

APPENDIX 3

Sample BF4

Weight of sand : 101.65 g

M = 0.792 D = 0.681 S = -0.0217 K = 0.871

Table 4.4: The result of sand sample of BF3

Phi value	Weight of sand (g)	% Weight of sand	Cumulative % Weight of sand
-2.5	0	0.00	0.00
-2.25	0	0.00	0.00
-2	0	0.00	0.00
-1.75	0	0.00	0.00
-1.5	0	0.00	0.00
-1.25	0.15	0.15	0.15
-1	0.28	0.28	0.42
-0.75	0.4	0.39	0.82
-0.5	1.52	1.50	2.31
-0.25	2.88	2.83	5.15
0	7.4	7.28	12.42
0.25	11.46	11.27	23.70
0.5	11.06	10.88	34.58
0.75	10.44	10.27	44.85
1	16.37	16.10	60.95
1.25	13.15	12.94	73.89
1.5	10.47	10.30	84.19
1.75	8.65	8.51	92.70
2	4.44	4.37	97.07
2.25	1.67	1.64	98.71
2.5	0.9	0.89	99.60
2.75	0.29	0.29	99.88
3	0.12	0.12	100.00
3.25	0	0.00	100.00
3.5	0	0.00	100.00
3.75	0	0.00	100.00
>4	0	0.00	100.00

APPENDIX 4

Sample : BF5

Weight of sand : 100.53 g

M = -0.2292 D = 0.9138 S = -0.1077 K = 1.4296

Table 4.5: The result of sand sample of BF4

Phi value	Weight of sand (g)	% Weight of sand	Cumulative % Weight of sand
-2.5	0.95	0.94	0.94
-2.25	1.53	1.52	2.47
-2	1.69	1.68	4.15
-1.75	2.56	2.55	6.69
-1.5	3.06	3.04	9.74
-1.25	4.52	4.50	14.23
-1	5.55	5.52	19.76
-0.75	6.76	6.72	26.48
-0.5	11.07	11.01	37.49
-0.25	8.94	8.89	46.38
0	10.68	10.62	57.01
0.25	11.25	11.19	68.20
0.5	10.09	10.04	78.24
0.75	8.55	8.50	86.74
1	7.87	7.83	94.57
1.25	3.1	3.08	97.65
1.5	1.28	1.27	98.93
1.75	0.6	0.60	99.52
2	0.31	0.31	99.83
2.25	0.08	0.08	99.91
2.5	0.09	0.09	100.00
2.75	0	0.00	100.00
3	0	0.00	100.00
3.25	0	0.00	100.00
3.5	0	0.00	100.00
3.75	0	0.00	100.00
>4	0	0.00	100.00

APPENDIX 5

Sample : BF6

Weight of sand : 99.81 g

M = -0.417 D = 0.042 S = -0.064 K = 1.095

Table 4.6: The result of sand sample of BF5

Phi value	Weight of sand (g)	% Weight of sand	Cumulative % Weight of sand
-2.5	0	0.00	0.00
-2.25	1.11	1.11	1.11
-2	1.38	1.38	2.49
-1.75	2.58	2.58	5.08
-1.5	4.83	4.84	9.92
-1.25	6.56	6.57	16.49
-1	6.67	6.68	23.17
-0.75	8.42	8.44	31.61
-0.5	13.86	13.89	45.50
-0.25	10.74	10.76	56.26
0	11.16	11.18	67.44
0.25	11.2	11.22	78.66
0.5	9.64	9.66	88.32
0.75	6.64	6.65	94.97
1	3.82	3.83	98.80
1.25	0.82	0.82	99.62
1.5	0.3	0.30	99.92
1.75	0.05	0.05	99.97
2	0.03	0.03	100.00
2.25	0	0.00	100.00
2.5	0	0.00	100.00
2.75	0	0.00	100.00
3	0	0.00	100.00
3.25	0	0.00	100.00
3.5	0	0.00	100.00
3.75	0	0.00	100.00
>4	0	0.00	100.00

APPENDIX 6

Sample : QB1

Weight of sand : 99.65 g

M = 1.833 D = 0.6056 S = -0.211 K = 0.847

Table 4.7: The result of sand sample of QB1

Phi value	Weight of sand (g)	% Weight of sand	Cumulative % Weight of sand
-2.5	0	0.00	0.00
-2.25	0	0.00	0.00
-2	0	0.00	0.00
-1.75	0	0.00	0.00
-1.5	0	0.00	0.00
-1.25	0	0.00	0.00
-1	0	0.00	0.00
-0.75	0	0.00	0.00
-0.5	0	0.00	0.00
-0.25	0	0.00	0.00
0	0	0.00	0.00
0.25	0.03	0.03	0.03
0.5	0.08	0.08	0.11
0.75	1.54	1.55	1.66
1	7.47	7.50	9.15
1.25	9.93	9.96	19.12
1.5	10.8	10.84	29.95
1.75	13.26	13.31	43.26
2	16.07	16.13	59.39
2.25	12.89	12.94	72.32
2.5	13.08	13.13	85.45
2.75	8.4	8.43	93.88
3	4.63	4.65	98.52
3.25	1.13	1.13	99.66
3.5	0.34	0.34	100.00
3.75	0	0	100
>4	0	0	100

APPENDIX 7

Sample : QB2

Weight of sand : 101.37 g

M = 1.125 D = 1.008 S = -0.103 K= 1.015

Table 4.8: The result of sand sample of QB2

Phi value	Weight of sand (g)	% Weight of sand	Cumulative % Weight of sand
-2.5	0	0.00	0.00
-2.25	0	0.00	0.00
-2	0	0.00	0.00
-1.75	0	0.00	0.00
-1.5	0.11	0.11	0.11
-1.25	0.25	0.25	0.36
-1	0.29	0.29	0.64
-0.75	2.04	2.01	2.65
-0.5	4.11	4.05	6.71
-0.25	3.44	3.39	10.10
0	3.95	3.90	14.00
0.25	4.96	4.89	18.89
0.5	6.38	6.29	25.18
0.75	7.61	7.51	32.69
1	10.29	10.15	42.84
1.25	10.31	10.17	53.01
1.5	10.01	9.87	62.89
1.75	9.79	9.66	72.55
2	9.03	8.91	81.45
2.25	5.9	5.82	87.27
2.5	5.83	5.75	93.03
2.75	3.9	3.85	96.87
3	2.27	2.24	99.11
3.25	0.52	0.51	99.63
3.5	0.38	0.37	100.00
3.75	0	0.00	100.00
>4	0	0.00	100.00

APPENDIX 8

Sample : QB3

Weight of sand : 104.64 g

M = 0.2083 D = 1.137 S = -0.0017 K = 0.998

Table 4.9: The result of sand sample of QB3

Phi value	Weight of sand (g)	% Weight of sand	Cumulative % Weight of sand
-2.5	0.98	0.94	0.94
-2.25	0.54	0.52	1.45
-2	0.27	0.26	1.71
-1.75	0	0.00	1.71
-1.5	0	0.00	1.71
-1.25	3.28	3.13	4.85
-1	6.3	6.02	10.87
-0.75	7.59	7.25	18.12
-0.5	10.03	9.59	27.70
-0.25	6.5	6.21	33.92
0	6.82	6.52	40.43
0.25	7.65	7.31	47.74
0.5	8.08	7.72	55.47
0.75	8.64	8.26	63.72
1	11.3	10.80	74.52
1.25	6.86	6.56	81.08
1.5	5.01	4.79	85.87
1.75	4.34	4.15	90.01
2	3.52	3.36	93.38
2.25	2.2	2.10	95.48
2.5	2.16	2.06	97.54
2.75	1.45	1.39	98.93
3	0.83	0.79	99.72
3.25	0.21	0.20	99.92
3.5	0.08	0.08	100.00
3.75	0	0.00	100.00
>4	0	0.00	100.00

APPENDIX 9

Sample : QB4

Weight of sand : 105.7 g

M = 0.2917 D = 0.9299 S = 0.0426 K = 1.122

Table 4.10: The result of sand sample of QB4

Phi value	Weight of sand (g)	% Weight of sand	Cumulative % Weight of sand
-2.5	0	0.00	0.00
-2.25	0	0.00	0.00
-2	0	0.00	0.00
-1.75	0	0.00	0.00
-1.5	0	0.00	0.00
-1.25	0	0.00	0.00
-1	0.16	0.15	0.15
-0.75	8.28	7.83	7.98
-0.5	17.29	16.36	24.34
-0.25	12.06	11.41	35.75
0	10.58	10.01	45.76
0.25	10.89	10.30	56.06
0.5	9.62	9.10	65.17
0.75	8.48	8.02	73.19
1	8.88	8.40	81.59
1.25	5.09	4.82	86.40
1.5	3.35	3.17	89.57
1.75	2.31	2.19	91.76
2	1.72	1.63	93.39
2.25	1.18	1.12	94.50
2.5	1.43	1.35	95.86
2.75	1.51	1.43	97.28
3	1.63	1.54	98.83
3.25	0.59	0.56	99.39
3.5	0.58	0.55	99.93
3.75	0.07	0.07	100.00
>4	0	0.00	100.00

APPENDIX 10

Sample : QB5

Weight of sand : 100.6 g

M = -0.4583 D = 0.7637 S = -0.067 K = 1.45

Table 4.11: The result of sand sample at QB5

Phi value	Weight of sand (g)	% Weight of sand	Cumulative % Weight of sand
-2.5	3.97	3.95	3.95
-2.25	0.74	0.74	4.68
-2	0.38	0.38	5.06
-1.75	0.25	0.25	5.31
-1.5	1.34	1.33	6.64
-1.25	4.86	4.83	11.47
-1	6.76	6.72	18.19
-0.75	12.44	12.37	30.56
-0.5	22.08	21.95	52.50
-0.25	14.84	14.75	67.26
0	11.43	11.36	78.62
0.25	7.94	7.89	86.51
0.5	4.26	4.23	90.75
0.75	2.81	2.79	93.54
1	2.43	2.42	95.95
1.25	1.25	1.24	97.20
1.5	0.83	0.83	98.02
1.75	0.63	0.63	98.65
2	0.32	0.32	98.97
2.25	0.15	0.15	99.12
2.5	0.17	0.17	99.28
2.75	0.21	0.21	99.49
3	0.25	0.25	99.74
3.25	0.14	0.14	99.88
3.5	0.12	0.12	100.00
3.75	0	0.00	100.00
>4	0	0.00	100.00

APPENDIX 2

Sample:BF3

Weight of sand : 108.22 g

M = 0.979 D = 0.6406 S = -0.105 K = 0.7396

Table 4.3: The result of sand sample of BF2

Phi value	Weight of sand (g)	% Weight of sand	Cumulative % Weight of sand
-2.5	0	0.00	0.00
-2.25	0	0.00	0.00
-2	0	0.00	0.00
-1.75	0	0.00	0.00
-1.5	0.05	0.05	0.05
-1.25	0.15	0.14	0.18
-1	0.19	0.18	0.36
-0.75	0.35	0.32	0.68
-0.5	1.43	1.32	2.01
-0.25	2.11	1.95	3.95
0	4.26	3.94	7.89
0.25	7.08	6.54	14.43
0.5	9.46	8.74	23.18
0.75	10.87	10.04	33.22
1	17.65	16.31	49.53
1.25	14.73	13.61	63.14
1.5	13.93	12.87	76.01
1.75	12.59	11.63	87.65
2	8.41	7.77	95.42
2.25	3.15	2.91	98.33
2.5	1.37	1.27	99.59
2.75	0.35	0.32	99.92
3	0.09	0.08	100.00
3.25	0	0.00	100.00
3.5	0	0.00	100.00
3.75	0	0.00	100.00
>4	0	0.00	100.00

APPENDIX 11



Photo 3.2: 250 MHz GPR at Batu Ferringhi



Photo 3.3: 250 MHz GPR at Persiaran Bayan Indah



Photo 3.3: Tools of GPR



Photo 3.4: A view at Persiaran Bayan Indah

APPENDIX 1

Sample:BF2

Weight of Sand: 100.95 g

M = 1.08 D = 0.622 S = -0.147 K = 0.966

Table 4.2: The result of sand sample at BF1

Phi value	Weight of sand (g)	% Weight of sand	Cumulative % Weight of sand
-2.5	0.00	0.00	0.00
-2.25	0.00	0.00	0.00
-2	0.00	0.00	0.00
-1.75	0.00	0.00	0.00
-1.5	0.00	0.00	0.00
-1.25	0.01	0.01	0.01
-1	0.05	0.05	0.06
-0.75	0.24	0.24	0.30
-0.5	0.76	0.75	1.05
-0.25	1.34	1.33	2.38
0	3.49	3.46	5.83
0.25	5.76	5.71	11.54
0.5	8.22	8.14	19.68
0.75	8.36	8.28	27.96
1	15.40	15.26	43.22
1.25	14.76	14.62	57.84
1.5	15.18	15.04	72.88
1.75	13.61	13.48	86.36
2	9.32	9.23	95.59
2.25	3.01	2.98	98.57
2.5	1.18	1.17	99.74
2.75	0.23	0.23	99.97
3	0.03	0.03	100.00
3.25	0.00	0.00	100.00
3.5	0.00	0.00	100.00
3.75	0.00	0.00	100.00
>4	0.00	0.00	100.00

APPENDIX 12



Photo 3.5: Sieve Shaker Machine



Photo 3.6: Riffle box



Photo 3.7: Containers



Photo 3.8: Test sieve



Photo 3.9: Balance beam



Photo 3.10: Drying oven