NMBAQC

The National Marine Biological Analytical Quality Control Scheme

Particle Size Report - PS59

Particle Size Component 2015/16

January 2016

Lydia Finbow & David Hall
nmbaqc@apemltd.co.uk

APEM

CONTENTS

.

APPENDICES

Appendix 1. Final Merged Data sheets as supplied by participating laboratories (arranged by Lab Code) and the benchmark replicates.

BENCHMARK DATA

Table 1. Summary data for the benchmark replicates distributed as PS59.

	Method	% Gravel	% Sand	% Silt/Clay	Sediment Description (Post analysis)
REPLICATE 1	NMBAQC	47.98	38.19	13.83	Muddy sandy gravel
REPLICATE 2	NMBAQC	48.27	37.78	13.85	Muddy sandy gravel
REPLICATE 3	NMBAQC	47.91	38.51	13.58	Muddy sandy gravel
REPLICATE 4	NMBAQC	48.03	37.38	14.59	Muddy sandy gravel
REPLICATE 5	NMBAQC	48.12	37.46	14.41	Muddy sandy gravel
REP AVERAGE	NMBAQC	48.06	37.87	14.05	Muddy sandy gravel

Table 2. Summary of equipment used and sieve data for the benchmark replicates distributed as PS59.

	Sieves used	Phi; sieve mesh		Total Weight (g)	Laser used
		Weight (g) < 0.00; >1 mm	Weight (g) > 0.00; <1 mm		
REPLICATE 1	☑	297.35	322.31	619.66	☑
REPLICATE 2	☑	298.71	320.10	618.81	☑
REPLICATE 3	☑	300.29	326.38	626.67	☑
REPLICATE 4	☑	295.62	319.75	615.37	☑
REPLICATE 5	☑	294.71	317.63	612.34	☑
BM AVERAGE	☑	297.34	321.23	618.57	☑

Table 3. Summary of final laser data for the benchmark replicates distributed as PS59.

	% Sand				
	Coarse 0 - 1 phi	Medium 1 - 2 phi	Fine 2 - 3 phi	Very Fine 3 - 4 phi	
REPLICATE 1	11.47	51.34	6.09	4.51	
REPLICATE 2	9.73	52.18	6.50	4.61	
REPLICATE 3	11.68	52.38	5.60	4.27	
REPLICATE 4	9.71	52.36	5.38	4.48	
REPLICATE 5	10.52	50.70	6.20	4.80	
BM AVERAGE	10.62	51.79	5.95	4.54	
	% Silt				% Clay
	Coarse 4 - 5 phi	Medium 5 - 6 phi	Fine 6 - 7 phi	Very Fine 7 - 8 phi	8 - 13 phi
REPLICATE 1	6.49	7.14	5.96	3.48	3.51
REPLICATE 2	6.61	7.26	6.02	3.51	3.58
REPLICATE 3	6.34	7.05	5.85	3.39	3.44
REPLICATE 4	6.83	7.55	6.36	3.69	3.64
REPLICATE 5	6.90	7.52	6.24	3.59	3.53
BM AVERAGE	6.63	7.30	6.09	3.53	3.54

BENCHMARK DATA

Table 4. Summary of descriptive statistics and coefficient of variance for the benchmark replicates distributed as PS59.

	D10 (µm)		D50 (µm)		D90 (µm)		Mean (µm)	
	Result	d	Result	d	Result	d	Result	d
BM REP 1	28.71	0.77	653.47	7.34	9426.14	30.18	3924.00	16.04
BM REP 2	28.33	0.38	641.42	4.71	9501.37	45.04	3964.14	24.11
BM REP 3	29.69	1.75	651.33	5.20	9471.75	15.43	3948.98	8.94
BM REP 4	26.02	1.92	632.00	14.14	9428.00	28.33	3922.93	17.10
BM REP 5	26.96	0.98	652.44	6.31	9454.37	1.96	3940.13	0.09
Grand Robust Mean	28.33		651.33		9454.37		3940.13	
Mean	27.94		646.13		9456.33		3940.04	
Robust Standard Deviation	0.98		6.31		28.33		16.04	
Standard Deviation	1.45		9.26		31.56		17.40	
Median Absolute Deviations	1.45		9.36		42.01		23.78	
Coefficient of Variance (COV)	5.20		1.43		0.33		0.44	

$$COV = 100 * (\frac{Std\ Dev}{Mean})$$

Good repoducibility when: - COV < 3% for D50
-COV < 5% for D10 and D90

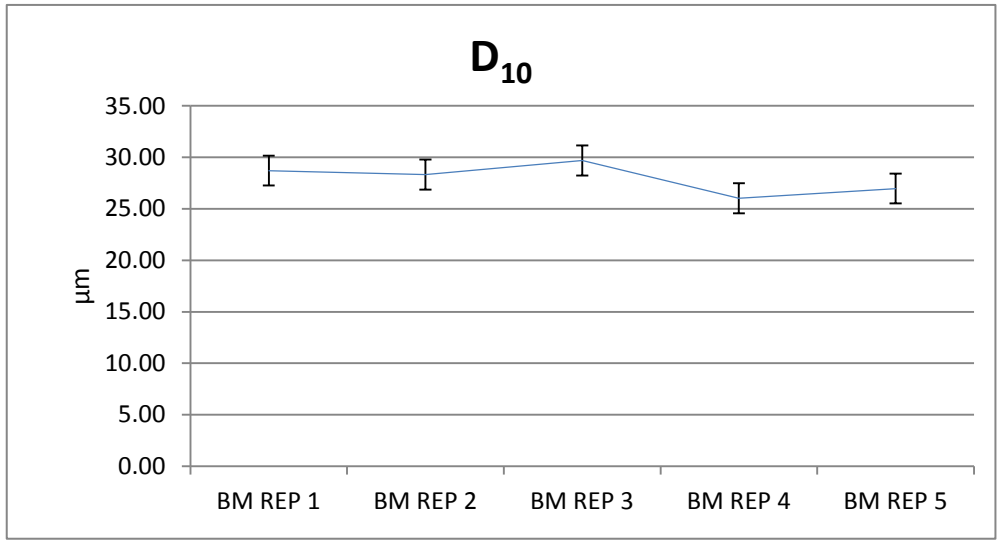
All limits double when the D50 < 10 µm.

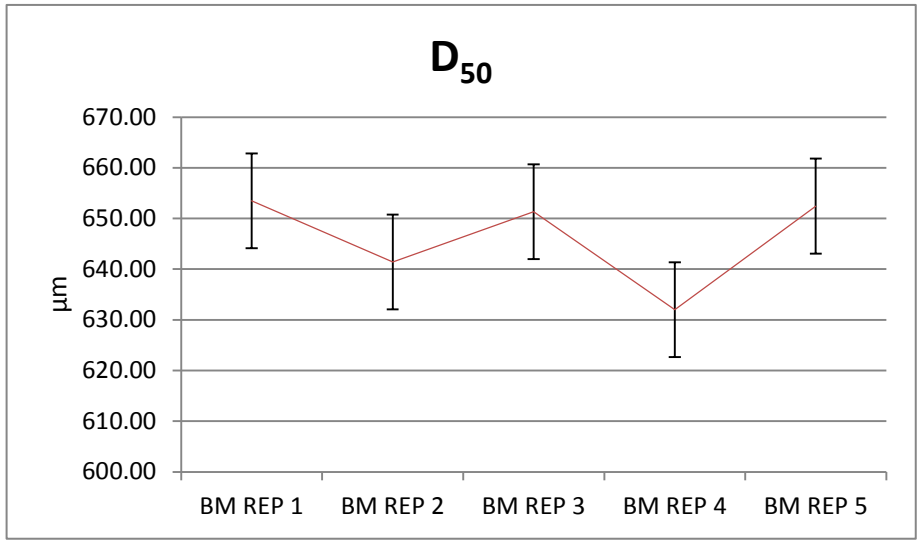
Benchmark replicates distributed as PS59 show a COV <3% for the D50 and <5% for the D10 and D90.

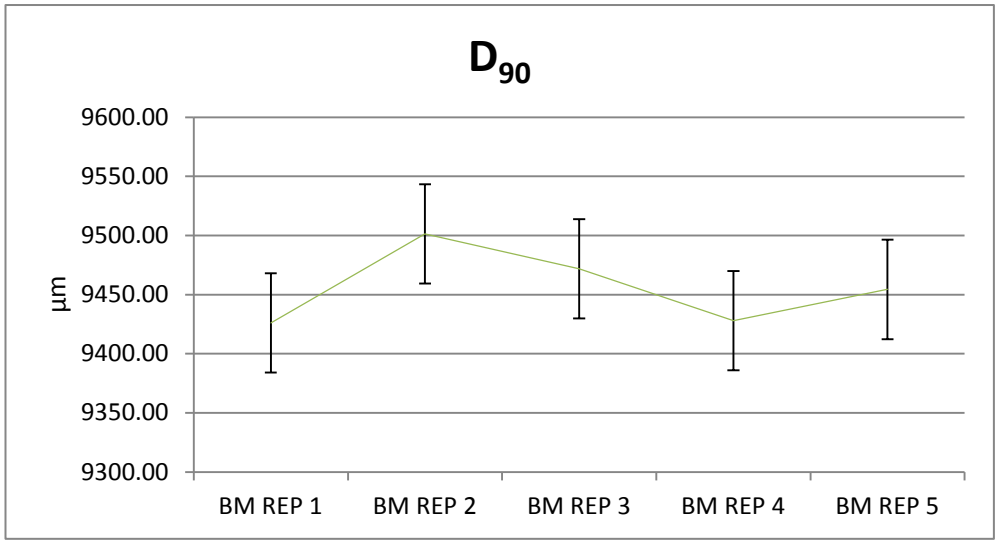
The replicates show good reproducibility.

BENCHMARK DATA

Figure 1. Scatterplot of Benchmark Data for PS59 with error bars showing ± 1 MAD_E.







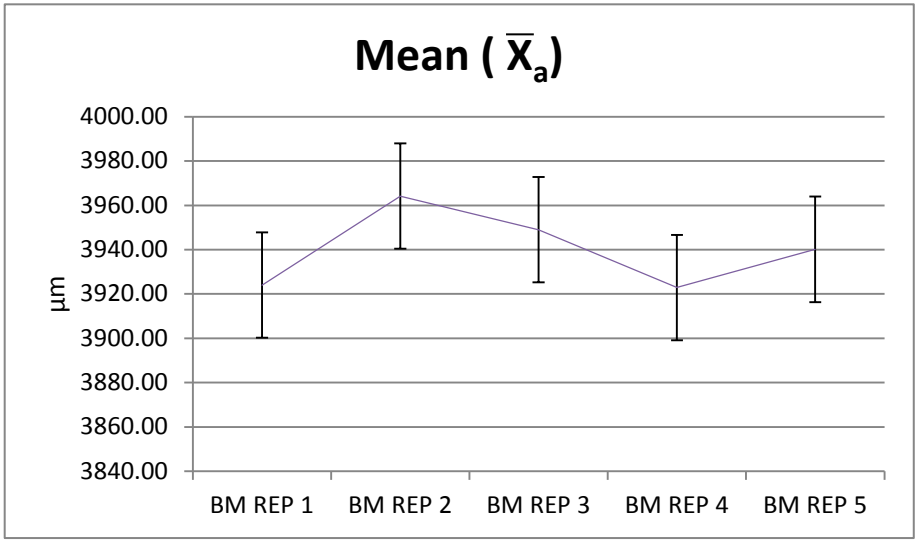
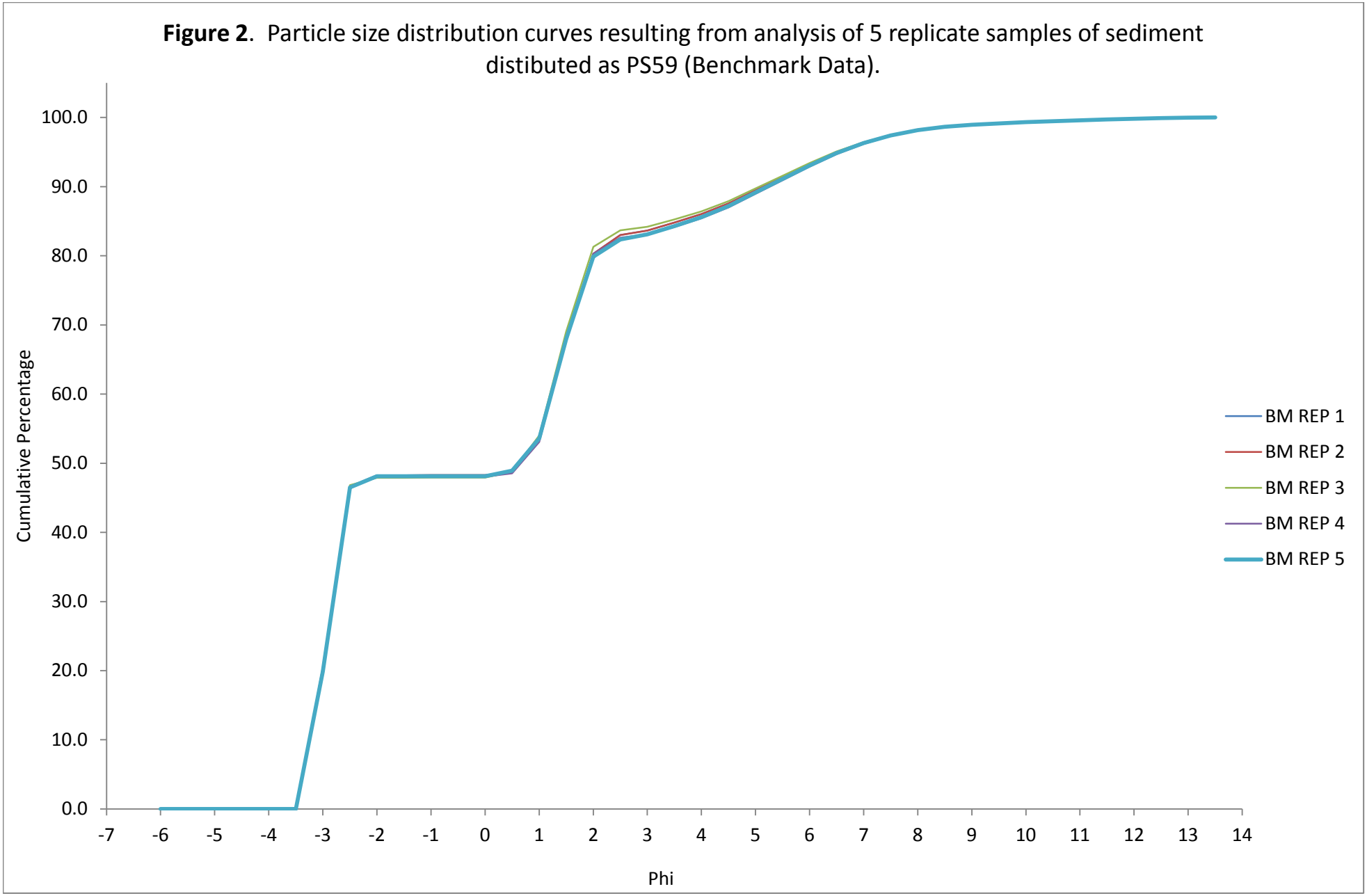


Figure 2. Particle size distribution curves resulting from analysis of 5 replicate samples of sediment distibuted as PS59 (Benchmark Data).



PARTICIPANT DATA

Table 5. Summary data and verification for the participants for sediment distributed as PS59.

Lab	% Gravel	% Sand	% Silt/Clay	Sediment Description (Post analysis)	Summary Data APEM verification							
					% Gravel		% Sand		% Silt/Clay		Sediment Description (Post analysis)	
Benchmark Average	48.06	37.87	14.05	Muddy sandy gravel	-		-		-		-	
PSA_2201	47.9	33.8	18.3	Muddy sandy gravel	☑	47.88	☑	33.83	☑	18.29	☑	Muddy Sandy Gravel
PSA_2202	48.2	42.5	9.3	Muddy sandy gravel	☑	48.20	☑	42.53	☑	9.27	☑	Muddy Sandy Gravel
PSA_2203	47.98	38.19	13.83	Muddy sandy gravel	☑	47.98	☑	38.19	☑	13.83	☑	Muddy Sandy Gravel
PSA_2205	-	-	-	-	-	45.69	-	26.76	-	27.54	-	Muddy Gravel
PSA_2208	-	-	-	-	-	47.40	-	40.34	-	12.25	-	Muddy Sandy Gravel
PSA_2209	48.62	29.56	21.82	Muddy sandy gravel	☑	48.62	☑	29.56	☑	21.82	☑	Muddy Sandy Gravel
PSA_2210	46.2	46.5	7.3	Muddy sandy gravel	☑	46.19	☑	46.55	☑	7.26	☑	Muddy Sandy Gravel
PSA_2211	49.34	35.71	14.95	Muddy sandy gravel	☑	49.34	☑	35.71	☑	14.95	☑	Muddy Sandy Gravel
PSA_2212	48.1	36.2	15.7	Muddy sandy gravel	☑	48.12	☑	36.17	☑	15.70	☑	Muddy Sandy Gravel
PSA_2213	46.00	35.32	18.69	Muddy sandy gravel	☑	46.00	☑	35.32	☑	18.69	☑	Muddy Sandy Gravel
PSA_2214_A	49.81	41.39	8.80	Muddy sandy gravel	☑	49.81	☑	41.39	☑	8.80	☑	Muddy Sandy Gravel
PSA_2214_B	49.81	41.10	9.09	Muddy sandy gravel	☑	49.81	☑	41.10	☑	9.09	☑	Muddy Sandy Gravel
PSA_2215	51.0	42.5	6.5	Muddy sandy gravel	☑	50.99	☑	42.53	☑	6.47	☑	Muddy Sandy Gravel
PSA_2216	-	-	-	-	-	55.77	-	44.23	-	0.00	-	Sandy Gravel
PSA_2217	49.10	50.49	<1	-	☒	49.15	☒	50.54	☒	0.31	-	Sandy Gravel
PSA_2218	47.7	46.5	5.8	Muddy sandy gravel	☒	47.61	☒	46.36	☒	6.03	☑	Muddy Sandy Gravel

NB: Decimal places as supplied by participant.

- Data not provided by participant

PARTICIPANT DATA

Table 6. Summary of equipment used and sieve data for the participants for sediment distributed as PS59.

Participant	Method	Sieves used	Phi; sieve mesh		Total Weight (g)	Laser used
			Weight (g) < 0.00; >1 mm	Weight (g) > 0.00; <1 mm		
Benchmark Average	NMBAQC	☑	297.34	321.23	618.57	☑
PSA_2201	NMBAQC	☑	273.03	296.99	570.02	☑
PSA_2202	NMBAQC	☑	297.04	319.10	616.14	☑
PSA_2203	NMBAQC	☑	297.35	322.31	619.66	☑
PSA_2205	NMBAQC	☑	257.08	305.52	562.60	☑
PSA_2208	NMBAQC	☑	282.16	313.01	595.17	☑
PSA_2209	IN-HOUSE	☑	301.40	318.47	619.87	☑
PSA_2210	NMBAQC	☑	256.45	298.77	555.22	☑
PSA_2211	NMBAQC	☑	299.11	307.02	606.13	☑
PSA_2212	NMBAQC	☑	299.93	323.32	623.25	☑
PSA_2213	NMBAQC	☑	250.45	294.05	544.50	☑
PSA_2214_A	NMBAQC	☑	299.44	301.70	601.14	☑
PSA_2214_B	NMBAQC	☑	299.42	301.74	601.16	☑
PSA_2215	NMBAQC*	☑	50.99	0	50.99	☑
PSA_2216	NMBAQC	☑	299.69	237.57	537.26	☑
PSA_2217	NMBAQC	☑	297.46	308.35	605.81	☑
PSA_2218	NMBAQC**	☑	296.87	290.26	587.13	☒

NMBAQC* - State NMBAQC method but have not followed the NMBAQC methodology. Sample wet split at 2mm.

NMBAQC** - Dry sieve analysis and pipette method following NMBAQC & British Standard methodology.

IN-HOUSE - State an in-house method used but no details given.

PARTICIPANT DATA

Table 7. Summary of final laser data for the participants for sediment distributed as PS59.

	% Sand					% Silt				% Clay	Total
Participant	Very Coarse -1 - 0 phi	Coarse 0 - 1 phi	Medium 1 - 2 phi	Fine 2 - 3 phi	Very Fine 3 - 4 phi	Coarse 4 - 5 phi	Medium 5 - 6 phi	Fine 6 - 7 phi	Very Fine 7 - 8 phi	8 - 13 phi	
Benchmark Average	-	10.62	51.79	5.95	4.54	6.63	7.30	6.09	3.53	3.54	100.00
PSA_2201	-	6.58	43.33	11.37	3.62	9.24	9.58	8.64	5.94	1.70	100.00
PSA_2202	-	16.12	54.84	9.48	1.67	5.68	4.66	4.11	2.39	1.06	100.00
PSA_2203	-	11.47	51.34	6.09	4.51	6.49	7.14	5.96	3.48	3.51	100.00
PSA_2205	-	7.26	25.08	8.45	8.49	13.78	15.14	12.99	7.57	1.24	100.00
PSA_2208	-	32.65	37.28	1.73	4.55	6.73	6.53	5.41	2.86	1.61	99.35
PSA_2209	-	12.92	30.50	9.40	4.71	9.97	10.74	9.72	6.74	5.30	100.00
PSA_2210	-	17.48	58.34	9.50	1.21	3.75	3.61	3.24	2.00	0.89	100.01
PSA_2211	-	12.38	35.68	12.65	9.77	12.62	7.60	4.36	2.38	2.55	99.99
PSA_2212	-	11.53	45.51	10.59	2.10	8.12	7.99	7.06	4.80	2.30	100.00
PSA_2213	-	8.38	41.86	9.36	5.80	7.62	8.26	7.39	4.71	6.62	100.00
PSA_2214_A	-	18.01	53.52	9.53	1.42	5.55	4.51	3.90	2.39	1.18	100.00
PSA_2214_B	-	17.99	53.61	9.05	1.24	5.43	4.54	4.09	2.66	1.39	100.00
PSA_2215	0.30	6.13	31.85	3.50	0.75	1.09	1.64	1.15	0.92	1.68	49.01
PSA_2216	-	53.18	34.92	2.46	0.00	0.00	0.00	0.00	0.00	0.00	90.56
PSA_2217	-	13.22	26.10	10.45	0.72	0.31	0.01	0.00	0.00	0.00	50.81
PSA_2218	-	-	-	-	-	-	-	-	-	-	-

- Laser not used.

Correctly re-proportioned laser data should equal 100%.

Wet split at 2mm, <2mm analysed by laser.

Figure 3. Particle size distribution curves from all participating laboratories and the Benchmark Average for sediment distributed as PS59.

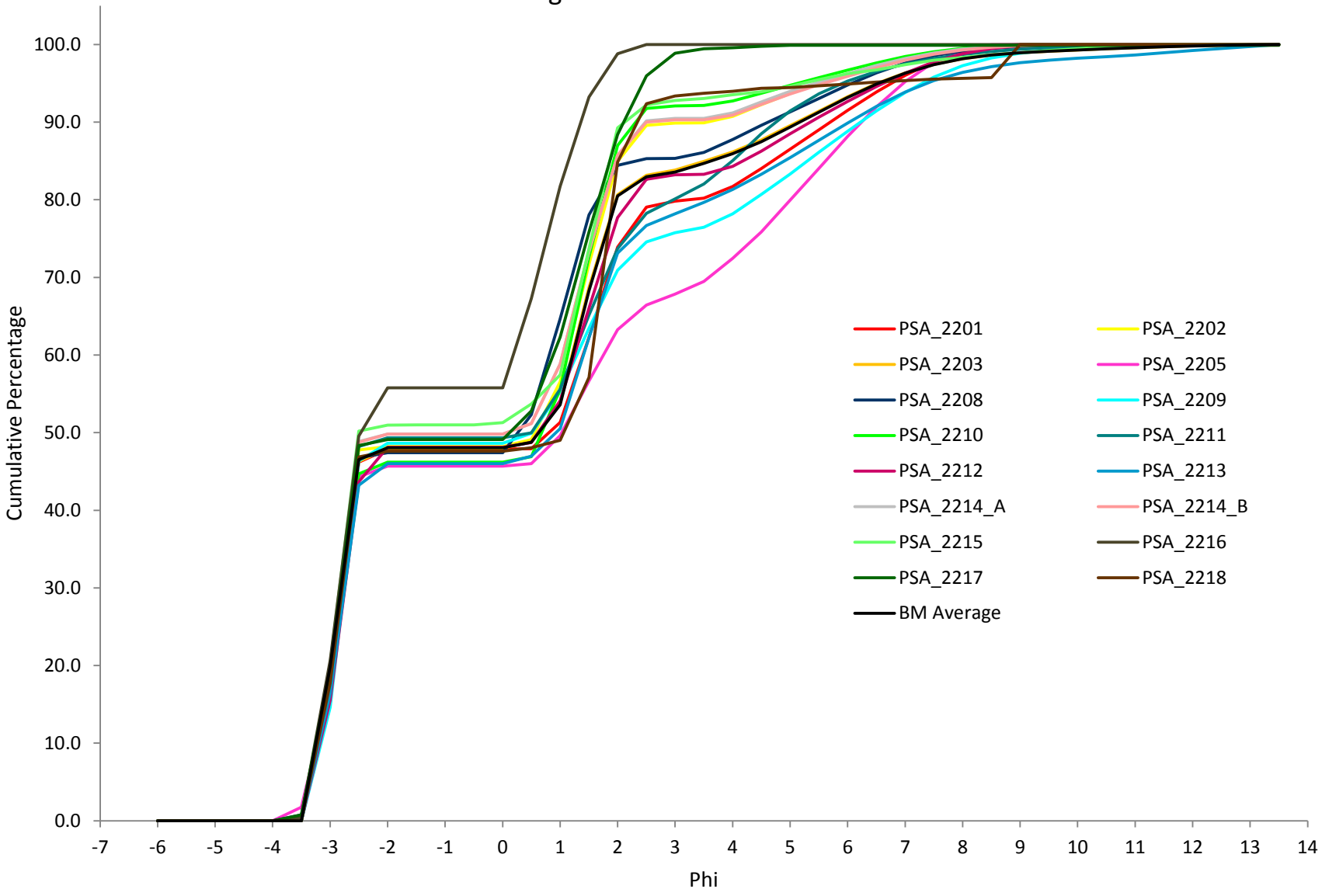
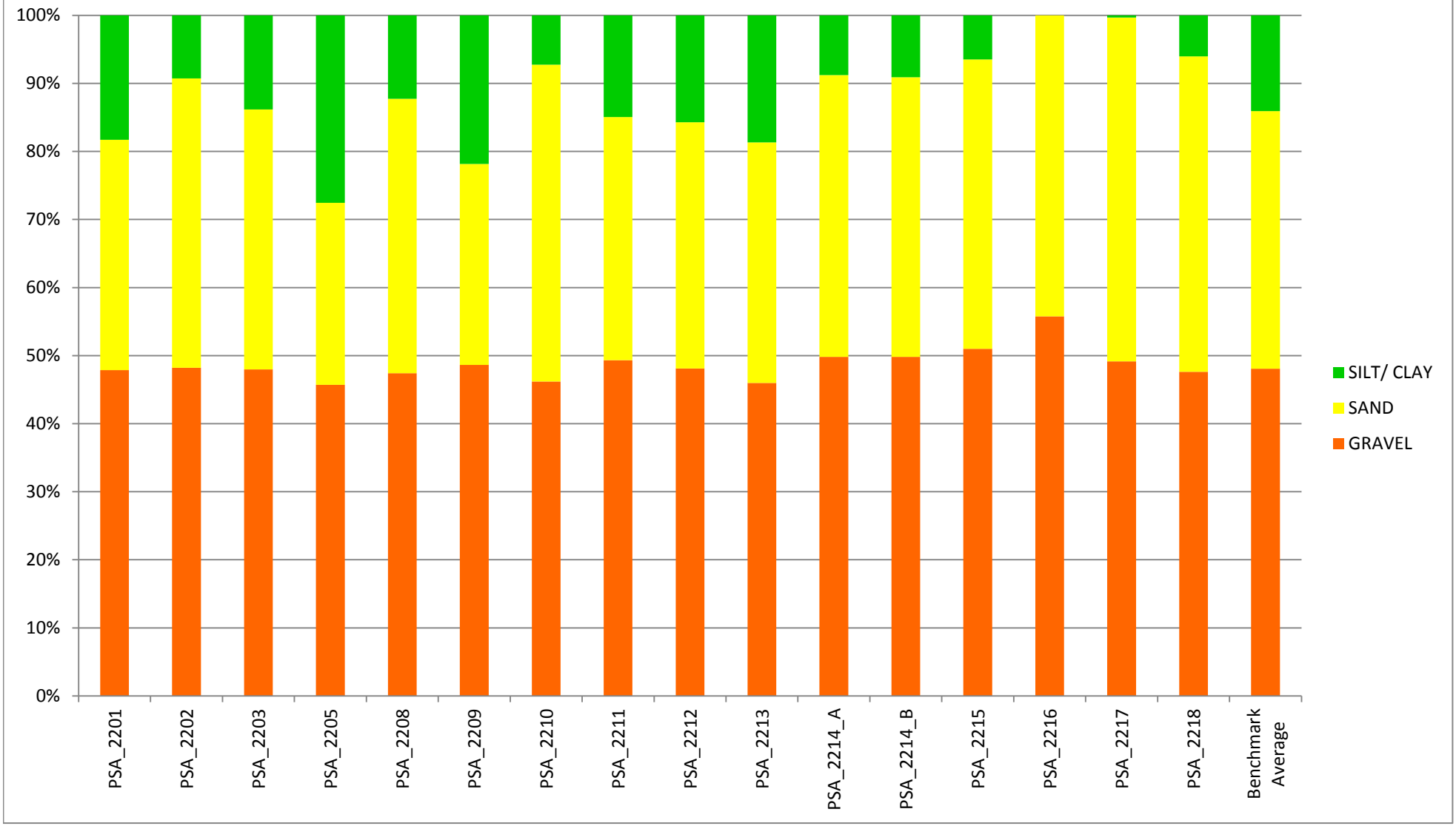


Figure 4. Bar chart showing the percentage gravel, sand, silt and clay recorded by each participating laboratory and the benchmark average for PS59.



Z-SCORES

Table 8. Calculations of Robust Mean and SDPA for PS59.

Laboratory	D_{10} (µm)		D_{50} (µm)		D_{90} (µm)		Mean (µm)	
	result	d	result	d	result	d	result	d
PSA_2201	19.29	43.37	572.54	117.97	9120.70	241.00	3801.32	135.22
PSA_2202	84.71	22.04	678.00	12.51	9423.34	61.64	3989.10	52.55
PSA_2203	28.71	33.95	653.47	37.04	9426.14	64.44	3924.00	12.54
PSA_2205	13.22	49.45	491.13	199.39	9357.93	3.77	3724.64	211.90
PSA_2208	40.63	22.04	832.15	141.64	9365.47	3.77	3949.09	12.54
PSA_2209	13.38	49.29	703.02	12.51	8899.17	462.53	3787.65	148.89
PSA_2210	200.89	138.23	624.68	65.83	9226.32	135.38	3784.22	152.32
PSA_2211	37.02	25.65	705.29	14.78	9276.06	85.64	3959.45	22.91
PSA_2212	24.53	38.14	651.26	39.25	9020.56	341.14	3757.73	178.81
PSA_2213	15.34	47.32	526.13	164.38	9120.06	241.64	3659.79	276.75
PSA_2214_A	179.10	116.43	953.71	263.19	9393.49	31.79	4073.62	137.07
PSA_2214_B	177.08	114.41	951.59	261.08	9424.74	63.04	4081.51	144.96
PSA_2215	229.46	166.79	5613.06	4922.55	9482.82	121.12	4189.30	252.76
PSA_2216	389.96	327.30	5469.66	4779.15	9554.72	193.01	4518.91	582.37
PSA_2217	233.39	170.73	923.24	232.73	9487.75	126.05	4109.48	172.94
PSA_2218	197.19	134.52	479.45	211.06	9268.51	93.19	3866.58	69.96
Origional Stats								
Robust Mean	62.67		690.51		9361.70		3936.54	
Mean	117.74		1301.77		9302.99		3948.52	
Robust SD	49.37		153.01		107.15		146.93	
Std Dev	113.32		1662.09		183.80		215.42	
MADe	73.21		226.92		158.91		217.89	
median + (5*MADe)	428.72		1825.09		10156.23		5026.01	
median - (5*MADe)	-303.38		-444.07		8567.17		2847.08	
Outliers removed								
Robust Mean	38.82		665.74		9272.29		3936.54	
Mean	90.04		696.12		9262.09		3948.52	
Robust SD	25.44		67.13		152.23		146.93	
Std Dev	85.22		162.73		195.17		215.42	
MADe	37.73		99.55		225.75		217.89	

	Data falls outside the range of: Median ± 5xMADe. Therefore removed from Robust mean and MADe calcualations.
	Data not used for any Median/Mean or Std Dev calculations due to reporting errors.

Z-SCORES

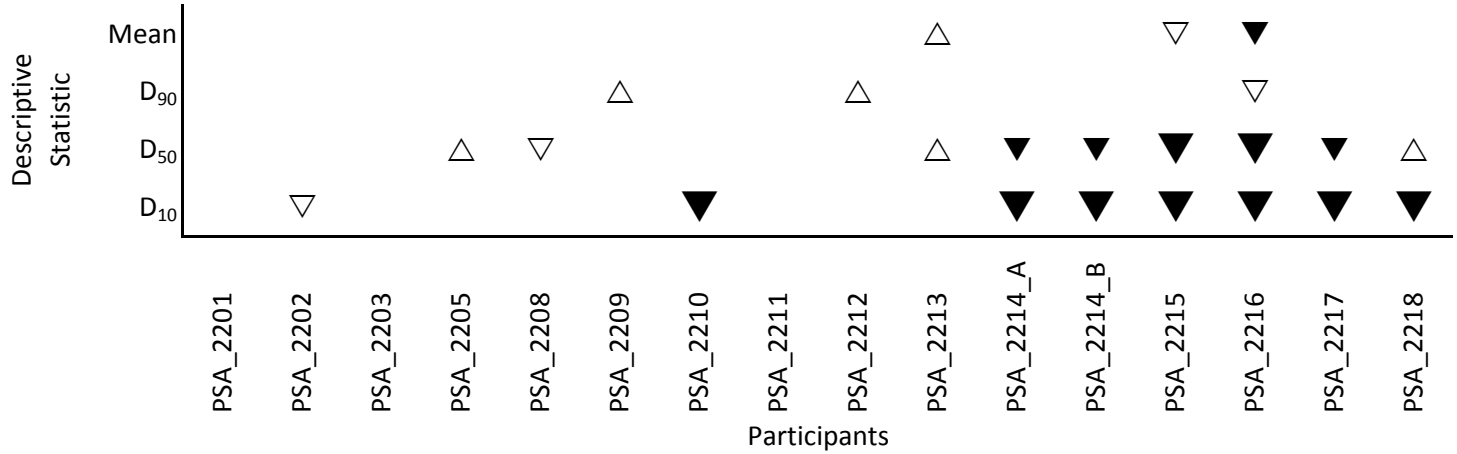
Table 9. z-score results for each participating laboratory for PS58 when using robust statistics with outliers removed.

	D_{10} (µm)		D_{50} (µm)		D_{90} (µm)		Mean(µm)	
Laboratory	Result	z	result	z	result	z	result	z
PSA_2201	19.29	-0.52	572.54	-0.94	9120.70	-0.67	3801.32	-0.62
PSA_2202	84.71	1.22	678.00	0.12	9423.34	0.67	3989.10	0.24
PSA_2203	28.71	-0.27	653.47	-0.12	9426.14	0.68	3924.00	-0.06
PSA_2205	13.22	-0.68	491.13	-1.75	9357.93	0.38	3724.64	-0.97
PSA_2208	40.63	0.05	832.15	1.67	9365.47	0.41	3949.09	0.06
PSA_2209	13.38	-0.67	703.02	0.37	8899.17	-1.65	3787.65	-0.68
PSA_2210	200.89	4.30	624.68	-0.41	9226.32	-0.20	3784.22	-0.70
PSA_2211	37.02	-0.05	705.29	0.40	9276.06	0.02	3959.45	0.11
PSA_2212	24.53	-0.38	651.26	-0.15	9020.56	-1.12	3757.73	-0.82
PSA_2213	15.34	-0.62	526.13	-1.40	9120.06	-0.67	3659.79	-1.27
PSA_2214_A	179.10	3.72	953.71	2.89	9393.49	0.54	4073.62	0.63
PSA_2214_B	177.08	3.66	951.59	2.87	9424.74	0.68	4081.51	0.67
PSA_2215	229.46	5.05	5613.06	49.70	9482.82	0.93	4189.30	1.16
PSA_2216	389.96	9.31	5469.66	48.26	9554.72	1.25	4518.91	2.67
PSA_2217	233.39	5.16	923.24	2.59	9487.75	0.95	4109.48	0.79
PSA_2218	197.19	4.20	479.45	-1.87	9268.51	-0.02	3866.58	-0.32

Robust Mean	38.82	665.74	9272.29	3936.54
MADe	37.73	99.55	225.75	217.89

Z-SCORES

Figure 5. Summary plots of z-scores achieved by participating laboratories for PS59 when using robust statistics.



▼	z-score ≥ 3.00	Unsatisfactory result
▼	2.00 ≤ z-score < 3.00	Questionable result
▽	1.00 ≤ z-score < 2.00	Satisfactory result
	-1.00 < z-score < 1.00	
△	-2.00 < z-score ≤ -1.00	
▲	-3.00 < z-score ≤ -2.00	Questionable result
▲	z-score ≤ -3.00	Unsatisfactory result

PERFORMANCE

Table 10. Summary of Results for PS59.

	D_{10}	D_{50}	D_{90}	Mean (µm)	Satisfactory	Questionable	Unsatisfactory	Score	%	Pass/Fail	
PSA_2201	Satisfactory	Satisfactory	Satisfactory	Satisfactory	4	0	0	20	100	PASS - EXCELLENT	PSA_2201
PSA_2202	Satisfactory	Satisfactory	Satisfactory	Satisfactory	4	0	0	20	100	PASS - EXCELLENT	PSA_2202
PSA_2203	Satisfactory	Satisfactory	Satisfactory	Satisfactory	4	0	0	20	100	PASS - EXCELLENT	PSA_2203
PSA_2205	Satisfactory	Satisfactory	Satisfactory	Satisfactory	4	0	0	20	100	PASS - EXCELLENT	PSA_2205
PSA_2208	Satisfactory	Satisfactory	Satisfactory	Satisfactory	4	0	0	20	100	PASS - EXCELLENT	PSA_2208
PSA_2209	Satisfactory	Satisfactory	Satisfactory	Satisfactory	4	0	0	20	100	PASS - EXCELLENT	PSA_2209
PSA_2210	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	3	0	1	15	75	PASS - GOOD	PSA_2210
PSA_2211	Satisfactory	Satisfactory	Satisfactory	Satisfactory	4	0	0	20	100	PASS - EXCELLENT	PSA_2211
PSA_2212	Satisfactory	Satisfactory	Satisfactory	Satisfactory	4	0	0	20	100	PASS - EXCELLENT	PSA_2212
PSA_2213	Satisfactory	Satisfactory	Satisfactory	Satisfactory	4	0	0	20	100	PASS - EXCELLENT	PSA_2213
PSA_2214_A	Unsatisfactory	Questionable	Satisfactory	Satisfactory	2	1	1	12	60	PASS - ACCEPTABLE	PSA_2214_A
PSA_2214_B	Unsatisfactory	Questionable	Satisfactory	Satisfactory	2	1	1	12	60	PASS - ACCEPTABLE	PSA_2214_B
PSA_2215	Unsatisfactory	Unsatisfactory	Satisfactory	Satisfactory	2	0	2	10	50	FAIL - POOR	PSA_2215
PSA_2216	Unsatisfactory	Unsatisfactory	Satisfactory	Questionable	1	1	2	7	35	FAIL - POOR	PSA_2216
PSA_2217	Unsatisfactory	Questionable	Satisfactory	Satisfactory	2	1	1	12	60	PASS - ACCEPTABLE	PSA_2217
PSA_2218	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	3	0	1	15	75	PASS - GOOD	PSA_2218

Score	
5	Satisfactory
2	Questionable
0	Unsatisactory

Score	%	Pass/ Fail	Level
20	86 - 100	PASS	EXCELLENT
15 - 19	71 - 85	PASS	GOOD
12 - 14	60 - 70	PASS	ACCEPTABLE
6 - 11	26 - 59	FAIL	POOR
0-5	0 - 15	FAIL	BAD

Appendices

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_2201**
Sample Code:	**PS592201**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.0000**
-3.50 to -3.00; 8 mm	**16.3836**
-3.00 to -2.50; 5.6 mm	**29.8077**
-2.50 to -2.00; 4 mm	**1.6824**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**0.0053**
-1.00 to -0.50; 1.4 mm	**0.0105**
-0.50 to 0.00; 1 mm	**0.0088**
0.00 to 0.50; (707 µm)	0.0365
0.50 to 1.00; (500 µm)	3.3901
1.00 to 1.50; (353.6 µm)	10.9576
1.50 to 2.00; (250 µm)	11.6204
2.00 to 2.50; (176.8 µm)	5.1424
2.50 to 3.00; (125 µm)	0.7798
3.00 to 3.50; (88.39 µm)	0.3682
3.50 to 4.00; (62.5 µm)	1.5185
4.00 to 4.50; (44.19 µm)	2.3185
4.50 to 5.00; (31.25 µm)	2.4939
5.00 to 5.50; (22.097 µm)	2.4991
5.50 to 6.00; (15.625 µm)	2.4916
6.00 to 6.50; (11.049 µm)	2.3799
6.50 to 7.00; (7.813 µm)	2.1234
7.00 to 7.50; (5.524 µm)	1.7720
7.50 to 8.00; (3.906 µm)	1.3211
8.00 to 8.50; (2.762 µm)	0.6993
8.50 to 9.00; (1.953 µm)	0.1795
9.00 to 9.50; (1.381 µm)	0.0081
9.50 to 10.00; (0.977 µm)	0.0000
10.00 to 10.50; (0.691 µm)	0.0000
10.50 to 11.00; (0.488 µm)	0.0000
11.00 to 11.50; (0.345 µm)	0.0000
11.50 to 12.00; (0.244 µm)	0.0000
12.00 to 12.50; (0.173 µm)	0.0000
12.50 to 13.00; (0.122 µm)	0.0000
13.00 to 13.50; (0.086 µm)	0.0000

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_2202**
Sample Code:	**PS592202**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.3246**
-3.50 to -3.00; 8 mm	**18.8480**
-3.00 to -2.50; 5.6 mm	**28.5828**
-2.50 to -2.00; 4 mm	**0.4447**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**0.0000**
-1.00 to -0.50; 1.4 mm	**0.0000**
-0.50 to 0.00; 1 mm	**0.0097**
0.00 to 0.50; (707 µm)	0.8880
0.50 to 1.00; (500 µm)	7.4628
1.00 to 1.50; (353.6 µm)	15.1491
1.50 to 2.00; (250 µm)	13.2511
2.00 to 2.50; (176.8 µm)	4.6360
2.50 to 3.00; (125 µm)	0.2724
3.00 to 3.50; (88.39 µm)	0.0283
3.50 to 4.00; (62.5 µm)	0.8350
4.00 to 4.50; (44.19 µm)	1.5039
4.50 to 5.00; (31.25 µm)	1.4368
5.00 to 5.50; (22.097 µm)	1.2357
5.50 to 6.00; (15.625 µm)	1.1768
6.00 to 6.50; (11.049 µm)	1.1394
6.50 to 7.00; (7.813 µm)	0.9874
7.00 to 7.50; (5.524 µm)	0.7424
7.50 to 8.00; (3.906 µm)	0.4954
8.00 to 8.50; (2.762 µm)	0.3022
8.50 to 9.00; (1.953 µm)	0.1696
9.00 to 9.50; (1.381 µm)	0.0780
9.50 to 10.00; (0.977 µm)	0.0000
10.00 to 10.50; (0.691 µm)	0.0000
10.50 to 11.00; (0.488 µm)	0.0000
11.00 to 11.50; (0.345 µm)	0.0000
11.50 to 12.00; (0.244 µm)	0.0000
12.00 to 12.50; (0.173 µm)	0.0000
12.50 to 13.00; (0.122 µm)	0.0000
13.00 to 13.50; (0.086 µm)	0.0000

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_2203**
Sample Code:	**PS592203**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.0000**
-3.50 to -3.00; 8 mm	**19.5139**
-3.00 to -2.50; 5.6 mm	**26.7889**
-2.50 to -2.00; 4 mm	**1.6703**
-2.00 to -1.50; 2.8 mm	**0.0065**
-1.50 to -1.00; 2 mm	**0.0032**
-1.00 to -0.50; 1.4 mm	**0.0016**
-0.50 to 0.00; 1 mm	**0.0016**
0.00 to 0.50; (707 µm)	0.8512
0.50 to 1.00; (500 µm)	5.1166
1.00 to 1.50; (353.6 µm)	14.7644
1.50 to 2.00; (250 µm)	11.9404
2.00 to 2.50; (176.8 µm)	2.4880
2.50 to 3.00; (125 µm)	0.6795
3.00 to 3.50; (88.39 µm)	1.1258
3.50 to 4.00; (62.5 µm)	1.2181
4.00 to 4.50; (44.19 µm)	1.5197
4.50 to 5.00; (31.25 µm)	1.8551
5.00 to 5.50; (22.097 µm)	1.8627
5.50 to 6.00; (15.625 µm)	1.8508
6.00 to 6.50; (11.049 µm)	1.6980
6.50 to 7.00; (7.813 µm)	1.4044
7.00 to 7.50; (5.524 µm)	1.0687
7.50 to 8.00; (3.906 µm)	0.7438
8.00 to 8.50; (2.762 µm)	0.4713
8.50 to 9.00; (1.953 µm)	0.2928
9.00 to 9.50; (1.381 µm)	0.2036
9.50 to 10.00; (0.977 µm)	0.1667
10.00 to 10.50; (0.691 µm)	0.1499
10.50 to 11.00; (0.488 µm)	0.1375
11.00 to 11.50; (0.345 µm)	0.1225
11.50 to 12.00; (0.244 µm)	0.1037
12.00 to 12.50; (0.173 µm)	0.0804
12.50 to 13.00; (0.122 µm)	0.0602
13.00 to 13.50; (0.086 µm)	0.0381

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_2205**
Sample Code:	**PS592205**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**9.8200**
-3.50 to -3.00; 8 mm	**86.9600**
-3.00 to -2.50; 5.6 mm	**152.4800**
-2.50 to -2.00; 4 mm	**7.8200**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**0.0000**
-1.00 to -0.50; 1.4 mm	**0.0000**
-0.50 to 0.00; 1 mm	**0.0000**
0.00 to 0.50; (707 µm)	1.8189
0.50 to 1.00; (500 µm)	20.3540
1.00 to 1.50; (353.6 µm)	39.6077
1.50 to 2.00; (250 µm)	37.0246
2.00 to 2.50; (176.8 µm)	17.8369
2.50 to 3.00; (125 µm)	7.9799
3.00 to 3.50; (88.39 µm)	9.1621
3.50 to 4.00; (62.5 µm)	16.7828
4.00 to 4.50; (44.19 µm)	19.0629
4.50 to 5.00; (31.25 µm)	23.0346
5.00 to 5.50; (22.097 µm)	23.0579
5.50 to 6.00; (15.625 µm)	23.1880
6.00 to 6.50; (11.049 µm)	21.4629
6.50 to 7.00; (7.813 µm)	18.2370
7.00 to 7.50; (5.524 µm)	14.0315
7.50 to 8.00; (3.906 µm)	9.0946
8.00 to 8.50; (2.762 µm)	3.5870
8.50 to 9.00; (1.953 µm)	0.1966
9.00 to 9.50; (1.381 µm)	0.0000
9.50 to 10.00; (0.977 µm)	0.0000
10.00 to 10.50; (0.691 µm)	0.0000
10.50 to 11.00; (0.488 µm)	0.0000
11.00 to 11.50; (0.345 µm)	0.0000
11.50 to 12.00; (0.244 µm)	0.0000
12.00 to 12.50; (0.173 µm)	0.0000
12.50 to 13.00; (0.122 µm)	0.0000
13.00 to 13.50; (0.086 µm)	0.0000

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

MERGED DATA CALCULATED BY APEM BASED ON FINAL SIEVE AND LASER DATA PROVIDED BY PARTICIPANT

Exercise Code:	**PS59**
LabCode:	**PSA_2208**
Sample Code:	**PS592208**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.7645**
-3.50 to -3.00; 8 mm	**17.3715**
-3.00 to -2.50; 5.6 mm	**28.6422**
-2.50 to -2.00; 4 mm	**0.6267**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**0.0000**
-1.00 to -0.50; 1.4 mm	**0.0017**
-0.50 to 0.00; 1 mm	**0.0017**
0.00 to 0.50; (707 µm)	4.8906
0.50 to 1.00; (500 µm)	12.3911
1.00 to 1.50; (353.6 µm)	13.3790
1.50 to 2.00; (250 µm)	6.3548
2.00 to 2.50; (176.8 µm)	0.8888
2.50 to 3.00; (125 µm)	0.0252
3.00 to 3.50; (88.39 µm)	0.7539
3.50 to 4.00; (62.5 µm)	1.6567
4.00 to 4.50; (44.19 µm)	1.8313
4.50 to 5.00; (31.25 µm)	1.7322
5.00 to 5.50; (22.097 µm)	1.7237
5.50 to 6.00; (15.625 µm)	1.7327
6.00 to 6.50; (11.049 µm)	1.5863
6.50 to 7.00; (7.813 µm)	1.2789
7.00 to 7.50; (5.524 µm)	0.9167
7.50 to 8.00; (3.906 µm)	0.5984
8.00 to 8.50; (2.762 µm)	0.3614
8.50 to 9.00; (1.953 µm)	0.2075
9.00 to 9.50; (1.381 µm)	0.1344
9.50 to 10.00; (0.977 µm)	0.0988
10.00 to 10.50; (0.691 µm)	0.0493
10.50 to 11.00; (0.488 µm)	0.0000
11.00 to 11.50; (0.345 µm)	0.0000
11.50 to 12.00; (0.244 µm)	0.0000
12.00 to 12.50; (0.173 µm)	0.0000
12.50 to 13.00; (0.122 µm)	0.0000
13.00 to 13.50; (0.086 µm)	0.0000

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_2209**
Sample Code:	**PS592209**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.0000**
-3.50 to -3.00; 8 mm	**14.6321**
-3.00 to -2.50; 5.6 mm	**31.7276**
-2.50 to -2.00; 4 mm	**2.2634**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**0.0000**
-1.00 to -0.50; 1.4 mm	**0.0000**
-0.50 to 0.00; 1 mm	**0.0000**
0.00 to 0.50; (707 µm)	1.2899
0.50 to 1.00; (500 µm)	5.3487
1.00 to 1.50; (353.6 µm)	8.1865
1.50 to 2.00; (250 µm)	7.4825
2.00 to 2.50; (176.8 µm)	3.6544
2.50 to 3.00; (125 µm)	1.1759
3.00 to 3.50; (88.39 µm)	0.7146
3.50 to 4.00; (62.5 µm)	1.7027
4.00 to 4.50; (44.19 µm)	2.5208
4.50 to 5.00; (31.25 µm)	2.5990
5.00 to 5.50; (22.097 µm)	2.8264
5.50 to 6.00; (15.625 µm)	2.6936
6.00 to 6.50; (11.049 µm)	2.6418
6.50 to 7.00; (7.813 µm)	2.3528
7.00 to 7.50; (5.524 µm)	1.9867
7.50 to 8.00; (3.906 µm)	1.4784
8.00 to 8.50; (2.762 µm)	0.9856
8.50 to 9.00; (1.953 µm)	0.6291
9.00 to 9.50; (1.381 µm)	0.3843
9.50 to 10.00; (0.977 µm)	0.2470
10.00 to 10.50; (0.691 µm)	0.4765
10.50 to 11.00; (0.488 µm)	0.0000
11.00 to 11.50; (0.345 µm)	0.0000
11.50 to 12.00; (0.244 µm)	0.0000
12.00 to 12.50; (0.173 µm)	0.0000
12.50 to 13.00; (0.122 µm)	0.0000
13.00 to 13.50; (0.086 µm)	0.0000

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_2210**
Sample Code:	**PS592210**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.0000**
-3.50 to -3.00; 8 mm	**17.3571**
-3.00 to -2.50; 5.6 mm	**27.3315**
-2.50 to -2.00; 4 mm	**1.4985**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**0.0000**
-1.00 to -0.50; 1.4 mm	**0.0000**
-0.50 to 0.00; 1 mm	**0.0018**
0.00 to 0.50; (707 µm)	0.7013
0.50 to 1.00; (500 µm)	8.7025
1.00 to 1.50; (353.6 µm)	17.0935
1.50 to 2.00; (250 µm)	14.2955
2.00 to 2.50; (176.8 µm)	4.7817
2.50 to 3.00; (125 µm)	0.3294
3.00 to 3.50; (88.39 µm)	0.0640
3.50 to 4.00; (62.5 µm)	0.5847
4.00 to 4.50; (44.19 µm)	0.9889
4.50 to 5.00; (31.25 µm)	1.0265
5.00 to 5.50; (22.097 µm)	0.9769
5.50 to 6.00; (15.625 µm)	0.9667
6.00 to 6.50; (11.049 µm)	0.9147
6.50 to 7.00; (7.813 µm)	0.8310
7.00 to 7.50; (5.524 µm)	0.6373
7.50 to 8.00; (3.906 µm)	0.4382
8.00 to 8.50; (2.762 µm)	0.2935
8.50 to 9.00; (1.953 µm)	0.1542
9.00 to 9.50; (1.381 µm)	0.0305
9.50 to 10.00; (0.977 µm)	0.0000
10.00 to 10.50; (0.691 µm)	0.0000
10.50 to 11.00; (0.488 µm)	0.0000
11.00 to 11.50; (0.345 µm)	0.0000
11.50 to 12.00; (0.244 µm)	0.0000
12.00 to 12.50; (0.173 µm)	0.0000
12.50 to 13.00; (0.122 µm)	0.0000
13.00 to 13.50; (0.086 µm)	0.0000

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_22011**
Sample Code:	**PS592011**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.0000**
-3.50 to -3.00; 8 mm	**108.2000**
-3.00 to -2.50; 5.6 mm	**184.0200**
-2.50 to -2.00; 4 mm	**6.8200**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**0.0000**
-1.00 to -0.50; 1.4 mm	**0.0000**
-0.50 to 0.00; 1 mm	**0.0700**
0.00 to 0.50; (707 µm)	3.6945
0.50 to 1.00; (500 µm)	34.3146
1.00 to 1.50; (353.6 µm)	57.8016
1.50 to 2.00; (250 µm)	51.7431
2.00 to 2.50; (176.8 µm)	27.5397
2.50 to 3.00; (125 µm)	11.2983
3.00 to 3.50; (88.39 µm)	11.6770
3.50 to 4.00; (62.5 µm)	18.3086
4.00 to 4.50; (44.19 µm)	20.8262
4.50 to 5.00; (31.25 µm)	17.9300
5.00 to 5.50; (22.097 µm)	13.4065
5.50 to 6.00; (15.625 µm)	9.9167
6.00 to 6.50; (11.049 µm)	7.6039
6.50 to 7.00; (7.813 µm)	5.7720
7.00 to 7.50; (5.524 µm)	4.2471
7.50 to 8.00; (3.906 µm)	3.0702
8.00 to 8.50; (2.762 µm)	2.3436
8.50 to 9.00; (1.953 µm)	1.7295
9.00 to 9.50; (1.381 µm)	1.2178
9.50 to 10.00; (0.977 µm)	0.9313
10.00 to 10.50; (0.691 µm)	0.9006
10.50 to 11.00; (0.488 µm)	0.7061
11.00 to 11.50; (0.345 µm)	0.0000
11.50 to 12.00; (0.244 µm)	
12.00 to 12.50; (0.173 µm)	
12.50 to 13.00; (0.122 µm)	
13.00 to 13.50; (0.086 µm)	

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_2212**
Sample Code:	**PS592212**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.0000**
-3.50 to -3.00; 8 mm	**15.5481**
-3.00 to -2.50; 5.6 mm	**28.1104**
-2.50 to -2.00; 4 mm	**4.4585**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**0.0063**
-1.00 to -0.50; 1.4 mm	**0.0000**
-0.50 to 0.00; 1 mm	**0.0006**
0.00 to 0.50; (707 µm)	0.6013
0.50 to 1.00; (500 µm)	5.3781
1.00 to 1.50; (353.6 µm)	11.9576
1.50 to 2.00; (250 µm)	11.6510
2.00 to 2.50; (176.8 µm)	4.9253
2.50 to 3.00; (125 µm)	0.5692
3.00 to 3.50; (88.39 µm)	0.0689
3.50 to 4.00; (62.5 µm)	1.0220
4.00 to 4.50; (44.19 µm)	1.9773
4.50 to 5.00; (31.25 µm)	2.2363
5.00 to 5.50; (22.097 µm)	2.1311
5.50 to 6.00; (15.625 µm)	2.0146
6.00 to 6.50; (11.049 µm)	1.9199
6.50 to 7.00; (7.813 µm)	1.7406
7.00 to 7.50; (5.524 µm)	1.4354
7.50 to 8.00; (3.906 µm)	1.0546
8.00 to 8.50; (2.762 µm)	0.6794
8.50 to 9.00; (1.953 µm)	0.3671
9.00 to 9.50; (1.381 µm)	0.1466
9.50 to 10.00; (0.977 µm)	0.0000
10.00 to 10.50; (0.691 µm)	0.0000
10.50 to 11.00; (0.488 µm)	0.0000
11.00 to 11.50; (0.345 µm)	0.0000
11.50 to 12.00; (0.244 µm)	0.0000
12.00 to 12.50; (0.173 µm)	0.0000
12.50 to 13.00; (0.122 µm)	0.0000
13.00 to 13.50; (0.086 µm)	0.0000

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_2213**
Sample Code:	**PS592213**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.00**
-6.00 to -5.50; 45 mm	**0.00**
-5.50 to -5.00; 31.5 mm	**0.00**
-5.00 to -4.50; 22.4 mm	**0.00**
-4.50 to -4.00; 16 mm	**0.00**
-4.00 to -3.50; 11.2 mm	**0.00**
-3.50 to -3.00; 8 mm	**16.38**
-3.00 to -2.50; 5.6 mm	**26.85**
-2.50 to -2.00; 4 mm	**2.77**
-2.00 to -1.50; 2.8 mm	**0.00**
-1.50 to -1.00; 2 mm	**0.00**
-1.00 to -0.50; 1.4 mm	**0.00**
-0.50 to 0.00; 1 mm	**0.00**
0.00 to 0.50; (707 µm)	0.99
0.50 to 1.00; (500 µm)	3.54
1.00 to 1.50; (353.6 µm)	11.72
1.50 to 2.00; (250 µm)	10.89
2.00 to 2.50; (176.8 µm)	3.55
2.50 to 3.00; (125 µm)	1.51
3.00 to 3.50; (88.39 µm)	1.48
3.50 to 4.00; (62.5 µm)	1.65
4.00 to 4.50; (44.19 µm)	1.95
4.50 to 5.00; (31.25 µm)	2.16
5.00 to 5.50; (22.097 µm)	2.24
5.50 to 6.00; (15.625 µm)	2.21
6.00 to 6.50; (11.049 µm)	2.14
6.50 to 7.00; (7.813 µm)	1.86
7.00 to 7.50; (5.524 µm)	1.47
7.50 to 8.00; (3.906 µm)	1.08
8.00 to 8.50; (2.762 µm)	0.74
8.50 to 9.00; (1.953 µm)	0.50
9.00 to 9.50; (1.381 µm)	0.33
9.50 to 10.00; (0.977 µm)	0.24
10.00 to 10.50; (0.691 µm)	0.21
10.50 to 11.00; (0.488 µm)	0.23
11.00 to 11.50; (0.345 µm)	0.27
11.50 to 12.00; (0.244 µm)	0.29
12.00 to 12.50; (0.173 µm)	0.28
12.50 to 13.00; (0.122 µm)	0.24
13.00 to 13.50; (0.086 µm)	0.26

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_2214_A**
Sample Code:	**PS5914_A**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.0000**
-3.50 to -3.00; 8 mm	**19.1289**
-3.00 to -2.50; 5.6 mm	**29.7367**
-2.50 to -2.00; 4 mm	**0.9449**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**0.0000**
-1.00 to -0.50; 1.4 mm	**0.0000**
-0.50 to 0.00; 1 mm	**0.0013**
0.00 to 0.50; (707 µm)	1.3763
0.50 to 1.00; (500 µm)	7.6619
1.00 to 1.50; (353.6 µm)	14.4660
1.50 to 2.00; (250 µm)	12.3942
2.00 to 2.50; (176.8 µm)	4.4559
2.50 to 3.00; (125 µm)	0.3260
3.00 to 3.50; (88.39 µm)	0.0080
3.50 to 4.00; (62.5 µm)	0.7032
4.00 to 4.50; (44.19 µm)	1.3995
4.50 to 5.00; (31.25 µm)	1.3843
5.00 to 5.50; (22.097 µm)	1.1777
5.50 to 6.00; (15.625 µm)	1.0863
6.00 to 6.50; (11.049 µm)	1.0407
6.50 to 7.00; (7.813 µm)	0.9170
7.00 to 7.50; (5.524 µm)	0.7109
7.50 to 8.00; (3.906 µm)	0.4899
8.00 to 8.50; (2.762 µm)	0.3055
8.50 to 9.00; (1.953 µm)	0.1752
9.00 to 9.50; (1.381 µm)	0.0972
9.50 to 10.00; (0.977 µm)	0.0125
10.00 to 10.50; (0.691 µm)	0.0000
10.50 to 11.00; (0.488 µm)	0.0000
11.00 to 11.50; (0.345 µm)	0.0000
11.50 to 12.00; (0.244 µm)	0.0000
12.00 to 12.50; (0.173 µm)	0.0000
12.50 to 13.00; (0.122 µm)	0.0000
13.00 to 13.50; (0.086 µm)	0.0000

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_2214_B**
Sample Code:	**PS5914_B**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.0000**
-3.50 to -3.00; 8 mm	**19.4971**
-3.00 to -2.50; 5.6 mm	**29.2749**
-2.50 to -2.00; 4 mm	**1.0353**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**0.0000**
-1.00 to -0.50; 1.4 mm	**0.0000**
-0.50 to 0.00; 1 mm	**0.0000**
0.00 to 0.50; (707 µm)	1.3459
0.50 to 1.00; (500 µm)	7.6847
1.00 to 1.50; (353.6 µm)	14.5816
1.50 to 2.00; (250 µm)	12.3276
2.00 to 2.50; (176.8 µm)	4.2720
2.50 to 3.00; (125 µm)	0.2699
3.00 to 3.50; (88.39 µm)	0.0000
3.50 to 4.00; (62.5 µm)	0.6219
4.00 to 4.50; (44.19 µm)	1.3594
4.50 to 5.00; (31.25 µm)	1.3646
5.00 to 5.50; (22.097 µm)	1.1761
5.50 to 6.00; (15.625 µm)	1.1019
6.00 to 6.50; (11.049 µm)	1.0777
6.50 to 7.00; (7.813 µm)	0.9762
7.00 to 7.50; (5.524 µm)	0.7808
7.50 to 8.00; (3.906 µm)	0.5521
8.00 to 8.50; (2.762 µm)	0.3473
8.50 to 9.00; (1.953 µm)	0.1969
9.00 to 9.50; (1.381 µm)	0.1079
9.50 to 10.00; (0.977 µm)	0.0479
10.00 to 10.50; (0.691 µm)	0.0000
10.50 to 11.00; (0.488 µm)	0.0000
11.00 to 11.50; (0.345 µm)	0.0000
11.50 to 12.00; (0.244 µm)	0.0000
12.00 to 12.50; (0.173 µm)	0.0000
12.50 to 13.00; (0.122 µm)	0.0000
13.00 to 13.50; (0.086 µm)	0.0000

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_2215**
Sample Code:	**PS592215**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.0000**
-3.50 to -3.00; 8 mm	**20.2180**
-3.00 to -2.50; 5.6 mm	**29.9808**
-2.50 to -2.00; 4 mm	**0.7832**
-2.00 to -1.50; 2.8 mm	**0.0034**
-1.50 to -1.00; 2 mm	**0.0086**
-1.00 to -0.50; 1.4 mm	**0.0002**
-0.50 to 0.00; 1 mm	**0.3039**
0.00 to 0.50; (707 µm)	2.4054
0.50 to 1.00; (500 µm)	3.7236
1.00 to 1.50; (353.6 µm)	16.3198
1.50 to 2.00; (250 µm)	15.5284
2.00 to 2.50; (176.8 µm)	2.9502
2.50 to 3.00; (125 µm)	0.5546
3.00 to 3.50; (88.39 µm)	0.2841
3.50 to 4.00; (62.5 µm)	0.4672
4.00 to 4.50; (44.19 µm)	0.3969
4.50 to 5.00; (31.25 µm)	0.6951
5.00 to 5.50; (22.097 µm)	0.8617
5.50 to 6.00; (15.625 µm)	0.7735
6.00 to 6.50; (11.049 µm)	0.4868
6.50 to 7.00; (7.813 µm)	0.6583
7.00 to 7.50; (5.524 µm)	0.5717
7.50 to 8.00; (3.906 µm)	0.3479
8.00 to 8.50; (2.762 µm)	0.3504
8.50 to 9.00; (1.953 µm)	0.2802
9.00 to 9.50; (1.381 µm)	0.2728
9.50 to 10.00; (0.977 µm)	0.2181
10.00 to 10.50; (0.691 µm)	0.2908
10.50 to 11.00; (0.488 µm)	0.2135
11.00 to 11.50; (0.345 µm)	0.0571
11.50 to 12.00; (0.244 µm)	0.0000
12.00 to 12.50; (0.173 µm)	0.0000
12.50 to 13.00; (0.122 µm)	0.0000
13.00 to 13.50; (0.086 µm)	0.0000

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_2216**
Sample Code:	**PS592216**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**2.3800**
-3.50 to -3.00; 8 mm	**108.7400**
-3.00 to -2.50; 5.6 mm	**155.1800**
-2.50 to -2.00; 4 mm	**33.2900**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**0.0300**
-1.00 to -0.50; 1.4 mm	**0.0500**
-0.50 to 0.00; 1 mm	**0.0200**
0.00 to 0.50; (707 µm)	61.6769
0.50 to 1.00; (500 µm)	77.8588
1.00 to 1.50; (353.6 µm)	61.7570
1.50 to 2.00; (250 µm)	29.8320
2.00 to 2.50; (176.8 µm)	6.3770
2.50 to 3.00; (125 µm)	0.0684
3.00 to 3.50; (88.39 µm)	0.0000
3.50 to 4.00; (62.5 µm)	0.0000
4.00 to 4.50; (44.19 µm)	0.0000
4.50 to 5.00; (31.25 µm)	0.0000
5.00 to 5.50; (22.097 µm)	0.0000
5.50 to 6.00; (15.625 µm)	0.0000
6.00 to 6.50; (11.049 µm)	0.0000
6.50 to 7.00; (7.813 µm)	0.0000
7.00 to 7.50; (5.524 µm)	0.0000
7.50 to 8.00; (3.906 µm)	0.0000
8.00 to 8.50; (2.762 µm)	0.0000
8.50 to 9.00; (1.953 µm)	0.0000
9.00 to 9.50; (1.381 µm)	0.0000
9.50 to 10.00; (0.977 µm)	0.0000
10.00 to 10.50; (0.691 µm)	0.0000
10.50 to 11.00; (0.488 µm)	0.0000
11.00 to 11.50; (0.345 µm)	0.0000
11.50 to 12.00; (0.244 µm)	0.0000
12.00 to 12.50; (0.173 µm)	0.0000
12.50 to 13.00; (0.122 µm)	0.0000
13.00 to 13.50; (0.086 µm)	0.0000

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_2217**
Sample Code:	**PS592217**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.7500**
-3.50 to -3.00; 8 mm	**18.7400**
-3.00 to -2.50; 5.6 mm	**28.8600**
-2.50 to -2.00; 4 mm	**0.7500**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**0.0000**
-1.00 to -0.50; 1.4 mm	**0.0000**
-0.50 to 0.00; 1 mm	**0.0000**
0.00 to 0.50; (707 µm)	3.7022
0.50 to 1.00; (500 µm)	9.5178
1.00 to 1.50; (353.6 µm)	13.5389
1.50 to 2.00; (250 µm)	12.5611
2.00 to 2.50; (176.8 µm)	7.5344
2.50 to 3.00; (125 µm)	2.9156
3.00 to 3.50; (88.39 µm)	0.5756
3.50 to 4.00; (62.5 µm)	0.1456
4.00 to 4.50; (44.19 µm)	0.1800
4.50 to 5.00; (31.25 µm)	0.1256
5.00 to 5.50; (22.097 µm)	0.0089
5.50 to 6.00; (15.625 µm)	0.0000
6.00 to 6.50; (11.049 µm)	0.0000
6.50 to 7.00; (7.813 µm)	0.0000
7.00 to 7.50; (5.524 µm)	0.0000
7.50 to 8.00; (3.906 µm)	0.0000
8.00 to 8.50; (2.762 µm)	0.0000
8.50 to 9.00; (1.953 µm)	0.0000
9.00 to 9.50; (1.381 µm)	0.0000
9.50 to 10.00; (0.977 µm)	0.0000
10.00 to 10.50; (0.691 µm)	0.0000
10.50 to 11.00; (0.488 µm)	0.0000
11.00 to 11.50; (0.345 µm)	0.0000
11.50 to 12.00; (0.244 µm)	0.0000
12.00 to 12.50; (0.173 µm)	0.0000
12.50 to 13.00; (0.122 µm)	0.0000
13.00 to 13.50; (0.086 µm)	0.0000

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_2218**
Sample Code:	**PS592218**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.0000**
-3.50 to -3.00; 8 mm	**110.8360**
-3.00 to -2.50; 5.6 mm	**181.3190**
-2.50 to -2.00; 4 mm	**4.7000**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**0.0150**
-1.00 to -0.50; 1.4 mm	**0.0000**
-0.50 to 0.00; 1 mm	**0.0000**
0.00 to 0.50; (707 µm)	2.7810
0.50 to 1.00; (500 µm)	5.9990
1.00 to 1.50; (353.6 µm)	50.5010
1.50 to 2.00; (250 µm)	172.9390
2.00 to 2.50; (176.8 µm)	46.8480
2.50 to 3.00; (125 µm)	6.2900
3.00 to 3.50; (88.39 µm)	2.1340
3.50 to 4.00; (62.5 µm)	1.5670
4.00 to 4.50; (44.19 µm)	2.4096
4.50 to 5.00; (31.25 µm)	0.7296
5.00 to 5.50; (22.097 µm)	1.3696
5.50 to 6.00; (15.625 µm)	1.2704
6.00 to 6.50; (11.049 µm)	1.6320
6.50 to 7.00; (7.813 µm)	1.2896
7.00 to 7.50; (5.524 µm)	1.1360
7.50 to 8.00; (3.906 µm)	0.6496
8.00 to 8.50; (2.762 µm)	0.5632
8.50 to 9.00; (1.953 µm)	26.5566
9.00 to 9.50; (1.381 µm)	0.0000
9.50 to 10.00; (0.977 µm)	0.0000
10.00 to 10.50; (0.691 µm)	0.0000
10.50 to 11.00; (0.488 µm)	0.0000
11.00 to 11.50; (0.345 µm)	0.0000
11.50 to 12.00; (0.244 µm)	0.0000
12.00 to 12.50; (0.173 µm)	0.0000
12.50 to 13.00; (0.122 µm)	0.0000
13.00 to 13.50; (0.086 µm)	0.0000

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_BM REP 1**
Sample Code:	**PS59BM REP 1**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.0000**
-3.50 to -3.00; 8 mm	**19.5139**
-3.00 to -2.50; 5.6 mm	**26.7889**
-2.50 to -2.00; 4 mm	**1.6703**
-2.00 to -1.50; 2.8 mm	**0.0065**
-1.50 to -1.00; 2 mm	**0.0032**
-1.00 to -0.50; 1.4 mm	**0.0016**
-0.50 to 0.00; 1 mm	**0.0016**
0.00 to 0.50; (707 µm)	0.8512
0.50 to 1.00; (500 µm)	5.1166
1.00 to 1.50; (353.6 µm)	14.7644
1.50 to 2.00; (250 µm)	11.9404
2.00 to 2.50; (176.8 µm)	2.4880
2.50 to 3.00; (125 µm)	0.6795
3.00 to 3.50; (88.39 µm)	1.1258
3.50 to 4.00; (62.5 µm)	1.2181
4.00 to 4.50; (44.19 µm)	1.5197
4.50 to 5.00; (31.25 µm)	1.8551
5.00 to 5.50; (22.097 µm)	1.8627
5.50 to 6.00; (15.625 µm)	1.8508
6.00 to 6.50; (11.049 µm)	1.6980
6.50 to 7.00; (7.813 µm)	1.4044
7.00 to 7.50; (5.524 µm)	1.0687
7.50 to 8.00; (3.906 µm)	0.7438
8.00 to 8.50; (2.762 µm)	0.4713
8.50 to 9.00; (1.953 µm)	0.2928
9.00 to 9.50; (1.381 µm)	0.2036
9.50 to 10.00; (0.977 µm)	0.1667
10.00 to 10.50; (0.691 µm)	0.1499
10.50 to 11.00; (0.488 µm)	0.1375
11.00 to 11.50; (0.345 µm)	0.1225
11.50 to 12.00; (0.244 µm)	0.1037
12.00 to 12.50; (0.173 µm)	0.0804
12.50 to 13.00; (0.122 µm)	0.0602
13.00 to 13.50; (0.086 µm)	0.0381

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_BM REP 2**
Sample Code:	**PS59BM REP 2**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.0000**
-3.50 to -3.00; 8 mm	**20.4570**
-3.00 to -2.50; 5.6 mm	**26.1324**
-2.50 to -2.00; 4 mm	**1.6613**
-2.00 to -1.50; 2.8 mm	**0.0097**
-1.50 to -1.00; 2 mm	**0.0048**
-1.00 to -0.50; 1.4 mm	**0.0032**
-0.50 to 0.00; 1 mm	**0.0032**
0.00 to 0.50; (707 µm)	0.4365
0.50 to 1.00; (500 µm)	4.5976
1.00 to 1.50; (353.6 µm)	14.5991
1.50 to 2.00; (250 µm)	12.3931
2.00 to 2.50; (176.8 µm)	2.6972
2.50 to 3.00; (125 µm)	0.6651
3.00 to 3.50; (88.39 µm)	1.1486
3.50 to 4.00; (62.5 µm)	1.2383
4.00 to 4.50; (44.19 µm)	1.5411
4.50 to 5.00; (31.25 µm)	1.8773
5.00 to 5.50; (22.097 µm)	1.8861
5.50 to 6.00; (15.625 µm)	1.8691
6.00 to 6.50; (11.049 µm)	1.7082
6.50 to 7.00; (7.813 µm)	1.4078
7.00 to 7.50; (5.524 µm)	1.0692
7.50 to 8.00; (3.906 µm)	0.7447
8.00 to 8.50; (2.762 µm)	0.4737
8.50 to 9.00; (1.953 µm)	0.2963
9.00 to 9.50; (1.381 µm)	0.2072
9.50 to 10.00; (0.977 µm)	0.1697
10.00 to 10.50; (0.691 µm)	0.1522
10.50 to 11.00; (0.488 µm)	0.1394
11.00 to 11.50; (0.345 µm)	0.1241
11.50 to 12.00; (0.244 µm)	0.1052
12.00 to 12.50; (0.173 µm)	0.0817
12.50 to 13.00; (0.122 µm)	0.0613
13.00 to 13.50; (0.086 µm)	0.0388

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_BM REP 3**
Sample Code:	**PS59BM REP 3**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.0000**
-3.50 to -3.00; 8 mm	**20.0760**
-3.00 to -2.50; 5.6 mm	**26.7557**
-2.50 to -2.00; 4 mm	**1.0628**
-2.00 to -1.50; 2.8 mm	**0.0096**
-1.50 to -1.00; 2 mm	**0.0064**
-1.00 to -0.50; 1.4 mm	**0.0048**
-0.50 to 0.00; 1 mm	**0.0032**
0.00 to 0.50; (707 µm)	0.8405
0.50 to 1.00; (500 µm)	5.2428
1.00 to 1.50; (353.6 µm)	15.0639
1.50 to 2.00; (250 µm)	12.2181
2.00 to 2.50; (176.8 µm)	2.3931
2.50 to 3.00; (125 µm)	0.5223
3.00 to 3.50; (88.39 µm)	1.0539
3.50 to 4.00; (62.5 µm)	1.1717
4.00 to 4.50; (44.19 µm)	1.4819
4.50 to 5.00; (31.25 µm)	1.8211
5.00 to 5.50; (22.097 µm)	1.8439
5.50 to 6.00; (15.625 µm)	1.8287
6.00 to 6.50; (11.049 µm)	1.6706
6.50 to 7.00; (7.813 µm)	1.3747
7.00 to 7.50; (5.524 µm)	1.0411
7.50 to 8.00; (3.906 µm)	0.7222
8.00 to 8.50; (2.762 µm)	0.4577
8.50 to 9.00; (1.953 µm)	0.2856
9.00 to 9.50; (1.381 µm)	0.1997
9.50 to 10.00; (0.977 µm)	0.1641
10.00 to 10.50; (0.691 µm)	0.1477
10.50 to 11.00; (0.488 µm)	0.1355
11.00 to 11.50; (0.345 µm)	0.1208
11.50 to 12.00; (0.244 µm)	0.1025
12.00 to 12.50; (0.173 µm)	0.0797
12.50 to 13.00; (0.122 µm)	0.0599
13.00 to 13.50; (0.086 µm)	0.0380

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_BM REP 4**
Sample Code:	**PS59BM REP 4**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.0000**
-3.50 to -3.00; 8 mm	**19.5362**
-3.00 to -2.50; 5.6 mm	**26.8391**
-2.50 to -2.00; 4 mm	**1.6397**
-2.00 to -1.50; 2.8 mm	**0.0130**
-1.50 to -1.00; 2 mm	**0.0065**
-1.00 to -0.50; 1.4 mm	**0.0033**
-0.50 to 0.00; 1 mm	**0.0016**
0.00 to 0.50; (707 µm)	0.4846
0.50 to 1.00; (500 µm)	4.5595
1.00 to 1.50; (353.6 µm)	14.7821
1.50 to 2.00; (250 µm)	12.4229
2.00 to 2.50; (176.8 µm)	2.3313
2.50 to 3.00; (125 µm)	0.4646
3.00 to 3.50; (88.39 µm)	1.0849
3.50 to 4.00; (62.5 µm)	1.2452
4.00 to 4.50; (44.19 µm)	1.5971
4.50 to 5.00; (31.25 µm)	1.9524
5.00 to 5.50; (22.097 µm)	1.9616
5.50 to 6.00; (15.625 µm)	1.9621
6.00 to 6.50; (11.049 µm)	1.8106
6.50 to 7.00; (7.813 µm)	1.4952
7.00 to 7.50; (5.524 µm)	1.1317
7.50 to 8.00; (3.906 µm)	0.7833
8.00 to 8.50; (2.762 µm)	0.4936
8.50 to 9.00; (1.953 µm)	0.3052
9.00 to 9.50; (1.381 µm)	0.2111
9.50 to 10.00; (0.977 µm)	0.1714
10.00 to 10.50; (0.691 µm)	0.1532
10.50 to 11.00; (0.488 µm)	0.1405
11.00 to 11.50; (0.345 µm)	0.1256
11.50 to 12.00; (0.244 µm)	0.1068
12.00 to 12.50; (0.173 µm)	0.0829
12.50 to 13.00; (0.122 µm)	0.0621
13.00 to 13.50; (0.086 µm)	0.0393

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS59**
LabCode:	**PSA_BM REP 5**
Sample Code:	**PS59BM REP 5**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	**0.0000**
-6.00 to -5.50; 45 mm	**0.0000**
-5.50 to -5.00; 31.5 mm	**0.0000**
-5.00 to -4.50; 22.4 mm	**0.0000**
-4.50 to -4.00; 16 mm	**0.0000**
-4.00 to -3.50; 11.2 mm	**0.0000**
-3.50 to -3.00; 8 mm	**19.8582**
-3.00 to -2.50; 5.6 mm	**26.6633**
-2.50 to -2.00; 4 mm	**1.5890**
-2.00 to -1.50; 2.8 mm	**0.0082**
-1.50 to -1.00; 2 mm	**0.0049**
-1.00 to -0.50; 1.4 mm	**0.0033**
-0.50 to 0.00; 1 mm	**0.0016**
0.00 to 0.50; (707 µm)	0.7903
0.50 to 1.00; (500 µm)	4.6642
1.00 to 1.50; (353.6 µm)	14.3724
1.50 to 2.00; (250 µm)	11.9274
2.00 to 2.50; (176.8 µm)	2.4822
2.50 to 3.00; (125 µm)	0.7335
3.00 to 3.50; (88.39 µm)	1.1865
3.50 to 4.00; (62.5 µm)	1.3022
4.00 to 4.50; (44.19 µm)	1.6200
4.50 to 5.00; (31.25 µm)	1.9595
5.00 to 5.50; (22.097 µm)	1.9568
5.50 to 6.00; (15.625 µm)	1.9442
6.00 to 6.50; (11.049 µm)	1.7777
6.50 to 7.00; (7.813 µm)	1.4608
7.00 to 7.50; (5.524 µm)	1.1026
7.50 to 8.00; (3.906 µm)	0.7607
8.00 to 8.50; (2.762 µm)	0.4778
8.50 to 9.00; (1.953 µm)	0.2964
9.00 to 9.50; (1.381 µm)	0.2074
9.50 to 10.00; (0.977 µm)	0.1691
10.00 to 10.50; (0.691 µm)	0.1499
10.50 to 11.00; (0.488 µm)	0.1359
11.00 to 11.50; (0.345 µm)	0.1204
11.50 to 12.00; (0.244 µm)	0.1014
12.00 to 12.50; (0.173 µm)	0.0780
12.50 to 13.00; (0.122 µm)	0.0579
13.00 to 13.50; (0.086 µm)	0.0364