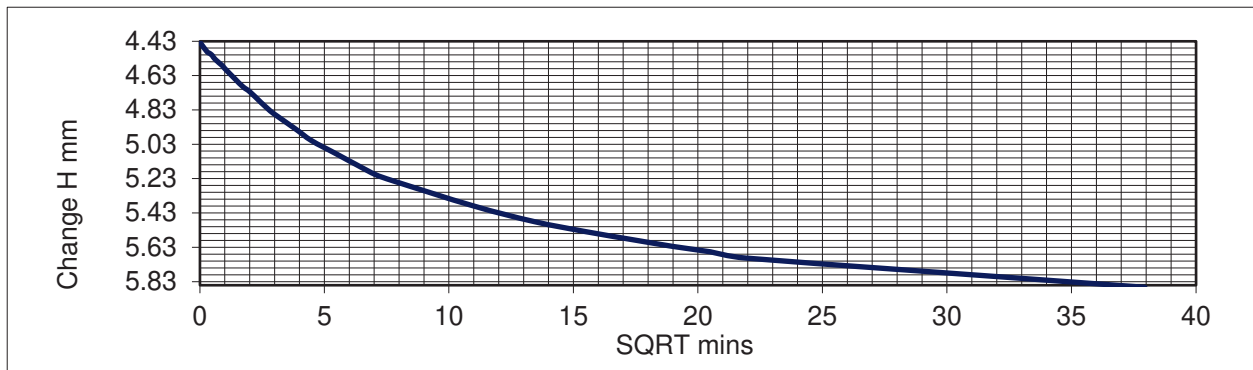
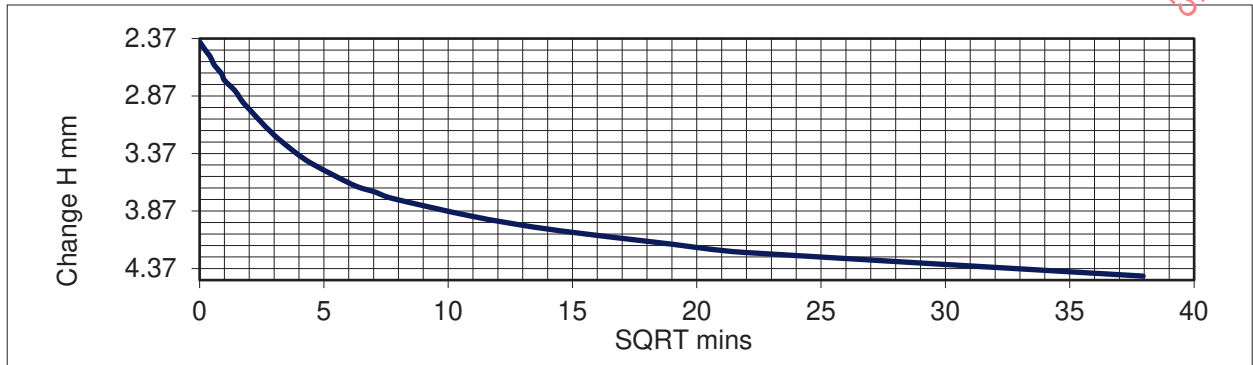
Report No. R152328

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH307 Sample number: 192101

Depth (m): 8.5





One dimensional Consolidation

ISO 17892-5:2017

RECEIVED: 24/03/2025

Report No. R152329

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH308 Sample number: 197091

Depth (m): 5.5

Description Grey slightly sandy SILT/CLAY with some organics

Specimen Height (mm) 20.00 Specimen diameter (mm) 75.10

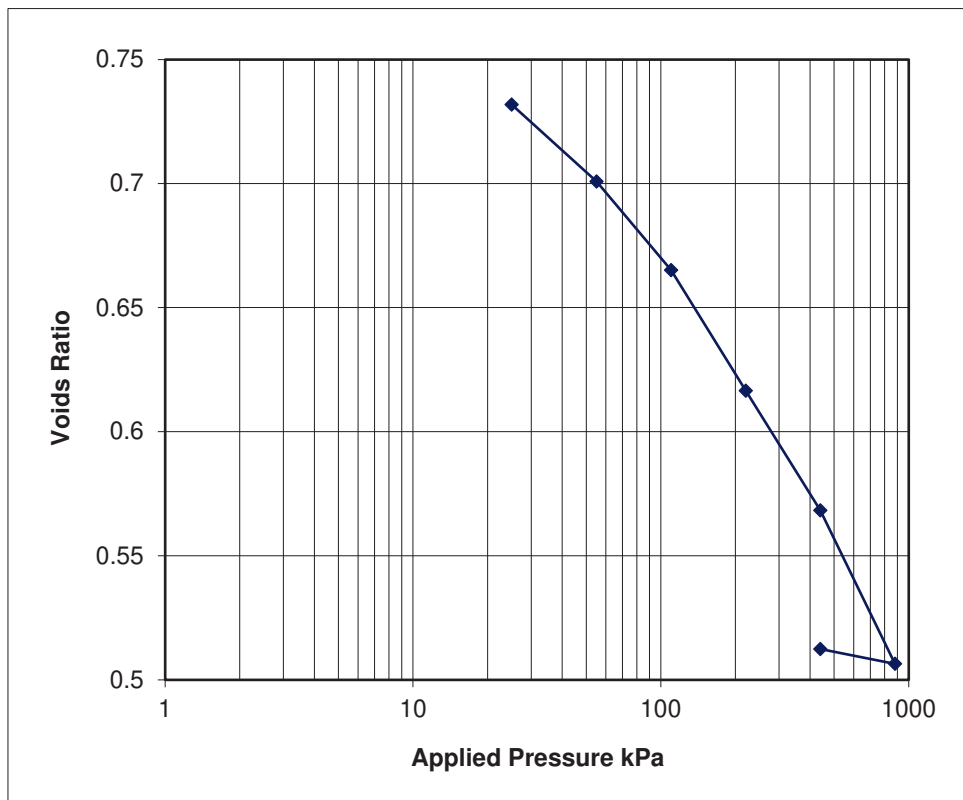
Water content %
Bulk density Mg/m^3
Dry density Mg/m^3
Voids ratio

Initial
37.6
1.82
1.32
0.813

Specimen Preparation:
The cutting ring was
pushed vertically into
an undisturbed sample.
Initial water content was
determined from the
trimmings.

Assumed Particle density Mg/m^3 2.40

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/year)	Voids Ratio
0 - 25	1.792	42.433	0.73180
25 - 55	0.597	32.883	0.70080
55 - 110	0.382	26.567	0.66509
110 - 220	0.265	25.253	0.61650
220 - 440	0.136	16.310	0.56827
440 - 880	0.090	12.470	0.50645
880 - 440	-	-	0.51243





One dimensional Consolidation

ISO 17892-5:2017

RECEIVED: 24/03/2025

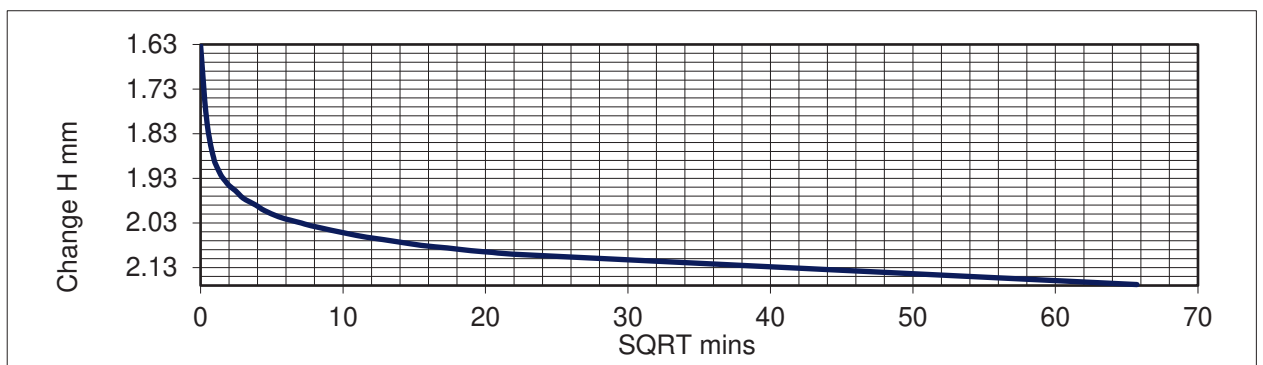
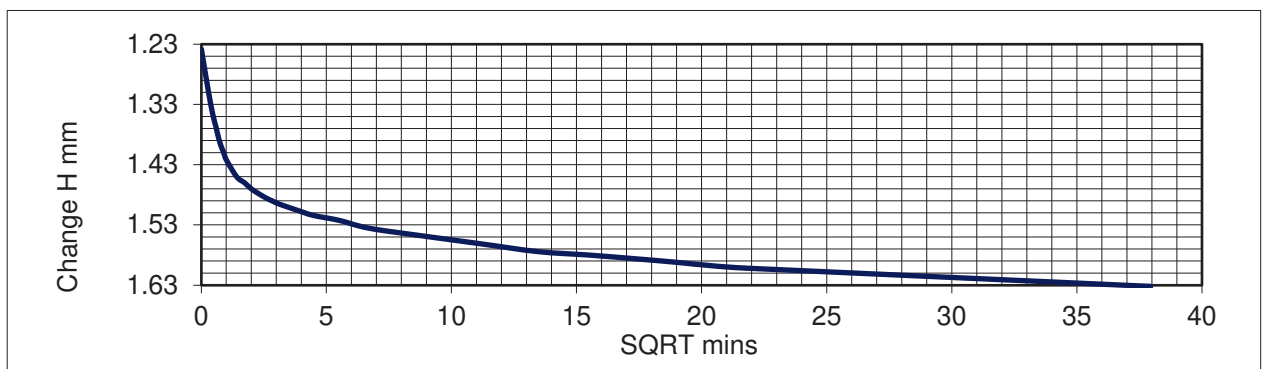
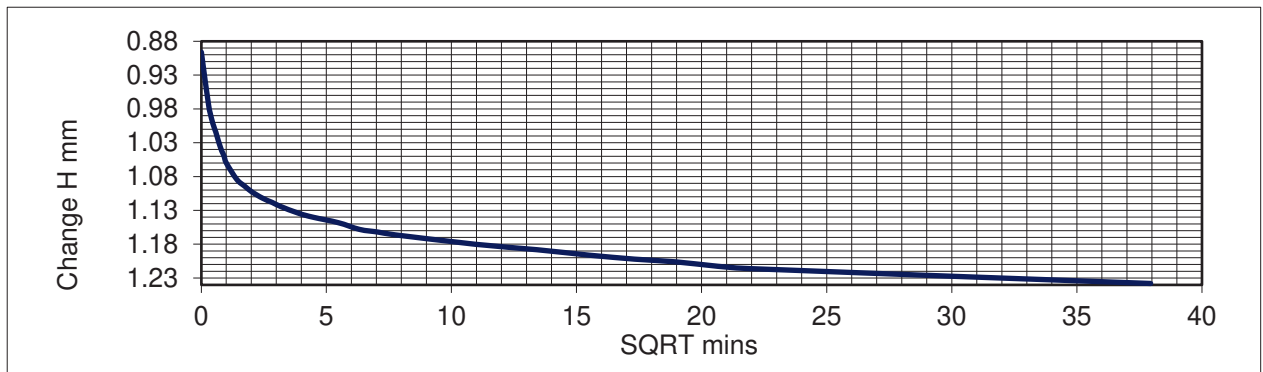
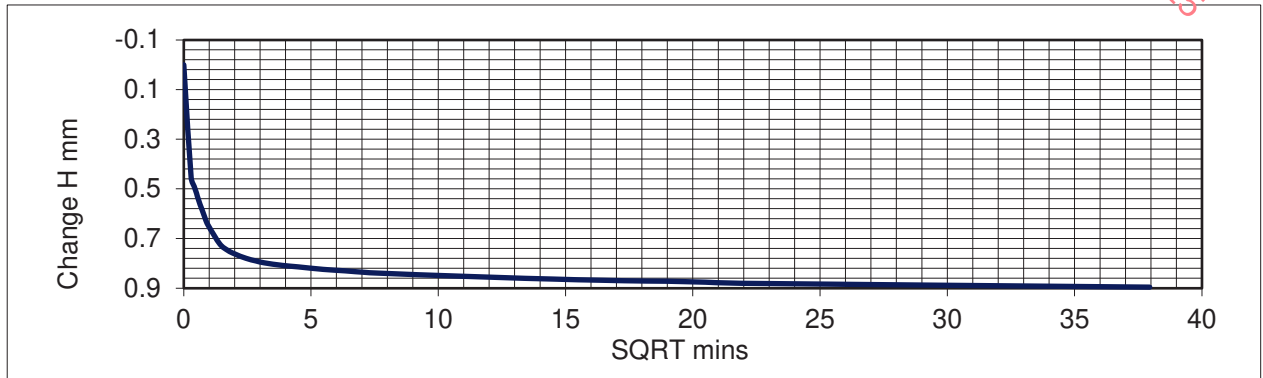
Report No. R152329

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH308 Sample number: 197091

Depth (m): 5.5





One dimensional Consolidation

ISO 17892-5:2017

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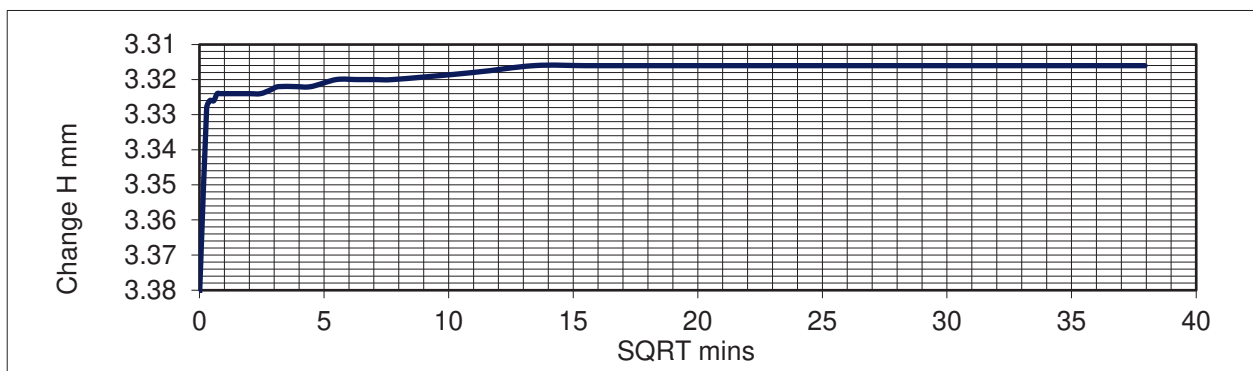
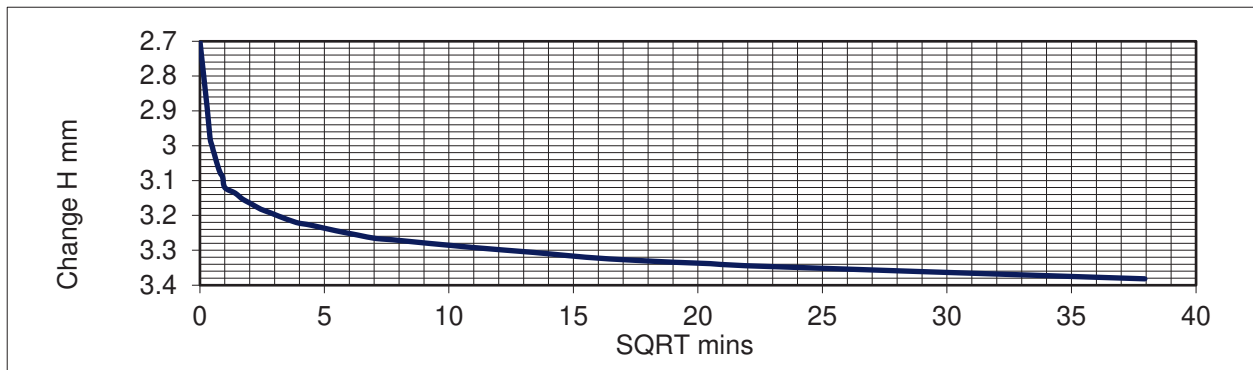
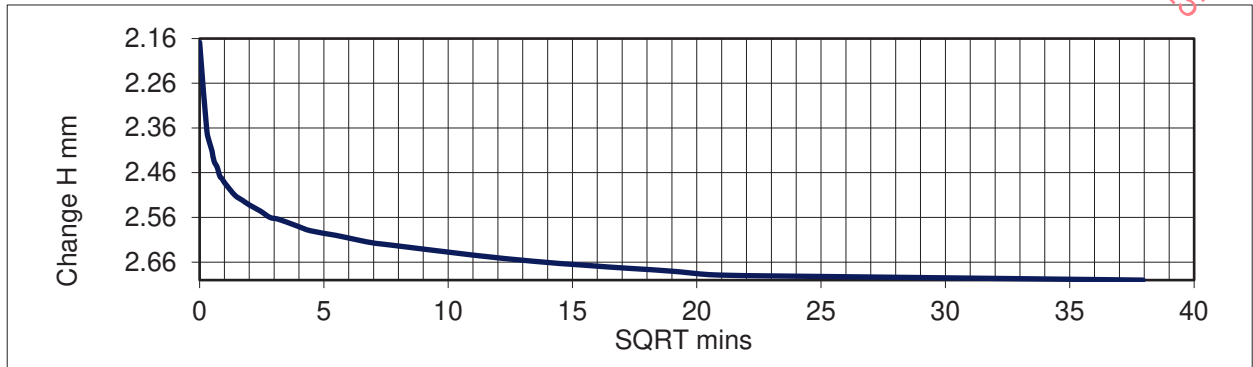
Report No. R152329

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH308 Sample number: 197091

Depth (m): 5.5





Test Report

Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152330

Contract Sea Gardens Bray

Contract Number 24991

Tested using ACONS automatic consolidation system

Client Ballymore/Atkins

BH: 308 Sample No. 197095 Depth (m): 8.50

Description Grey brown slightly mottled CLAY with occasional shell fragments

Initial Height (mm) 20.0 Diameter (mm) 75.0 Initial Voids Ratio 1.813

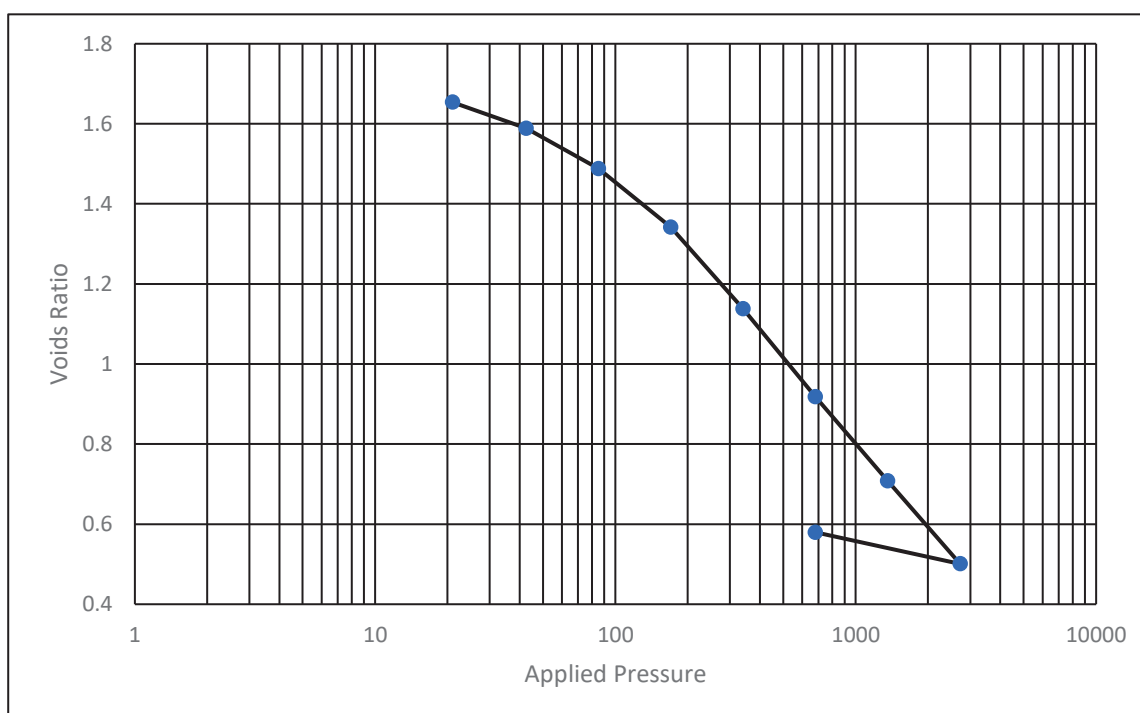
Initial Water Content (%) 80.5 Assumed Particle Density (Mg/m^3) 2.40

Initial Bulk Density (Mg/m^3) 1.54 Initial Dry Density (Mg/m^3) 0.85

Laboratory Temperature: 20 +/- 4 degrees C unless otherwise stated

Preparation: Cutting Ring pushed vertically into sample. Water Content derived from trimmings

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/Year)	Voids Ratio
21	2.694	1.612	1.65407
42.5	1.150	1.260	1.58843
85	0.909	1.170	1.48842
170	0.692	1.049	1.34200
340	0.513	0.877	1.13793
680	0.302	0.712	0.91867
1360	0.161	0.559	0.70816
2720	0.089	0.406	0.50117
680	-	-	0.57962



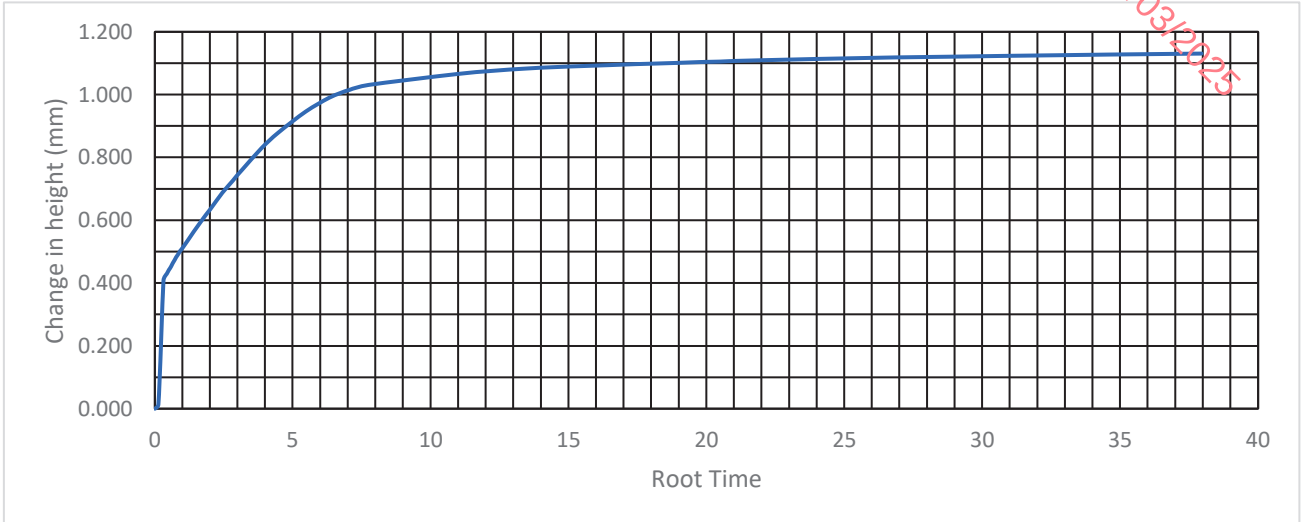


Test Report

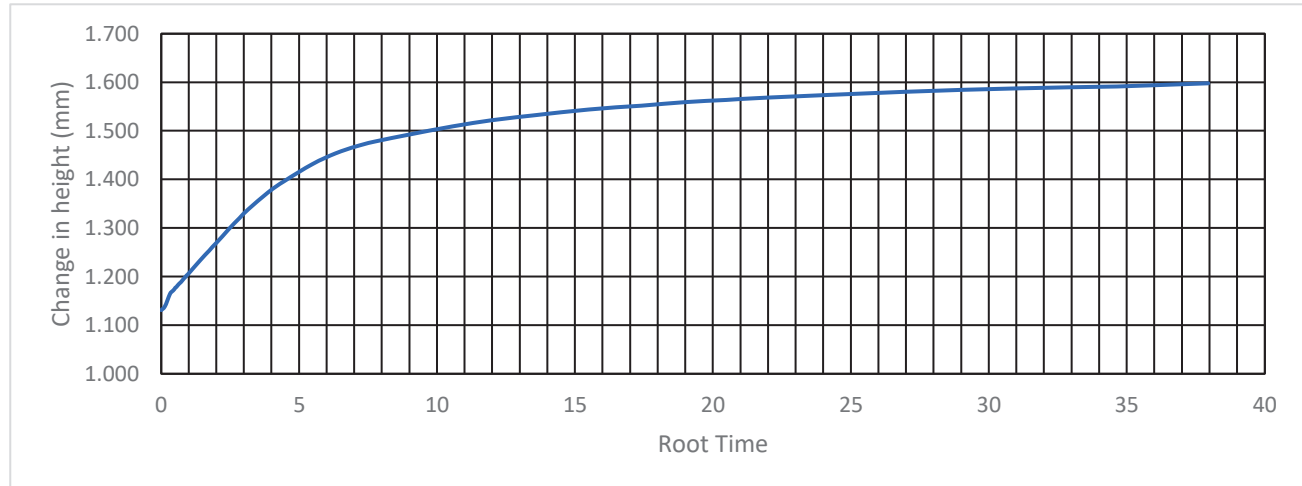
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152330

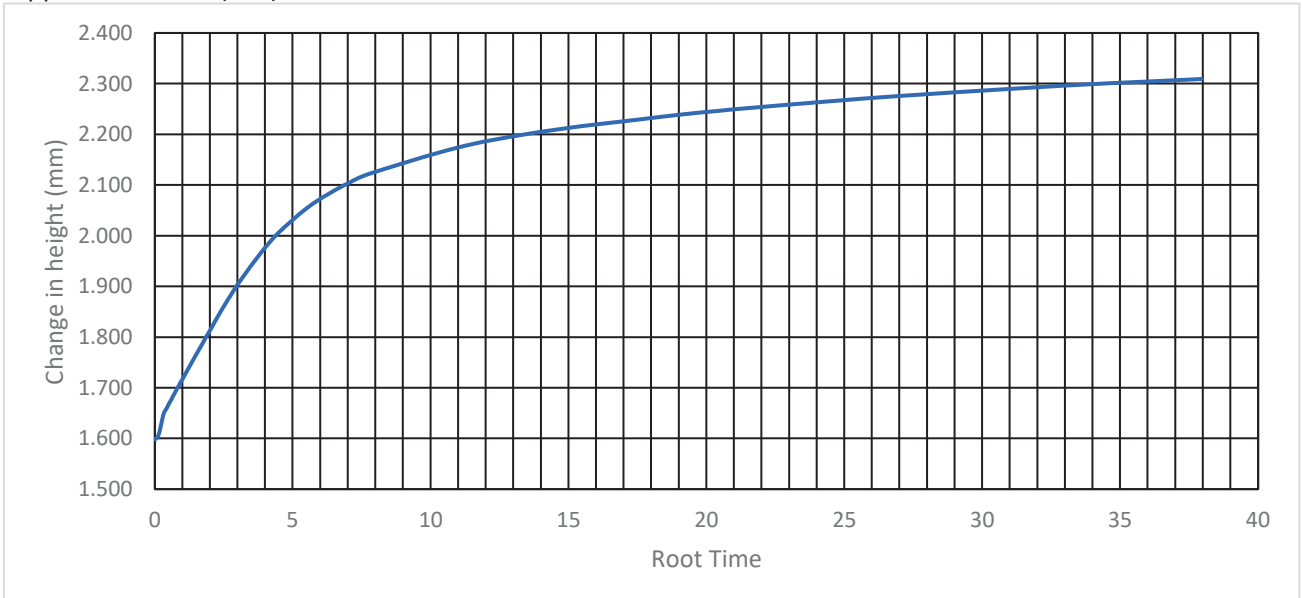
Applied Pressure (kPa) 21



Applied Pressure (kPa) 42.5



Applied Pressure (kPa) 85



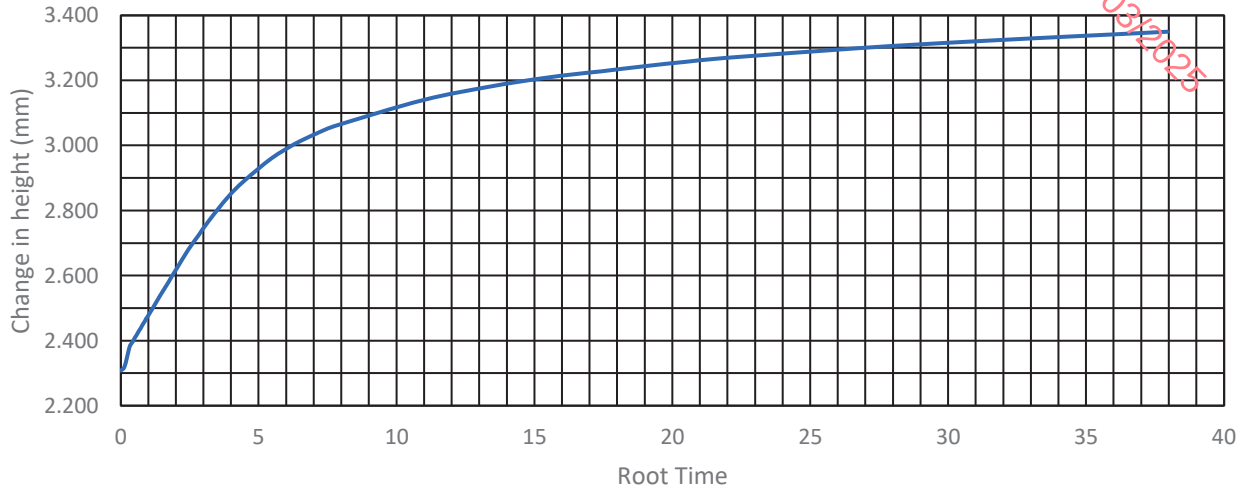


Test Report

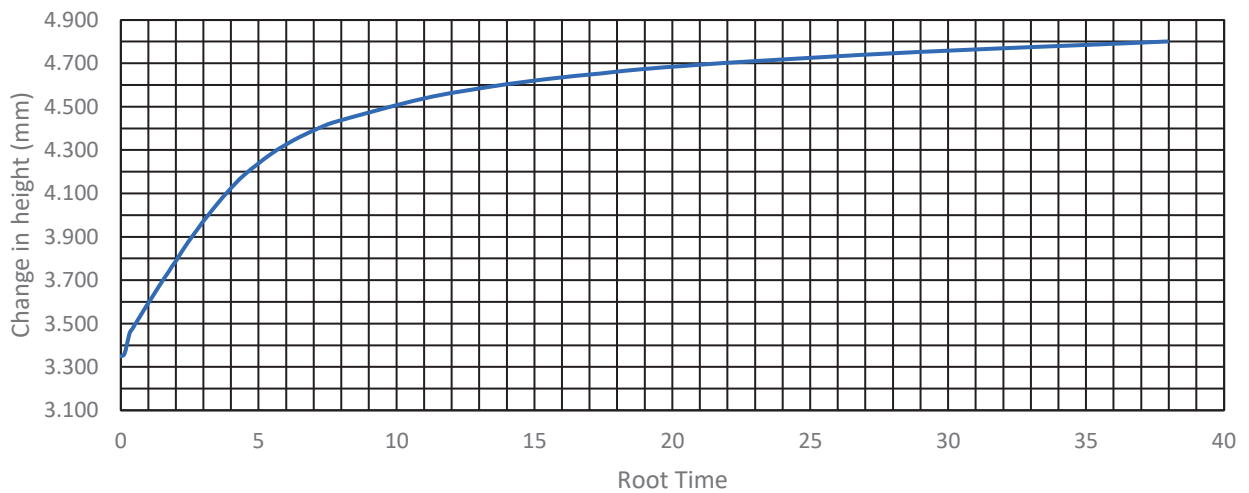
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152330

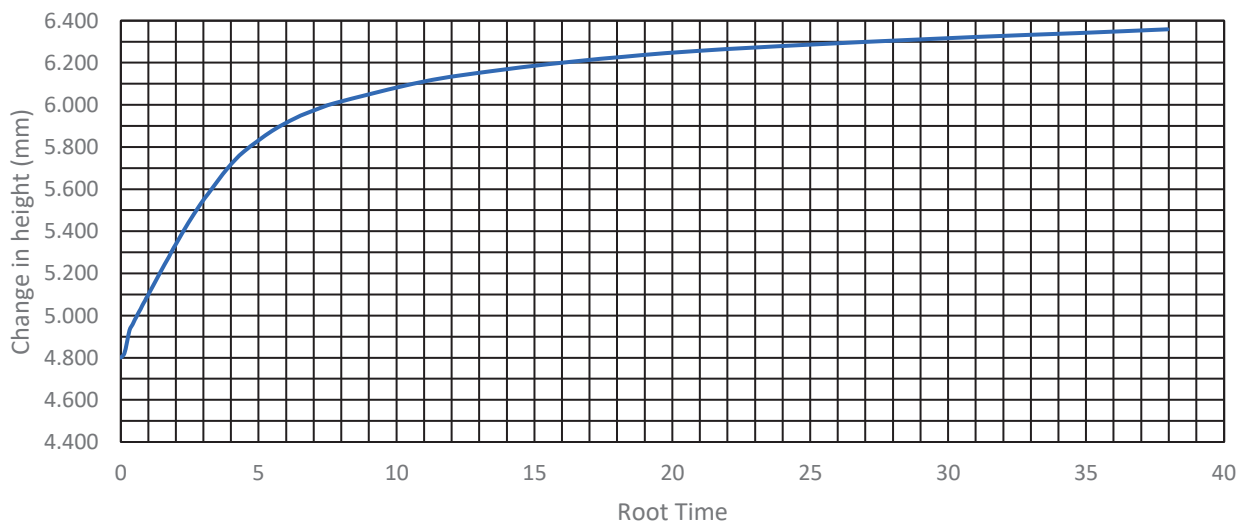
Applied Pressure (kPa) 170



Applied Pressure (kPa) 340



Applied Pressure (kPa) 680



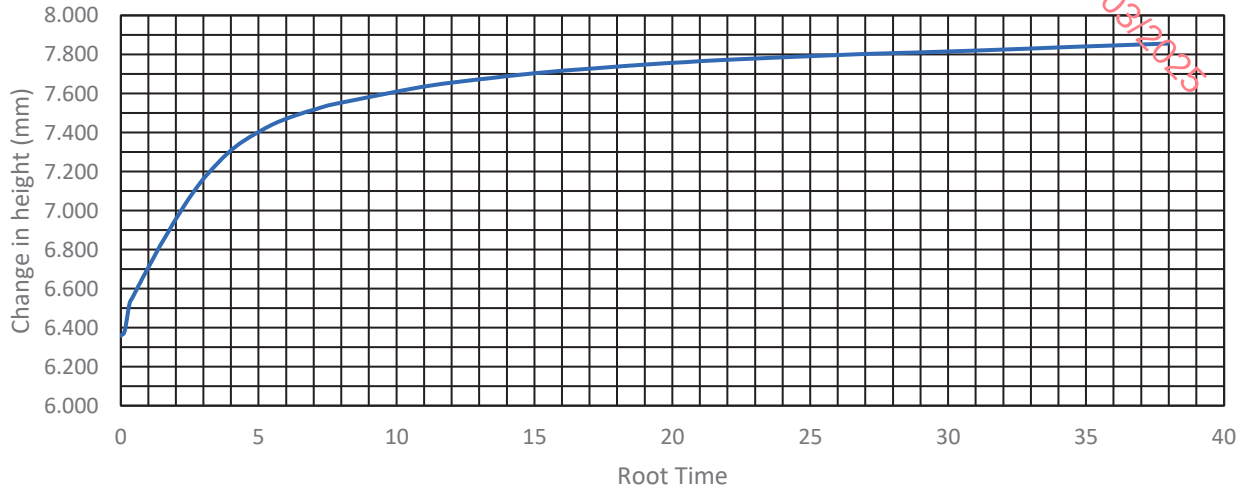


Test Report

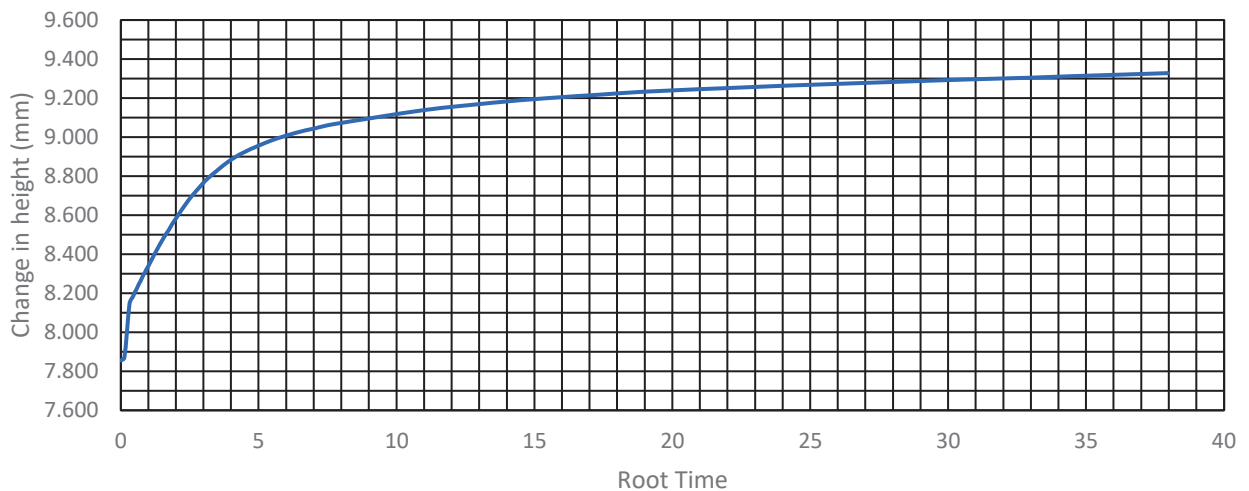
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152330

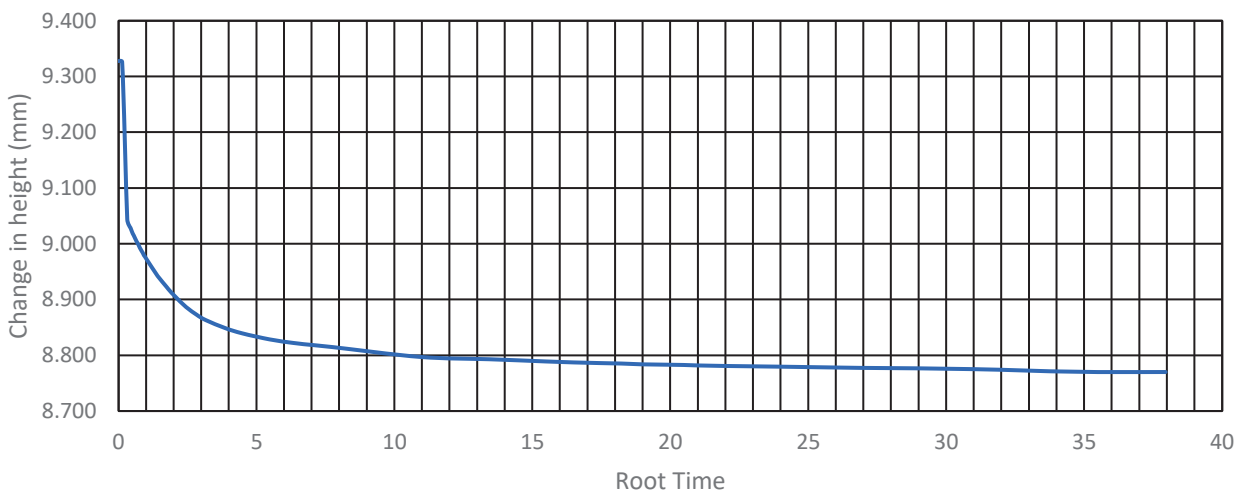
Applied Pressure (kPa) 1360



Applied Pressure (kPa) 2720



Applied Pressure (kPa) 680





Test Report

Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152331

Contract Sea Gardens Bray

Contract Number 24991

Tested using ACONS automatic consolidation system

Client Ballymore/Atkins

BH: 309 Sample No. 191714 Depth (m): 6.00

Description Dark grey slightly sandy SILT/CLAY mottled with dark brown peaty silt and occasional shell fragments

Initial Height (mm) 20.0 Diameter (mm) 75.0 Initial Voids Ratio 1.011

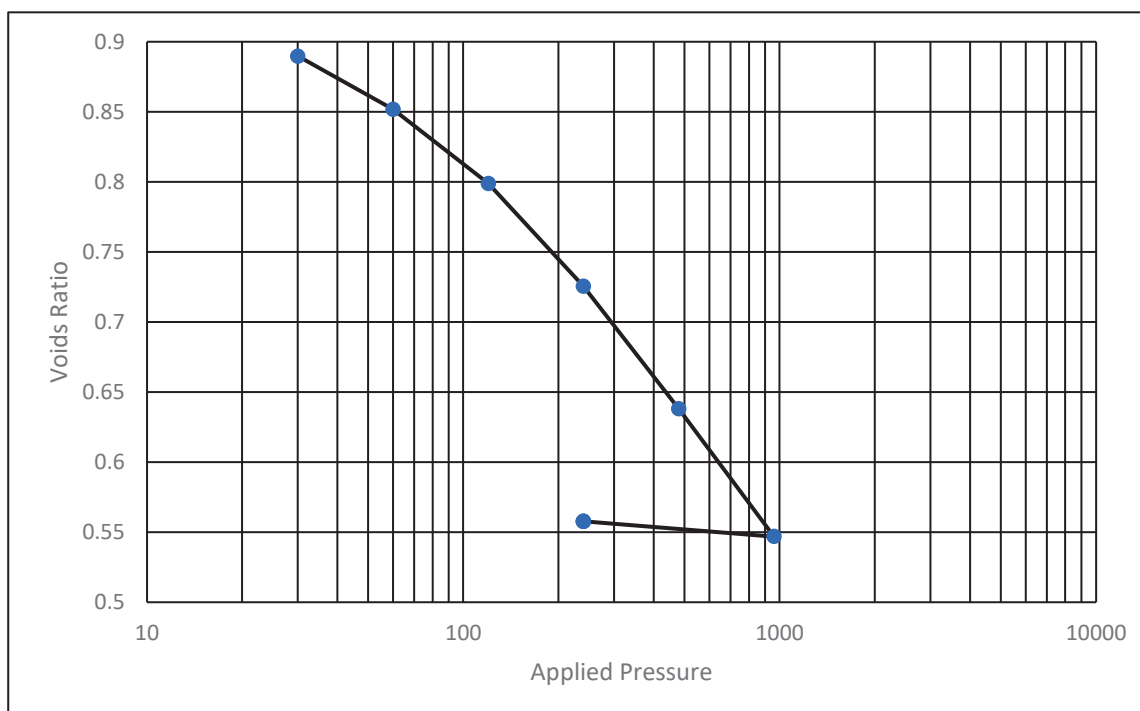
Initial Water Content (%) 43.8 Assumed Particle Density (Mg/m^3) 2.40

Initial Bulk Density (Mg/m^3) 1.72 Initial Dry Density (Mg/m^3) 1.19

Laboratory Temperature: 20 +/- 4 degrees C unless otherwise stated

Preparation: Cutting Ring pushed vertically into sample. Water Content derived from trimmings

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/Year)	Voids Ratio
30	2.009	12.350	0.88972
60	0.669	6.950	0.85179
120	0.477	6.616	0.79876
240	0.339	5.977	0.72555
480	0.211	5.279	0.63807
960	0.116	3.863	0.54700
240	-	-	0.55766



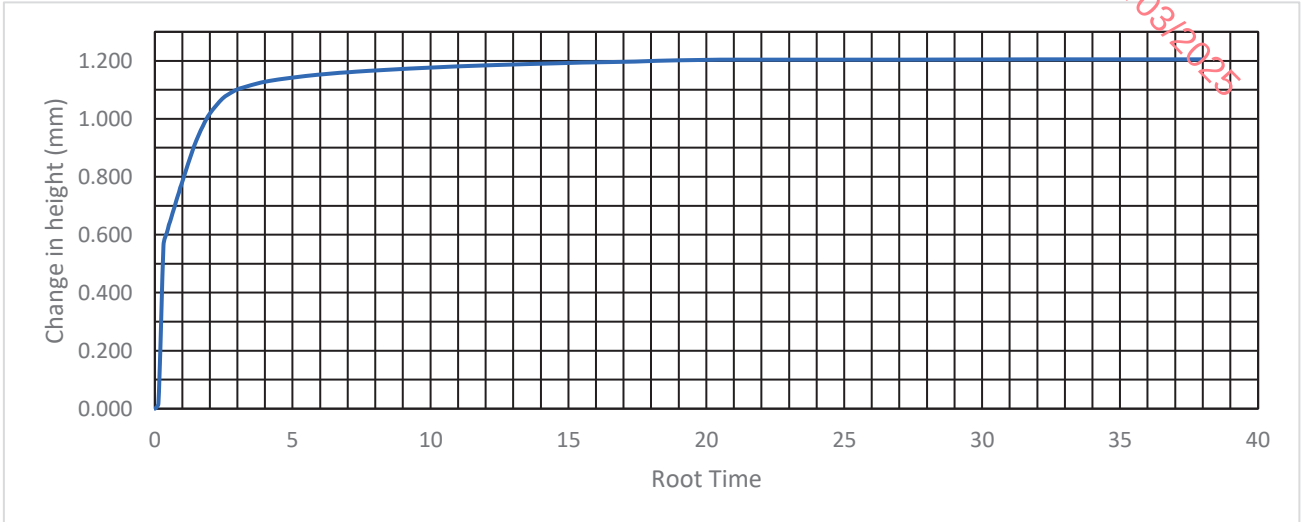


Test Report

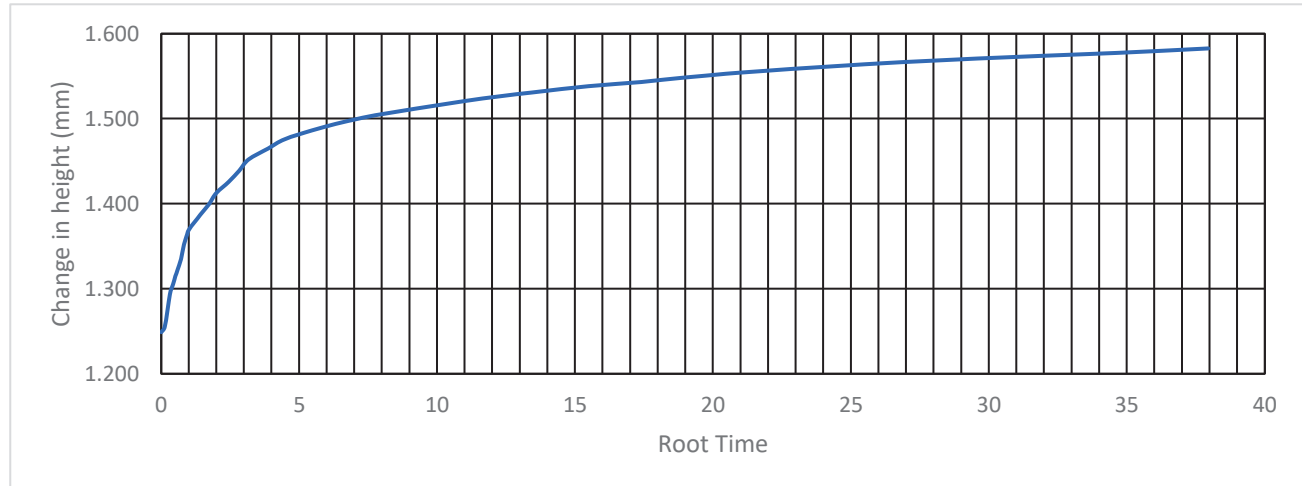
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152331

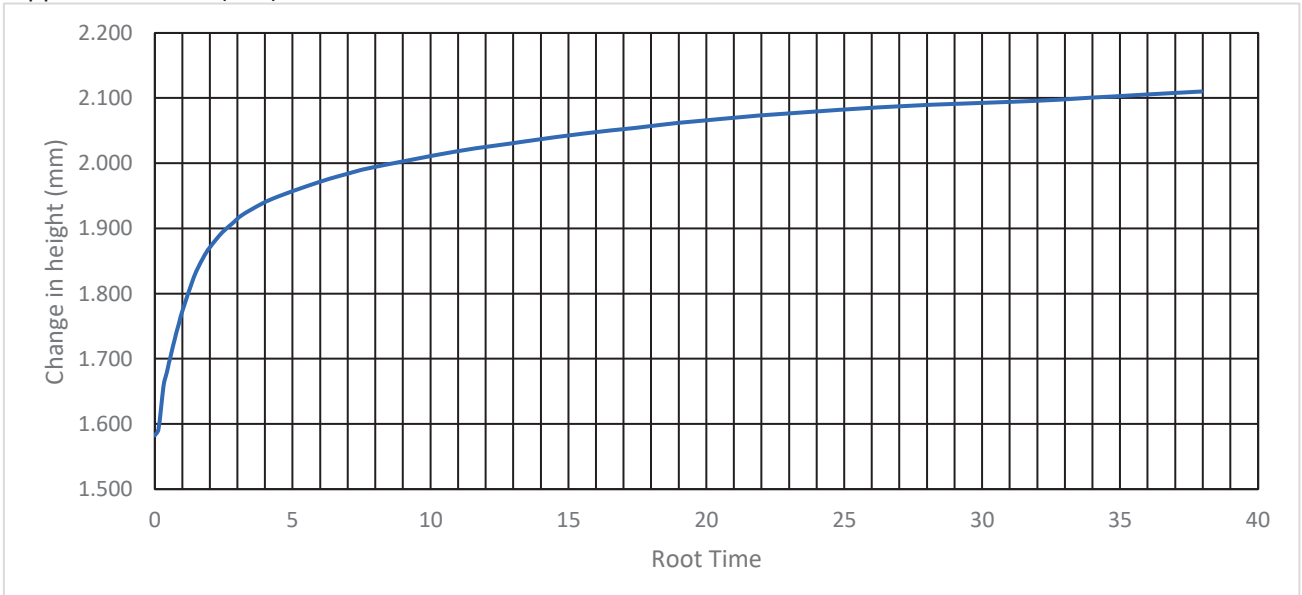
Applied Pressure (kPa) 30



Applied Pressure (kPa) 60



Applied Pressure (kPa) 120



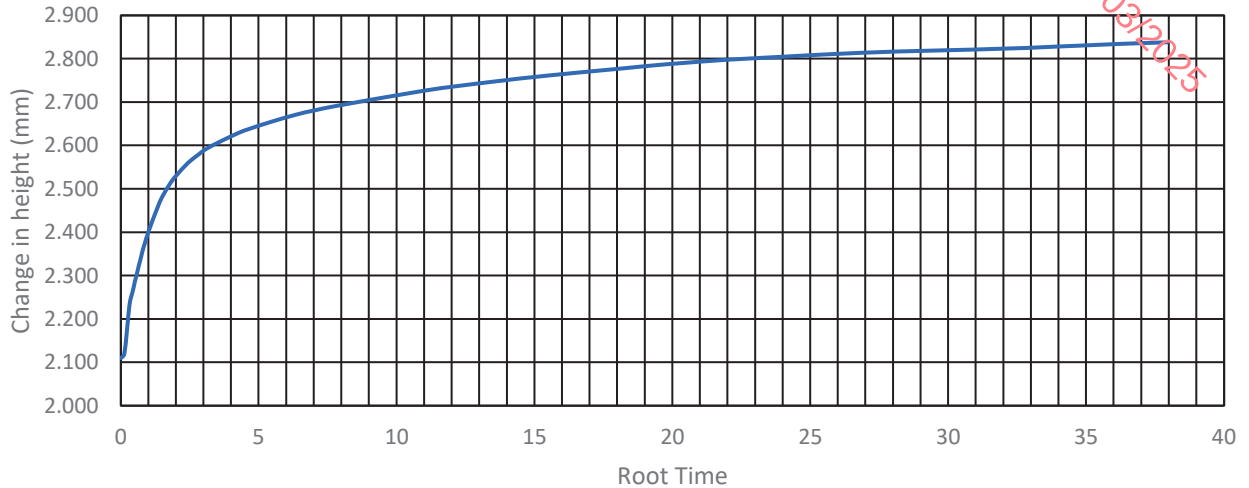


Test Report

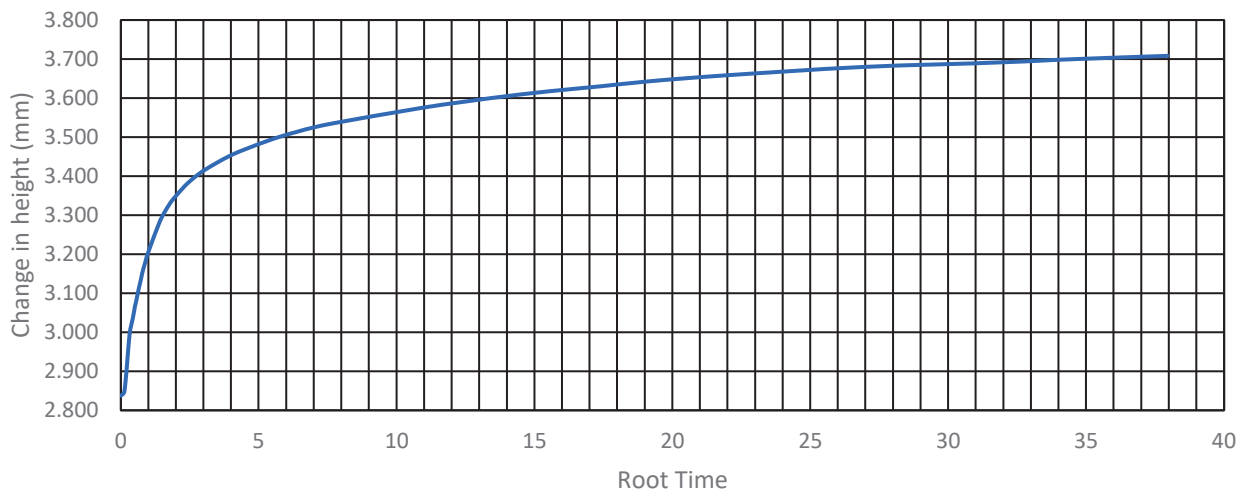
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152331

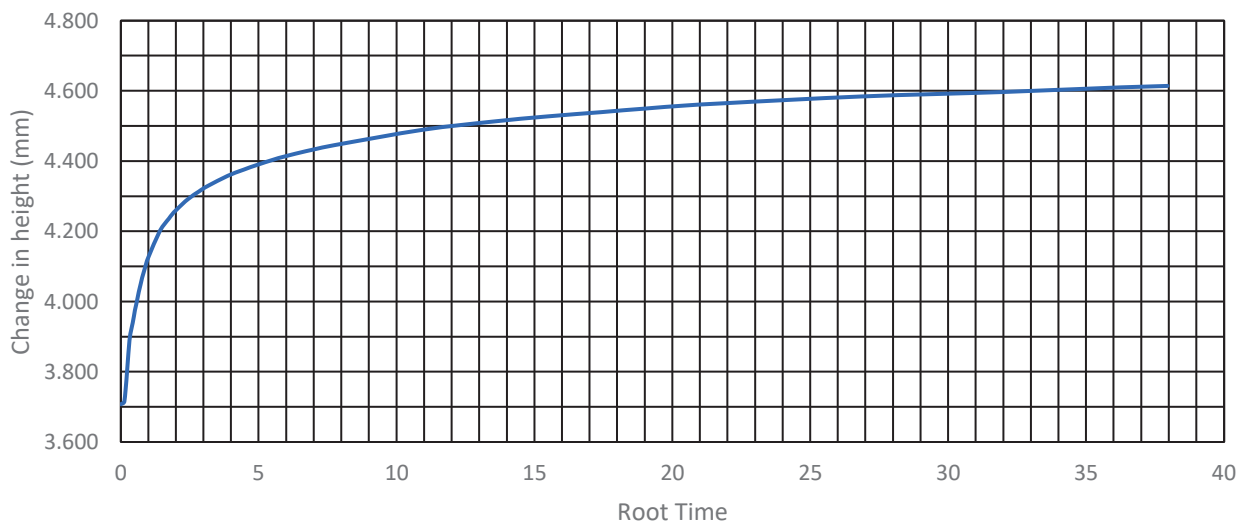
Applied Pressure (kPa) 240



Applied Pressure (kPa) 480



Applied Pressure (kPa) 960



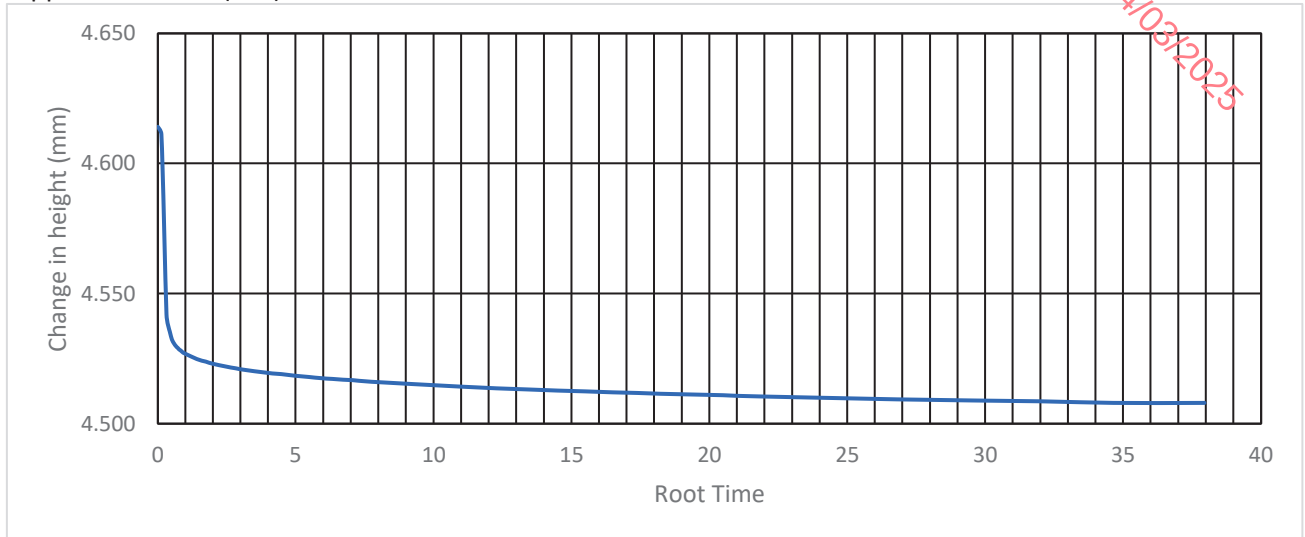


Test Report

Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152331

Applied Pressure (kPa) 240



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One dimensional Consolidation

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Report No. R152332

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH310 Sample number: 197287

Depth (m): 8.0

Description Grey SILT/CLAY with shell fragments

Specimen Height (mm) 20.01 Specimen diameter (mm) 74.98

Water content %

Bulk density Mg/m^3

Dry density Mg/m^3

Voids ratio

Initial

70.0

1.56

0.91

1.624

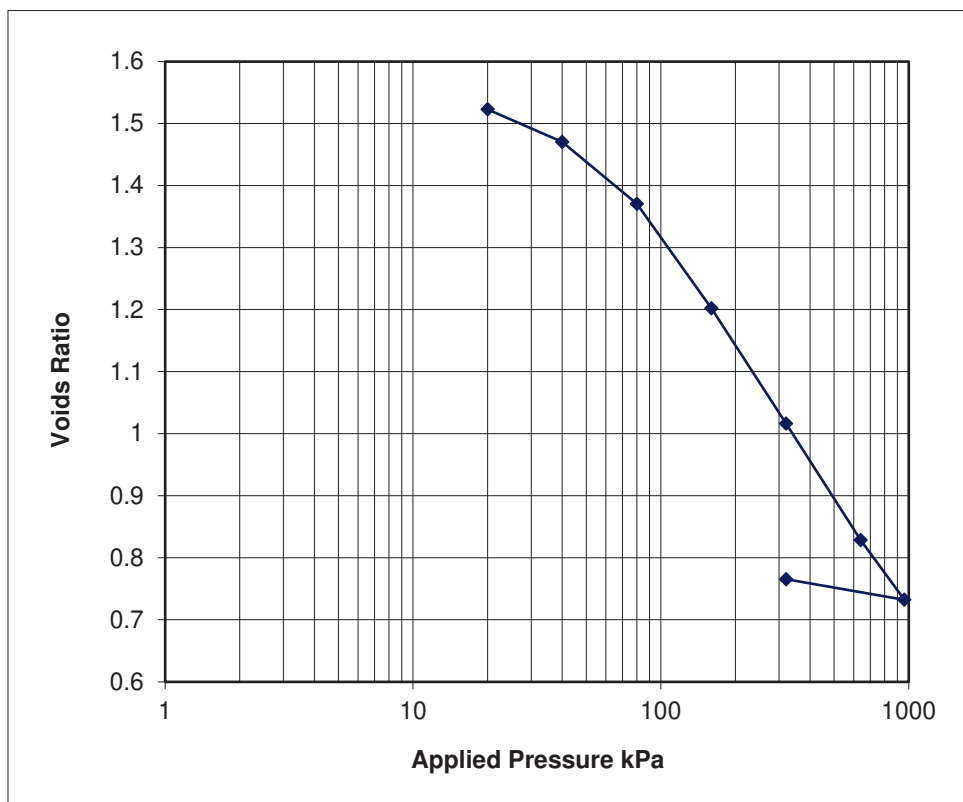
Specimen Preparation:

The cutting ring was pushed vertically into an undisturbed sample.

Initial water content was determined from the trimmings.

Assumed Particle density Mg/m^3 2.40

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/year)	Voids Ratio
0 - 20	1.919	29.691	1.52283
20 - 40	1.039	10.062	1.47039
40 - 80	1.011	4.498	1.37048
80 - 160	0.888	1.667	1.20214
160 - 320	0.528	0.985	1.01622
320 - 640	0.291	0.709	0.82847
640 - 960	0.164	0.532	0.73224
960 - 320	-	-	0.76528





One dimensional Consolidation

ISO 17892-5:2017

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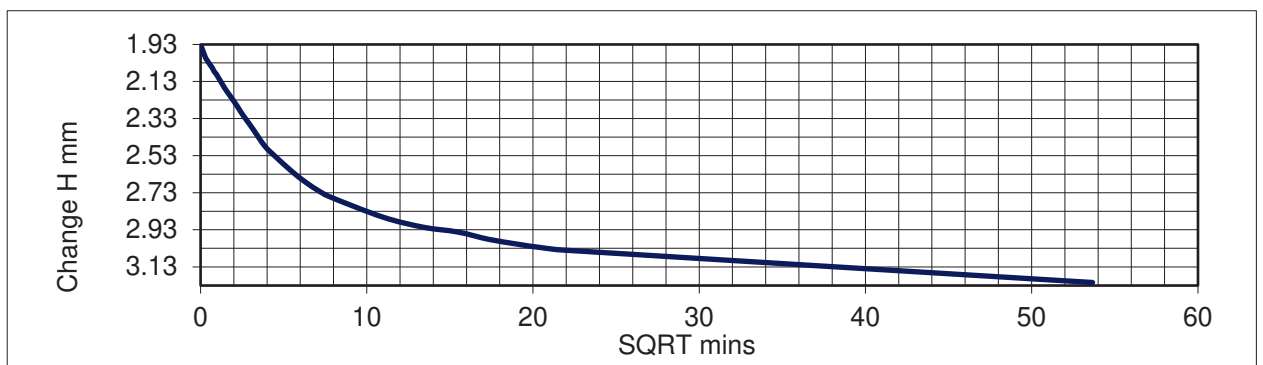
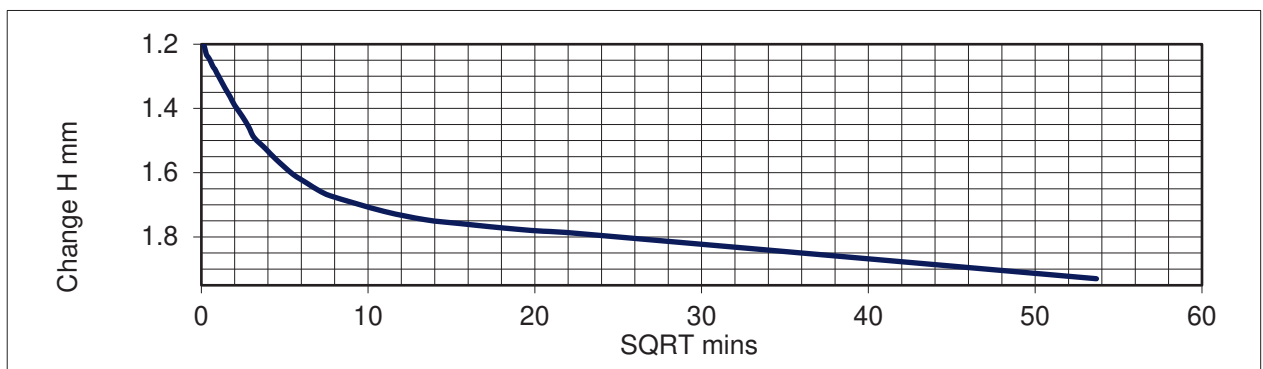
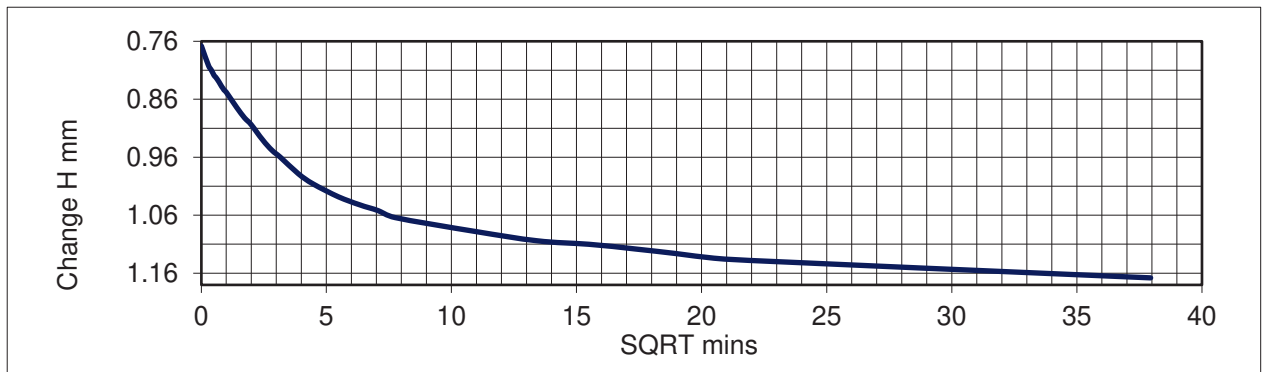
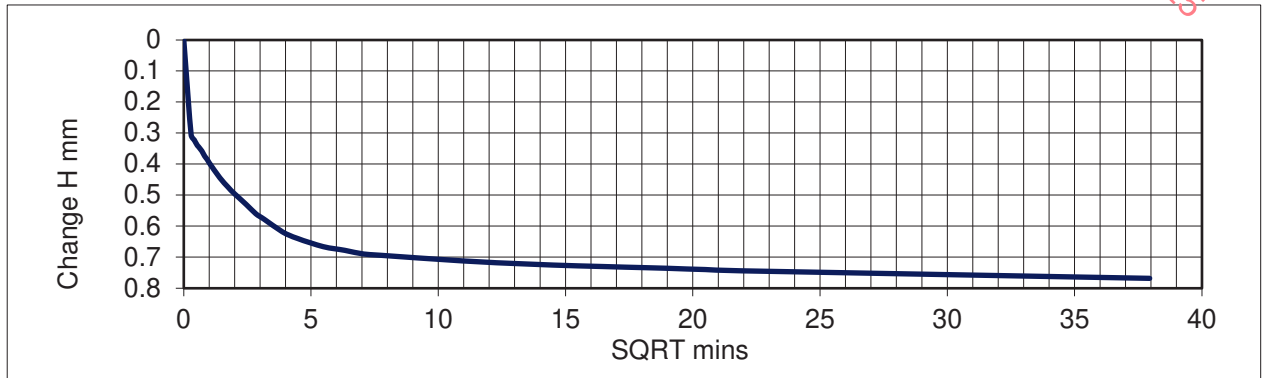
Report No. R152332

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH310 Sample number: 197287

Depth (m): 8.0





One dimensional Consolidation

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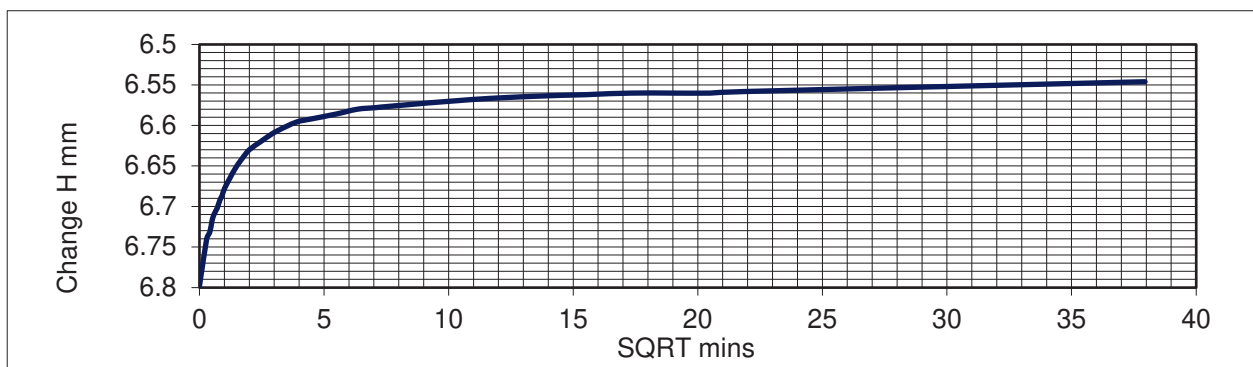
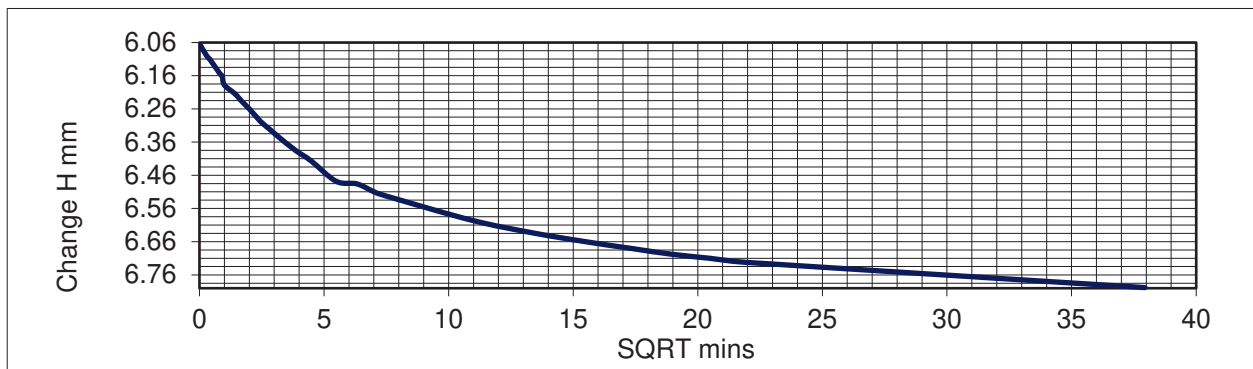
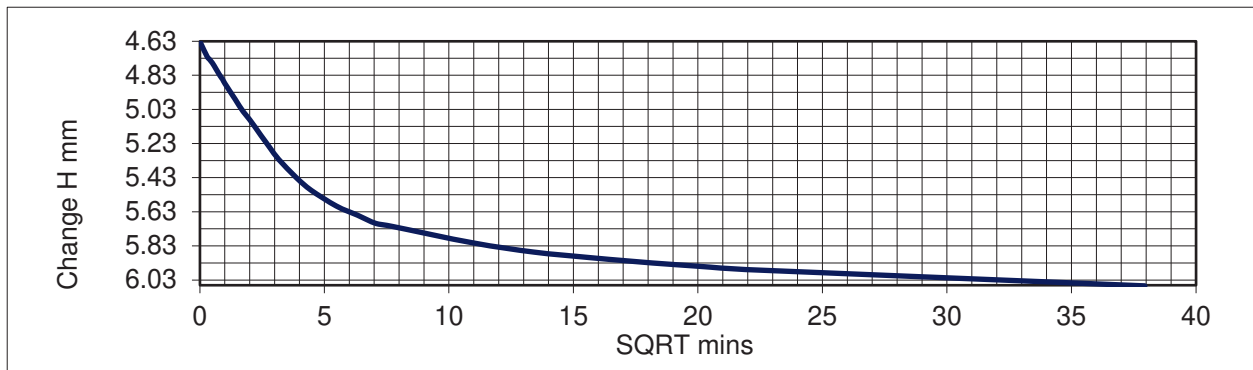
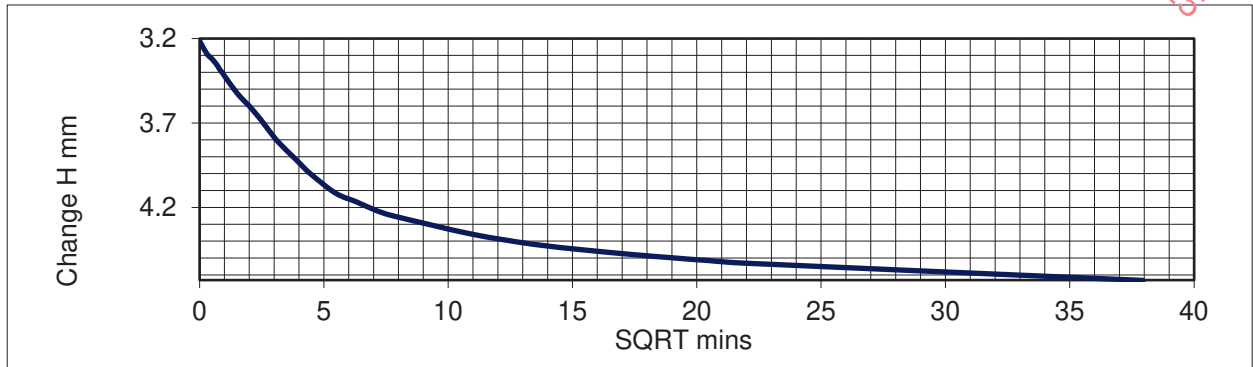
Report No. R152332

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH310 Sample number: 197287

Depth (m): 8.0





Test Report

Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152333

Contract Sea Gardens Bray

Contract Number 24991

Tested using ACONS automatic consolidation system

Client Ballymore/Atkins

BH: 311 Sample No. 197258 Depth (m): 7.00

Description Dark brown SILT/CLAY with organics

Initial Height (mm) 20.0 Diameter (mm) 75.0 Initial Voids Ratio 2.351

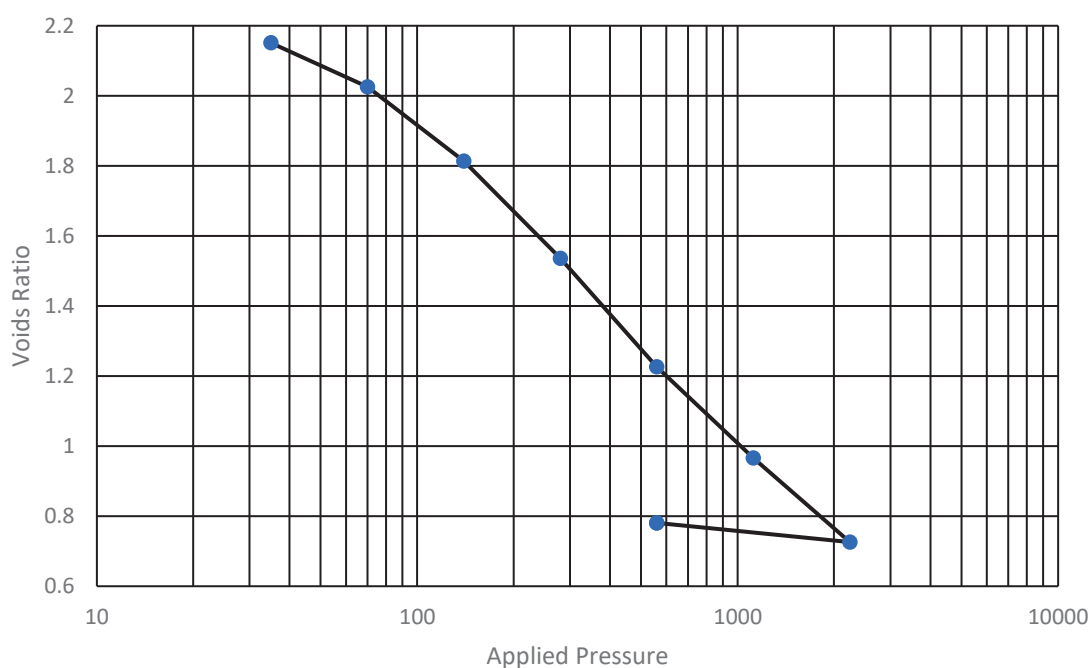
Initial Water Content (%) 96.4 Assumed Particle Density (Mg/m^3) 2.40

Initial Bulk Density (Mg/m^3) 1.41 Initial Dry Density (Mg/m^3) 0.72

Laboratory Temperature: 20 +/- 4 degrees C unless otherwise stated

Preparation: Cutting Ring pushed vertically into sample. Water Content derived from trimmings

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/Year)	Voids Ratio
35	1.708	10.586	2.15095
70	1.141	7.052	2.02511
140	0.998	4.666	1.81370
280	0.705	2.694	1.53606
560	0.436	1.706	1.22612
1120	0.208	1.308	0.96649
2240	0.109	1.015	0.72640
560	-	-	0.78091



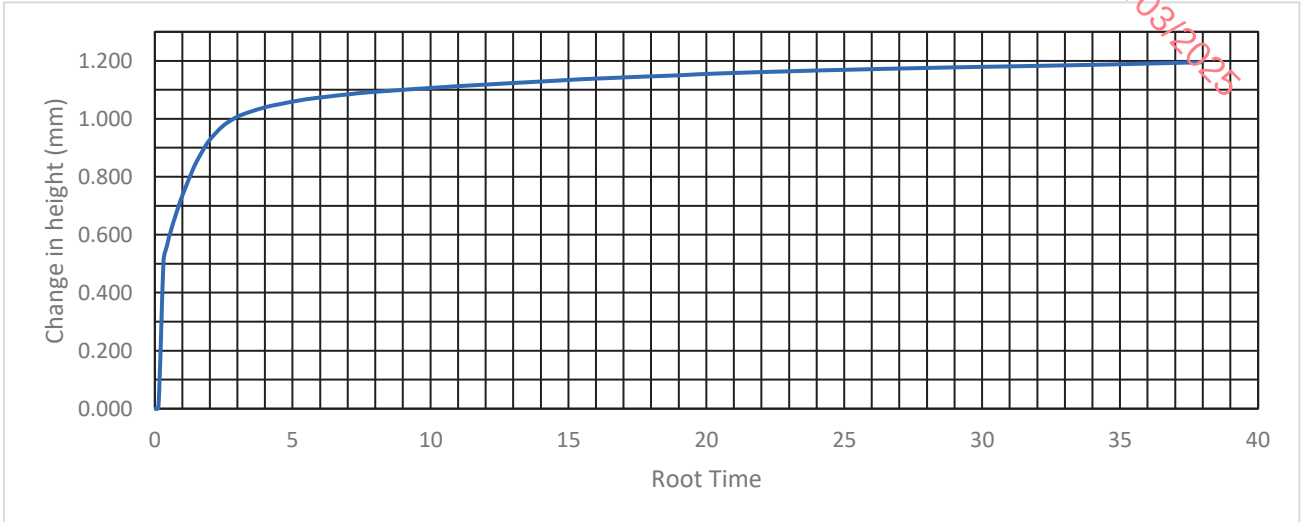


Test Report

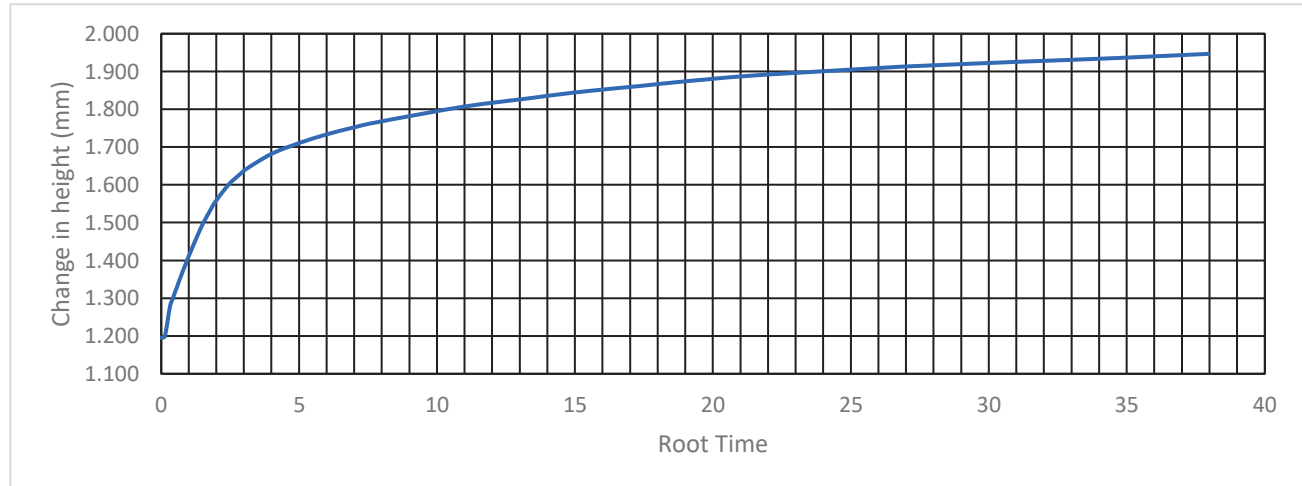
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152333

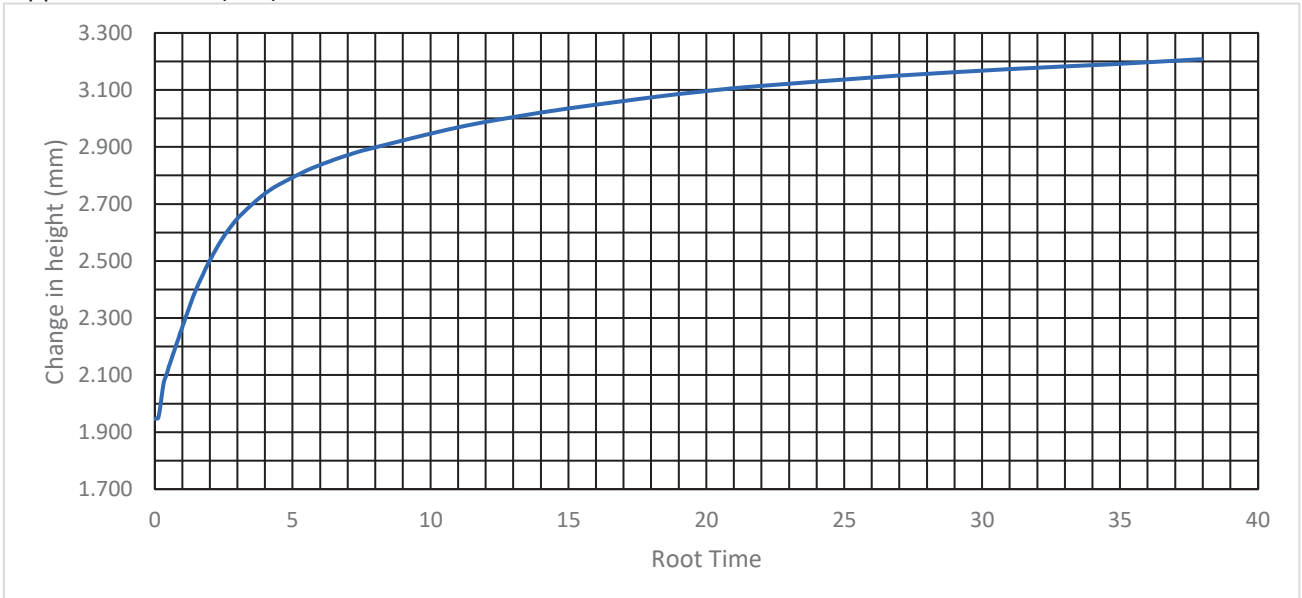
Applied Pressure (kPa) 35



Applied Pressure (kPa) 70



Applied Pressure (kPa) 140



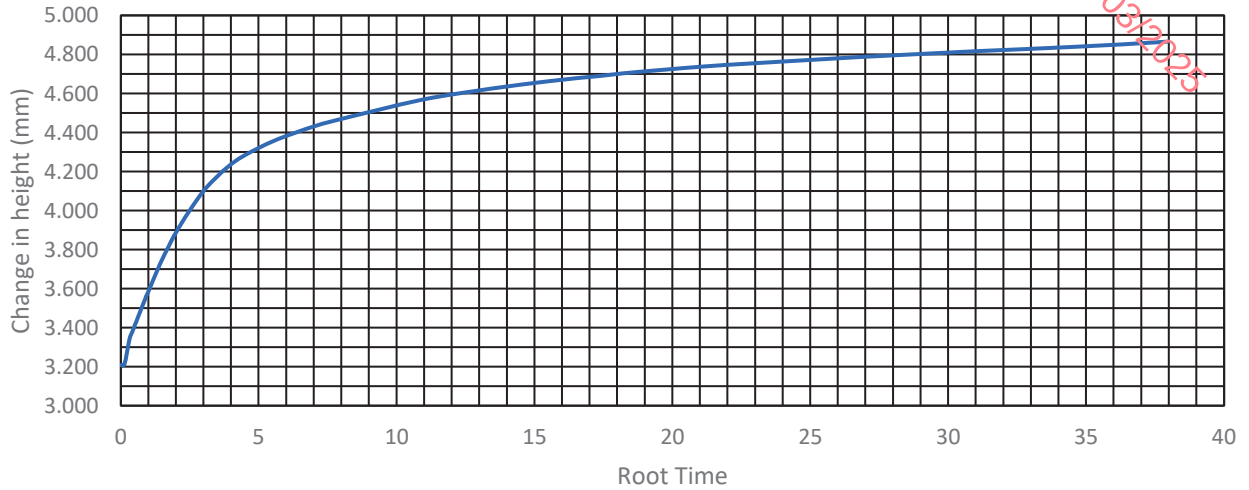


Test Report

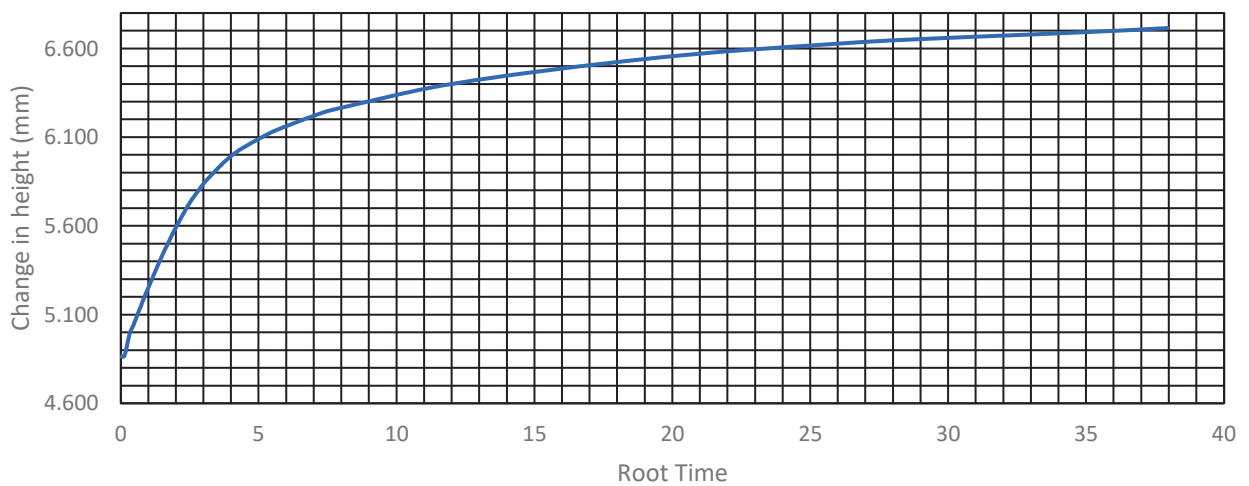
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152333

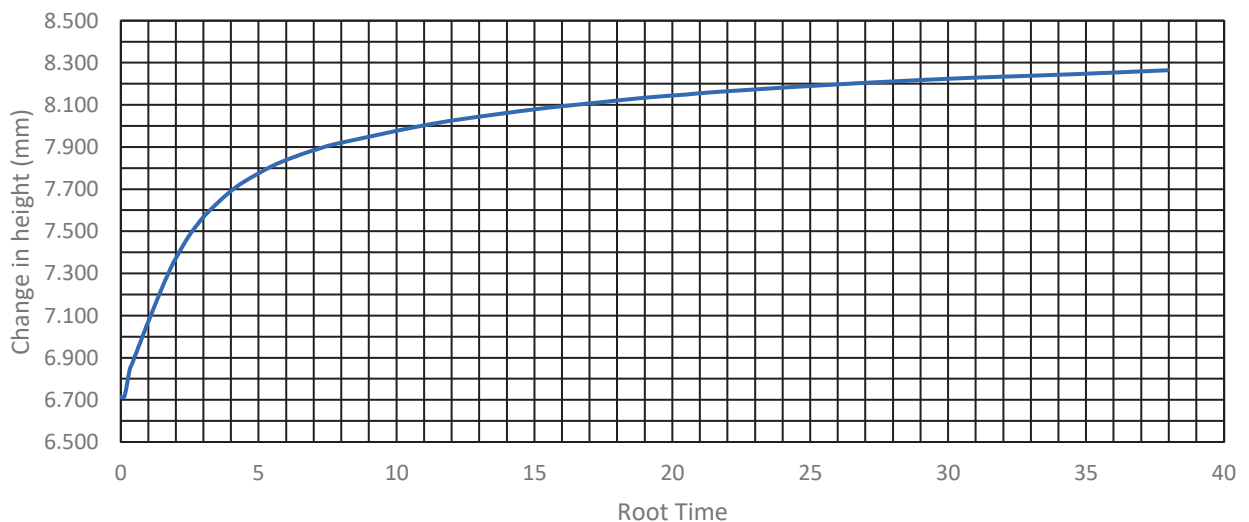
Applied Pressure (kPa) 280



Applied Pressure (kPa) 560



Applied Pressure (kPa) 1120



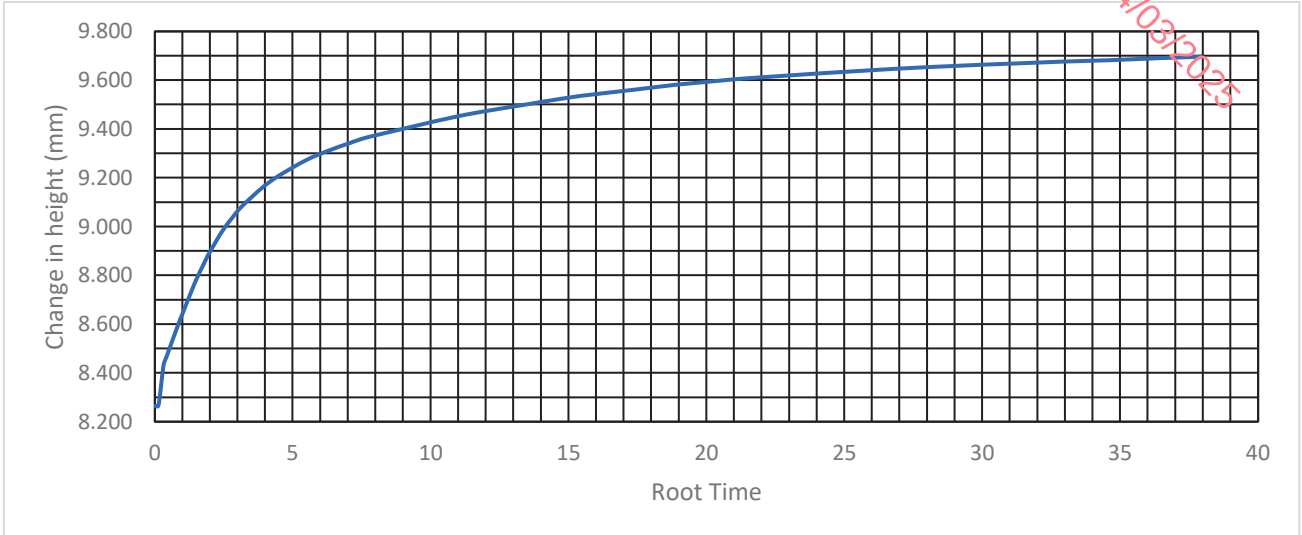


Test Report

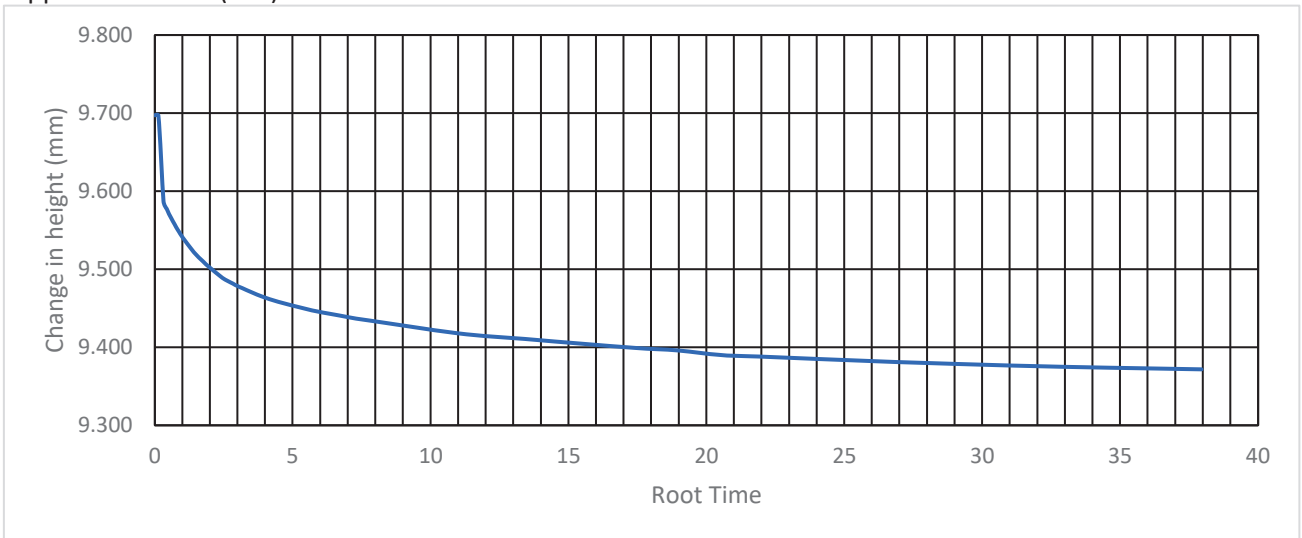
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152333

Applied Pressure (kPa) 2240



Applied Pressure (kPa) 560





One dimensional Consolidation

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Report No. R152334

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH312 Sample number: 192503

Depth (m): 8.0

Description Grey slightly sandy, slightly gravelly SILT/CLAY

Specimen Height (mm) 20.07 Specimen diameter (mm) 75.07

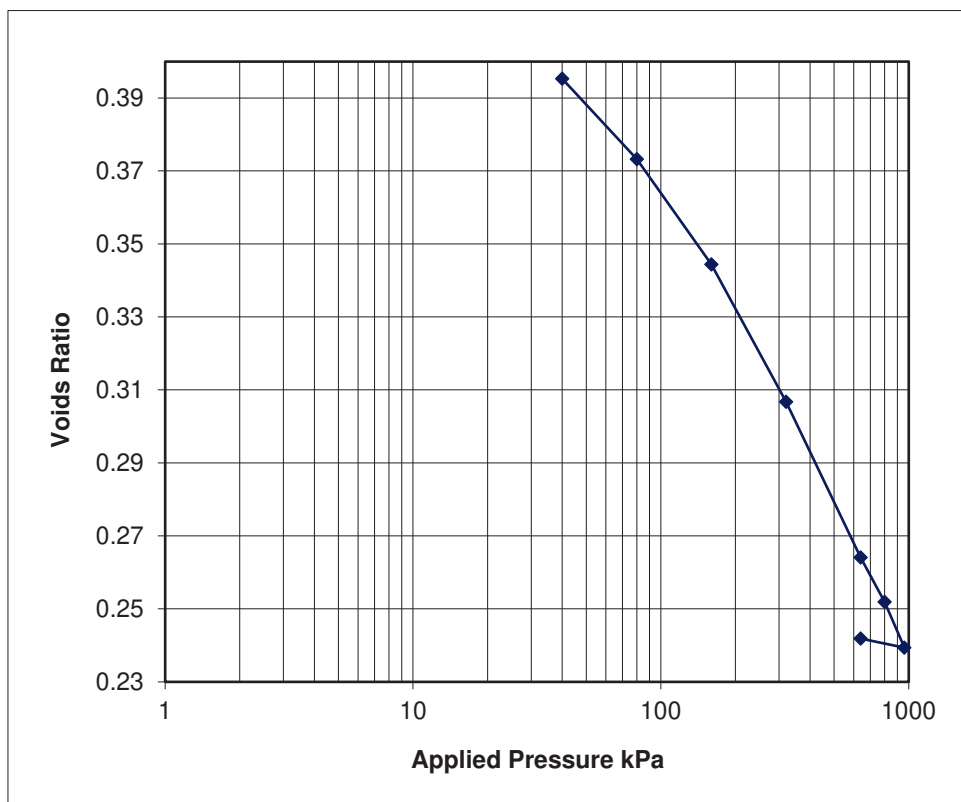
Water content %
Bulk density Mg/m^3
Dry density Mg/m^3
Voids ratio

Initial
28.9
2.10
1.63
0.476

Specimen Preparation:
The cutting ring was
pushed vertically into
an undisturbed sample.
Initial water content was
determined from the
trimmings.

Assumed Particle density Mg/m^3 2.40

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/year)	Voids Ratio
0 - 40	1.365	66.099	0.39527
40 - 80	0.395	32.506	0.37321
80 - 160	0.262	22.426	0.34438
160 - 320	0.175	16.030	0.30673
320 - 640	0.102	15.074	0.26408
640 - 800	0.060	14.437	0.25187
800 - 960	0.062	14.155	0.23937
960 - 640	-	-	0.24187





One dimensional Consolidation

ISO 17892-5:2017

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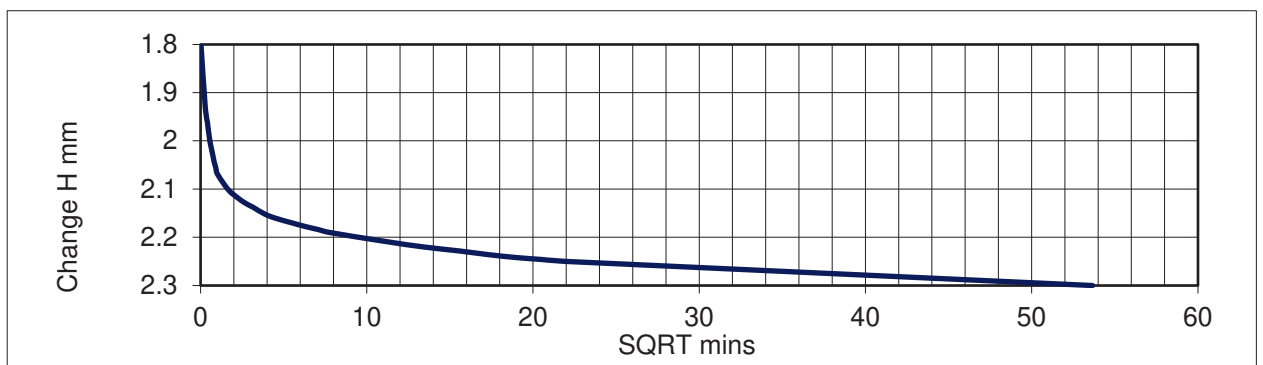
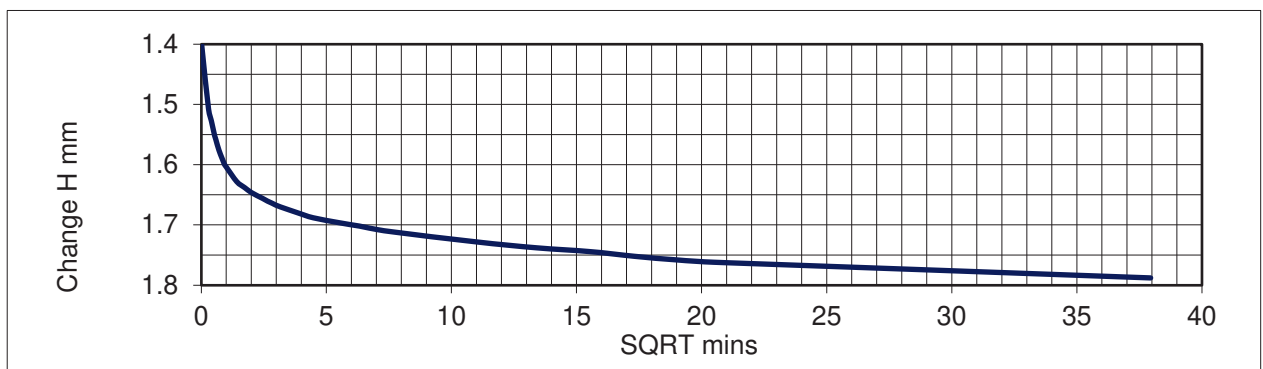
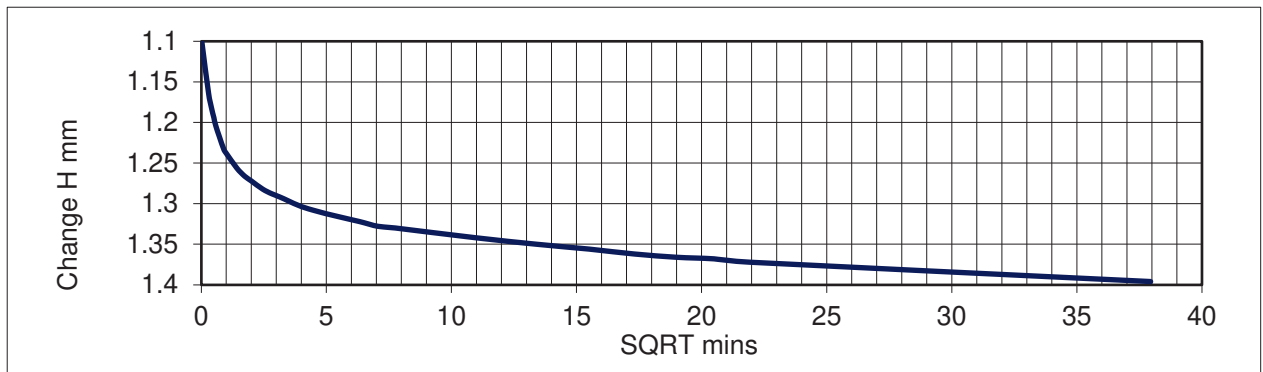
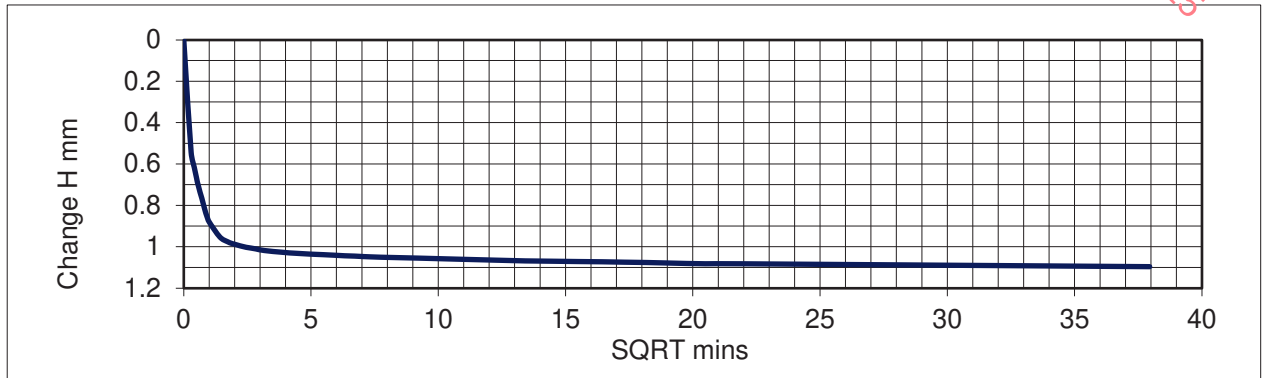
Report No. R152334

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH312 Sample number: 192503

Depth (m): 8.0





One dimensional Consolidation

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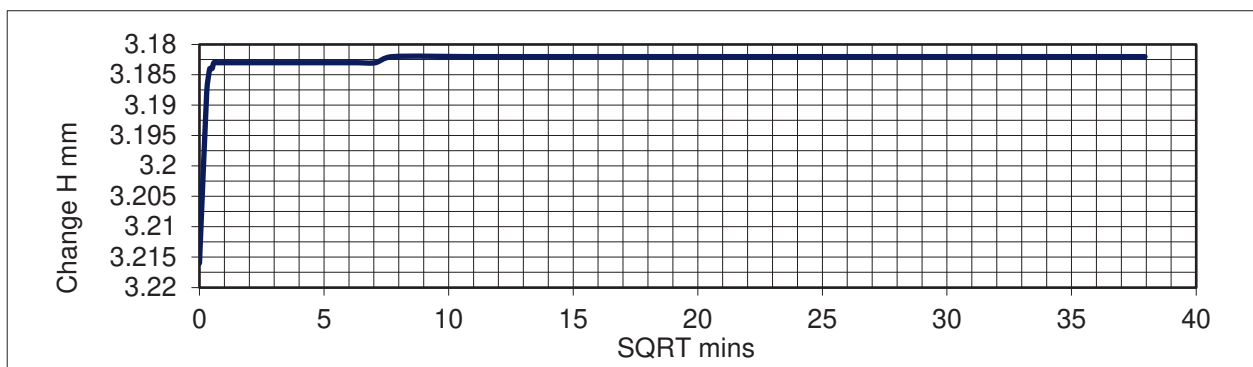
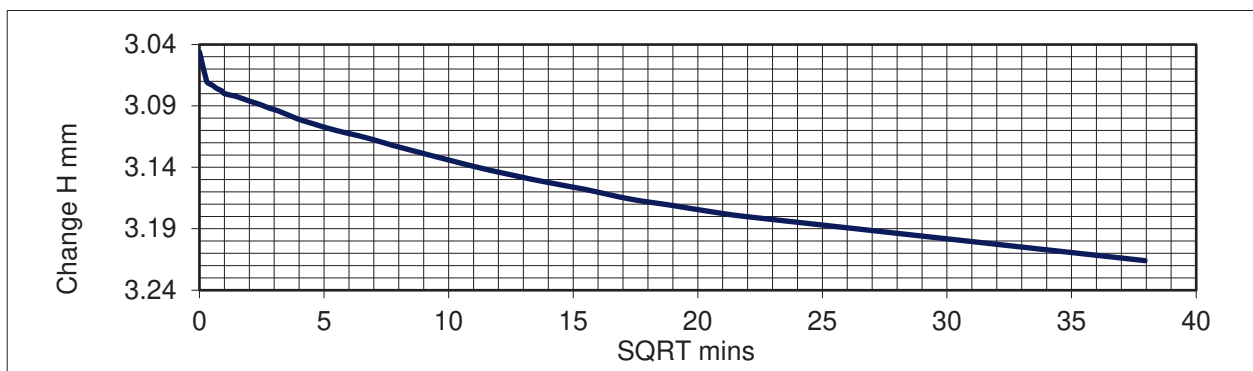
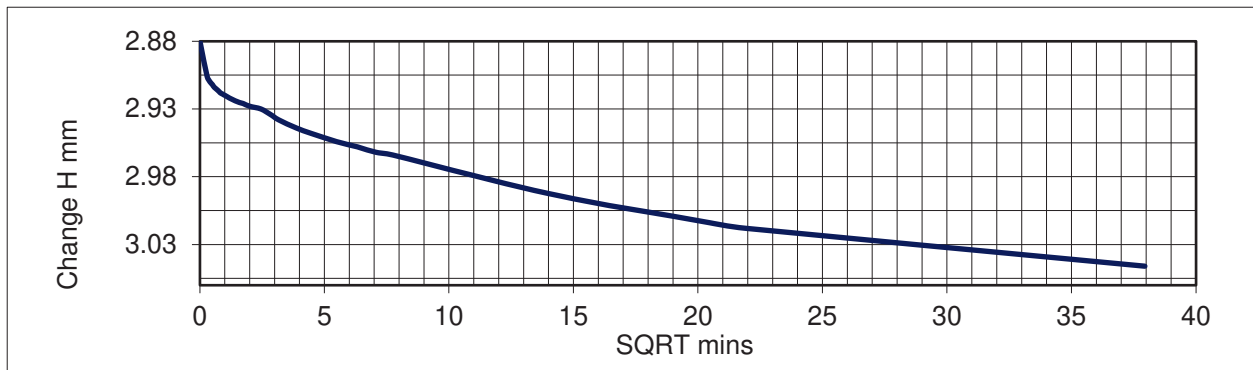
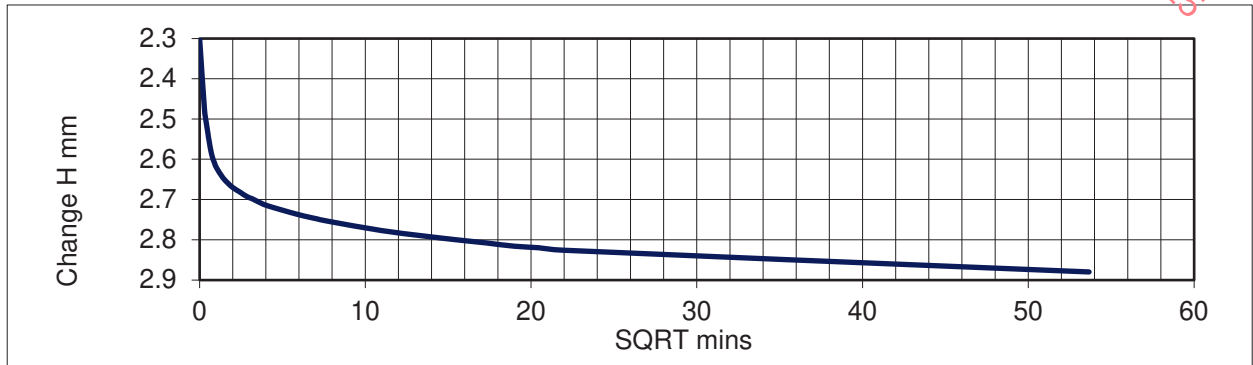
Report No. R152334

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH312 Sample number: 192503

Depth (m): 8.0





One dimensional Consolidation

ISO 17892-5:2017

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Report No. R152335

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH313 Sample number: 204384

Depth (m): 5.0

Description Grey slightly sandy SILT/CLAY with shell fragments

Specimen Height (mm) 20.01 Specimen diameter (mm) 74.98

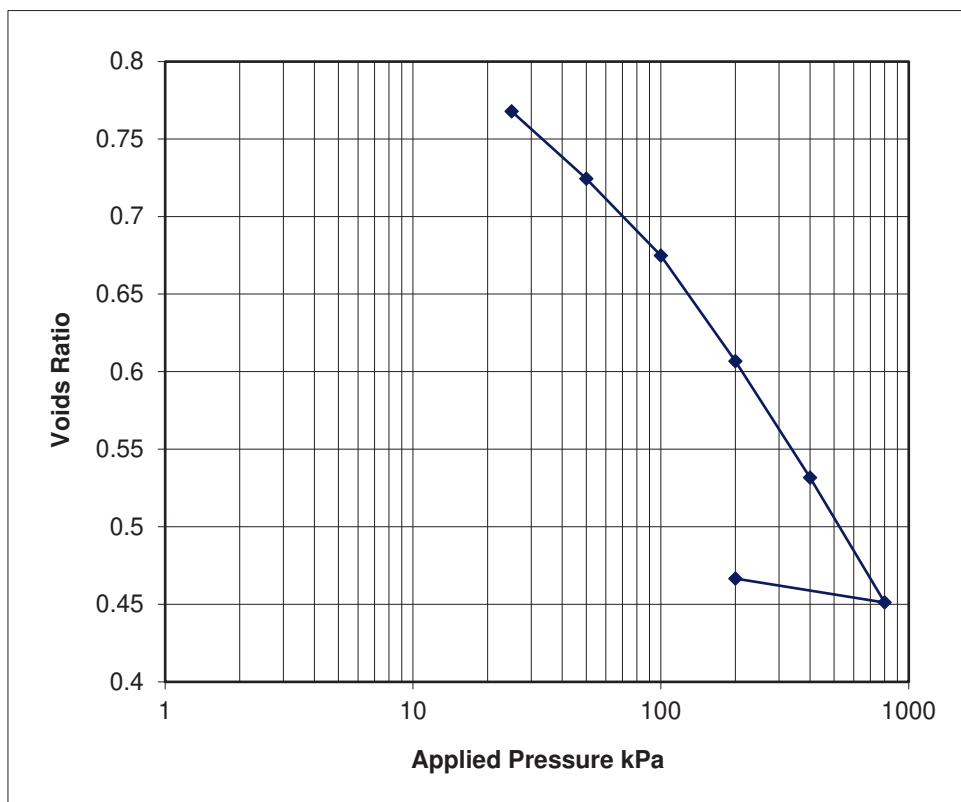
Water content %
Bulk density Mg/m^3
Dry density Mg/m^3
Voids ratio

Initial
41.7
1.81
1.28
0.880

Specimen Preparation:
The cutting ring was
pushed vertically into
an undisturbed sample.
Initial water content was
determined from the
trimmings.

Assumed Particle density Mg/m^3 2.40

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/year)	Voids Ratio
0 - 25	2.387	10.458	0.76779
25 - 50	0.982	4.559	0.72439
50 - 100	0.575	3.780	0.67478
100 - 200	0.406	2.344	0.60676
200 - 400	0.234	2.036	0.53160
400 - 800	0.131	1.839	0.45118
800 - 200	-	-	0.46658





One dimensional Consolidation

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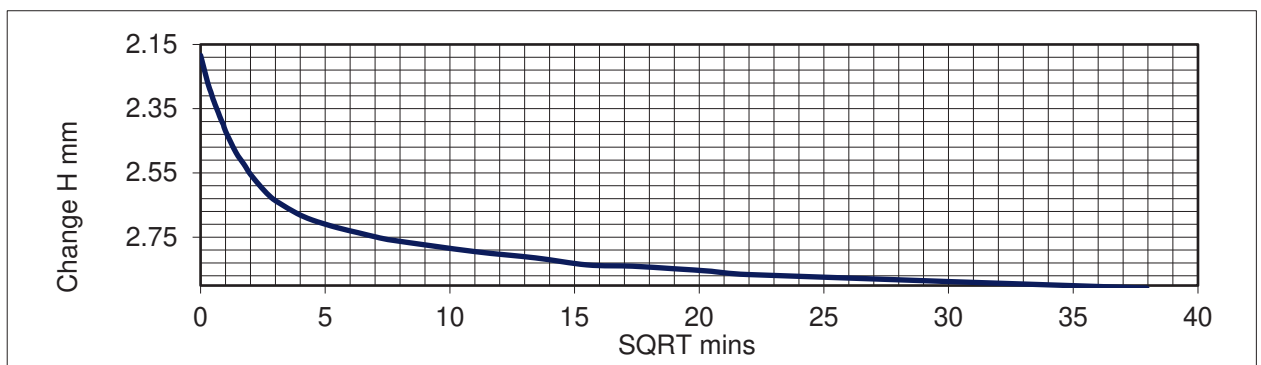
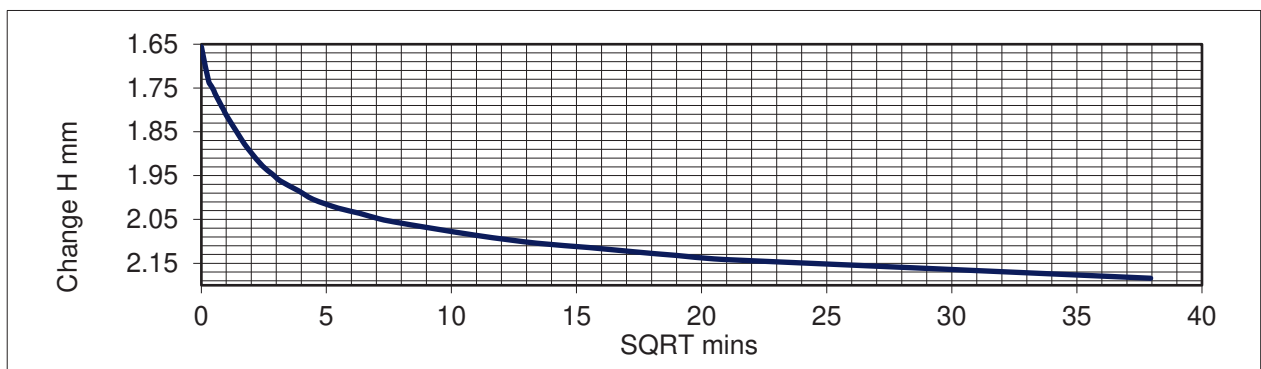
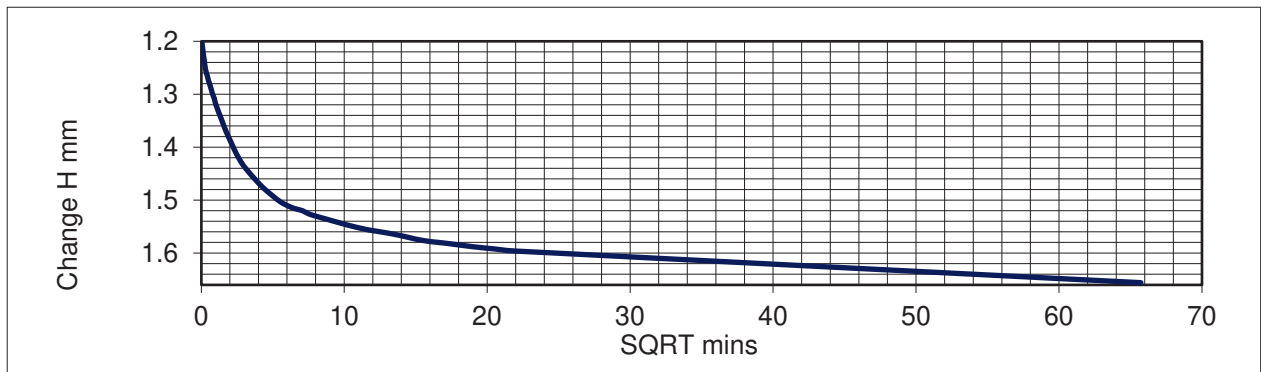
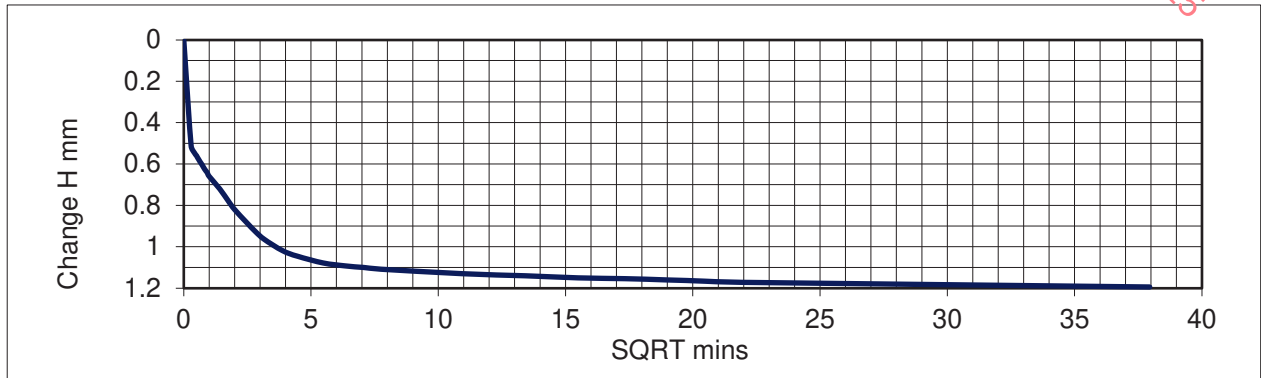
Report No. R152335

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH313 Sample number: 204384

Depth (m): 5.0





One dimensional Consolidation

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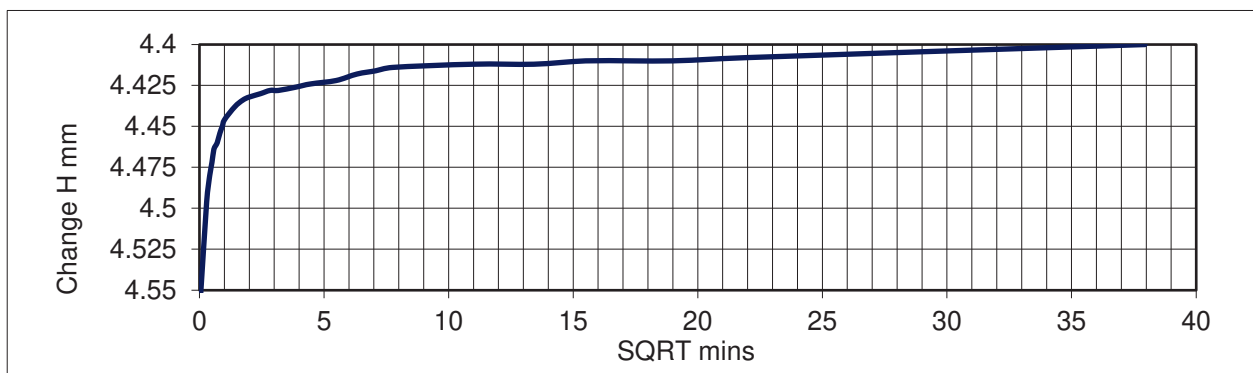
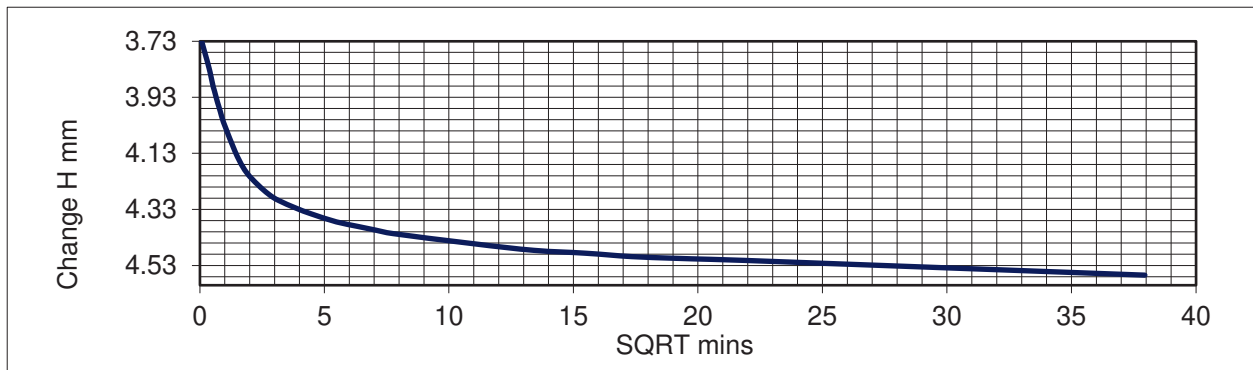
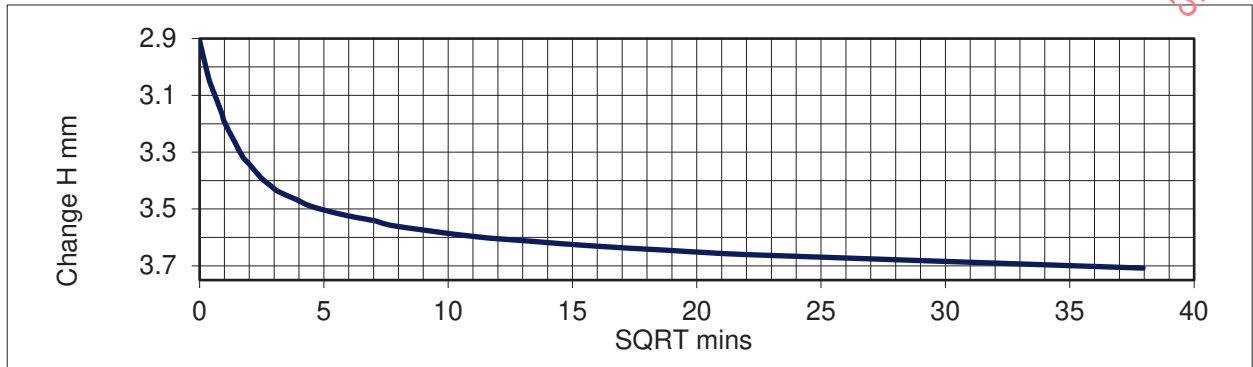
Report No. R152335

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH313 Sample number: 204384

Depth (m): 5.0





One dimensional Consolidation

ISO 17892-5:2017

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Report No. R152336

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH314 Sample number: 167266

Depth (m): 7.0

Description Dark grey slightly sandy SILT/CLAY with some organic material

Specimen Height (mm) 20.01 Specimen diameter (mm) 75.06

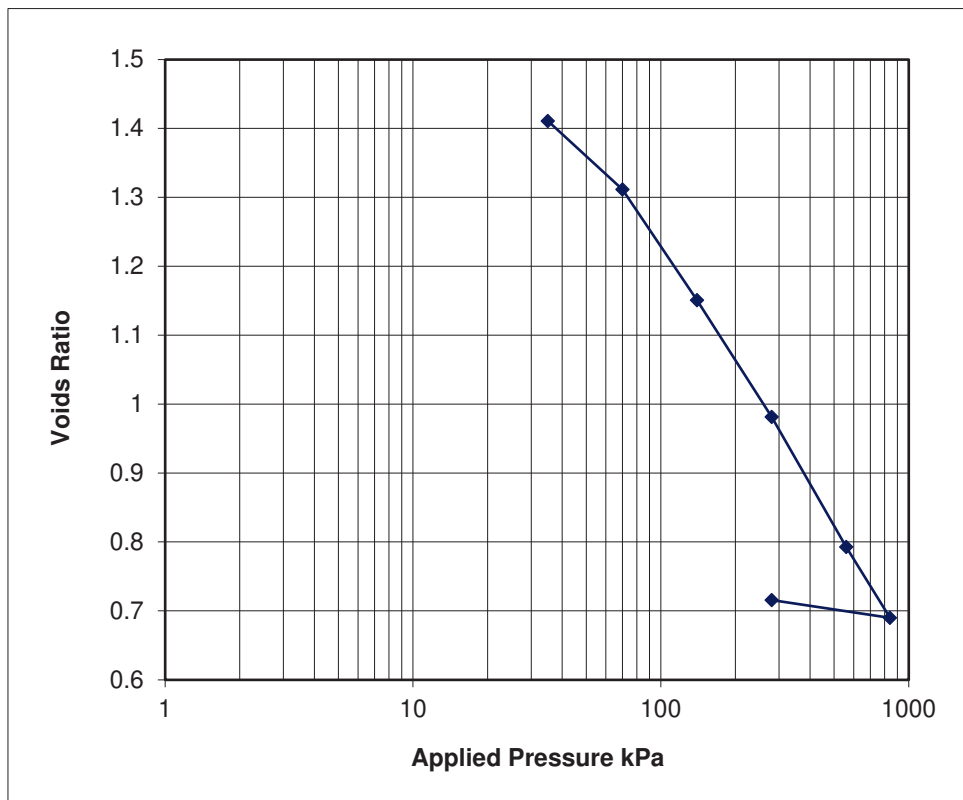
Water content %
Bulk density Mg/m^3
Dry density Mg/m^3
Voids ratio

Initial
66.6
1.51
0.90
1.653

Specimen Preparation:
The cutting ring was
pushed vertically into
an undisturbed sample.
Initial water content was
determined from the
trimmings.

Assumed Particle density Mg/m^3 2.40

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/year)	Voids Ratio
0 - 35	2.604	28.115	1.41076
35 - 70	1.178	15.650	1.31134
70 - 140	0.993	7.860	1.15067
140 - 280	0.563	6.740	0.98126
280 - 560	0.340	4.647	0.79276
560 - 840	0.205	2.627	0.68989
870 - 280	-	-	0.71561





One dimensional Consolidation

ISO 17892-5:2017

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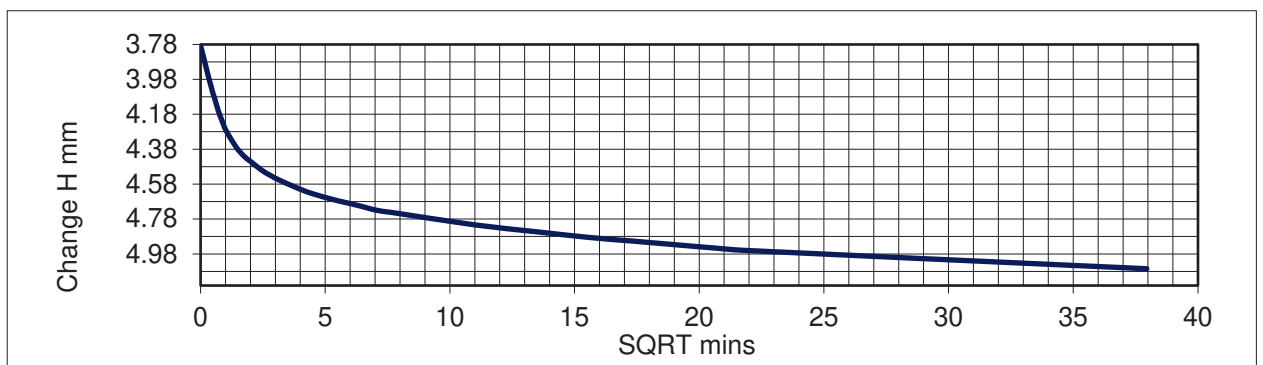
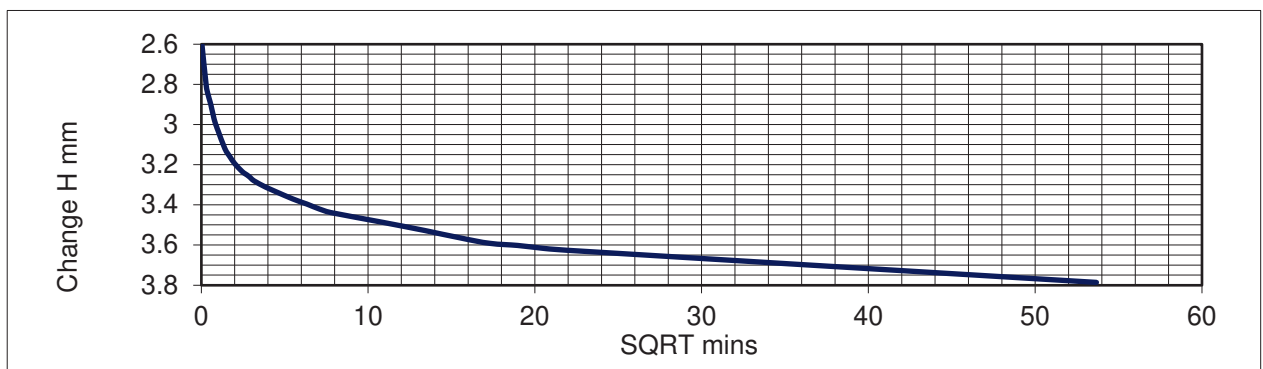
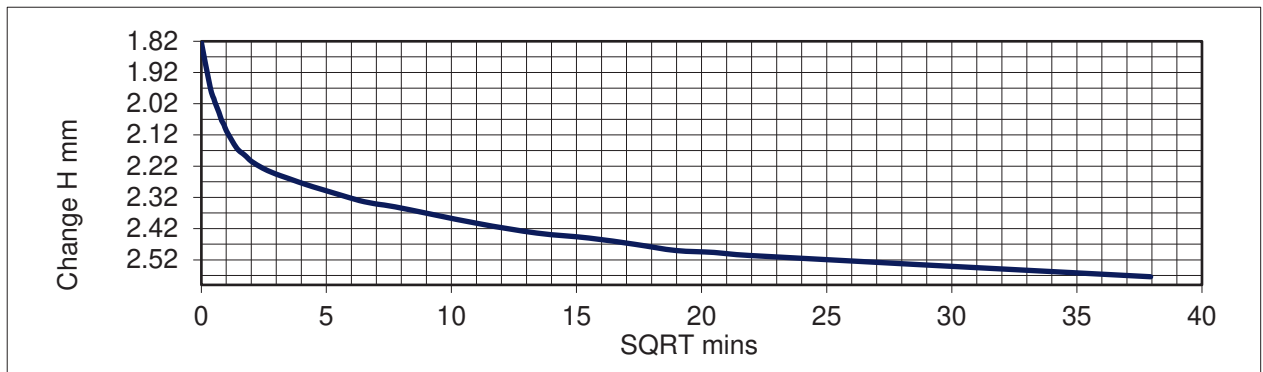
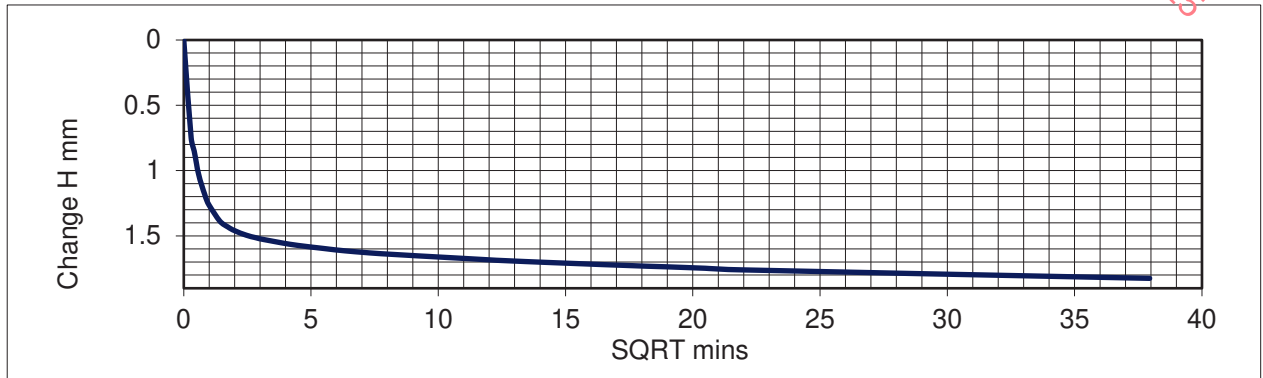
Report No. R152336

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH314 Sample number: 167266

Depth (m): 7.0





One dimensional Consolidation

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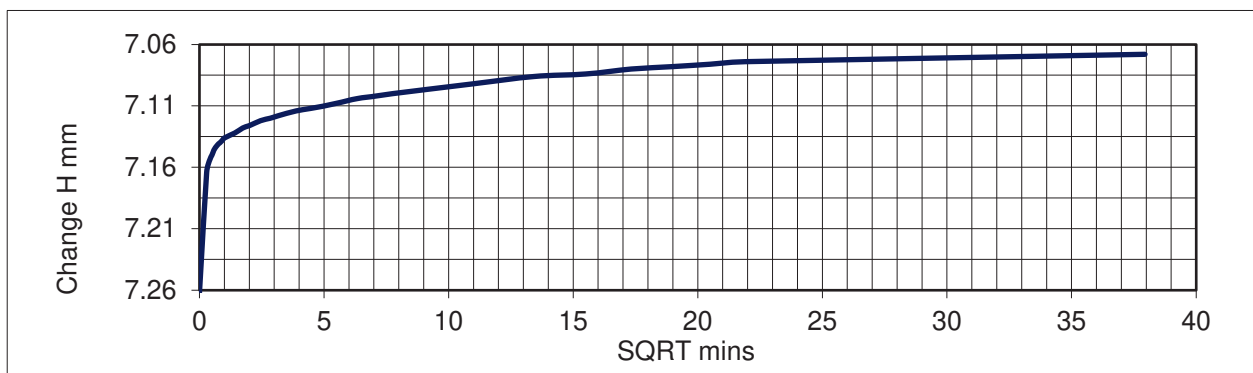
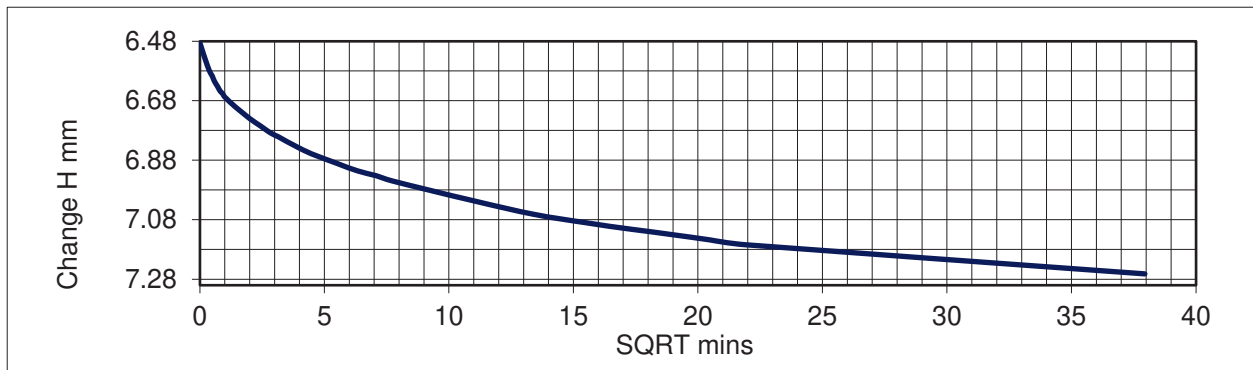
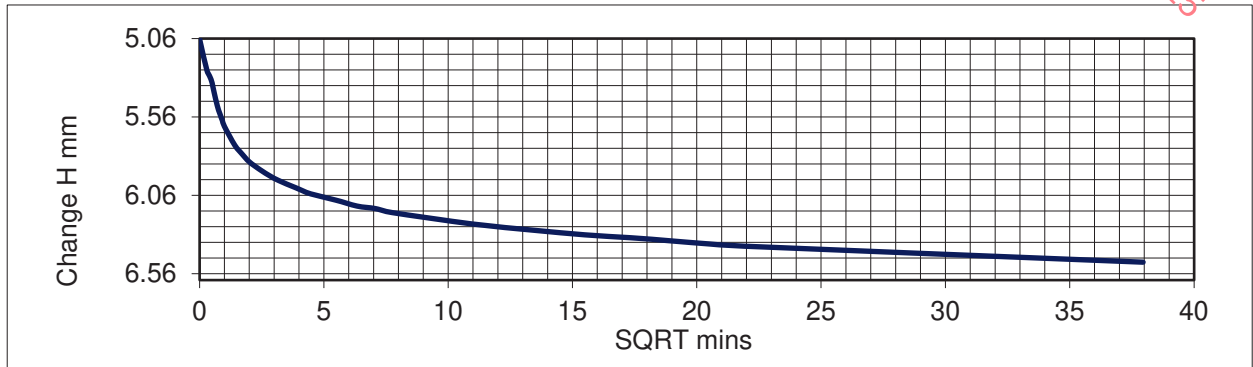
Report No. R152336

Contract: Sea Gardens Bray

Contract number: 24991

BH: BH314 Sample number: 167266

Depth (m): 7.0





Test Report

Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152337

Contract Sea Gardens Bray

Contract Number 24991

Tested using ACONS automatic consolidation system

Client Ballymore/Atkins

BH: 315 Sample No. 197278 Depth (m): 6.00

Description Dark brown SILT/CLAY with numerous organics

Initial Height (mm) 20.0 Diameter (mm) 75.0 Initial Voids Ratio 1.532

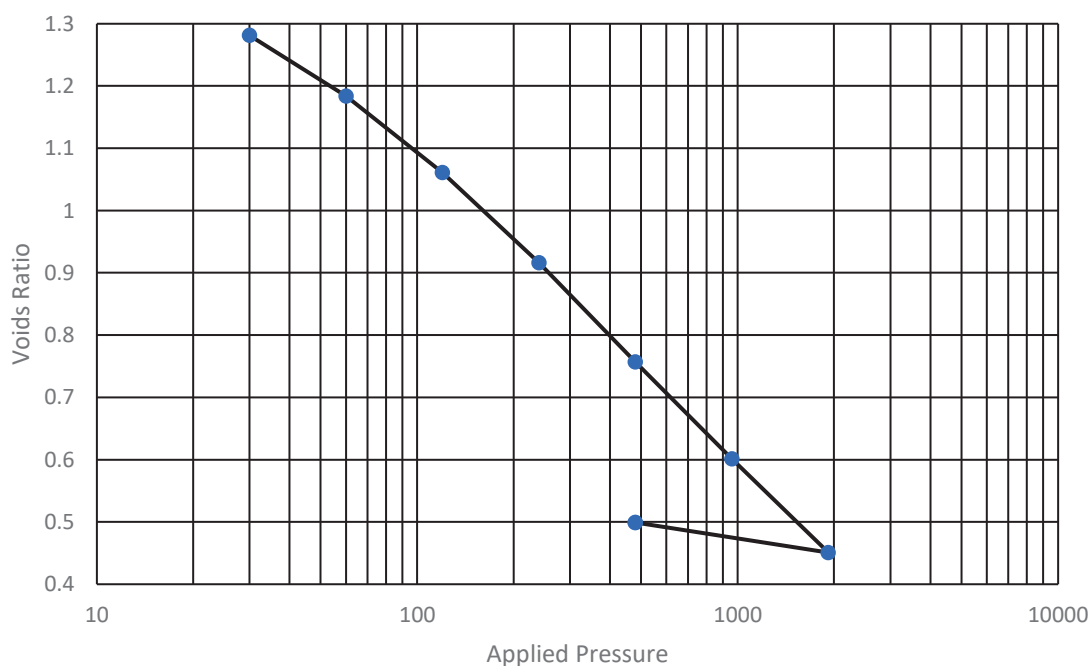
Initial Water Content (%) 68.5 Assumed Particle Density (Mg/m^3) 2.40

Initial Bulk Density (Mg/m^3) 1.60 Initial Dry Density (Mg/m^3) 0.95

Laboratory Temperature: 20 +/- 4 degrees C unless otherwise stated

Preparation: Cutting Ring pushed vertically into sample. Water Content derived from trimmings

Applied Pressure (kPa)	m_v (m^2/MN)	c_v (m^2/Year)	Voids Ratio
30	3.297	0.942	1.28132
60	1.423	0.811	1.18394
120	0.937	0.724	1.06110
240	0.586	0.609	0.91624
480	0.347	0.519	0.75677
960	0.185	0.434	0.60112
1920	0.098	0.346	0.45102
480	0.023	-	0.49926



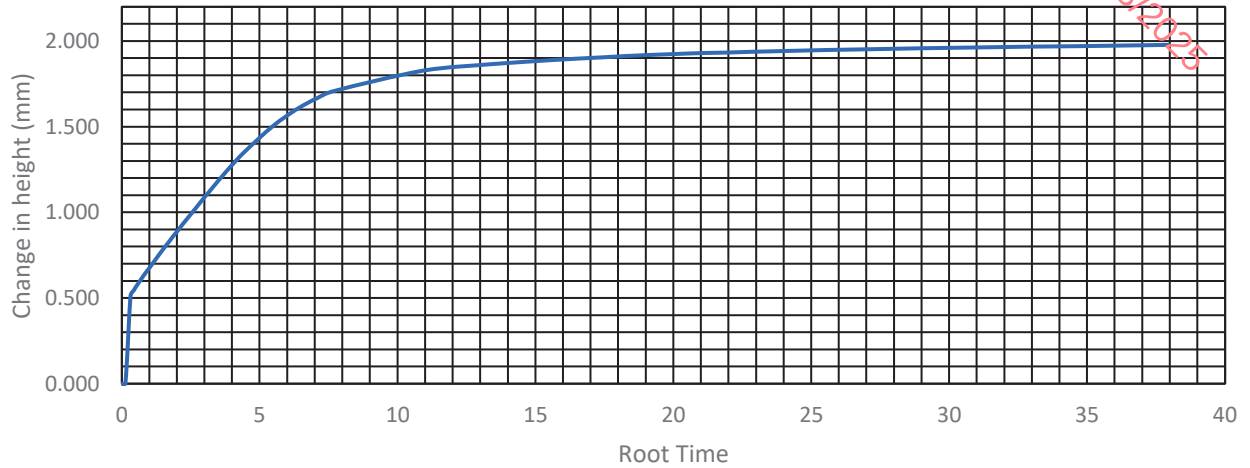


Test Report

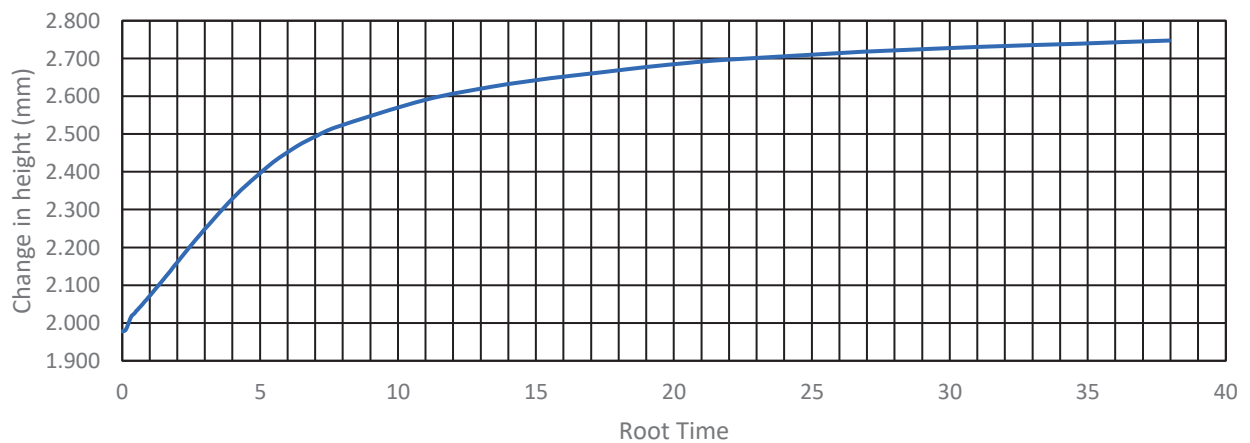
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152337

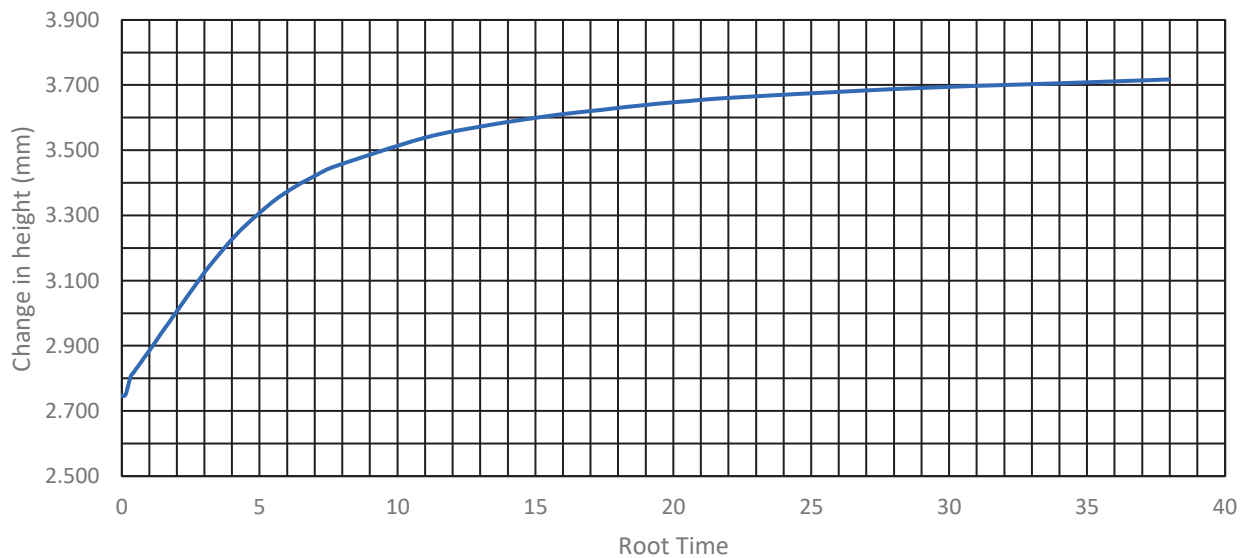
Applied Pressure (kPa) 30



Applied Pressure (kPa) 60



Applied Pressure (kPa) 120



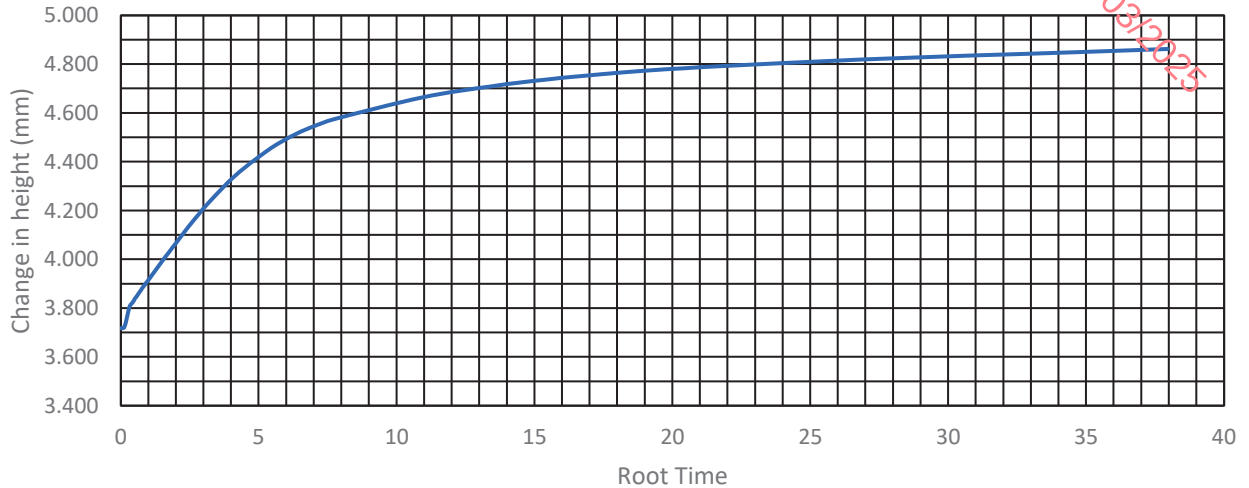


Test Report

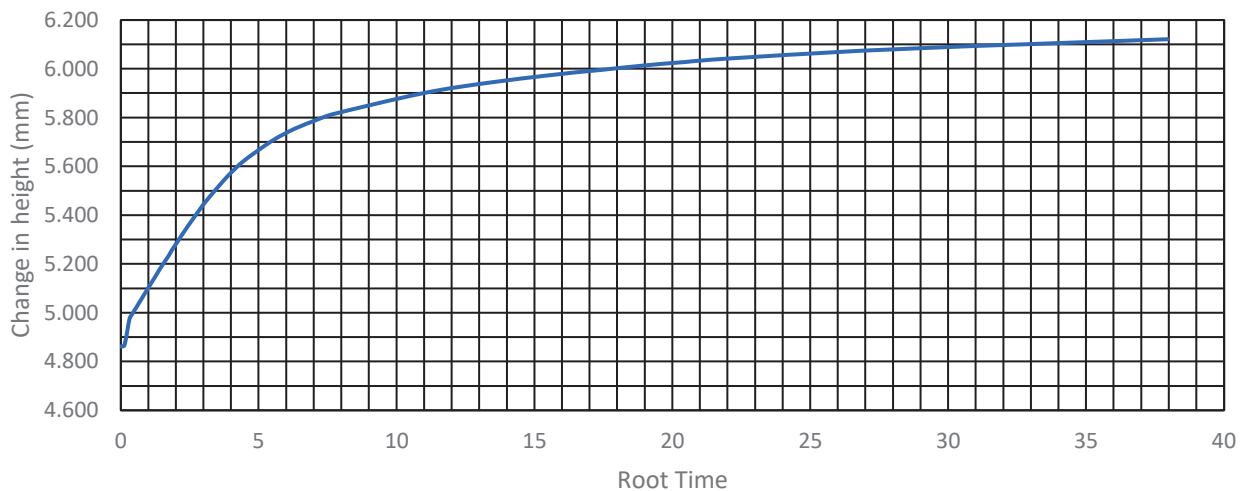
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

Report Number R152337

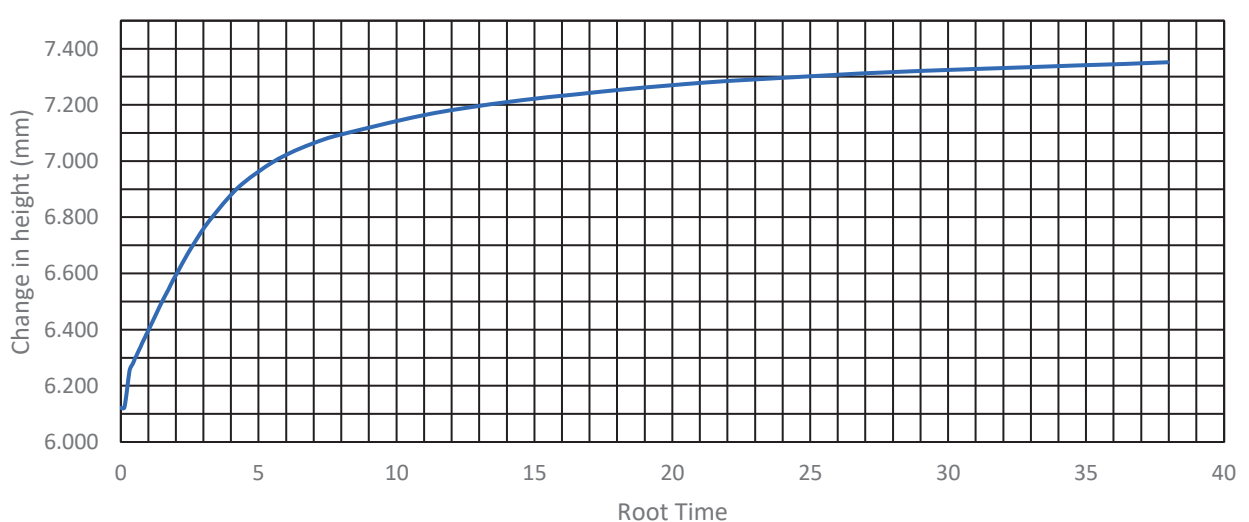
Applied Pressure (kPa) 240



Applied Pressure (kPa) 480



Applied Pressure (kPa) 960



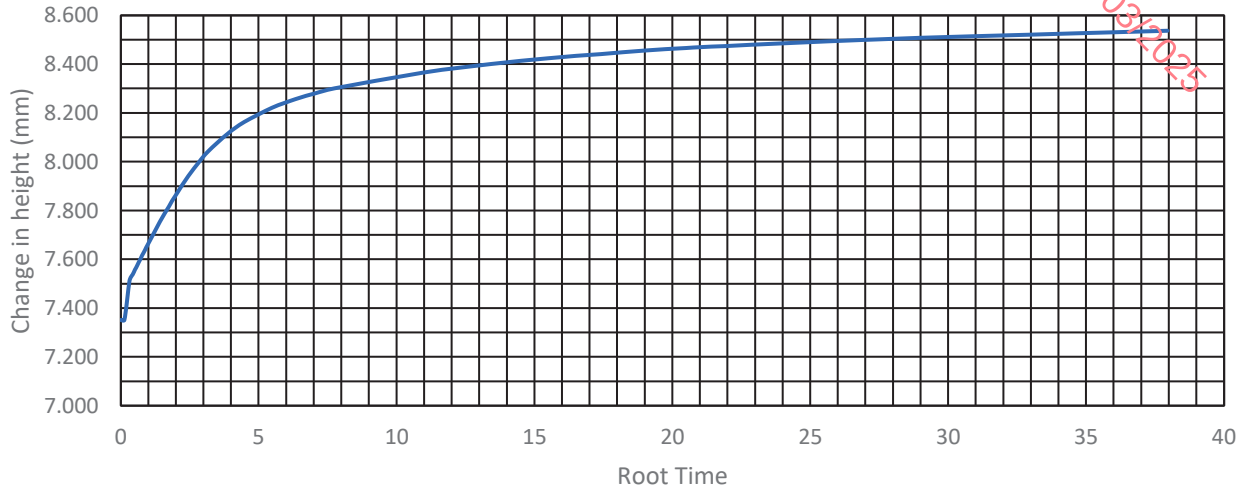


Test Report

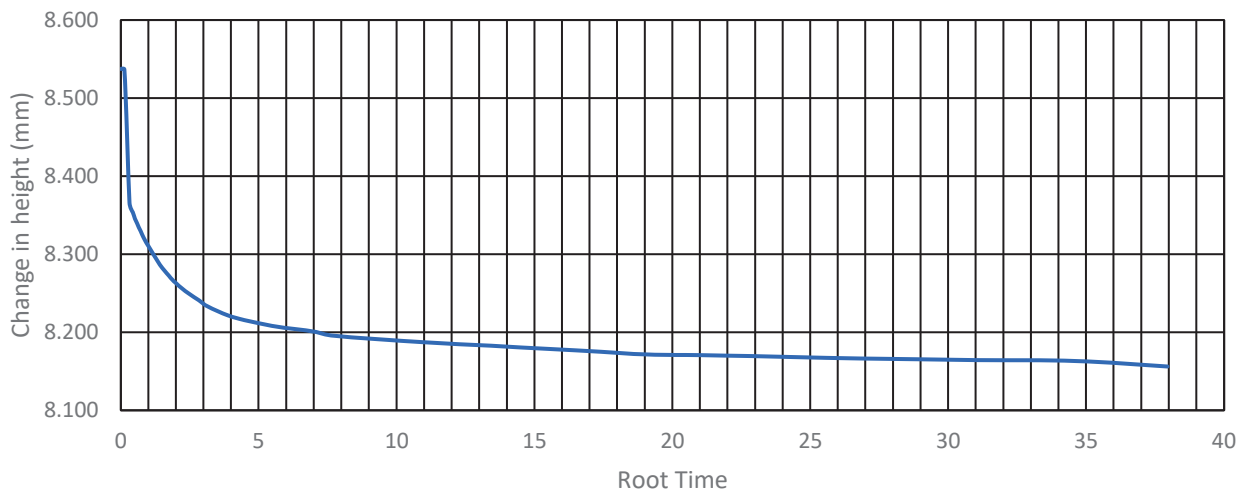
Incremental Loading Oedometer Test (EN ISO 17892-5:2017)

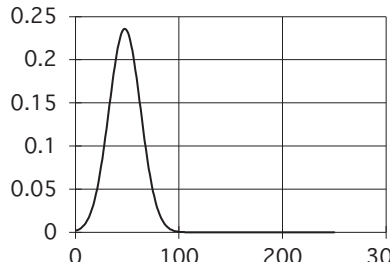
Report Number R152337

Applied Pressure (kPa) 1920



Applied Pressure (kPa) 480



(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA									
Contract: Sea Gardens, Bray			Sample Type: Core Date of test: 19/3/24						
Contract no. 24991									
RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orientation
RC310	17.8	78	13.0	1.222	2.14	2.61	52	d	//
	8.3	78	7.0	1.222	1.15	1.41	28	d	//
	19.1	78	11.0	1.222	1.81	2.21	44	d	//
	20.2	78	15.0	1.222	2.47	3.01	60	d	//
	20.5	78	9.0	1.222	1.48	1.81	36	d	//
RC314	14.4	78	11.0	1.222	1.81	2.21	44	d	//
	14.9	78	19.0	1.222	3.12	3.81	76	d	//
	15.2	78	8.0	1.222	1.31	1.61	32	d	//
	15.3	78	14.0	1.222	2.30	2.81	56	d	//
Statistical Summary Data			Is(50)	UCS*	*UCS Normal Distribution Curve			Abbreviations	
Number of Samples Tested			9	9				i irregular	
Minimum			1.41	28				a axial	
Average			2.39	48				b block	
Maximum			3.81	76				d diametrial	
Standard Dev.			0.76	15					
Upper 95% Confidence Limit			3.88	77.57				approx. orientation to planes of weakness/bedding	
Lower 95% Confidence Limit			0.90	17.91				U unknown P perpendicular // parallel	
Comments:									
*UCS taken as k x Point Load Is(50):			k=	20					

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Appendix 9

Chemical & Environmental Laboratory Testing (Eurofins Chemtest Laboratory)



Chemtest

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

RECEIVED 24/03/2025

Final Report

Report No.: 23-40764-1
Initial Date of Issue: 18-Dec-2023

Re-Issue Details:

Client IGSL
Client Address: M7 Business Park
Naas
County Kildare
Ireland
Contact(s): Darren Keogh
Project 24991 Sea Gardens Bray Wicklow (Ballymore Group / Atkins)
Quotation No.: Q20-19951
Order No.:
No. of Samples: 57
Turnaround (Wkdays): 7
Date Approved: 18-Dec-2023
Approved By:

Date Received: 08-Dec-2023
Date Instructed: 08-Dec-2023
Results Due: 18-Dec-2023

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: 24991 Sea Gardens Bray Wicklow (Ballymore Group / Atkins)

Client: IGSL	Chemtest Job No.:					23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764
Quotation No.: Q20-19951	Chemtest Sample ID.:					1743190	1743191	1743192	1743193	1743194	1743195	1743196	1743197	1743198
Order No.:	Client Sample Ref.:					AA203017	AA203018	AA203020	AA203023	AA203024	AA203025	AA203028	AA203030	AA203033
	Sample Location:					BH301	BH301	BH301	BH301	BH301	BH301	BH301	BH301	BH302
	Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					2.00	3.00	4.00	6.00	7.00	7.50	10.00	12.00	1.00
Determinand	Accred.	SOP	Units	LOD										
Moisture	N	2030	%	0.020	24	35	25	23	32	31	36	7.7	27	27
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones and Roots	Stones and Roots	Roots	Stones	Roots and Stones	Stones	Stones	Stones	Stones and Roots	Stones and Roots
Soil Texture	N	2040		N/A	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Gravel	Clay	Clay
pH at 20C	M	2010		4.0	7.8					7.7				
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010		0.36			0.31					
Sulphate (Total)	U	2430	mg/kg	100		12000			43000					
Sulphate (Acid Soluble)	U	2430	%	0.010		0.33			0.2					
Organic Matter	M	2625	%	0.40	0.42		2.6	1.1		4.6	7.1	0.67	6.8	1.3

Results - Soil

Project: 24991 Sea Gardens Bray Wicklow (Ballymore Group / Atkins)

Client: IGSL	Chemtest Job No.:				23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764
Quotation No.: Q20-19951	Chemtest Sample ID.:				1743201	1743202	1743203	1743204	1743205	1743208	1743209	1743211	1743213	1743215
Order No.:	Client Sample Ref.:				AA203037	AA203040	AA203042	AA203043	AA203044	AA209326	AA209328	AA209330	AA203001	AA203006
	Sample Location:				BH302	BH302	BH302	BH302	BH302	BH303	BH303	BH303	BH304	BH304
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				5.00	7.00	8.00	9.00	10.00	6.00	8.00	10.00	1.00	5.00
Determinand	Accred.	SOP	Units	LOD										
Moisture	N	2030	%	0.020	24	35	30	6.1	28	26	26	44	20	26
Soil Colour	N	2040		N/A	Brown	Brown	Grey	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	None	Stones	None	Stones and Roots	Roots and Stones	None	Roots and Stones	Roots	Stones and Roots	Roots
Soil Texture	N	2040		N/A	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
pH at 20C	M	2010		4.0			7.2							
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010				0.3			0.19		0.025	
Sulphate (Total)	U	2430	mg/kg	100				13000			20000		1100	
Sulphate (Acid Soluble)	U	2430	%	0.010				0.077			0.092		0.05	
Organic Matter	M	2625	%	0.40	1.5	4.9			3.9	2.2	1.8	4		1.6

Results - Soil

Project: 24991 Sea Gardens Bray Wicklow (Ballymore Group / Atkins)

Client: IGSL	Chemtest Job No.:				23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764
Quotation No.: Q20-19951	Chemtest Sample ID.:				1743216	1743217	1743218	1743219	1743221	1743222	1743223	1743225	1743226	1743227
Order No.:	Client Sample Ref.:				AA203007	AA203010	AA197055	AA197056	AA197059	AA197063	AA197066	AA192094	AA195097	AA192098
	Sample Location:				BH304	BH304	BH306	BH306	BH306	BH306	BH306	BH307	BH307	BH307
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				6.00	8.00	1.00	2.00	5.00	7.00	9.00	4.00	6.00	6.50
Determinand	Accred.	SOP	Units	LOD										
Moisture	N	2030	%	0.020	19	31	19	17	23	40	30	19	29	24
Soil Colour	N	2040		N/A	Grey	Grey	Brown	Brown	Brown	Brown	Brown	Grey	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones and Roots	Stones and Roots	Roots and Stones	Roots	Roots and Stones	Stones	Stones	Roots
Soil Texture	N	2040		N/A	Loam	Clay	Clay	Clay	Clay	Clay	Clay	Loam	Clay	Clay
pH at 20C	M	2010		4.0		8		7.9				6.7		7.8
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.58	0.35	0.016					0.8		
Sulphate (Total)	U	2430	mg/kg	100	20000	35000	2200					22000		
Sulphate (Acid Soluble)	U	2430	%	0.010	0.14	0.13	0.065					0.19		
Organic Matter	M	2625	%	0.40			0.81		1.7	7.8	3.3	< 0.40	4.3	

Results - Soil

Project: 24991 Sea Gardens Bray Wicklow (Ballymore Group / Atkins)

Client: IGSL	Chemtest Job No.:					23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764
Quotation No.: Q20-19951	Chemtest Sample ID.:					1743228	1743229	1743230	1743234	1743235	1743236	1743239	1743240	1743242
Order No.:	Client Sample Ref.:					AA192099	AA192100	AA192101	AA197078	AA197079	AA197081	AA197086	AA197090	AA191709
	Sample Location:					BH307	BH307	BH307	BH305	BH305	BH305	BH308	BH308	BH309
	Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					7.00	8.00	8.50	6.00	6.50	8.00	4.00	5.00	1.00
Determinand	Accred.	SOP	Units	LOD										
Moisture	N	2030	%	0.020	38	39	33	30	23	40	40	27	24	20
Soil Colour	N	2040		N/A	Grey	Brown	Brown	Brown	Brown	Grey	Brown	Grey	Brown	Brown
Other Material	N	2040		N/A	None	None	Roots	Roots and Stones	None	None	Stones and Roots	Stones	Stones and Roots	Stones
Soil Texture	N	2040		N/A	Clay	Clay	Loam	Clay	Clay	Loam	Clay	Clay	Clay	Sand
pH at 20C	M	2010		4.0						7.9		7.9		8.1
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010		0.37			0.26			0.4		
Sulphate (Total)	U	2430	mg/kg	100		21000			23000			36000		
Sulphate (Acid Soluble)	U	2430	%	0.010		0.15			0.13			0.33		
Organic Matter	M	2625	%	0.40	2.7		9.1	3		2.8	17		0.86	

Results - Soil

Project: 24991 Sea Gardens Bray Wicklow (Ballymore Group / Atkins)

Client: IGSL	Chemtest Job No.:					23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764
Quotation No.: Q20-19951	Chemtest Sample ID.:					1743245	1743246	1743247	1743249	1743250	1743253	1743254	1743255	1743259
Order No.:	Client Sample Ref.:					AA191712	AA191713	AA197280	AA197286	AA197287	AA197254	AA197257	AA197258	AA192499
	Sample Location:					BH309	BH309	BH310	BH310	BH310	BH311	BH311	BH311	BH312
	Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					4.00	5.00	1.00	7.00	8.00	3.00	6.00	7.00	5.00
Determinand	Accred.	SOP	Units	LOD										
Moisture	N	2030	%	0.020	26	27	25	34	34	25	31	34	28	36
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Grey	Grey	Brown	Brown	Grey	Brown	Brown
Other Material	N	2040		N/A	Stones and Roots	None	Stones and Roots	None	Roots	Stones and Roots	Stones	None	Stones and Roots	Stones
Soil Texture	N	2040		N/A	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
pH at 20C	M	2010		4.0				7.9			7.9		7.7	
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010		0.3		0.84			0.43			0.37
Sulphate (Total)	U	2430	mg/kg	100		33000		24000			42000			37000
Sulphate (Acid Soluble)	U	2430	%	0.010		0.12		0.15			0.21			0.16
Organic Matter	M	2625	%	0.40	2.2		0.78		2.1	0.85		2.5		4.3

Results - Soil

Project: 24991 Sea Gardens Bray Wicklow (Ballymore Group / Atkins)

Client: IGSL	Chemtest Job No.:				23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764	23-40764
Quotation No.: Q20-19951	Chemtest Sample ID.:				1743262	1743263	1743266	1743267	1743268	1743271	1743273	1743273
Order No.:	Client Sample Ref.:				AA204383	AA204385	AA167264	AA167266	AA167268	AA197276	AA197279	AA197279
	Sample Location:				BH313	BH313	BH314	BH314	BH314	BH315	BH315	BH315
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				4.00	6.00	5.00	7.00	9.00	4.00	7.00	7.00
Determinand	Accred.	SOP	Units	LOD								
Moisture	N	2030	%	0.020	36	28	34	30	33	15	27	27
Soil Colour	N	2040		N/A	Brown	Brown	Grey	Grey	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	None	None	Stones	Stones and Wood	Stones and Roots	Stones and Roots
Soil Texture	N	2040		N/A	Clay	Clay	Clay	Clay	Clay	Sand	Clay	Clay
pH at 20C	M	2010		4.0		7.7		7.9				7.9
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010		0.6	0.49		0.25	0.18	0.18	0.18
Sulphate (Total)	U	2430	mg/kg	100		29000	38000		37000	14000	20000	20000
Sulphate (Acid Soluble)	U	2430	%	0.010		0.14	0.16		0.092	0.041	0.12	0.12
Organic Matter	M	2625	%	0.40	4.8		3			1.1		

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Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH at 20°C	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.

Report Information

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Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Chemtest

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070

Email: info@chemtest.com

Final Report

Report No.: 24-00971-1

Initial Date of Issue: 23-Jan-2024

Re-Issue Details:

Client IGSL

Client Address: M7 Business Park
Naas
County Kildare
Ireland

Contact(s): Darren Keogh

Project Sea Gardens Bray (24991)

Quotation No.: Q24-33474

Date Received: 15-Jan-2024

Order No.:

Date Instructed: 15-Jan-2024

No. of Samples: 6

Turnaround (Wkdays): 7

Results Due: 23-Jan-2024

Date Approved: 23-Jan-2024

Approved By:

Details: Stuart Henderson, Technical
Manager

Results - Leachate

Project: Sea Gardens Bray (24991)

Client: IGSL	Chemtest Job No.:						24-00971	24-00971	24-00971	24-00971	24-00971	24-00971
Quotation No.: Q24-33474	Chemtest Sample ID.:						1753695	1753697	1753701	1753704	1753707	1753708
Order No.:	Client Sample Ref.:						WS06B	WS06B	WS07B	WS07B	WS08B	WS08B
	Sample Type:						SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):						0.2	1.4	0.4	2.4	0.5	1.4
	Bottom Depth (m):						0.4	1.6	0.7	2.7	0.8	1.7
	Date Sampled:						10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024
Determinand	Accred.	SOP	Type	Units	LOD							
Ammonium	U	1220	10:1	mg/l	0.050	0.14	< 0.050	0.065	0.36	< 0.050	0.061	
Ammonium	N	1220	10:1	mg/kg	0.10	1.4	0.60	0.69	3.9	0.26	0.62	

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Results - Soil

Project: Sea Gardens Bray (24991)

Client: IGSL		Chemtest Job No.:		24-00971	24-00971	24-00971	24-00971	24-00971	24-00971	24-00971
Quotation No.: Q24-33474		Chemtest Sample ID.:		1753695	1753697	1753701	1753704	1753707	1753708	1753708
Order No.:		Client Sample Ref.:		WS06B	WS06B	WS07B	WS07B	WS08B	WS08B	WS08B
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.2	1.4	0.4	2.4	0.5	1.4	1.4
		Bottom Depth (m):		0.4	1.6	0.7	2.7	0.8	1.7	1.7
		Date Sampled:		10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024
		Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD					
ACM Type		U	2192		N/A	-	-	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	20	22	18	19	19
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones and Roots	Stones	Stones and Roots	Roots and Stones	Stones
Soil Texture		N	2040		N/A	Sand	Sand	Sand	Clay	Sand
pH at 20C		M	2010		4.0	7.2	6.8	8.0	8.5	7.7
Electrical Conductivity (2:1)		N	2020	µS/cm	1.0	44	400	160	450	340
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40	< 0.40	0.46	1.6	< 0.40
Sulphur (Elemental)		M	2180	mg/kg	1.0	1.0	1.1	1.1	400	9.6
Chloride (Water Soluble)		M	2220	g/l	0.010	0.016	0.014	< 0.010	0.037	< 0.010
Fluoride (Extractable)		N	2220	mg/kg	0.010	0.34	0.70	0.84	0.78	0.42
Nitrite (Water Soluble)		N	2220	mg/kg	0.100	< 0.10	0.11	0.42	3.0	0.11
Nitrate (Water Soluble)		N	2220	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	4.3	2.7	3.2	28	3.3
Ammoniacal Nitrogen		M	2425	mg/kg	0.50	5.4	1.0	1.8	9.3	1.1
Ammonium (Water Soluble)		M	2220	g/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sodium (Total)		N	2430	mg/kg	10	68	210	100	480	130
Phosphate (Total)		N	2430	mg/kg	10	380	2100	860	1600	1100
Sulphate (Total)		U	2430	%	0.010	0.014	0.057	0.037	0.53	0.038
Arsenic		M	2455	mg/kg	0.5	9.1	21	21	17	35
Barium		M	2455	mg/kg	0	52	120	66	56	120
Cadmium		M	2455	mg/kg	0.10	0.35	1.1	0.79	0.55	1.3
Chromium		M	2455	mg/kg	0.5	16	36	22	36	33
Molybdenum		M	2455	mg/kg	0.5	< 0.5	1.3	1.0	1.3	1.3
Antimony		N	2455	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Copper		M	2455	mg/kg	0.50	12	30	25	26	30
Mercury		M	2455	mg/kg	0.05	< 0.05	0.06	0.31	0.09	0.05
Nickel		M	2455	mg/kg	0.50	17	41	28	41	39
Lead		M	2455	mg/kg	0.50	20	43	43	33	43
Selenium		M	2455	mg/kg	0.25	< 0.25	2.9	0.69	0.81	1.1
Zinc		M	2455	mg/kg	0.50	72	160	94	90	130
Chromium (Trivalent)		N	2490	mg/kg	1.0	16	36	22	36	33
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Results - Soil

Project: Sea Gardens Bray (24991)

Client: IGSL		Chemtest Job No.:		24-00971	24-00971	24-00971	24-00971	24-00971	24-00971
Quotation No.: Q24-33474		Chemtest Sample ID.:		1753695	1753697	1753701	1753704	1753707	1753708
Order No.:		Client Sample Ref.:		WS06B	WS06B	WS07B	WS07B	WS08B	WS08B
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.2	1.4	0.4	2.4	0.5	1.4
		Bottom Depth (m):		0.4	1.6	0.7	2.7	0.8	1.7
		Date Sampled:		10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024
		Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD				
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	EH_AL_2D_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16	EH_AL_2D_#1	M	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic EPH >C16-C21	EH_AL_2D_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0	3.1	< 2.0
Aliphatic EPH >C21-C35	EH_AL_2D_#1	M	2690	mg/kg	3.00	3.5	16	< 3.0	< 3.0
Aliphatic EPH >C35-C40	EH_AL_2D_#1	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	EH_AL_2D_#1	M	2690	mg/kg	5.00	< 5.0	16	< 5.0	< 5.0
Total Aliphatic EPH >C10-C40	EH_AL_2D_#1	N	2690	mg/kg	10.00	< 10	16	< 10	< 10
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	EH_AR_2D_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16	EH_AR_2D_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C16-C21	EH_AR_2D_#1	U	2690	mg/kg	2.00	3.3	3.9	4.3	4.6
Aromatic EPH >C21-C35	EH_AR_2D_#1	U	2690	mg/kg	2.00	5.4	< 2.0	2.3	41
Aromatic EPH >C35-C40	EH_AR_2D_#1	N	2690	mg/kg	1.00	4.1	4.4	3.4	8.8
Total Aromatic EPH >C10-C35	EH_AR_2D_#1	U	2690	mg/kg	5.00	8.7	5.3	6.6	44
Total Aromatic EPH >C10-C40	EH_AR_2D_#1	N	2690	mg/kg	10.00	13	< 10	10	53
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	EH_Total_2D_#1	U	2690	mg/kg	10.00	13	21	< 10	54
Total EPH >C10-C40	EH_Total_2D_#1	N	2690	mg/kg	10.00	17	25	< 10	63
Organic Matter		M	2625	%	0.40	3.2	0.67	0.43	2.1
Total Organic Carbon		M	2625	%	0.20	1.8	0.39	0.25	1.2
Mineral Oil EPH	EH_AL_2D_#1	N	2670	mg/kg	10	< 10	16	< 10	10
Dichlorodifluoromethane		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		M	2760	µg/kg	20	< 20	< 20	< 20	< 20
Chloroethane		U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: Sea Gardens Bray (24991)

Client: IGSL		Chemtest Job No.:	24-00971	24-00971	24-00971	24-00971	24-00971	24-00971
Quotation No.: Q24-33474		Chemtest Sample ID.:	1753695	1753697	1753701	1753704	1753707	1753708
Order No.:		Client Sample Ref.:	WS06B	WS06B	WS07B	WS07B	WS08B	WS08B
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	0.2	1.4	0.4	2.4	0.5	1.4
		Bottom Depth (m):	0.4	1.6	0.7	2.7	0.8	1.7
		Date Sampled:	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024
		Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD			
Trans 1,2-Dichloroethene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane		U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		M	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichloroethene		N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Dibromomethane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane		M	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene		N	2760	µg/kg	10	< 10	< 10	< 10
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene		N	2760	µg/kg	10	< 10	< 10	< 10
1,1,2-Trichloroethane		M	2760	µg/kg	10	< 10	< 10	< 10
Tetrachloroethene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane		U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane		U	2760	µg/kg	10	< 10	< 10	< 10
1,2-Dibromoethane		M	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane		M	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Styrene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Tribromomethane		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane		N	2760	µg/kg	50	< 50	< 50	< 50
N-Propylbenzene		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: Sea Gardens Bray (24991)

Client: IGSL		Chemtest Job No.:	24-00971	24-00971	24-00971	24-00971	24-00971	24-00971
Quotation No.: Q24-33474		Chemtest Sample ID.:	1753695	1753697	1753701	1753704	1753707	1753708
Order No.:		Client Sample Ref.:	WS06B	WS06B	WS07B	WS07B	WS08B	WS08B
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	0.2	1.4	0.4	2.4	0.5	1.4
		Bottom Depth (m):	0.4	1.6	0.7	2.7	0.8	1.7
		Date Sampled:	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024
		Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD			
Sec-Butylbenzene		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane		U	2760	µg/kg	50	< 50	< 50	< 50
1,2,4-Trichlorobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene		N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene		U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenol		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Isophorone		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50

Results - Soil

Project: Sea Gardens Bray (24991)

Client: IGSL		Chemtest Job No.:	24-00971	24-00971	24-00971	24-00971	24-00971	24-00971
Quotation No.: Q24-33474		Chemtest Sample ID.:	1753695	1753697	1753701	1753704	1753707	1753708
Order No.:		Client Sample Ref.:	WS06B	WS06B	WS07B	WS07B	WS08B	WS08B
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	0.2	1.4	0.4	2.4	0.5	1.4
		Bottom Depth (m):	0.4	1.6	0.7	2.7	0.8	1.7
		Date Sampled:	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024
		Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD			
2-Chloronaphthalene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Azobenzene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Carbazole		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0	< 2.0	< 2.0
Total Of 17 PAH's Lower		N	2800	mg/kg	1.0	< 1.0	< 1.0	< 1.0
PCB 28		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010

Results - Soil

Project: Sea Gardens Bray (24991)

Client: IGSL		Chemtest Job No.:		24-00971	24-00971	24-00971	24-00971	24-00971	24-00971
Quotation No.: Q24-33474		Chemtest Sample ID.:		1753695	1753697	1753701	1753704	1753707	1753708
Order No.:		Client Sample Ref.:		WS06B	WS06B	WS07B	WS07B	WS08B	WS08B
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.2	1.4	0.4	2.4	0.5	1.4
		Bottom Depth (m):		0.4	1.6	0.7	2.7	0.8	1.7
		Date Sampled:		10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024	10-Jan-2024
		Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD				
PCB 52		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2-Chlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2-Methylphenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
3-Methylphenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
4-Methylphenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2-Nitrophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2,4-Dimethylphenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2,4-Dichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2,6-Dichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
4-Chloro-3-Methylphenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2,3,4-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2,3,5-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2,3,6-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2,4,6-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2,4,5-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
4-Nitrophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2,3,4,5-Tetrachlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2,3,4,6-Tetrachlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2,3,5,6-Tetrachlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
3,4,5-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2-Methyl-4,6-Dinitrophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
Pentachlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
2-Sec-Butyl-4,6-Dinitrophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
Total Phenols		N	2900	mg/kg	5.00	< 5.0	< 5.0	< 5.0	< 5.0
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
SVOC TIC		N	2790	mg/kg	N/A	None Detected	None Detected	None Detected	None Detected
VOC TIC		N	2760	µg/kg	N/A	None Detected	None Detected	None Detected	None Detected

Results - Single Stage WAC

Project: Sea Gardens Bray (24991)

Chemtest Job No: 24-00971						Landfill Waste Acceptance Criteria Limits		
Chemtest Sample ID: 1753695						Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample Ref: WS06B								
Sample ID:								
Sample Location:								
Top Depth(m): 0.2								
Bottom Depth(m): 0.4								
Sampling Date: 10-Jan-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	1.8	3	5	6
Loss On Ignition	2610		M	%	2.5	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		7.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0069	--	To evaluate	To evaluate
Eluate Analysis					10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455		U	0.0023	0.023	0.5	2	25
Barium	1455		U	0.006	0.056	20	100	300
Cadmium	1455		U	0.00011	0.0011	0.04	1	5
Chromium	1455		U	0.0020	0.020	0.5	10	70
Copper	1455		U	0.0057	0.057	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0003	0.0026	0.5	10	30
Nickel	1455		U	0.0027	0.027	0.4	10	40
Lead	1455		U	0.0023	0.023	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.010	0.099	4	50	200
Chloride	1220		U	3.0	30	800	15000	25000
Fluoride	1220		U	0.15	1.5	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	8.4	84	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	6.6	66	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	20

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Sea Gardens Bray (24991)

Chemtest Job No: 24-00971						Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1753697						Inert Waste Landfill	Limits	
Sample Ref: WS06B							Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:								
Sample Location:								
Top Depth(m): 1.4								
Bottom Depth(m): 1.6								
Sampling Date: 10-Jan-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	0.39	3	5	6
Loss On Ignition	2610		M	%	2.3	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH CU 1D Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		6.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0090	--	To evaluate	To evaluate
Eluate Analysis					10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455		U	0.0021	0.021	0.5	2	25
Barium	1455		U	0.010	0.10	20	100	300
Cadmium	1455		U	0.00027	0.0027	0.04	1	5
Chromium	1455		U	0.0021	0.021	0.5	10	70
Copper	1455		U	0.0032	0.032	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0006	0.0055	0.5	10	30
Nickel	1455		U	0.0039	0.040	0.4	10	40
Lead	1455		U	0.0031	0.031	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0011	0.011	0.1	0.5	7
Zinc	1455		U	0.020	0.20	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.13	1.3	10	150	500
Sulphate	1220		U	4.9	49	1000	20000	50000
Total Dissolved Solids	1020		N	23	220	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	6.9	69	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	22

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Sea Gardens Bray (24991)

Chemtest Job No: 24-00971						Landfill Waste Acceptance Criteria Limits		
Chemtest Sample ID: 1753701						Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample Ref: WS07B								
Sample ID:								
Sample Location:								
Top Depth(m): 0.4								
Bottom Depth(m): 0.7								
Sampling Date: 10-Jan-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	0.25	3	5	6
Loss On Ignition	2610		M	%	3.3	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.0	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0080	--	To evaluate	To evaluate
Eluate Analysis					10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455		U	0.0010	0.0098	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0016	0.016	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0017	0.017	0.5	10	30
Nickel	1455		U	0.0012	0.012	0.4	10	40
Lead	1455		U	0.0007	0.0067	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.006	0.060	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.25	2.5	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	57	570	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.6	56	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	18

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Sea Gardens Bray (24991)

Chemtest Job No: 24-00971						Landfill Waste Acceptance Criteria Limits		
Chemtest Sample ID: 1753704						Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample Ref: WS07B								
Sample ID:								
Sample Location:								
Top Depth(m): 2.4								
Bottom Depth(m): 2.7								
Sampling Date: 10-Jan-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	1.2	3	5	6
Loss On Ignition	2610		M	%	3.3	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH CU 1D Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0050	--	To evaluate	To evaluate
Eluate Analysis					10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455		U	0.0024	0.024	0.5	2	25
Barium	1455		U	0.008	0.076	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	< 0.0005	< 0.0050	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.016	0.16	0.5	10	30
Nickel	1455		U	0.0007	0.0068	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0025	0.025	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.004	0.035	4	50	200
Chloride	1220		U	3.6	36	800	15000	25000
Fluoride	1220		U	0.18	1.8	10	150	500
Sulphate	1220		U	12	120	1000	20000	50000
Total Dissolved Solids	1020		N	90	890	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	6.4	64	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	19

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Sea Gardens Bray (24991)

Chemtest Job No: 24-00971						Landfill Waste Acceptance Criteria Limits			
Chemtest Sample ID: 1753707						Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample Ref: WS08B									
Sample ID:									
Sample Location:									
Top Depth(m): 0.5									
Bottom Depth(m): 0.8									
Sampling Date: 10-Jan-2024									
Determinand	SOP	HWOL Code	Accred.	Units					
Total Organic Carbon	2625		M	%		0.54	3	5	6
Loss On Ignition	2610		M	%		3.0	--	--	10
Total BTEX	2760		M	mg/kg		< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg		< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg		< 10	500	--	--
Total (of 17) PAHs							100	--	--
pH at 20C	2010		M			7.7	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg		0.0060	--	To evaluate	To evaluate
Eluate Analysis				10:1 Eluate mg/l		10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455		U	0.0011		0.011	0.5	2	25
Barium	1455		U	0.006		0.063	20	100	300
Cadmium	1455		U	< 0.00011		< 0.0011	0.04	1	5
Chromium	1455		U	0.0010		0.010	0.5	10	70
Copper	1455		U	0.0010		0.0099	2	50	100
Mercury	1455		U	< 0.00005		< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0004		0.0044	0.5	10	30
Nickel	1455		U	0.0012		0.012	0.4	10	40
Lead	1455		U	0.0008		0.0080	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5	
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7	
Zinc	1455		U	0.009	0.086	4	50	200	
Chloride	1220		U	< 1.0	< 10	800	15000	25000	
Fluoride	1220		U	0.099	< 1.0	10	150	500	
Sulphate	1220		U	1.4	14	1000	20000	50000	
Total Dissolved Solids	1020		N	10	100	4000	60000	100000	
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-	
Dissolved Organic Carbon	1610		U	4.3	< 50	500	800	1000	

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	21

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Sea Gardens Bray (24991)

Chemtest Job No: 24-00971						Landfill Waste Acceptance Criteria Limits		
Chemtest Sample ID: 1753708						Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample Ref: WS08B								
Sample ID:								
Sample Location:								
Top Depth(m): 1.4								
Bottom Depth(m): 1.7								
Sampling Date: 10-Jan-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	< 0.20	3	5	6
Loss On Ignition	2610		M	%	2.5	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH CU 1D Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		7.9	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.016	--	To evaluate	To evaluate
Eluate Analysis					10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455		U	0.0024	0.024	0.5	2	25
Barium	1455		U	0.006	0.064	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0035	0.035	0.5	10	70
Copper	1455		U	0.0027	0.027	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0003	0.0032	0.5	10	30
Nickel	1455		U	0.0027	0.027	0.4	10	40
Lead	1455		U	0.0030	0.030	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.016	0.16	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.18	1.8	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	7.1	70	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.4	54	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	19

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH at 20°C	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH at 20°C	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2020	Electrical Conductivity	Electrical conductivity (EC) of aqueous extract or calcium sulphate solution for topsoil	Measurement of the electrical resistance of a 2:1 water/soil extract.
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N-dimethyl-p-phenylenediamine.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.

Test Methods

SOP	Title	Parameters included	Method summary
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8–C10 Aromatics: >C5–C7,>C7–C8,>C8–C10	Water extraction / Headspace GCxGC FID detection
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2900	Phenols in Soils by GC-MS	Approximately 24 substituted Phenols, including Chlorophenols	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

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Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

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Final Report

Report No.: 24-01744-1
Initial Date of Issue: 31-Jan-2024

Re-Issue Details:

Client IGSL
Client Address: M7 Business Park
 Naas
 County Kildare
 Ireland
Contact(s): Darren Keogh
Project SEA GARDENS BRAY
Quotation No.: Q24-33474
Order No.:
No. of Samples: 1
Turnaround (Wkdays): 7
Date Approved: 31-Jan-2024

Date Received: 22-Jan-2024
Date Instructed: 23-Jan-2024
Results Due: 31-Jan-2024

Approved By:



Details: Stuart Henderson, Technical
 Manager

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: SEA GARDENS BRAY

Client: IGSL	Chemtest Job No.: 24-01744					
Quotation No.: Q24-33474	Chemtest Sample ID.: 1756551					
Order No.:	Client Sample Ref.: TP306					
	Sample Location: TP306					
	Sample Type: SOIL					
	Top Depth (m): 0.5					
	Date Sampled: 19-Jan-2024					
Determinand	Accred.	SOP	Type	Units	LOD	
Ammonium	U	1220	10:1	mg/l	0.050	0.080
Ammonium	N	1220	10:1	mg/kg	0.10	0.80

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Results - Soil

Project: SEA GARDENS BRAY

Client: IGSL		Chemtest Job No.:		24-01744		
Quotation No.: Q24-33474		Chemtest Sample ID.:		1756551		
Order No.:		Client Sample Ref.:		TP306		
		Sample Location:		TP306		
		Sample Type:		SOIL		
		Top Depth (m):		0.5		
		Date Sampled:		19-Jan-2024		
		Asbestos Lab:		DURHAM		
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
ACM Type		U	2192		N/A	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected
Moisture		N	2030	%	0.020	19
Soil Colour		N	2040		N/A	Brown
Other Material		N	2040		N/A	Stones
Soil Texture		N	2040		N/A	Sand
pH at 20C		U	2010		4.0	8.0
Electrical Conductivity (2:1)		N	2020	µS/cm	1.0	210
Boron (Hot Water Soluble)		U	2120	mg/kg	0.40	0.72
Sulphur (Elemental)		U	2180	mg/kg	1.0	< 1.0
Chloride (Water Soluble)		U	2220	g/l	0.010	< 0.010
Fluoride (Extractable)		N	2220	mg/kg	0.010	0.90
Nitrite (Water Soluble)		N	2220	mg/kg	0.100	< 0.10
Nitrate (Water Soluble)		N	2220	g/l	0.010	< 0.010
Cyanide (Total)		U	2300	mg/kg	0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	5.2
Ammoniacal Nitrogen		U	2425	mg/kg	0.50	4.4
Ammonium (Water Soluble)		U	2220	g/l	0.01	< 0.01
Sodium (Total)		N	2430	mg/kg	10	86
Phosphate (Total)		N	2430	mg/kg	10	2000
Sulphate (Total)		U	2430	%	0.010	0.035
Arsenic		U	2455	mg/kg	0.5	23
Barium		U	2455	mg/kg	0	89
Cadmium		U	2455	mg/kg	0.10	0.91
Chromium		U	2455	mg/kg	0.5	15
Molybdenum		U	2455	mg/kg	0.5	1.4
Antimony		N	2455	mg/kg	2.0	< 2.0
Copper		U	2455	mg/kg	0.50	16
Mercury		U	2455	mg/kg	0.05	0.32
Nickel		U	2455	mg/kg	0.50	23
Lead		U	2455	mg/kg	0.50	55
Selenium		U	2455	mg/kg	0.25	0.58
Zinc		U	2455	mg/kg	0.50	76
Chromium (Trivalent)		N	2490	mg/kg	1.0	15
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05

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Results - Soil

Project: SEA GARDENS BRAY

Client: IGSL		Chemtest Job No.:		24-01744		
Quotation No.: Q24-33474		Chemtest Sample ID.:		1756551		
Order No.:		Client Sample Ref.:		TP306		
		Sample Location:		TP306		
		Sample Type:		SOIL		
		Top Depth (m):		0.5		
		Date Sampled:		19-Jan-2024		
		Asbestos Lab:		DURHAM		
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_AL_2D_#1	U	2690	mg/kg	2.00	< 2.0
Aliphatic EPH >C12-C16 MC	EH_AL_2D_#1	U	2690	mg/kg	1.00	< 1.0
Aliphatic EPH >C16-C21 MC	EH_AL_2D_#1	U	2690	mg/kg	2.00	< 2.0
Aliphatic EPH >C21-C35 MC	EH_AL_2D_#1	U	2690	mg/kg	3.00	< 3.0
Aliphatic EPH >C35-C40 MC	EH_AL_2D_#1	N	2690	mg/kg	10.00	< 10
Total Aliphatic EPH >C10-C35 MC	EH_AL_2D_#1	U	2690	mg/kg	5.00	< 5.0
Total Aliphatic EPH >C10-C40 MC	EH_AL_2D_#1	N	2690	mg/kg	10.00	< 10
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_AR_2D_#1	U	2690	mg/kg	1.00	< 1.0
Aromatic EPH >C12-C16 MC	EH_AR_2D_#1	U	2690	mg/kg	1.00	< 1.0
Aromatic EPH >C16-C21 MC	EH_AR_2D_#1	U	2690	mg/kg	2.00	15
Aromatic EPH >C21-C35 MC	EH_AR_2D_#1	U	2690	mg/kg	2.00	< 2.0
Aromatic EPH >C35-C40 MC	EH_AR_2D_#1	N	2690	mg/kg	1.00	< 1.0
Total Aromatic EPH >C10-C35 MC	EH_AR_2D_#1	U	2690	mg/kg	5.00	16
Total Aromatic EPH >C10-C40 MC	EH_AR_2D_#1	N	2690	mg/kg	10.00	16
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50
Total EPH >C10-C35 NC	EH_Total_2D_#1	U	2690	mg/kg	10.00	16
Total EPH >C10-C40 NC	EH_Total_2D_#1	N	2690	mg/kg	10.00	16
Organic Matter		U	2625	%	0.40	4.6
Total Organic Carbon		U	2625	%	0.20	2.7
Mineral Oil EPH	EH_AL_2D_#1	N	2670	mg/kg	10	< 10
Dichlorodifluoromethane		U	2760	µg/kg	1.0	< 1.0
Chloromethane		U	2760	µg/kg	1.0	< 1.0
Vinyl Chloride		U	2760	µg/kg	1.0	< 1.0
Bromomethane		U	2760	µg/kg	20	< 20
Chloroethane		U	2760	µg/kg	2.0	< 2.0
Trichlorofluoromethane		U	2760	µg/kg	1.0	< 1.0
1,1-Dichloroethene		U	2760	µg/kg	1.0	< 1.0
Trans 1,2-Dichloroethene		U	2760	µg/kg	1.0	< 1.0

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Results - Soil

Project: SEA GARDENS BRAY

Client: IGSL		Chemtest Job No.:		24-01744		
Quotation No.: Q24-33474		Chemtest Sample ID.:		1756551		
Order No.:		Client Sample Ref.:		TP306		
		Sample Location:		TP306		
		Sample Type:		SOIL		
		Top Depth (m):		0.5		
		Date Sampled:		19-Jan-2024		
		Asbestos Lab:		DURHAM		
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
1,1-Dichloroethane		U	2760	µg/kg	1.0	< 1.0
cis 1,2-Dichloroethene		U	2760	µg/kg	1.0	< 1.0
Bromochloromethane		U	2760	µg/kg	5.0	< 5.0
Trichloromethane		U	2760	µg/kg	1.0	< 1.0
1,1,1-Trichloroethane		U	2760	µg/kg	1.0	< 1.0
Tetrachloromethane		U	2760	µg/kg	1.0	< 1.0
1,1-Dichloropropene		U	2760	µg/kg	1.0	< 1.0
Benzene		U	2760	µg/kg	1.0	< 1.0
1,2-Dichloroethane		U	2760	µg/kg	2.0	< 2.0
Trichloroethene		N	2760	µg/kg	1.0	< 1.0
1,2-Dichloropropane		U	2760	µg/kg	1.0	< 1.0
Dibromomethane		U	2760	µg/kg	1.0	< 1.0
Bromodichloromethane		U	2760	µg/kg	5.0	< 5.0
cis-1,3-Dichloropropene		N	2760	µg/kg	10	< 10
Toluene		U	2760	µg/kg	1.0	< 1.0
Trans-1,3-Dichloropropene		N	2760	µg/kg	10	< 10
1,1,2-Trichloroethane		U	2760	µg/kg	10	< 10
Tetrachloroethene		U	2760	µg/kg	1.0	< 1.0
1,3-Dichloropropane		U	2760	µg/kg	2.0	< 2.0
Dibromochloromethane		U	2760	µg/kg	10	< 10
1,2-Dibromoethane		U	2760	µg/kg	5.0	< 5.0
Chlorobenzene		U	2760	µg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane		U	2760	µg/kg	2.0	< 2.0
Ethylbenzene		U	2760	µg/kg	1.0	< 1.0
m & p-Xylene		U	2760	µg/kg	1.0	< 1.0
o-Xylene		U	2760	µg/kg	1.0	< 1.0
Styrene		U	2760	µg/kg	1.0	< 1.0
Tribromomethane		U	2760	µg/kg	1.0	< 1.0
Isopropylbenzene		U	2760	µg/kg	1.0	< 1.0
Bromobenzene		U	2760	µg/kg	1.0	< 1.0
1,2,3-Trichloropropane		N	2760	µg/kg	50	< 50
N-Propylbenzene		U	2760	µg/kg	1.0	< 1.0
2-Chlorotoluene		U	2760	µg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene		U	2760	µg/kg	1.0	< 1.0
4-Chlorotoluene		U	2760	µg/kg	1.0	< 1.0
Tert-Butylbenzene		U	2760	µg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene		U	2760	µg/kg	1.0	< 1.0
Sec-Butylbenzene		U	2760	µg/kg	1.0	< 1.0

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Results - Soil

Project: SEA GARDENS BRAY

Client: IGSL		Chemtest Job No.:		24-01744		
Quotation No.: Q24-33474		Chemtest Sample ID.:		1756551		
Order No.:		Client Sample Ref.:		TP306		
		Sample Location:		TP306		
		Sample Type:		SOIL		
		Top Depth (m):		0.5		
		Date Sampled:		19-Jan-2024		
		Asbestos Lab:		DURHAM		
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
1,3-Dichlorobenzene		U	2760	µg/kg	1.0	< 1.0
4-Isopropyltoluene		U	2760	µg/kg	1.0	< 1.0
1,4-Dichlorobenzene		U	2760	µg/kg	1.0	< 1.0
N-Butylbenzene		U	2760	µg/kg	1.0	< 1.0
1,2-Dichlorobenzene		U	2760	µg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane		U	2760	µg/kg	50	< 50
1,2,4-Trichlorobenzene		U	2760	µg/kg	1.0	< 1.0
Hexachlorobutadiene		N	2760	µg/kg	1.0	< 1.0
1,2,3-Trichlorobenzene		U	2760	µg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether		U	2760	µg/kg	1.0	< 1.0
N-Nitrosodimethylamine		U	2790	mg/kg	0.50	< 0.50
Phenol		U	2790	mg/kg	0.50	< 0.50
2-Chlorophenol		N	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether		U	2790	mg/kg	0.50	< 0.50
1,3-Dichlorobenzene		U	2790	mg/kg	0.50	< 0.50
1,4-Dichlorobenzene		N	2790	mg/kg	0.50	< 0.50
1,2-Dichlorobenzene		U	2790	mg/kg	0.50	< 0.50
2-Methylphenol		U	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether		U	2790	mg/kg	0.50	< 0.50
Hexachloroethane		N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine		U	2790	mg/kg	0.50	< 0.50
4-Methylphenol		U	2790	mg/kg	0.50	< 0.50
Nitrobenzene		N	2790	mg/kg	0.50	< 0.50
Isophorone		U	2790	mg/kg	0.50	< 0.50
2-Nitrophenol		N	2790	mg/kg	0.50	< 0.50
2,4-Dimethylphenol		N	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroethoxy)Methane		U	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol		N	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene		U	2790	mg/kg	0.50	< 0.50
4-Chloroaniline		N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene		U	2790	mg/kg	0.50	< 0.50
4-Chloro-3-Methylphenol		N	2790	mg/kg	0.50	< 0.50
2-Methylnaphthalene		U	2790	mg/kg	0.50	< 0.50
4-Nitrophenol		N	2790	mg/kg	0.50	< 0.50
Hexachlorocyclopentadiene		N	2790	mg/kg	0.50	< 0.50
2,4,6-Trichlorophenol		N	2790	mg/kg	0.50	< 0.50
2,4,5-Trichlorophenol		N	2790	mg/kg	0.50	< 0.50
2-Chloronaphthalene		U	2790	mg/kg	0.50	< 0.50

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Results - Soil

Project: SEA GARDENS BRAY

Client: IGSL		Chemtest Job No.:		24-01744		
Quotation No.: Q24-33474		Chemtest Sample ID.:		1756551		
Order No.:		Client Sample Ref.:		TP306		
		Sample Location:		TP306		
		Sample Type:		SOIL		
		Top Depth (m):		0.5		
		Date Sampled:		19-Jan-2024		
		Asbestos Lab:		DURHAM		
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
2-Nitroaniline		N	2790	mg/kg	0.50	< 0.50
Dimethylphthalate		U	2790	mg/kg	0.50	< 0.50
2,6-Dinitrotoluene		N	2790	mg/kg	0.50	< 0.50
3-Nitroaniline		N	2790	mg/kg	0.50	< 0.50
Dibenzofuran		U	2790	mg/kg	0.50	< 0.50
4-Chlorophenylphenylether		U	2790	mg/kg	0.50	< 0.50
2,4-Dinitrotoluene		N	2790	mg/kg	0.50	< 0.50
Diethyl Phthalate		U	2790	mg/kg	0.50	< 0.50
4-Nitroaniline		N	2790	mg/kg	0.50	< 0.50
Azobenzene		U	2790	mg/kg	0.50	< 0.50
4-Bromophenylphenyl Ether		U	2790	mg/kg	0.50	< 0.50
Hexachlorobenzene		U	2790	mg/kg	0.50	< 0.50
Carbazole		U	2790	mg/kg	0.50	< 0.50
Di-N-Butyl Phthalate		N	2790	mg/kg	0.50	< 0.50
Butylbenzyl Phthalate		N	2790	mg/kg	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate		N	2790	mg/kg	0.50	< 0.50
Di-N-Octyl Phthalate		N	2790	mg/kg	0.50	< 0.50
Naphthalene		U	2800	mg/kg	0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10
Acenaphthene		U	2800	mg/kg	0.10	< 0.10
Fluorene		U	2800	mg/kg	0.10	< 0.10
Phenanthrene		U	2800	mg/kg	0.10	< 0.10
Anthracene		U	2800	mg/kg	0.10	< 0.10
Fluoranthene		U	2800	mg/kg	0.10	< 0.10
Pyrene		U	2800	mg/kg	0.10	< 0.10
Benzo[a]anthracene		U	2800	mg/kg	0.10	< 0.10
Chrysene		U	2800	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene		U	2800	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene		U	2800	mg/kg	0.10	< 0.10
Benzo[a]pyrene		U	2800	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		U	2800	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene		U	2800	mg/kg	0.10	< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0
Total Of 17 PAH's Lower		N	2800	mg/kg	1.0	< 1.0
PCB 28		U	2815	mg/kg	0.010	< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010

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Results - Soil

Project: SEA GARDENS BRAY

Client: IGSL		Chemtest Job No.:		24-01744		
Quotation No.: Q24-33474		Chemtest Sample ID.:		1756551		
Order No.:		Client Sample Ref.:		TP306		
		Sample Location:		TP306		
		Sample Type:		SOIL		
		Top Depth (m):		0.5		
		Date Sampled:		19-Jan-2024		
		Asbestos Lab:		DURHAM		
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
PCB 101		U	2815	mg/kg	0.010	< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05
Phenol		N	2900	mg/kg	0.20	< 0.20
2-Chlorophenol		N	2900	mg/kg	0.20	< 0.20
2-Methylphenol		N	2900	mg/kg	0.20	< 0.20
3-Methylphenol		N	2900	mg/kg	0.20	< 0.20
4-Methylphenol		N	2900	mg/kg	0.20	< 0.20
2-Nitrophenol		N	2900	mg/kg	0.20	< 0.20
2,4-Dimethylphenol		N	2900	mg/kg	0.20	< 0.20
2,4-Dichlorophenol		N	2900	mg/kg	0.20	< 0.20
2,6-Dichlorophenol		N	2900	mg/kg	0.20	< 0.20
4-Chloro-3-Methylphenol		N	2900	mg/kg	0.20	< 0.20
2,3,4-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20
2,3,5-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20
2,3,6-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20
2,4,6-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20
2,4,5-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20
4-Nitrophenol		N	2900	mg/kg	0.20	< 0.20
2,3,4,5-Tetrachlorophenol		N	2900	mg/kg	0.20	< 0.20
2,3,4,6-Tetrachlorophenol		N	2900	mg/kg	0.20	< 0.20
2,3,5,6-Tetrachlorophenol		N	2900	mg/kg	0.20	< 0.20
3,4,5-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20
2-Methyl-4,6-Dinitrophenol		N	2900	mg/kg	0.20	< 0.20
Pentachlorophenol		N	2900	mg/kg	0.20	< 0.20
2-Sec-Butyl-4,6-Dinitrophenol		N	2900	mg/kg	0.20	< 0.20
Total Phenols		N	2900	mg/kg	5.00	< 5.0
Total Phenols		U	2920	mg/kg	0.10	< 0.10
SVOC TIC		N	2790	mg/kg	N/A	None Detected
VOC TIC		N	2760	µg/kg	N/A	None Detected

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Results - Single Stage WAC

Project: SEA GARDENS BRAY

Chemtest Job No: 24-01744						Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1756551						Inert Waste Landfill	Limits	
Sample Ref: TP306							Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:								
Sample Location: TP306								
Top Depth(m): 0.5								
Bottom Depth(m):								
Sampling Date: 19-Jan-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		U	%	2.7	3	5	6
Loss On Ignition	2610		U	%	3.6	--	--	10
Total BTEX	2760		U	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		U	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	U	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		U		8.0	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.011	--	To evaluate	To evaluate
Eluate Analysis					10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455		U	0.0026	0.026	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0023	0.023	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0028	0.028	0.5	10	30
Nickel	1455		U	0.0008	0.0082	0.4	10	40
Lead	1455		U	0.0008	0.0080	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.015	0.15	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.18	1.8	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	26	260	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	6.4	64	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	19

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2020	Electrical Conductivity	Electrical conductivity (EC) of aqueous extract or calcium sulphate solution for topsoil	Measurement of the electrical resistance of a 2:1 water/soil extract.	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easily liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N-dimethyl-p-phenylenediamine.	
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics (cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7, >C7–C8, >C8–C10 Aromatics: >C5–C7, >C7–C8, >C8–C10	Water extraction / Headspace GCxGC FID detection	
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenzo[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS	
2900	Phenols in Soils by GC-MS	Approximately 24 substituted Phenols, including Chlorophenols	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

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Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

-
- A - Date of sampling not supplied
 - B - Sample age exceeds stability time (sampling to extraction)
 - C - Sample not received in appropriate containers
 - D - Broken Container
 - E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

Water Sample Category Key for Accreditation

-
- DW - Drinking Water
 - GW - Ground Water
 - LE - Land Leachate
 - NA - Not Applicable
 - PL - Prepared Leachate
 - PW - Processed Water

Report Information

RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

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If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com



Chemtest

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.: 24-01750-1

Initial Date of Issue: 05-Feb-2024

Re-Issue Details:

Client IGSL

Client Address: M7 Business Park
Naas
County Kildare
Ireland

Contact(s): Darren Keogh

Project SEA GARDENS BRAY

Quotation No.: Q24-33474

Date Received: 22-Jan-2024

Order No.:

Date Instructed: 23-Jan-2024

No. of Samples: 6

Turnaround (Wkdays): 7

Results Due: 31-Jan-2024

Date Approved: 05-Feb-2024

Approved By:

Details: Nick Watson, Operations Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: SEA GARDENS BRAY

Client: IGSL	Chemtest Job No.:						24-01750	24-01750	24-01750	24-01750	24-01750	24-01750
Quotation No.: Q24-33474	Chemtest Sample ID.:						1756674	1756676	1756677	1756680	1756681	1756683
Order No.:	Client Sample Ref.:						TP304	TP305	TP305A	TP302	TP302	TP305A
	Sample Type:						SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):						0.6	0.6	1.2	1.7	2.6	2.7
	Bottom Depth (m):								1.3			
	Date Sampled:						19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024
Determinand	Accred.	SOP	Type	Units	LOD							
Ammonium	U	1220	10:1	mg/l	0.050	0.078	0.078	0.059	0.056	0.082	0.083	
Ammonium	N	1220	10:1	mg/kg	0.10	0.95	0.87	0.83	0.60	0.84	0.84	

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Results - Soil

Project: SEA GARDENS BRAY

Client: IGSL		Chemtest Job No.:		24-01750	24-01750	24-01750	24-01750	24-01750	24-01750
Quotation No.: Q24-33474		Chemtest Sample ID.:		1756674	1756676	1756677	1756680	1756681	1756683
Order No.:		Client Sample Ref.:		TP304	TP305	TP305A	TP302	TP302	TP305A
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.6	0.6	1.2	1.7	2.6	2.7
		Bottom Depth (m):				1.3			
		Date Sampled:		19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024
		Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD				
ACM Type		U	2192		N/A	-	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	17	18	17	16
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones	None
Soil Texture		N	2040		N/A	Sand	Sand	Sand	Sand
pH at 20C		M	2010		4.0	9.0	8.4	8.6	8.1
Electrical Conductivity (2:1)		N	2020	µS/cm	1.0	160	180	150	170
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	0.55	0.61	< 0.40	< 0.40
Sulphur (Elemental)		M	2180	mg/kg	1.0	2.4	< 1.0	< 1.0	< 1.0
Chloride (Water Soluble)		M	2220	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Fluoride (Extractable)		N	2220	mg/kg	0.010	0.56	1.2	1.2	0.30
Nitrite (Water Soluble)		N	2220	mg/kg	0.100	0.26	< 0.10	< 0.10	< 0.10
Nitrate (Water Soluble)		N	2220	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	3.8	4.4	3.3	3.0
Ammoniacal Nitrogen		M	2425	mg/kg	0.50	2.0	1.0	0.73	0.54
Ammonium (Water Soluble)		M	2220	g/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sodium (Total)		N	2430	mg/kg	10	92	73	87	49
Phosphate (Total)		N	2430	mg/kg	10	1300	630	660	250
Sulphate (Total)		U	2430	%	0.010	0.013	0.020	0.36	0.43
Arsenic		M	2455	mg/kg	0.5	11	25	10	8.1
Barium		M	2455	mg/kg	0	35	99	34	23
Cadmium		M	2455	mg/kg	0.10	0.31	1.5	0.33	0.27
Chromium		M	2455	mg/kg	0.5	9.6	17	15	11
Molybdenum		M	2455	mg/kg	0.5	0.7	2.1	0.6	< 0.5
Antimony		N	2455	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Copper		M	2455	mg/kg	0.50	10	15	10	7.1
Mercury		M	2455	mg/kg	0.05	3.1	0.05	0.05	< 0.05
Nickel		M	2455	mg/kg	0.50	11	26	18	12
Lead		M	2455	mg/kg	0.50	89	28	16	14
Selenium		M	2455	mg/kg	0.25	0.30	0.52	0.32	0.25
Zinc		M	2455	mg/kg	0.50	38	76	66	45
Chromium (Trivalent)		N	2490	mg/kg	1.0	9.6	17	15	11
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05

Results - Soil

Project: SEA GARDENS BRAY

Client: IGSL		Chemtest Job No.:		24-01750	24-01750	24-01750	24-01750	24-01750	24-01750
Quotation No.: Q24-33474		Chemtest Sample ID.:		1756674	1756676	1756677	1756680	1756681	1756683
Order No.:		Client Sample Ref.:		TP304	TP305	TP305A	TP302	TP302	TP305A
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.6	0.6	1.2	1.7	2.6	2.7
		Bottom Depth (m):				1.3			
		Date Sampled:		19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024
		Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD				
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_AL_2D_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16 MC	EH_AL_2D_#1	M	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic EPH >C16-C21 MC	EH_AL_2D_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C21-C35 MC	EH_AL_2D_#1	M	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	< 3.0
Aliphatic EPH >C35-C40 MC	EH_AL_2D_#1	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35 MC	EH_AL_2D_#1	M	2690	mg/kg	5.00	< 5.0	< 5.0	< 5.0	< 5.0
Total Aliphatic EPH >C10-C40 MC	EH_AL_2D_#1	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_AR_2D_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_AR_2D_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C16-C21 MC	EH_AR_2D_#1	U	2690	mg/kg	2.00	16	8.8	15	15
Aromatic EPH >C21-C35 MC	EH_AR_2D_#1	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic EPH >C35-C40 MC	EH_AR_2D_#1	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic EPH >C10-C35 MC	EH_AR_2D_#1	U	2690	mg/kg	5.00	16	10	16	15
Total Aromatic EPH >C10-C40 MC	EH_AR_2D_#1	N	2690	mg/kg	10.00	16	10	16	15
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_Total_2D_#1	U	2690	mg/kg	10.00	16	10	16	15
Total EPH >C10-C40 MC	EH_Total_2D_#1	N	2690	mg/kg	10.00	16	10	16	15
Organic Matter		M	2625	%	0.40	1.9	1.2	< 0.40	< 0.40
Total Organic Carbon		M	2625	%	0.20	1.1	0.67	< 0.20	< 0.20
Mineral Oil EPH	EH_AL_2D_#1	N	2670	mg/kg	10	< 10	< 10	16	< 10
Dichlorodifluoromethane		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		M	2760	µg/kg	20	< 20	< 20	< 20	< 20
Chloroethane		U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: SEA GARDENS BRAY

Client: IGSL		Chemtest Job No.:		24-01750	24-01750	24-01750	24-01750	24-01750	24-01750
Quotation No.: Q24-33474		Chemtest Sample ID.:		1756674	1756676	1756677	1756680	1756681	1756683
Order No.:		Client Sample Ref.:		TP304	TP305	TP305A	TP302	TP302	TP305A
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.6	0.6	1.2	1.7	2.6	2.7
		Bottom Depth (m):				1.3			
		Date Sampled:		19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024
		Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD				
1,1-Dichloroethane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane		U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		M	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene		N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane		M	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene		N	2760	µg/kg	10	< 10	< 10	< 10	< 10
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene		N	2760	µg/kg	10	< 10	< 10	< 10	< 10
1,1,2-Trichloroethane		M	2760	µg/kg	10	< 10	< 10	< 10	< 10
Tetrachloroethene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane		U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane		U	2760	µg/kg	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane		M	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane		M	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane		N	2760	µg/kg	50	< 50	< 50	< 50	< 50
N-Propylbenzene		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: SEA GARDENS BRAY

Client: IGSL		Chemtest Job No.:		24-01750	24-01750	24-01750	24-01750	24-01750	24-01750
Quotation No.: Q24-33474		Chemtest Sample ID.:		1756674	1756676	1756677	1756680	1756681	1756683
Order No.:		Client Sample Ref.:		TP304	TP305	TP305A	TP302	TP302	TP305A
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.6	0.6	1.2	1.7	2.6	2.7
		Bottom Depth (m):				1.3			
		Date Sampled:		19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024
		Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD				
1,3-Dichlorobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene		U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane		U	2760	µg/kg	50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene		N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene		U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50

Results - Soil

Project: SEA GARDENS BRAY

Client: IGSL		Chemtest Job No.:		24-01750	24-01750	24-01750	24-01750	24-01750	24-01750
Quotation No.: Q24-33474		Chemtest Sample ID.:		1756674	1756676	1756677	1756680	1756681	1756683
Order No.:		Client Sample Ref.:		TP304	TP305	TP305A	TP302	TP302	TP305A
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.6	0.6	1.2	1.7	2.6	2.7
		Bottom Depth (m):				1.3			
		Date Sampled:		19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024
		Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD				
2-Nitroaniline		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbazole		M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate		N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene		M	2800	mg/kg	0.10	0.23	< 0.10	< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	0.24	< 0.10	< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	1.6	< 0.10	0.39	< 0.10
Anthracene		M	2800	mg/kg	0.10	0.34	< 0.10	< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	1.6	0.11	0.58	< 0.10
Pyrene		M	2800	mg/kg	0.10	1.0	0.11	0.37	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	0.87	< 0.10	0.25	< 0.10
Chrysene		M	2800	mg/kg	0.10	0.99	< 0.10	0.27	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	1.1	< 0.10	0.29	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	0.27	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	0.55	< 0.10	0.17	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	0.36	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	0.18	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	0.36	< 0.10	< 0.10	< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	9.7	< 2.0	2.3	< 2.0
Total Of 17 PAH's Lower		N	2800	mg/kg	1.0	9.7	< 1.0	2.3	< 1.0
PCB 28		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010

Results - Soil

Project: SEA GARDENS BRAY

Client: IGSL		Chemtest Job No.:	24-01750	24-01750	24-01750	24-01750	24-01750	24-01750
Quotation No.: Q24-33474		Chemtest Sample ID.:	1756674	1756676	1756677	1756680	1756681	1756683
Order No.:		Client Sample Ref.:	TP304	TP305	TP305A	TP302	TP302	TP305A
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	0.6	0.6	1.2	1.7	2.6	2.7
		Bottom Depth (m):			1.3			
		Date Sampled:	19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024	19-Jan-2024
		Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD			
PCB 101		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Phenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2-Chlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2-Methylphenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
3-Methylphenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
4-Methylphenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2-Nitrophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2,4-Dimethylphenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2,4-Dichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2,6-Dichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
4-Chloro-3-Methylphenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2,3,4-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2,3,5-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2,3,6-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2,4,6-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2,4,5-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
4-Nitrophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2,3,4,5-Tetrachlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2,3,4,6-Tetrachlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2,3,5,6-Tetrachlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
3,4,5-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2-Methyl-4,6-Dinitrophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
Pentachlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
2-Sec-Butyl-4,6-Dinitrophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20	< 0.20
Total Phenols		N	2900	mg/kg	5.00	< 5.0	< 5.0	< 5.0
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10
SVOC TIC		N	2790	mg/kg	N/A	None Detected	None Detected	None Detected
VOC TIC		N	2760	µg/kg	N/A	None Detected	None Detected	None Detected

Results - Single Stage WAC

Project: SEA GARDENS BRAY

Chemtest Job No: 24-01750						Landfill Waste Acceptance Criteria Limits			
Chemtest Sample ID: 1756674						Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample Ref: TP304									
Sample ID:									
Sample Location:									
Top Depth(m): 0.6									
Bottom Depth(m):									
Sampling Date: 19-Jan-2024									
Determinand	SOP	HWOL Code	Accred.	Units					
Total Organic Carbon	2625		M	%		1.1	3	5	6
Loss On Ignition	2610		M	%		2.5	--	--	10
Total BTEX	2760		M	mg/kg		< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg		< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg		< 10	500	--	--
Total (of 17) PAHs							100	--	--
pH at 20C	2010		M			9.0	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg		0.019	--	To evaluate	To evaluate
Eluate Analysis				10:1 Eluate mg/l		10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455		U	0.0024		0.024	0.5	2	25
Barium	1455		U	< 0.005		< 0.050	20	100	300
Cadmium	1455		U	< 0.00011		< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005		< 0.0050	0.5	10	70
Copper	1455		U	0.0017		0.017	2	50	100
Mercury	1455		U	0.00017		0.0017	0.01	0.2	2
Molybdenum	1455		U	0.0009		0.0088	0.5	10	30
Nickel	1455		U	< 0.0005		< 0.0050	0.4	10	40
Lead	1455		U	0.0021		0.021	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5	
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7	
Zinc	1455		U	0.007	0.065	4	50	200	
Chloride	1220		U	< 1.0	< 10	800	15000	25000	
Fluoride	1220		U	0.26	2.6	10	150	500	
Sulphate	1220		U	2.2	22	1000	20000	50000	
Total Dissolved Solids	1020		N	57	570	4000	60000	100000	
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-	
Dissolved Organic Carbon	1610		U	4.0	< 50	500	800	1000	

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	17

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: SEA GARDENS BRAY

Chemtest Job No: 24-01750						Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1756676						Inert Waste Landfill	Limits	
Sample Ref: TP305							Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:								
Sample Location:								
Top Depth(m): 0.6								
Bottom Depth(m):								
Sampling Date: 19-Jan-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	0.67	3	5	6
Loss On Ignition	2610		M	%	2.9	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.011	--	To evaluate	To evaluate
Eluate Analysis					10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455		U	0.0062	0.063	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0014	0.014	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0057	0.057	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0007	0.0065	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.005	0.052	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.21	2.1	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	57	570	4000	60000	100000
Phenol Index	1920		U	0.15	1.5	1	-	-
Dissolved Organic Carbon	1610		U	6.8	68	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	18

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: SEA GARDENS BRAY

Chemtest Job No: 24-01750						Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1756677						Inert Waste Landfill	Limits	
Sample Ref: TP305A							Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:								
Sample Location:								
Top Depth(m): 1.2								
Bottom Depth(m): 1.3								
Sampling Date: 19-Jan-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	< 0.20	3	5	6
Loss On Ignition	2610		M	%	1.7	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.016	--	To evaluate	To evaluate
Eluate Analysis				10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455		U	0.0022	0.022	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0011	0.011	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0018	0.018	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	0.0008	0.0079	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.004	0.037	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.23	2.3	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	39	390	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.9	59	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	17

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: SEA GARDENS BRAY

Chemtest Job No: 24-01750						Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1756680						Inert Waste Landfill	Limits	
Sample Ref: TP302							Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:								
Sample Location:								
Top Depth(m): 1.7								
Bottom Depth(m):								
Sampling Date: 19-Jan-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	< 0.20	3	5	6
Loss On Ignition	2610		M	%	0.69	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.1	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.015	--	To evaluate	To evaluate
Eluate Analysis				10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455		U	< 0.0002	< 0.0020	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0006	0.0064	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	< 0.0002	< 0.0020	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.009	0.087	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.12	1.2	10	150	500
Sulphate	1220		U	15	150	1000	20000	50000
Total Dissolved Solids	1020		N	33	330	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	16

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: SEA GARDENS BRAY

Chemtest Job No: 24-01750						Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1756681						Inert Waste Landfill	Limits	
Sample Ref: TP302							Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:								
Sample Location:								
Top Depth(m): 2.6								
Bottom Depth(m):								
Sampling Date: 19-Jan-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	1.3	3	5	6
Loss On Ignition	2610		M	%	2.8	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH CU 1D Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		7.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.012	--	To evaluate	To evaluate
Eluate Analysis					10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455		U	0.015	0.15	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0008	0.0084	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0065	0.065	0.5	10	30
Nickel	1455		U	0.0011	0.011	0.4	10	40
Lead	1455		U	0.0007	0.0071	0.5	10	50
Antimony	1455		U	0.0040	0.040	0.06	0.7	5
Selenium	1455		U	0.0061	0.061	0.1	0.5	7
Zinc	1455		U	0.005	0.051	4	50	200
Chloride	1220		U	2.3	23	800	15000	25000
Fluoride	1220		U	0.12	1.2	10	150	500
Sulphate	1220		U	13	130	1000	20000	50000
Total Dissolved Solids	1020		N	35	340	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.5	< 50	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	25

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: SEA GARDENS BRAY

Chemtest Job No: 24-01750						Landfill Waste Acceptance Criteria Limits		
Chemtest Sample ID: 1756683						Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample Ref: TP305A								
Sample ID:								
Sample Location:								
Top Depth(m): 2.7								
Bottom Depth(m):								
Sampling Date: 19-Jan-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	1.4	3	5	6
Loss On Ignition	2610		M	%	3.6	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.015	--	To evaluate	To evaluate
Eluate Analysis					10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455		U	0.0075	0.075	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0016	0.016	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.011	0.11	0.5	10	30
Nickel	1455		U	0.0014	0.014	0.4	10	40
Lead	1455		U	0.0010	0.0097	0.5	10	50
Antimony	1455		U	0.0040	0.040	0.06	0.7	5
Selenium	1455		U	0.0045	0.045	0.1	0.5	7
Zinc	1455		U	0.017	0.17	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.18	1.8	10	150	500
Sulphate	1220		U	18	180	1000	20000	50000
Total Dissolved Solids	1020		N	38	380	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.7	57	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	23

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2020	Electrical Conductivity	Electrical conductivity (EC) of aqueous extract or calcium sulphate solution for topsoil	Measurement of the electrical resistance of a 2:1 water/soil extract.	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easily liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N-dimethyl-p-phenylenediamine.	
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics (cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8–C10 Aromatics: >C5–C7,>C7–C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenzo[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS	
2900	Phenols in Soils by GC-MS	Approximately 24 substituted Phenols, including Chlorophenols	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

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Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

-
- A - Date of sampling not supplied
 - B - Sample age exceeds stability time (sampling to extraction)
 - C - Sample not received in appropriate containers
 - D - Broken Container
 - E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

Water Sample Category Key for Accreditation

-
- DW - Drinking Water
 - GW - Ground Water
 - LE - Land Leachate
 - NA - Not Applicable
 - PL - Prepared Leachate
 - PW - Processed Water

Report Information

RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

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If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com



Chemtest

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

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Final Report

Report No.: 24-02030-1

Initial Date of Issue: 04-Feb-2024

Re-Issue Details:

Client IGSL

Client Address: M7 Business Park
Naas
County Kildare
Ireland

Contact(s): Darren Keogh

Project Sea Gardens Bray

Quotation No.: Q24-33474

Date Received: 24-Jan-2024

Order No.:

Date Instructed: 24-Jan-2024

No. of Samples: 2

Turnaround (Wkdays): 7

Results Due: 01-Feb-2024

Date Approved: 04-Feb-2024

Approved By:

Details: Stuart Henderson, Technical
Manager

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: Sea Gardens Bray

Client: IGSL	Chemtest Job No.:					24-02030	24-02030
Quotation No.: Q24-33474	Chemtest Sample ID.:					1757628	1757629
Order No.:	Client Sample Ref.:					TP306	TP306
	Sample Type:					SOIL	SOIL
	Top Depth (m):					2.9	3.3
	Date Sampled:					19-Jan-2024	19-Jan-2024
Determinand	Accred.	SOP	Type	Units	LOD		
Ammonium	U	1220	10:1	mg/l	0.050	0.38	0.25
Ammonium	N	1220	10:1	mg/kg	0.10	3.9	2.5

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Results - Soil

Project: Sea Gardens Bray

Client: IGSL		Chemtest Job No.:				24-02030	24-02030
Quotation No.: Q24-33474		Chemtest Sample ID.:				1757628	1757629
Order No.:		Client Sample Ref.:				TP306	TP306
		Sample Type:				SOIL	SOIL
		Top Depth (m):				2.9	3.3
		Date Sampled:				19-Jan-2024	19-Jan-2024
		Asbestos Lab:				DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD		
ACM Type		U	2192		N/A	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	28	20
Soil Colour		N	2040		N/A	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones
Soil Texture		N	2040		N/A	Sand	Sand
pH at 20C		M	2010		4.0	8.1	8.5
Electrical Conductivity (2:1)		N	2020	µS/cm	1.0	180	220
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	< 0.40	< 0.40
Sulphur (Elemental)		M	2180	mg/kg	1.0	6.0	16
Chloride (Water Soluble)		M	2220	g/l	0.010	0.012	0.012
Fluoride (Extractable)		N	2220	mg/kg	0.010	0.52	0.66
Nitrite (Water Soluble)		N	2220	mg/kg	0.100	0.12	< 0.10
Nitrate (Water Soluble)		N	2220	g/l	0.010	< 0.010	< 0.010
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	9.7	14
Ammoniacal Nitrogen		M	2425	mg/kg	0.50	12	4.1
Ammonium (Water Soluble)		M	2220	g/l	0.01	< 0.01	< 0.01
Sodium (Total)		N	2430	mg/kg	10	94	78
Phosphate (Total)		N	2430	mg/kg	10	52	21
Sulphate (Total)		U	2430	%	0.010	0.19	0.43
Arsenic		M	2455	mg/kg	0.5	7.9	12
Barium		M	2455	mg/kg	0	52	36
Cadmium		M	2455	mg/kg	0.10	1.2	0.49
Chromium		M	2455	mg/kg	0.5	25	17
Molybdenum		M	2455	mg/kg	0.5	0.6	0.6
Antimony		N	2455	mg/kg	2.0	< 2.0	< 2.0
Copper		M	2455	mg/kg	0.50	15	11
Mercury		M	2455	mg/kg	0.05	< 0.05	< 0.05
Nickel		M	2455	mg/kg	0.50	25	21
Lead		M	2455	mg/kg	0.50	21	17
Selenium		M	2455	mg/kg	0.25	1.5	0.70
Zinc		M	2455	mg/kg	0.50	100	98
Chromium (Trivalent)		N	2490	mg/kg	1.0	25	17
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05

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Results - Soil

Project: Sea Gardens Bray

Client: IGSL		Chemtest Job No.:				24-02030	24-02030
Quotation No.: Q24-33474		Chemtest Sample ID.:				1757628	1757629
Order No.:		Client Sample Ref.:				TP306	TP306
		Sample Type:				SOIL	SOIL
		Top Depth (m):				2.9	3.3
		Date Sampled:				19-Jan-2024	19-Jan-2024
		Asbestos Lab:				DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD		
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_AL_2D_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0
Aliphatic EPH >C12-C16 MC	EH_AL_2D_#1	M	2690	mg/kg	1.00	< 1.0	< 1.0
Aliphatic EPH >C16-C21 MC	EH_AL_2D_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0
Aliphatic EPH >C21-C35 MC	EH_AL_2D_#1	M	2690	mg/kg	3.00	< 3.0	< 3.0
Aliphatic EPH >C35-C40 MC	EH_AL_2D_#1	N	2690	mg/kg	10.00	< 10	< 10
Total Aliphatic EPH >C10-C35 MC	EH_AL_2D_#1	M	2690	mg/kg	5.00	< 5.0	< 5.0
Total Aliphatic EPH >C10-C40 MC	EH_AL_2D_#1	N	2690	mg/kg	10.00	< 10	< 10
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_AR_2D_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_AR_2D_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0
Aromatic EPH >C16-C21 MC	EH_AR_2D_#1	U	2690	mg/kg	2.00	2.6	2.9
Aromatic EPH >C21-C35 MC	EH_AR_2D_#1	U	2690	mg/kg	2.00	9.4	< 2.0
Aromatic EPH >C35-C40 MC	EH_AR_2D_#1	N	2690	mg/kg	1.00	< 1.0	< 1.0
Total Aromatic EPH >C10-C35 MC	EH_AR_2D_#1	U	2690	mg/kg	5.00	12	< 5.0
Total Aromatic EPH >C10-C40 MC	EH_AR_2D_#1	N	2690	mg/kg	10.00	12	< 10
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_Total_2D_#1	U	2690	mg/kg	10.00	13	< 10
Total EPH >C10-C40 MC	EH_Total_2D_#1	N	2690	mg/kg	10.00	13	< 10
Organic Matter		M	2625	%	0.40	2.8	< 0.40
Total Organic Carbon		M	2625	%	0.20	1.6	< 0.20
Mineral Oil EPH	EH_AL_2D_#1	N	2670	mg/kg	10	< 10	< 10
Dichlorodifluoromethane		U	2760	µg/kg	1.0	< 1.0	< 1.0
Chloromethane		M	2760	µg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride		M	2760	µg/kg	1.0	< 1.0	< 1.0
Bromomethane		M	2760	µg/kg	20	< 20	< 20
Chloroethane		U	2760	µg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane		M	2760	µg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene		M	2760	µg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene		M	2760	µg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane		M	2760	µg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene		M	2760	µg/kg	1.0	< 1.0	< 1.0

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Results - Soil

Project: Sea Gardens Bray

Client: IGSL		Chemtest Job No.:				24-02030	24-02030
Quotation No.: Q24-33474		Chemtest Sample ID.:				1757628	1757629
Order No.:		Client Sample Ref.:				TP306	TP306
		Sample Type:				SOIL	SOIL
		Top Depth (m):				2.9	3.3
		Date Sampled:				19-Jan-2024	19-Jan-2024
		Asbestos Lab:				DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD		
Bromochloromethane		U	2760	µg/kg	5.0	< 5.0	< 5.0
Trichloromethane		M	2760	µg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane		M	2760	µg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane		M	2760	µg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene		U	2760	µg/kg	1.0	< 1.0	< 1.0
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane		M	2760	µg/kg	2.0	< 2.0	< 2.0
Trichloroethene		N	2760	µg/kg	1.0	< 1.0	< 1.0
1,2-Dichloropropane		M	2760	µg/kg	1.0	< 1.0	< 1.0
Dibromomethane		M	2760	µg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane		M	2760	µg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene		N	2760	µg/kg	10	< 10	< 10
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene		N	2760	µg/kg	10	< 10	< 10
1,1,2-Trichloroethane		M	2760	µg/kg	10	< 10	< 10
Tetrachloroethene		M	2760	µg/kg	1.0	< 1.0	< 1.0
1,3-Dichloropropane		U	2760	µg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane		U	2760	µg/kg	10	< 10	< 10
1,2-Dibromoethane		M	2760	µg/kg	5.0	< 5.0	< 5.0
Chlorobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane		M	2760	µg/kg	2.0	< 2.0	< 2.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0
Styrene		M	2760	µg/kg	1.0	< 1.0	< 1.0
Tribromomethane		U	2760	µg/kg	1.0	< 1.0	< 1.0
Isopropylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0
Bromobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane		N	2760	µg/kg	50	< 50	< 50
N-Propylbenzene		U	2760	µg/kg	1.0	< 1.0	< 1.0
2-Chlorotoluene		M	2760	µg/kg	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene		U	2760	µg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene		U	2760	µg/kg	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene		U	2760	µg/kg	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0
4-Isopropyltoluene		U	2760	µg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0

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Results - Soil

Project: Sea Gardens Bray

Client: IGSL		Chemtest Job No.:				24-02030	24-02030
Quotation No.: Q24-33474		Chemtest Sample ID.:				1757628	1757629
Order No.:		Client Sample Ref.:				TP306	TP306
		Sample Type:				SOIL	SOIL
		Top Depth (m):				2.9	3.3
		Date Sampled:				19-Jan-2024	19-Jan-2024
		Asbestos Lab:				DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD		
N-Butylbenzene		U	2760	µg/kg	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane		U	2760	µg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene		N	2760	µg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene		U	2760	µg/kg	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine		M	2790	mg/kg	0.50	< 0.50	< 0.50
Phenol		M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether		M	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene		M	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene		N	2790	mg/kg	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene		M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol		M	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether		M	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane		N	2790	mg/kg	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine		M	2790	mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol		M	2790	mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene		N	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone		M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitrophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dimethylphenol		N	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane		M	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene		M	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline		N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene		M	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol		N	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene		M	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene		N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol		N	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene		M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline		N	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate		M	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene		N	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline		N	2790	mg/kg	0.50	< 0.50	< 0.50

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Results - Soil

Project: Sea Gardens Bray

Client: IGSL		Chemtest Job No.:				24-02030	24-02030
Quotation No.: Q24-33474		Chemtest Sample ID.:				1757628	1757629
Order No.:		Client Sample Ref.:				TP306	TP306
		Sample Type:				SOIL	SOIL
		Top Depth (m):				2.9	3.3
		Date Sampled:				19-Jan-2024	19-Jan-2024
		Asbestos Lab:				DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD		
Dibenzofuran		M	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether		M	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene		N	2790	mg/kg	0.50	< 0.50	< 0.50
Diethyl Phthalate		M	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitroaniline		N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene		M	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether		M	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene		M	2790	mg/kg	0.50	< 0.50	< 0.50
Carbazole		M	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate		N	2790	mg/kg	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate		N	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate		N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate		N	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10	0.11
Anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10	0.14
Pyrene		M	2800	mg/kg	0.10	< 0.10	0.13
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0	< 2.0
Total Of 17 PAH's Lower		N	2800	mg/kg	1.0	< 1.0	< 1.0
PCB 28		U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 118		U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010	< 0.010

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Results - Soil

Project: Sea Gardens Bray

Client: IGSL		Chemtest Job No.:				24-02030	24-02030
Quotation No.: Q24-33474		Chemtest Sample ID.:				1757628	1757629
Order No.:		Client Sample Ref.:				TP306	TP306
		Sample Type:				SOIL	SOIL
		Top Depth (m):				2.9	3.3
		Date Sampled:				19-Jan-2024	19-Jan-2024
		Asbestos Lab:				DURHAM	DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD		
Tot PCBs Low (7 Congeners)		N	2815	mg/kg	0.05	< 0.05	< 0.05
Phenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2-Chlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2-Methylphenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
3-Methylphenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
4-Methylphenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2-Nitrophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2,4-Dimethylphenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2,4-Dichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2,6-Dichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
4-Chloro-3-Methylphenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2,3,4-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2,3,5-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2,3,6-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2,4,6-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2,4,5-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
4-Nitrophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2,3,4,5-Tetrachlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2,3,4,6-Tetrachlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2,3,5,6-Tetrachlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
3,4,5-Trichlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2-Methyl-4,6-Dinitrophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
Pentachlorophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
2-Sec-Butyl-4,6-Dinitrophenol		N	2900	mg/kg	0.20	< 0.20	< 0.20
Total Phenols		N	2900	mg/kg	5.00	< 5.0	< 5.0
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10
SVOC TIC		N	2790	mg/kg	N/A	None Detected	None Detected
VOC TIC		N	2760	µg/kg	N/A	None Detected	None Detected

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Results - Single Stage WAC

Project: Sea Gardens Bray

Chemtest Job No: 24-02030						Landfill Waste Acceptance Criteria Limits		
Chemtest Sample ID: 1757628						Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample Ref: TP306								
Sample ID:								
Sample Location:								
Top Depth(m): 2.9								
Bottom Depth(m):								
Sampling Date: 19-Jan-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	1.6	3	5	6
Loss On Ignition	2610		M	%	2.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.1	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.014	--	To evaluate	To evaluate
Eluate Analysis				10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455		U	0.017	0.17	0.5	2	25
Barium	1455		U	0.010	0.10	20	100	300
Cadmium	1455		U	0.00016	0.0016	0.04	1	5
Chromium	1455		U	0.0010	0.0099	0.5	10	70
Copper	1455		U	0.0049	0.048	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.020	0.20	0.5	10	30
Nickel	1455		U	0.0018	0.018	0.4	10	40
Lead	1455		U	0.0026	0.026	0.5	10	50
Antimony	1455		U	0.0089	0.089	0.06	0.7	5
Selenium	1455		U	0.0028	0.028	0.1	0.5	7
Zinc	1455		U	0.013	0.13	4	50	200
Chloride	1220		U	3.4	34	800	15000	25000
Fluoride	1220		U	0.20	2.0	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	33	330	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	< 2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	28

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: Sea Gardens Bray

Chemtest Job No: 24-02030						Landfill Waste Acceptance Criteria Limits		
Chemtest Sample ID: 1757629						Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample Ref: TP306								
Sample ID:								
Sample Location:								
Top Depth(m): 3.3								
Bottom Depth(m):								
Sampling Date: 19-Jan-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	< 0.20	3	5	6
Loss On Ignition	2610		M	%	7.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.5	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.014	--	To evaluate	To evaluate
Eluate Analysis					10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455		U	0.022	0.22	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0007	0.0072	0.5	10	70
Copper	1455		U	0.0035	0.035	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.014	0.14	0.5	10	30
Nickel	1455		U	0.0019	0.019	0.4	10	40
Lead	1455		U	0.0021	0.021	0.5	10	50
Antimony	1455		U	0.0050	0.050	0.06	0.7	5
Selenium	1455		U	0.0014	0.014	0.1	0.5	7
Zinc	1455		U	0.016	0.16	4	50	200
Chloride	1220		U	2.0	20	800	15000	25000
Fluoride	1220		U	0.14	1.4	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	21	210	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	5.7	57	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	20

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2020	Electrical Conductivity	Electrical conductivity (EC) of aqueous extract or calcium sulphate solution for topsoil	Measurement of the electrical resistance of a 2:1 water/soil extract.	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easily liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N-dimethyl-p-phenylenediamine.	
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics (cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8–C10 Aromatics: >C5–C7,>C7–C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS	
2900	Phenols in Soils by GC-MS	Approximately 24 substituted Phenols, including Chlorophenols	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

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Key

U	UKAS accredited
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I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

-
- A - Date of sampling not supplied
 - B - Sample age exceeds stability time (sampling to extraction)
 - C - Sample not received in appropriate containers
 - D - Broken Container
 - E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

Water Sample Category Key for Accreditation

-
- DW - Drinking Water
 - GW - Ground Water
 - LE - Land Leachate
 - NA - Not Applicable
 - PL - Prepared Leachate
 - PW - Processed Water

Report Information

RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

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If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

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Final Report

Report No.: 24-12128-1
Initial Date of Issue: 25-Apr-2024

Re-Issue Details:

Client IGSL
Client Address: M7 Business Park
 Naas
 County Kildare
 Ireland
Contact(s): Darren Keogh
Project 24991 Sea Gardens Bray

Quotation No.:		Date Received:	19-Apr-2024
Order No.:		Date Instructed:	19-Apr-2024
No. of Samples:	9	Results Due:	29-Apr-2024
Turnaround (Wkdays):	7		
Date Approved:	25-Apr-2024		

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: 24991 Sea Gardens Bray

Client: IGSL		Chemtest Job No.:						24-12128	24-12128	24-12128	24-12128	24-12128	24-12128	24-12128
Quotation No.:		Chemtest Sample ID.:						1795738	1795739	1795740	1795741	1795742	1795743	1795745
Order No.:		Client Sample Ref.:						TP301	TP301	TP302	TP302	TP303	TP304	TP305
		Sample Type:						SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):						0.40	1.10	0.60	1.70	0.60	0.60	1.15
		Date Sampled:						17-Apr-2024	17-Apr-2024	17-Apr-2024	17-Apr-2024	17-Apr-2024	17-Apr-2024	17-Apr-2024
Determinand	HWOL Code	Accred.	SOP	Units	LOD									
Moisture		N	2030	%	0.020	16	12	22	17	20	13	13	18	
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	
Other Material		N	2040		N/A	Stones and Roots	Stones	Stones	Stones	Stones	Stones	Stones	Stones	
Soil Texture		N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	
Electrical Conductivity (2.5:1)		N	2020	µS/cm	1.0	76	110	79	190	330	110	180	130	

Results - Soil

Project: 24991 Sea Gardens Bray

Client: IGSL		Chemtest Job No.:		24-12128		
Quotation No.:		Chemtest Sample ID.:		1795746		
Order No.:		Client Sample Ref.:		TP306		
		Sample Type:		SOIL		
		Top Depth (m):		1.20		
		Date Sampled:		17-Apr-2024		
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
Moisture		N	2030	%	0.020	24
Soil Colour		N	2040		N/A	Brown
Other Material		N	2040		N/A	Stones
Soil Texture		N	2040		N/A	Sand
Electrical Conductivity (2.5:1)		N	2020	µS/cm	1.0	73

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Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2020	Electrical Conductivity	Electrical conductivity (EC) of aqueous extract or calcium sulphate solution for topsoil	Measurement of the electrical resistance of a 2:1 water/soil extract.	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	

Report Information

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Report Information

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SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

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Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com



RECEIVED 24/03/2025

Final Report

Report No.: 24-09880-1
Initial Date of Issue: 08-Apr-2024

Re-Issue Details:

Client IGSL
Client Address: M7 Business Park
Naas
County Kildare
Ireland
Contact(s): Darren Keogh
Project 24991 Sea Gardens, Bray, Co. Wicklow

Quotation No.:	Q22-27193	Date Received:	28-Mar-2024
Order No.:		Date Instructed:	28-Mar-2024
No. of Samples:	8		
Turnaround (Wkdays):	7	Results Due:	09-Apr-2024
Date Approved:	08-Apr-2024		

Approved By:

Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Water

Project: 24991 Sea Gardens, Bray, Co. Wicklow

Client: IGSL		Chemtest Job No.:		24-09880	24-09880	24-09880	24-09880	24-09880	24-09880	24-09880	24-09880	24-09880
Quotation No.: Q22-27193		Chemtest Sample ID.:		1787004	1787005	1787006	1787007	1787008	1787009	1787010	1787011	1787011
Order No.:		Client Sample Ref.:		ROH03 High Tide	WS06B High Tide	WS07B High Tide	WS08B High Tide	ROH03 Low Tide	WS06B Low Tide	WS07B Low Tide	WS08B Low Tide	WS08B Low Tide
		Sample Location:		ROH03	WS06B	WS07B	WS08B	ROH03	WS06B	WS07B	WS08B	WS08B
		Sample Type:		WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
		Sample Sub Type:		Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
		Top Depth (m):		1.50	1.24	1.44	2.10	1.69	1.22	1.67	2.12	2.12
		Date Sampled:		25-Mar-2024	25-Mar-2024	25-Mar-2024	25-Mar-2024	25-Mar-2024	25-Mar-2024	25-Mar-2024	25-Mar-2024	25-Mar-2024
		Time Sampled:		11:27	11:40	11:10	12:20	17:40	17:20	17:30	17:50	17:50
Determinand	HWOL Code	Accred.	SOP	Units	LOD							
pH at 20C		U	1010		4.0	8.4	8.1	8.3	8.2	8.3	8.0	8.3
Sulphate		U	1220	mg/l	1.0	50	56	< 1.0	39	51	57	7.2
Cyanide (Total)		U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Arsenic (Dissolved)		U	1455	µg/l	0.20	24	0.35	0.86	0.24	21	0.39	4.1
Boron (Dissolved)		U	1455	µg/l	10.0	90	16	180	< 10	57	< 10	170
Cadmium (Dissolved)		U	1455	µg/l	0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Chromium (Dissolved)		U	1455	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Copper (Dissolved)		U	1455	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Mercury (Dissolved)		U	1455	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)		U	1455	µg/l	0.50	1.5	0.83	< 0.50	0.68	1.8	0.93	0.95
Lead (Dissolved)		U	1455	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Zinc (Dissolved)		U	1455	µg/l	2.5	3.0	5.5	2.9	4.0	4.9	14	3.5
Total TPH >C6-C40	EH_1D_Total	U	1670	µg/l	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Naphthalene		U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene		U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene		U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene		U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene		U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene		U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene		U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene		U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene		N	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene		U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene		U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's		N	1700	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total Phenols		U	1920	mg/l	0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	RE PW TE TS PL DW GW
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.	GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1670	Total Petroleum Hydrocarbons (TPH) in Waters by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO	Pentane extraction / GC FID detection	
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)	PL GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	PL GW

Report Information

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Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

-
- A - Date of sampling not supplied
 - B - Sample age exceeds stability time (sampling to extraction)
 - C - Sample not received in appropriate containers
 - D - Broken Container
 - E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

Water Sample Category Key for Accreditation

-
- DW - Drinking Water
 - GW - Ground Water
 - LE - Land Leachate
 - NA - Not Applicable
 - PL - Prepared Leachate
 - PW - Processed Water

Report Information

RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

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Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

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Appendix 10

As-Surveyed Site Plans

Ground Investigation

