NMBAQC

NE Atlantic Marine Biological Analytical Quality Control Scheme

Particle Size Report - PS79

Particle Size Component 2020/21

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BENCHMARK DATA

Table 1. Summary data for the benchmark replicates distributed as PS79.

	Method	% Gravel	% Sand	% Mud	Sediment Description (Post analysis)
PSA_2630 BM REP 1	NMBAQC	99.98	0.01	0.01	Gravel
PSA_2631 BM REP 2	NMBAQC	99.98	0.01	0.01	Gravel
PSA_2632 BM REP 3	NMBAQC	99.98	0.02	0.01	Gravel
PSA_2633 BM REP 4	NMBAQC	99.98	0.01	0.01	Gravel
PSA_2634 BM REP 5	NMBAQC	99.98	0.01	0.01	Gravel
BM REP AVERAGE	NMBAQC	99.98	0.01	0.01	Gravel

Table 2. Summary of sieve data for the benchmark replicates distributed as PS79.

	PSA_2730 BM REP 1	PSA_2731 BM REP 2	PSA_2732 BM REP 3	PSA_2733 BM REP 4	PSA_2734 BM REP 5	BM Average
Sieves used	Yes	Yes	Yes	Yes	Yes	Yes
Phi interval; mm	**Weight in grams**					
-6.50 to -6.00; 63 mm	0.00	0.00	0.00	0.00	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00	0.00	0.00	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00	0.00	0.00	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00	0.00	0.00	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00	0.00	0.00	0.00	0.00
-4.00 to -3.50; 11.2 mm	0.00	0.00	0.00	0.00	0.00	0.00
-3.50 to -3.00; 8 mm	332.59	338.26	339.24	344.51	347.28	340.38
-3.00 to -2.50; 5.6 mm	264.42	259.18	261.28	253.75	245.94	256.91
-2.50 to -2.00; 4 mm	140.43	135.44	136.79	136.41	141.02	138.02
-2.00 to -1.50; 2.8 mm	55.49	60.06	56.76	57.38	56.54	57.25
-1.50 to -1.00; 2 mm	0.33	0.34	0.57	0.75	0.32	0.46
-1.00 to -0.50; 1.4 mm	0.01	0.03	0.02	0.02	0.01	0.02
-0.50 to 0.00; 1.0 mm	0.02	0.01	0.03	0.01	0.02	0.02
>1.0 mm	793.29	793.32	794.69	792.83	791.13	793.05
<1.0 mm — Base Pan	0.11	0.14	0.14	0.10	0.12	0.12
<1.0 mm — Oven Dried	0.00	0.00	0.00	0.00	0.00	0.00
Total Weight (g)	793.40	793.46	794.83	792.93	791.25	793.17

BENCHMARK DATA

Table 3. Summary of final laser data for the benchmark replicates distributed as PS79.

	PSA_2730 BM REP 1	PSA_2731 BM REP 2	PSA_2732 BM REP 3	PSA_2733 BM REP 4	PSA_2734 BM REP 5	BM AVERAGE
0.00 to 0.50; (707 µm)	2.36	0.44	1.41	0.91	1.60	1.35
0.50 to 1.00; (500 µm)	6.63	2.69	6.15	4.44	3.97	4.78
1.00 to 1.50; (353.6 µm)	10.10	6.03	9.74	8.07	8.88	8.56
1.50 to 2.00; (250 µm)	9.37	5.96	7.59	6.00	8.93	7.57
2.00 to 2.50; (176.8 µm)	9.12	7.29	7.77	7.20	10.29	8.33
2.50 to 3.00; (125 µm)	7.99	8.20	6.48	7.18	10.13	8.00
3.00 to 3.50; (88.39 µm)	6.96	7.08	5.22	5.04	8.09	6.48
3.50 to 4.00; (62.5 µm)	5.50	5.81	5.19	4.85	7.02	5.67
4.00 to 4.50; (44.19 µm)	4.04	4.28	4.03	4.21	5.54	4.42
4.50 to 5.00; (31.25 µm)	3.47	3.91	3.88	2.98	3.05	3.46
5.00 to 5.50; (22.097 µm)	2.80	3.19	2.64	2.77	2.17	2.71
5.50 to 6.00; (15.625 µm)	2.67	2.90	2.86	2.60	2.01	2.61
6.00 to 6.50; (11.049 µm)	2.83	3.40	3.41	3.43	2.30	3.08
6.50 to 7.00; (7.813 µm)	2.78	3.34	3.14	3.32	2.30	2.98
7.00 to 7.50; (5.524 µm)	3.23	4.49	3.92	4.29	2.92	3.77
7.50 to 8.00; (3.906 µm)	3.62	5.74	4.76	5.49	3.58	4.64
8.00 to 8.50; (2.762 µm)	3.30	5.47	4.46	5.25	3.43	4.38
8.50 to 9.00; (1.953 µm)	2.84	4.67	4.03	4.98	3.14	3.93
9.00 to 9.50; (1.381 µm)	2.56	4.05	3.78	4.91	2.95	3.65
9.50 to 10.00; (0.977 µm)	2.22	3.35	3.20	4.21	2.50	3.10
10.00 to 10.50; (0.691 µm)	1.75	2.53	2.37	3.04	1.87	2.31
10.50 to 11.00; (0.488 µm)	1.31	1.82	1.60	1.99	1.29	1.60
11.00 to 11.50; (0.345 µm)	0.94	1.27	1.02	1.23	0.84	1.06
11.50 to 12.00; (0.244 µm)	0.65	0.86	0.63	0.75	0.54	0.69
12.00 to 12.50; (0.173 µm)	0.43	0.56	0.35	0.43	0.32	0.42
12.50 to 13.00; (0.122 µm)	0.29	0.36	0.21	0.25	0.20	0.26
13.00 to 13.50; (0.086 µm)	0.17	0.21	0.11	0.14	0.11	0.14
13.50 to 14.00; (0.061 µm)	0.06	0.08	0.04	0.05	0.04	0.05
14.00 to 14.50; (0.043 µm)	0.01	0.01	0.00	0.01	0.01	0.01
>14.50; (0.01 µm)	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00
MEAN:	Very Coarse Silt	Coarse Silt	Very Coarse Silt	Coarse Silt	Very Coarse Silt	Very Coarse Silt
SORTING:	Very Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted
SKEWNESS:	Very Fine Skewed	Fine Skewed	Fine Skewed	Fine Skewed	Very Fine Skewed	Very Fine Skewed
KURTOSIS:	Platykurtic	Platykurtic	Platykurtic	Very Platykurtic	Platykurtic	Platykurtic
MODE:	Trimodal	Polymodal	Polymodal	Polymodal	Trimodal	Polymodal
MODE 1 (µm):	426.8	150.9	426.8	426.8	213.4	426.8
MODE 2 (µm):	4.715	426.8	213.4	213.4	4.715	213.4
MODE 3 (µm):	13.337	4.715	4.715	4.715	13.337	4.715

BENCHMARK DATA

Table 4. Summary of Coefficient of Variation for Benchmark laser replicates for PS79.

		PSA_2730 BM REP 1	PSA_2731 BM REP 2	PSA_2732 BM REP 3	PSA_2733 BM REP 4	PSA_2734 BM REP 5
D_{10}	Subsample 1	2.61	1.57	3.14	1.48	1.22
	Subsample 2	-	-	-	-	-
	Subsample 3	-	-	-	-	-
D_{50}	Subsample 1	3.73	12.19	15.44	8.16	1.85
	Subsample 2	-	-	-	-	-
	Subsample 3	-	-	-	-	-
D_{90}	Subsample 1	1.92	4.28	4.91	0.87	3.91
	Subsample 2	-	-	-	-	-
	Subsample 3	-	-	-	-	-

$$COV = \left(\frac{StDev}{Mean}\right) * 100$$

ISO 133020 defines good reproducibility when: COV is <3% for D50

COV is <5% for D10 and D90

All limits double when the D50 is <10microns.

In reality 3% and 5% are low and greater variability is expected for natural sediment samples therefore a maximum of 20% (based on three replicates being measured) will be used as a guide.

The Benchmark replicates show good reproducibility

Table 5. Laser metadata for Benchmark replicates for P79.

If laser used, provide manufacturer/model:	Beckman Coulter LS 13320
Dispersion unit:	Universal liquid module
Analysis model:	Mie
Dispersant used:	Water (RI - 1.33)
Particle Refractive Index:	1.55
Particle Absorption Index:	0.1
Fines extension	PIDS system
Obscuration (average):	10%
Pump speed (% or rpm)	50%
Stirrer speed (% or rpm)	n/a
Ultrasonic duration (seconds)	30
Ultrasonic level (eg %, unit as described by instrument manual)	2

Figure 1a. Percentage bar charts resulting from final sieve analysis of 5 replicate samples of sediment distributed as PS79 (Benchmark Data).

NMBAQC Particle Size Analysis
2020/21 - PS79
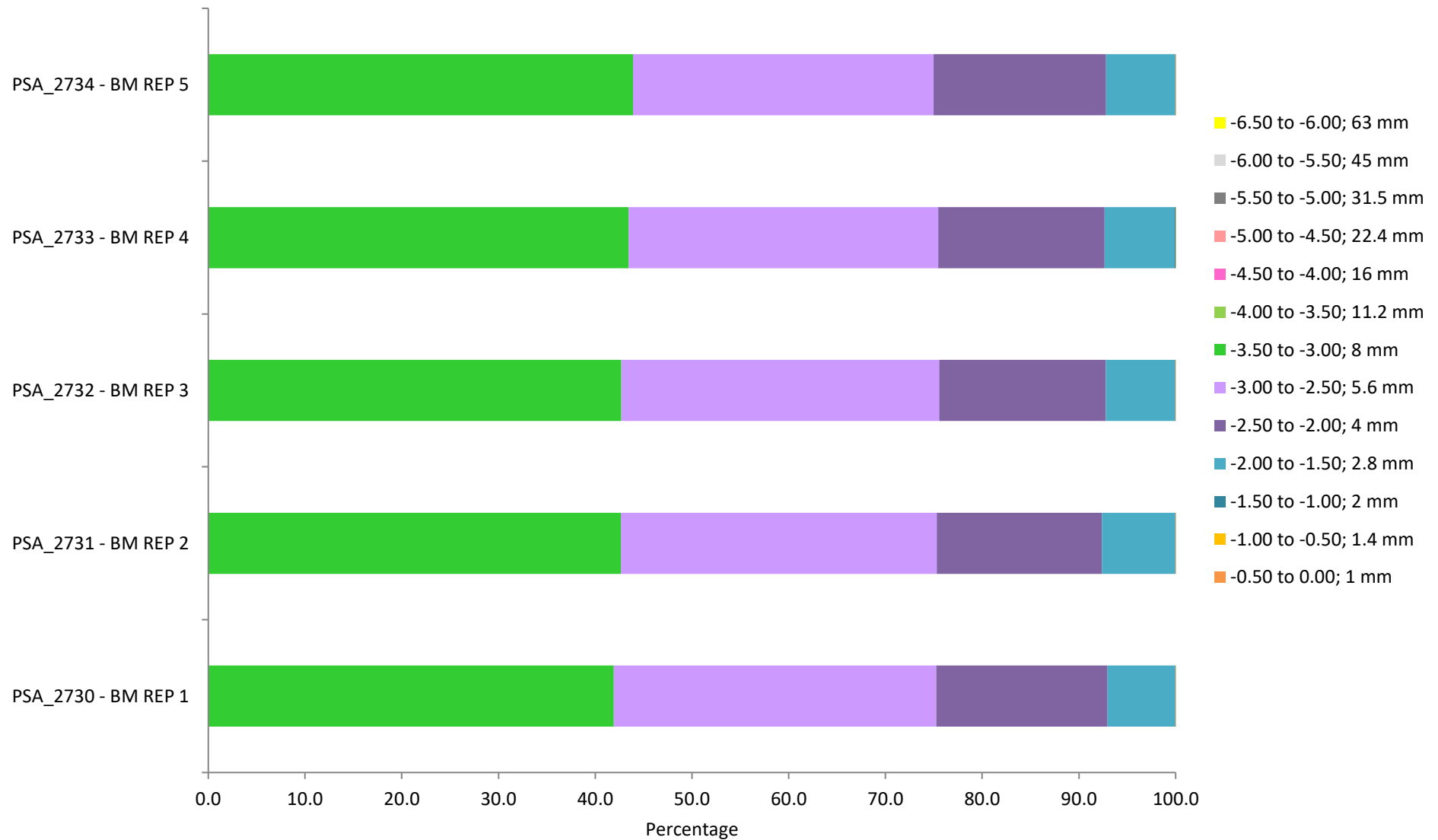
Figure 1b. Particle size distribution curves resulting from final laser analysis of 5 replicate samples of sediment distibuted as PS79 (Benchmark Data).
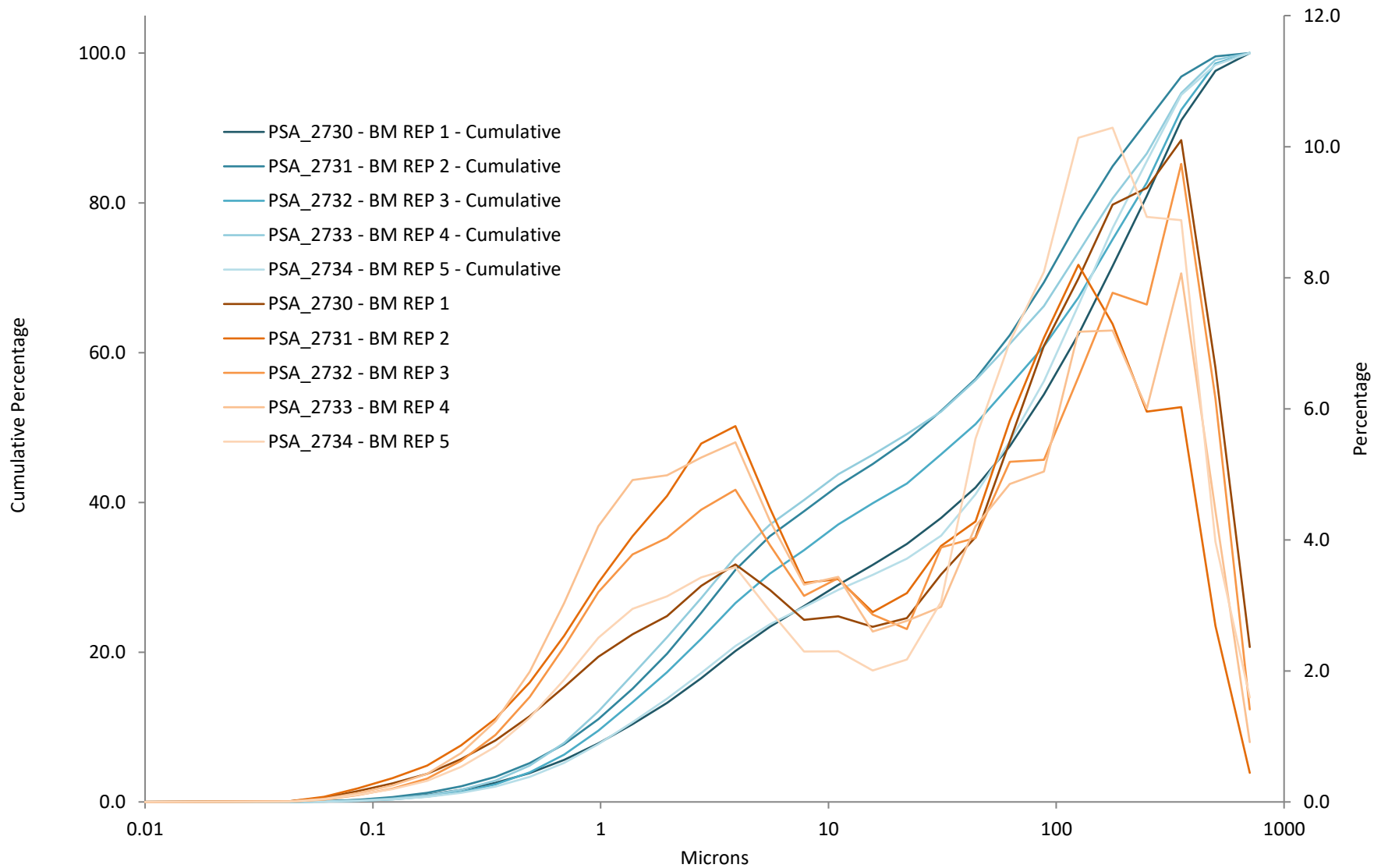
NMBAQC Particle Size Analysis
2020/21 - PS79

Figure 2. Particle size distribution curves resulting from laser analysis of five replicate samples of sediment distributed as PS79.
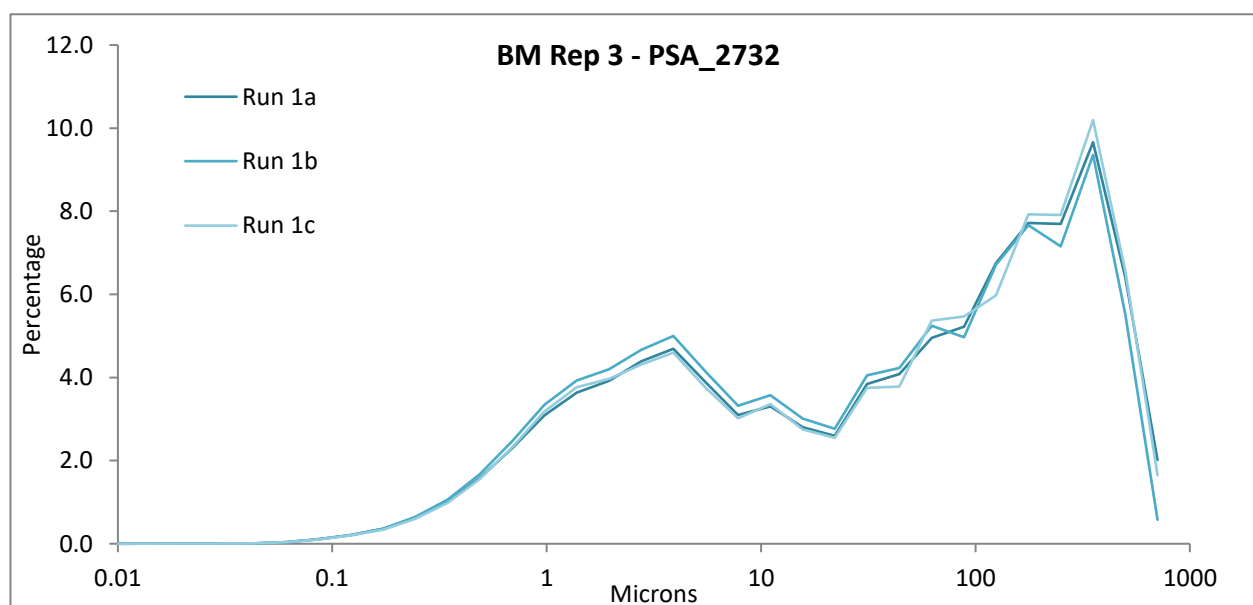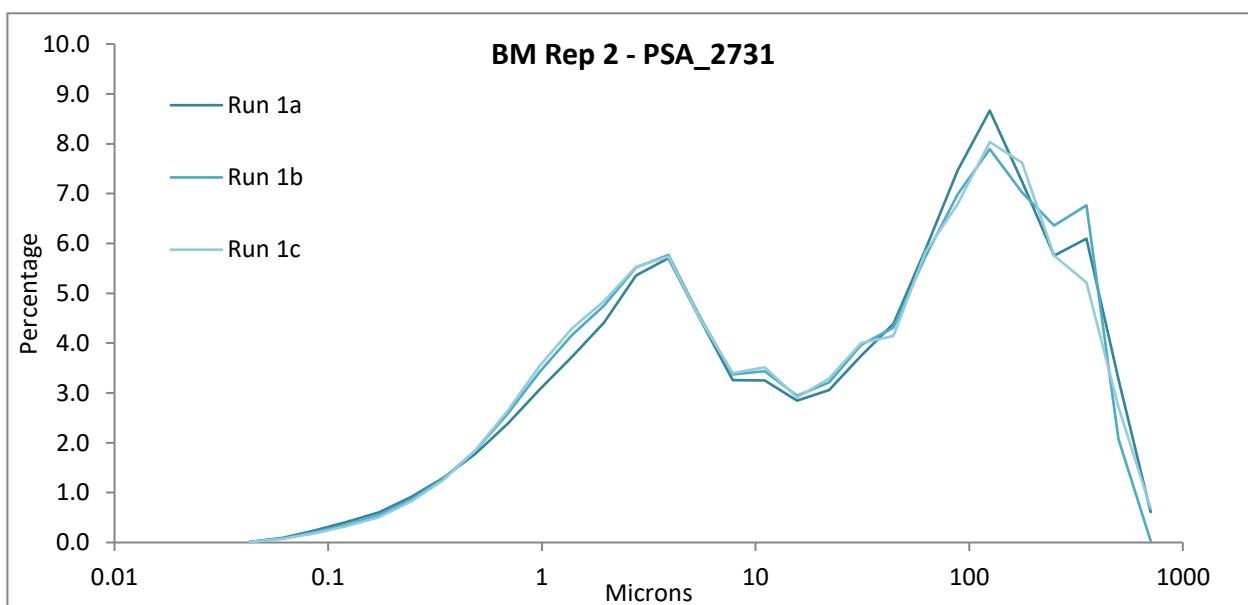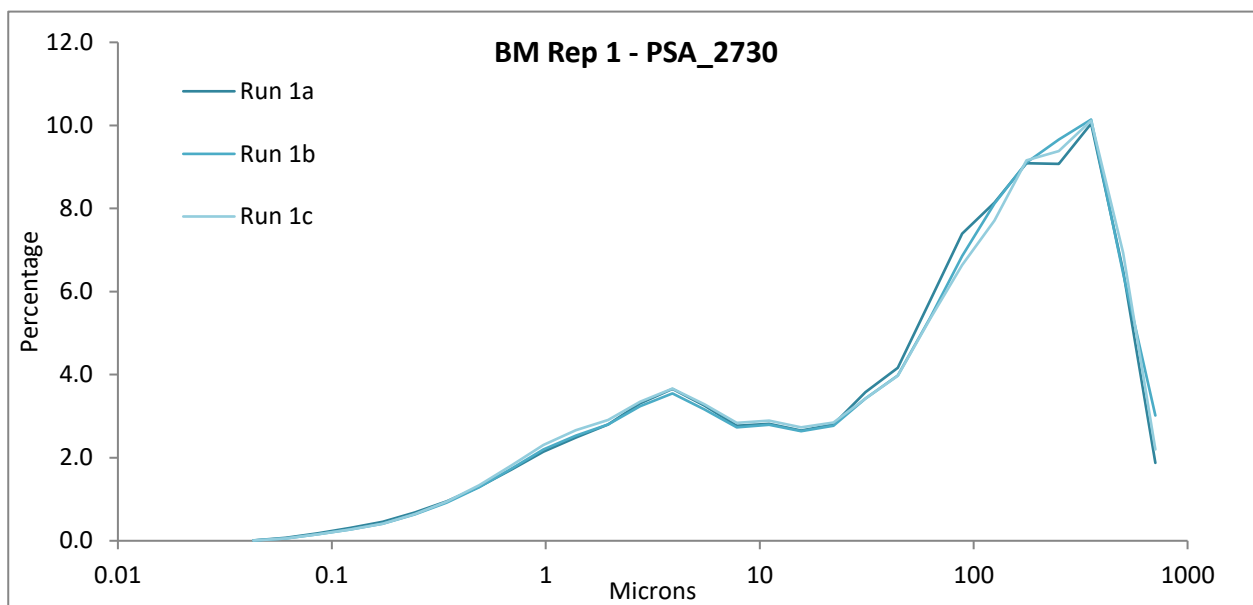
Figure 2. Particle size distribution curves resulting from laser analysis of five replicate samples of sediment distributed as PS79.
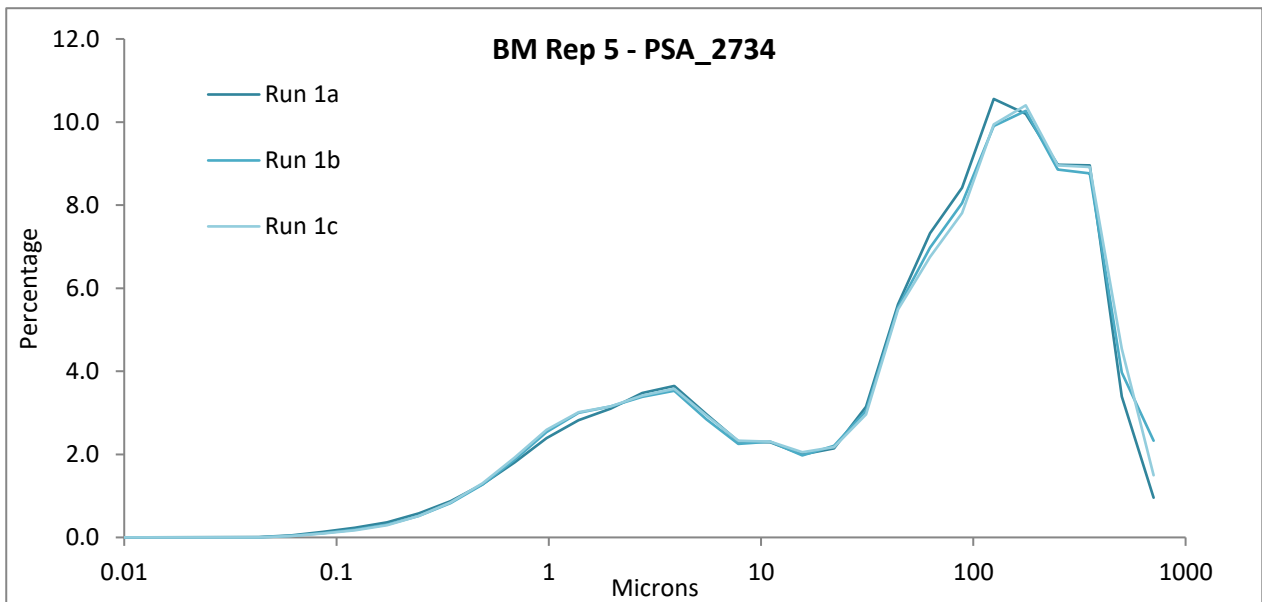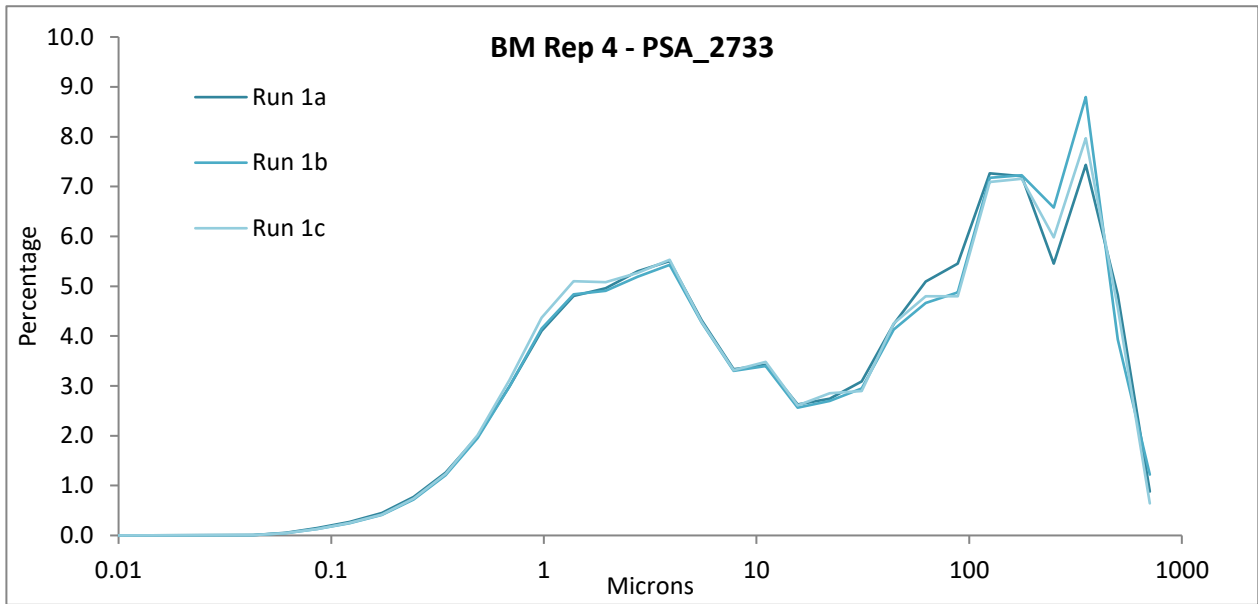
Figure 3. Particle size distribution curves resulting from analysis of 5 replicate samples of sediment distibuted as PS79 (Benchmark Data).

NMBAQC Particle Size Analysis
2020/21 - PS79
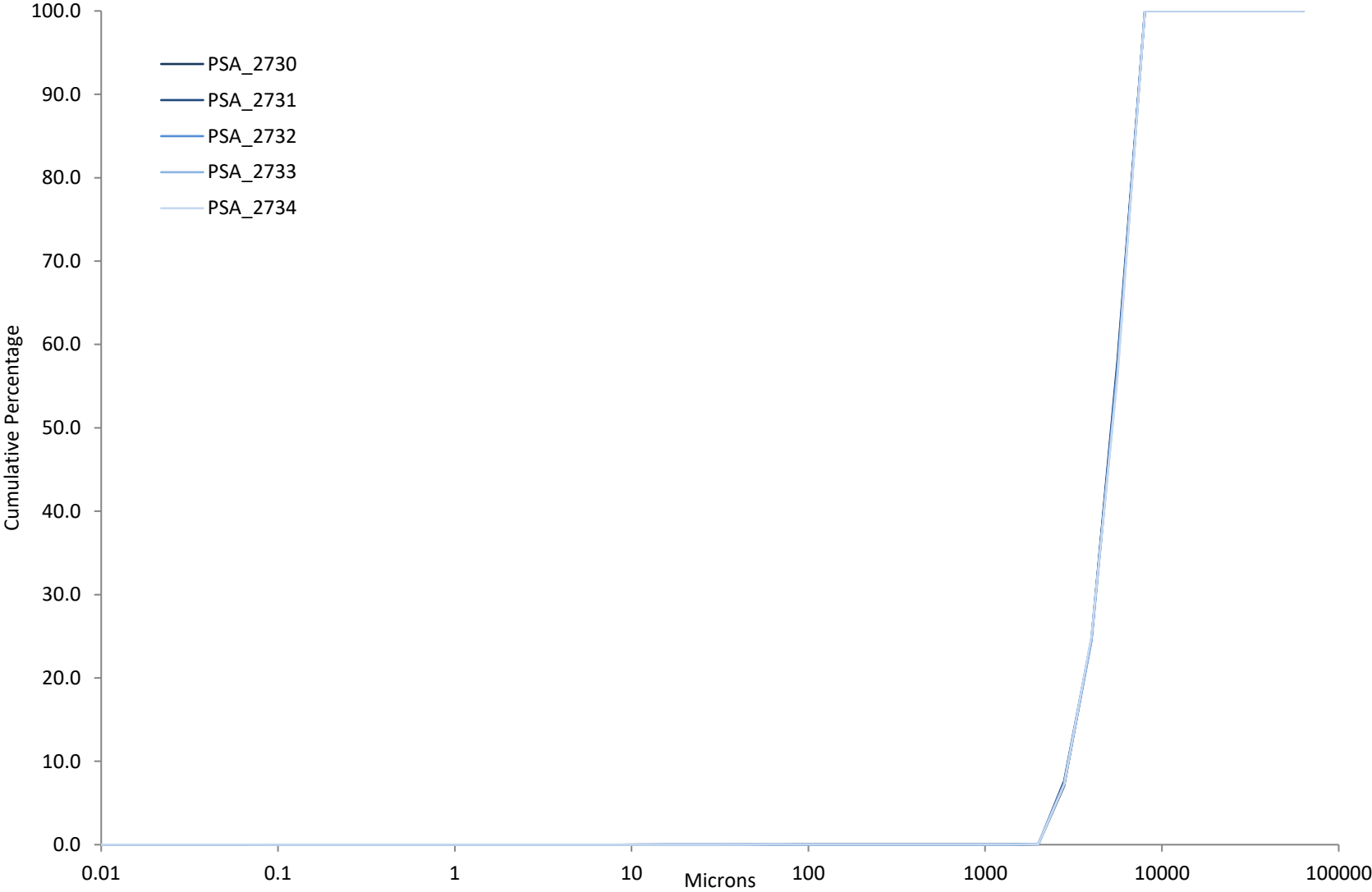
PARTICIPANT DATA

Table 6. Summary of equipment and methods used by participants and sample summary data provided by participants for sediment distributed as PS79.

| Lab | Equipment Used | | Method Used | Chemical Dispersant Used | Peroxide pre-treatment Used | Summary Data | | | Sediment Description (Post Analysis) | Sediment Description* Gradistat Textural Group |
	Sieves	Laser				% Gravel	% Sand	% Mud		
Benchmark Average	Yes	Yes	NMBAQC	No	No	99.98	0.01	0.01	Gravel	Gravel
PSA_2701	Yes	No	NMBAQC	No	No	99.89	0.11	0.00	Gravel	Gravel
PSA_2702	Yes	No	NMBAQC	No	No	100	0	0	Gravel	Gravel
PSA_2703	n/p	n/p	n/p	n/p	n/p	n/p	n/p	n/p	n/p	n/p
PSA_2704	Yes	No	NMBAQC	No	No	99.98	0.02	0.00	Gravel	Gravel
PSA_2705	Yes	No	NMBAQC	No	No	100	0	0	Gravel	Gravel
PSA_2706	Yes	Yes	NMBAQC	No	No	99.92	0.04	0.04	Gravel	Gravel
PSA_2707	Yes	No	NMBAQC	No	No	99.47	0.53	0.00	Gravel	Gravel
PSA_2708	Yes	No	OTHER	No	No	99.72	0.28	0.00	Gravel	Gravel
PSA_2709	Yes	No	NMBAQC	No	No	100	0	0	Gravel	Gravel
PSA_2710	n/p	n/p	n/p	n/p	n/p	n/p	n/p	n/p	n/p	n/p
PSA_2711	Yes	No	NMBAQC	No	No	100	0	0	Gravel	Gravel
PSA_2712	Yes	No	NMBAQC	No	No	100	0	0	Gravel	Gravel
PSA_2713	Yes	No	NMBAQC	No	No	99.94	0.06	0.00	Gravel	Gravel
PSA_2714	Yes	No	NMBAQC	No	No	100	0	0	Gravel	Gravel
PSA_2715	Yes	Yes	NMBAQC	No	No	99.98	0.01	0.01	Gravel	Gravel
PSA_2716	Yes	No	NMBAQC	No	No	100.00	0.00	0.00	Gravel	Gravel
PSA_2717	Yes	No	NMBAQC	No	No	100	0	0	Gravel	Gravel

NB: Decimal places as supplied by participant.

* Sediment description from Gradistat textural group based on final data supplied by participant.
n/p - not participating in this exercise at current time.

PARTICIPANT DATA

Table 7. Raw sieve data (weight in grams) provided by participants for sediment distributed as PS79.

Phi interval (explicit) + sieve mesh	Benchmark Average	PSA_2701	PSA_2702	PSA_2703	PSA_2704	PSA_2705	PSA_2706	PSA_2707	PSA_2708	PSA_2709
					Participant					
-6.50 to -6.00; 63 mm	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00
-4.00 to -3.50; 11.2 mm	0.00	7.94	1.70	n/p	12.13	0.00	0.00	5.17	0.00	1.70
-3.50 to -3.00; 8 mm	340.38	329.17	337.00	n/p	308.52	317.81	310.00	317.07	289.67	337.00
-3.00 to -2.50; 5.6 mm	256.91	271.07	254.40	n/p	282.76	284.62	286.16	284.95	306.37	254.40
-2.50 to -2.00; 4 mm	138.02	112.77	140.60	n/p	133.23	121.97	132.75	120.42	115.10	140.60
-2.00 to -1.50; 2.8 mm	57.25	65.77	60.90	n/p	63.91	68.24	59.94	61.21	78.13	60.90
-1.50 to -1.00; 2 mm	0.46	3.04	1.10	n/p	3.14	1.70	5.43	2.06	2.07	1.10
-1.00 to -0.50; 1.4 mm	0.02	0.02	0.00	n/p	0.07	0.08	0.05	0.10	0.10	0.00
-0.50 to 0.00; 1 mm	0.02	0.02	0.10	n/p	0.06	0.00	0.03	0.09	0.00	0.10
Total *	793.05	789.80	795.80	n/p	803.83	794.42	794.35	791.07	791.43	795.80

Summary Data

		Benchmark Average	PSA_2701	PSA_2702	PSA_2703	PSA_2704	PSA_2705	PSA_2706	PSA_2707	PSA_2708	PSA_2709
< 0.00; >1 mm		793.05	789.80	795.80	n/p	803.83	794.42	794.35	791.07	791.43	795.80
> 0.00; <1 mm	Base pan	0.12	0.52	0.00	n/p	0.00	0.65	0.50	3.99	-	0.00
	Oven dried	0.00	0.29	0.00	n/p	0.00	-	0.00	0.00	2.10	0.00
Total Sample Weight		793.17	790.61	795.80	n/p	803.83	795.07	794.86	795.06	793.53	795.80

- No data provided.

n/p - not participating in this exercise at current time.

* as calculated by Apem

PARTICIPANT DATA

Table 7. Raw sieve data (weight in grams) provided by participants for sediment distributed as PS79.

Phi interval (explicit) + sieve mesh	Benchmark Average	PSA_2710	PSA_2711	PSA_2712	PSA_2713	PSA_2714	PSA_2715	PSA_2716	PSA_2717
-6.50 to -6.00; 63 mm	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-4.00 to -3.50; 11.2 mm	0.00	n/p	7.42	9.48	3.79	0.00	0.00	19.06	2.09
-3.50 to -3.00; 8 mm	340.38	n/p	299.57	315.39	315.12	301.34	340.92	312.94	318.82
-3.00 to -2.50; 5.6 mm	256.91	n/p	261.47	271.29	282.14	304.58	248.52	268.75	283.34
-2.50 to -2.00; 4 mm	138.02	n/p	148.61	124.39	121.26	127.24	143.73	132.35	115.27
-2.00 to -1.50; 2.8 mm	57.25	n/p	65.44	64.03	68.56	58.54	57.43	61.53	73.94
-1.50 to -1.00; 2 mm	0.46	n/p	5.26	2.83	3.06	5.17	0.95	1.97	2.18
-1.00 to -0.50; 1.4 mm	0.02	n/p	0.02	0.08	0.04	0.04	0.03	0.01	0.10
-0.50 to 0.00; 1 mm	0.02	n/p	0.02	0.03	0.02	0.02	0.00	0.01	0.04
*Total**	793.05	n/p	787.79	787.52	793.99	796.93	791.58	796.62	795.78

Summary Data

		Benchmark Average	PSA_2710	PSA_2711	PSA_2712	PSA_2713	PSA_2714	PSA_2715	PSA_2716	PSA_2717
< 0.00; >1 mm		793.05	n/p	787.79	787.52	793.99	796.93	791.58	796.62	795.78
> 0.00; <1 mm	Base pan	0.12	n/p	2.82	0.33	0.42	0.09	0.12	0.00	0.00
	Oven dried	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Sample Weight		793.17	n/p	790.62	787.85	794.41	797.02	791.70	796.62	795.78

- No data provided.

n/p - not participating in this exercise at current time.

* as calculated by Apem

PARTICICPANT DATA

Table 8. Summary of final laser data for the participants for sediment distributed as PS79 with Gradistat output.

Microns	Benchmark Average	PSA_2701	PSA_2702	PSA_2703	PSA_2704	PSA_2705	PSA_2706
707	1.35	-	-	n/p	-	-	3.62
500	4.78	-	-	n/p	-	-	3.92
353.6	8.56	-	-	n/p	-	-	4.09
250	7.57	-	-	n/p	-	-	4.35
176.8	8.33	-	-	n/p	-	-	4.69
125	8.00	-	-	n/p	-	-	5.24
88.39	6.48	-	-	n/p	-	-	6.20
62.5	5.67	-	-	n/p	-	-	7.41
44.19	4.42	-	-	n/p	-	-	8.20
31.25	3.46	-	-	n/p	-	-	7.92
22.097	2.71	-	-	n/p	-	-	6.67
15.625	2.61	-	-	n/p	-	-	5.19
11.049	3.08	-	-	n/p	-	-	4.08
7.813	2.98	-	-	n/p	-	-	3.53
5.524	3.77	-	-	n/p	-	-	3.42
3.906	4.64	-	-	n/p	-	-	3.52
2.762	4.38	-	-	n/p	-	-	3.55
1.953	3.93	-	-	n/p	-	-	3.36
1.381	3.65	-	-	n/p	-	-	3.02
0.977	3.10	-	-	n/p	-	-	2.77
0.691	2.31	-	-	n/p	-	-	2.53
0.488	1.60	-	-	n/p	-	-	1.93
0.345	1.06	-	-	n/p	-	-	0.79
0.244	0.69	-	-	n/p	-	-	0.00
0.173	0.42	-	-	n/p	-	-	0.00
0.122	0.26	-	-	n/p	-	-	0.00
0.086	0.14	-	-	n/p	-	-	0.00
0.061	0.05	-	-	n/p	-	-	0.00
0.043	0.01	-	-	n/p	-	-	0.00
0.010	0.00	-	-	n/p	-	-	0.00
Total	100.00	-	-	n/p	-	-	100.00
GRADISTAT OUTPUTS							
MEAN:	Very Coarse Silt	-	-	n/p	-	-	Very Coarse Silt
SORTING:	Very Poorly Sorted	-	-	n/p	-	-	Very Poorly Sorted
SKEWNESS:	Very Fine Skewed	-	-	n/p	-	-	Fine Skewed
KURTOSIS:	Platykurtic	-	-	n/p	-	-	Mesokurtic
MODE:	Polymodal	-	-	n/p	-	-	Bimodal
MODE 1 (µm):	426.80	-	-	n/p	-	-	53.35
MODE 2 (µm):	213.40	-	-	n/p	-	-	3.33
MODE 3 (µm):	4.72	-	-	n/p	-	-	-

n/p - not participating in this exercise at current time.

PARTICICPANT DATA

Table 8. Summary of final laser data for the participants for sediment distributed as PS79 with Gradistat output.

Microns	BM Average	PSA_2707	PSA_2708	PSA_2709	PSA_2710	PSA_2711	PSA_2712
707	1.35	-	-	-	n/p	-	-
500	4.78	-	-	-	n/p	-	-
353.6	8.56	-	-	-	n/p	-	-
250	7.57	-	-	-	n/p	-	-
176.8	8.33	-	-	-	n/p	-	-
125	8.00	-	-	-	n/p	-	-
88.39	6.48	-	-	-	n/p	-	-
62.5	5.67	-	-	-	n/p	-	-
44.19	4.42	-	-	-	n/p	-	-
31.25	3.46	-	-	-	n/p	-	-
22.097	2.71	-	-	-	n/p	-	-
15.625	2.61	-	-	-	n/p	-	-
11.049	3.08	-	-	-	n/p	-	-
7.813	2.98	-	-	-	n/p	-	-
5.524	3.77	-	-	-	n/p	-	-
3.906	4.64	-	-	-	n/p	-	-
2.762	4.38	-	-	-	n/p	-	-
1.953	3.93	-	-	-	n/p	-	-
1.381	3.65	-	-	-	n/p	-	-
0.977	3.10	-	-	-	n/p	-	-
0.691	2.31	-	-	-	n/p	-	-
0.488	1.60	-	-	-	n/p	-	-
0.345	1.06	-	-	-	n/p	-	-
0.244	0.69	-	-	-	n/p	-	-
0.173	0.42	-	-	-	n/p	-	-
0.122	0.26	-	-	-	n/p	-	-
0.086	0.14	-	-	-	n/p	-	-
0.061	0.05	-	-	-	n/p	-	-
0.043	0.01	-	-	-	n/p	-	-
0.010	0.00	-	-	-	n/p	-	-
Total	100.00	-	-	-	n/p	-	-
GRADISTAT OUTPUTS							
MEAN:	Very Coarse Silt	-	-	-	n/p		-
SORTING:	Very Poorly Sorted	-	-	-	n/p		-
SKEWNESS:	Very Fine Skewed	-	-	-	n/p		-
KURTOSIS:	Platykurtic	-	-	-	n/p		-
MODE:	Polymodal	-	-	-	n/p		-
MODE 1 (µm):	426.80	-	-	-	n/p		-
MODE 2 (µm):	213.40	-	-	-	n/p		-
MODE 3 (µm):	4.72	-	-	-	n/p		-

n/p - not participating in this exercise at current time.

PARTICICPANT DATA

Table 8. Summary of final laser data for the participants for sediment distributed as PS79 with Gradistat output.

Microns	BM Average	PSA_2713	PSA_2714	PSA_2715	PSA_2716	PSA_2717
707	1.35	-	-	0.27	-	-
500	4.78	-	-	4.94	-	-
353.6	8.56	-	-	10.65	-	-
250	7.57	-	-	11.18	-	-
176.8	8.33	-	-	10.94	-	-
125	8.00	-	-	10.40	-	-
88.39	6.48	-	-	8.70	-	-
62.5	5.67	-	-	6.72	-	-
44.19	4.42	-	-	5.58	-	-
31.25	3.46	-	-	4.79	-	-
22.097	2.71	-	-	3.41	-	-
15.625	2.61	-	-	2.49	-	-
11.049	3.08	-	-	2.13	-	-
7.813	2.98	-	-	2.03	-	-
5.524	3.77	-	-	2.30	-	-
3.906	4.64	-	-	2.48	-	-
2.762	4.38	-	-	2.24	-	-
1.953	3.93	-	-	1.84	-	-
1.381	3.65	-	-	1.55	-	-
0.977	3.10	-	-	1.31	-	-
0.691	2.31	-	-	1.08	-	-
0.488	1.60	-	-	0.87	-	-
0.345	1.06	-	-	0.68	-	-
0.244	0.69	-	-	0.53	-	-
0.173	0.42	-	-	0.38	-	-
0.122	0.26	-	-	0.28	-	-
0.086	0.14	-	-	0.17	-	-
0.061	0.05	-	-	0.07	-	-
0.043	0.01	-	-	0.01	-	-
0.010	0.00	-	-	0.00	-	-
Total	100.00	-	-	100.00	-	-
GRADISTAT OUTPUTS						
MEAN:	Very Coarse Silt	-	-	Very Fine Sand	-	-
SORTING:	Very Poorly Sorted	-	-	Very Poorly Sorted	-	-
SKEWNESS:	Very Fine Skewed	-	-	Very Fine Skewed	-	-
KURTOSIS:	Platykurtic	-	-	Mesokurtic	-	-
MODE:	Polymodal	-	-	Bimodal	-	-
MODE 1 (µm):	426.80	-	-	301.80	-	-
MODE 2 (µm):	213.40	-	-	4.72	-	-
MODE 3 (µm):	4.72	-	-	-	-	-

n/p - not participating in this exercise at current time.

Figure 4. Final sieve data (in percentages) provided by each participant for sediment distributed as PS79.

NMBAQC Particle Size Analysis
2020/21 - PS79
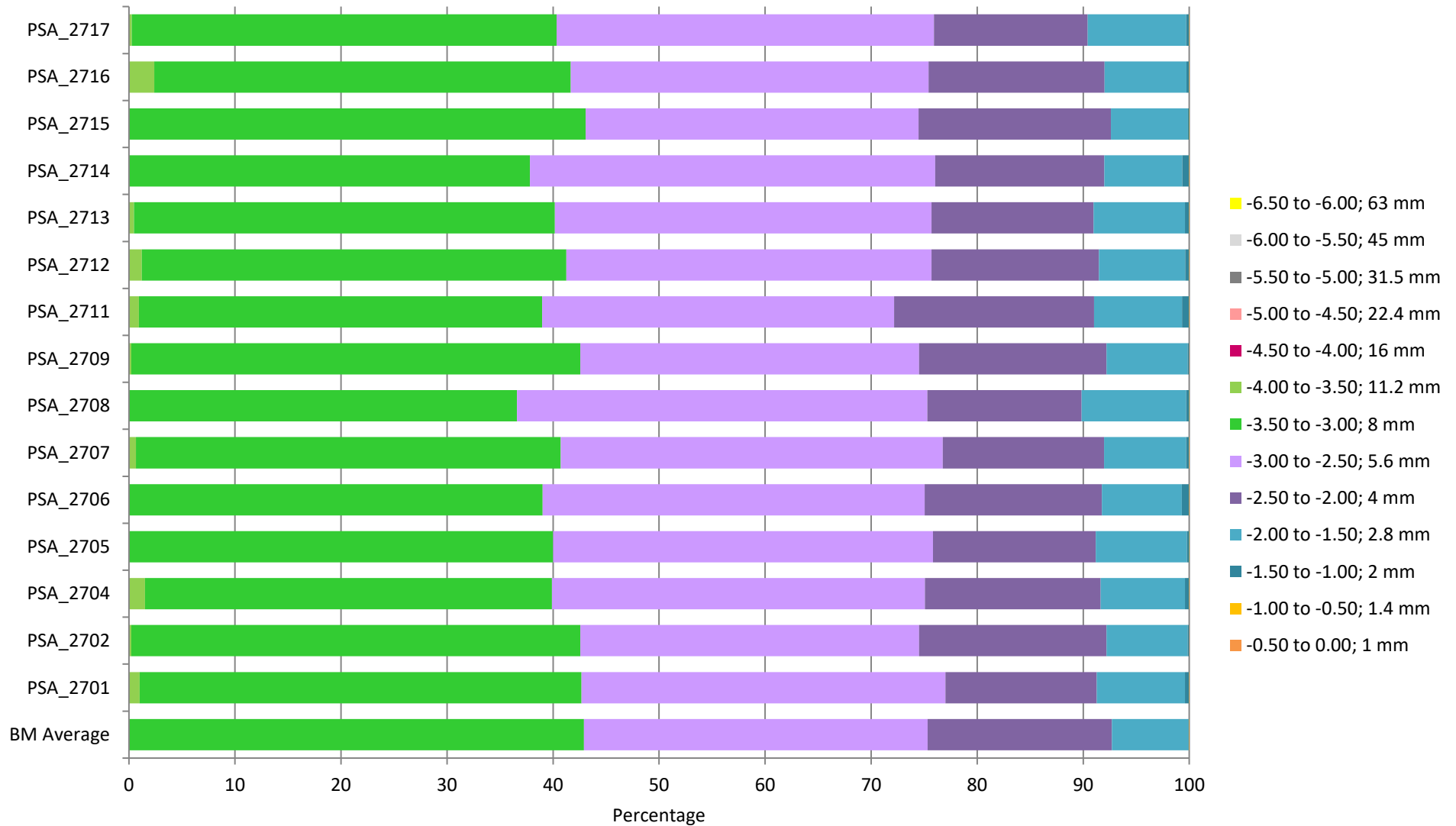
Figure 5. **(a)** Cumulative and **(b)** Differential final laser data provided by the participants and Benchmark average for sediment distributed as PS79.
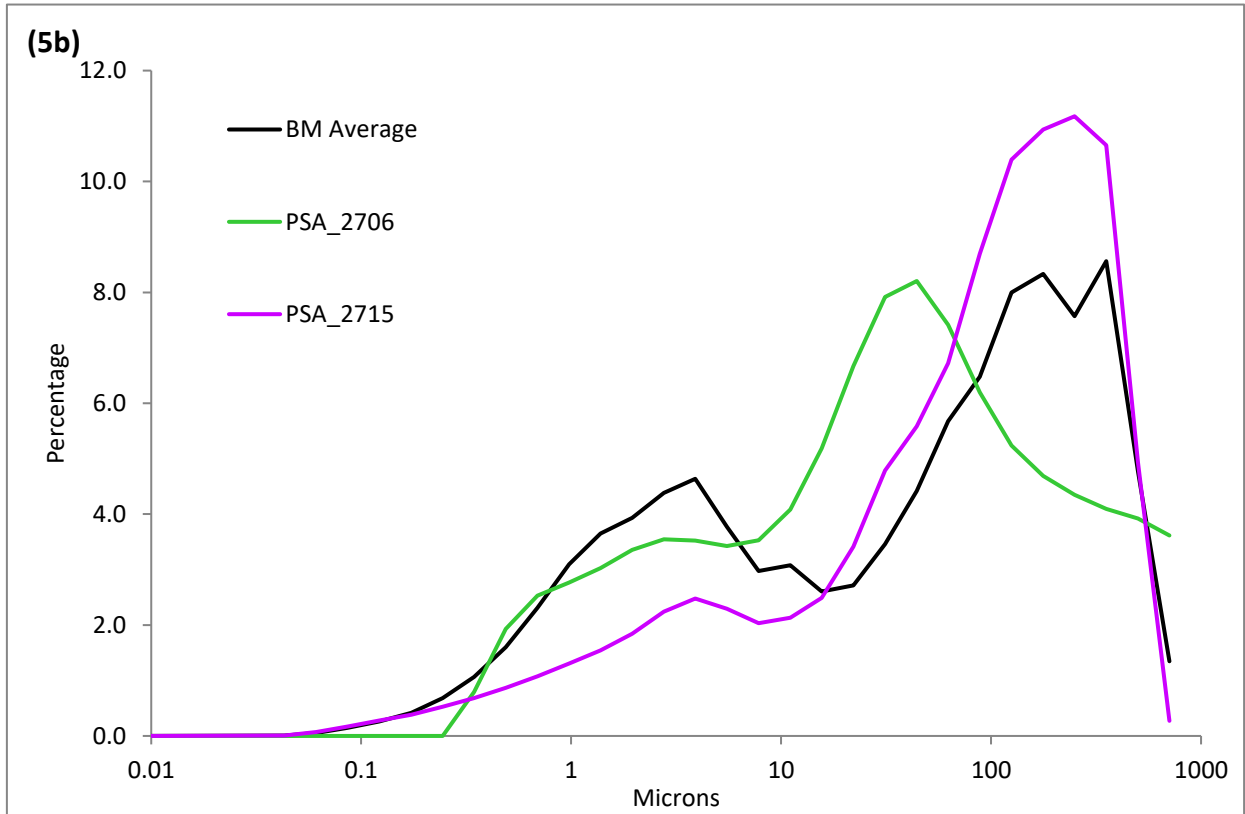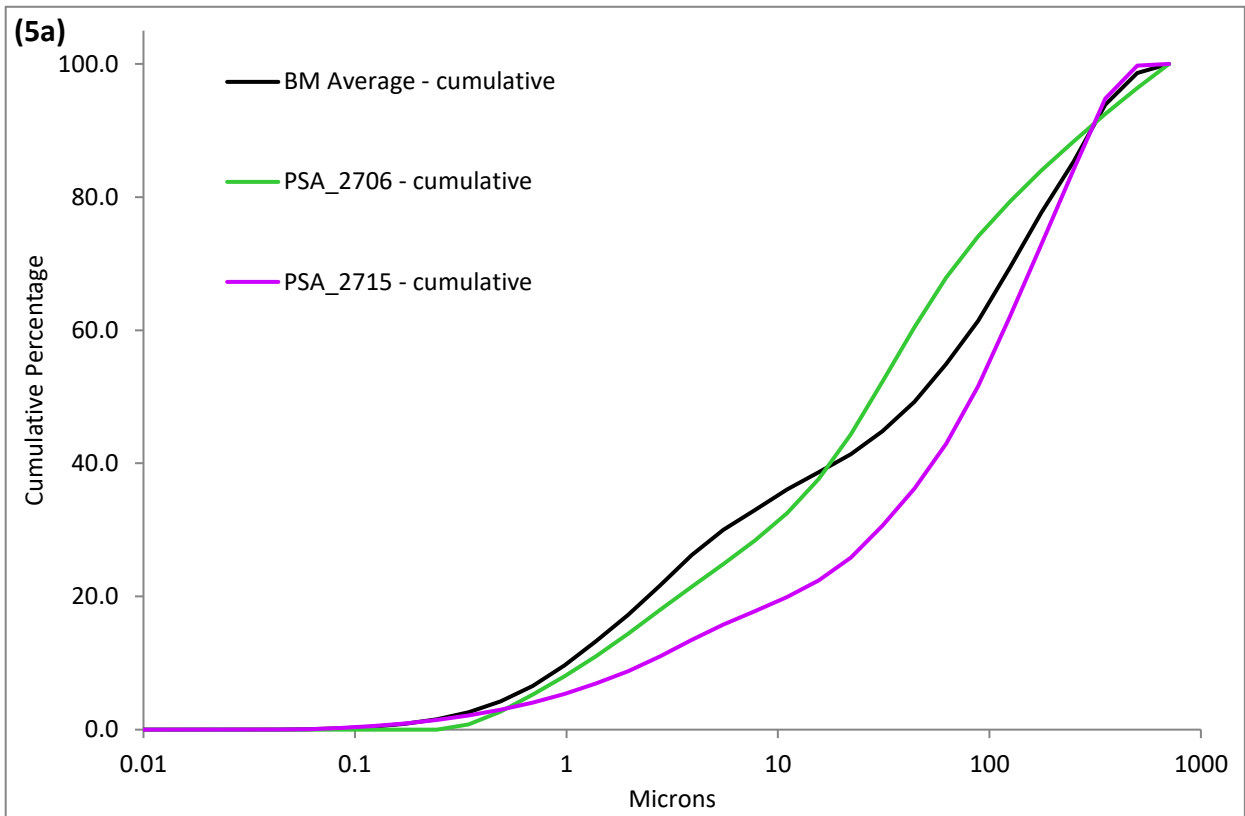
Figure 6. Individual comparisons of participant sieve data with the Benchmark Average for sediment distributed as PS79.

NMBAQC Particle Size Analysis
2020/21 - PS79

Figure 6. Individual comparisons of participant sieve data with the Benchmark Average for sediment distributed as PS79.

NMBAQC Particle Size Analysis
2020/21 - PS79
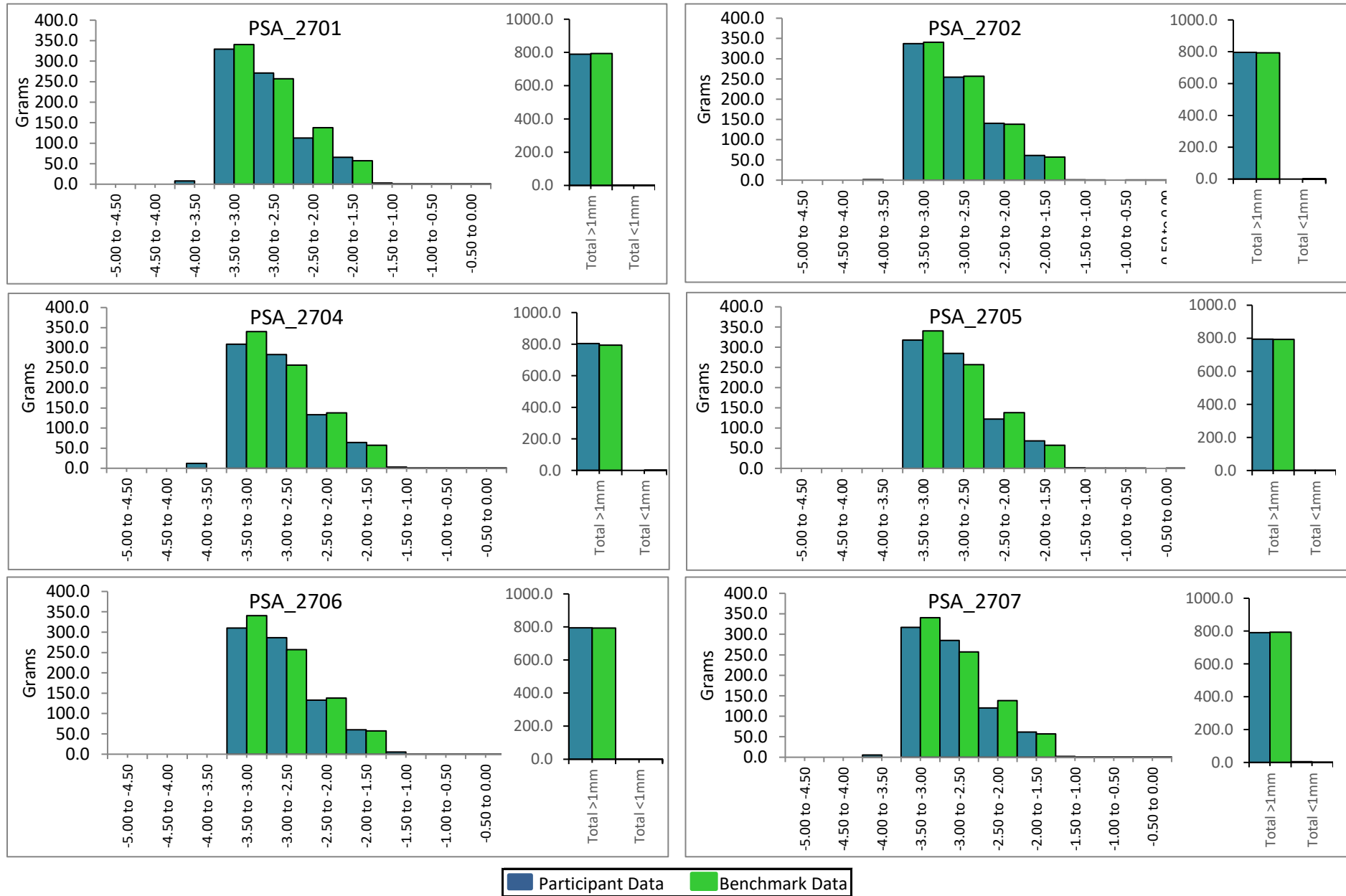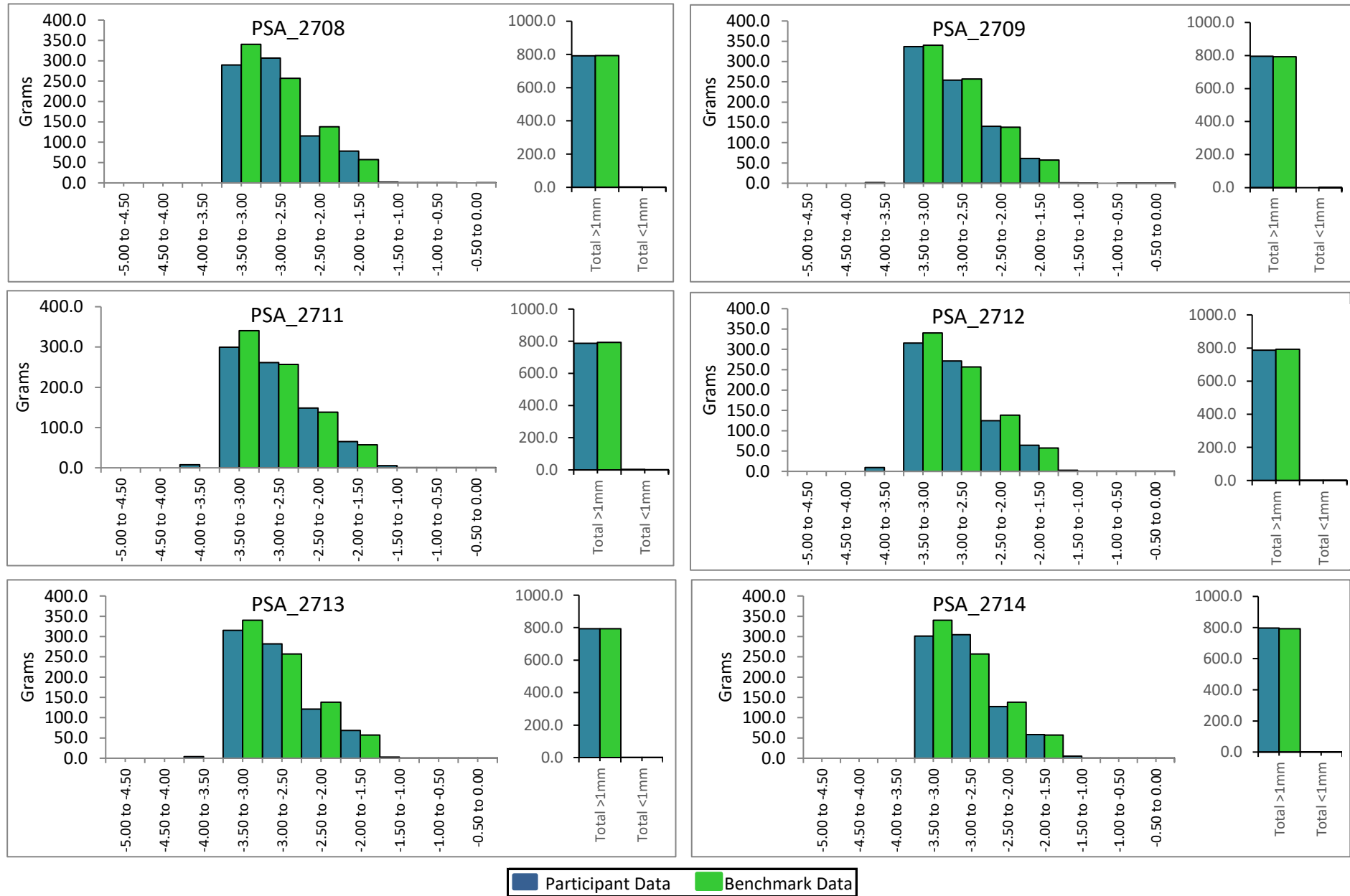
Figure 6. Individual comparisons of participant sieve data with the Benchmark Average for sediment distributed as PS79.
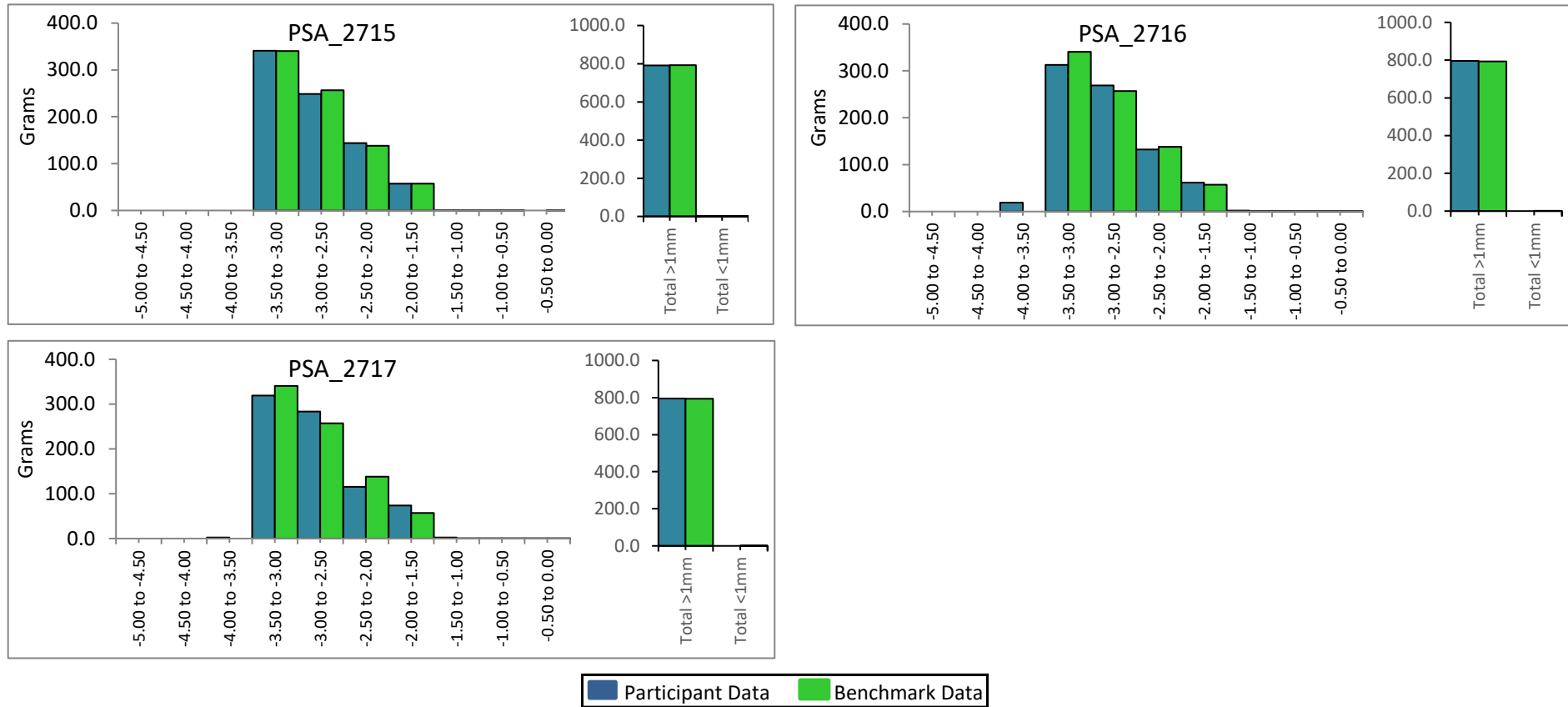
Figure 7. Particle size distribution curves from all participating laboratories and the Benchmark Average for sediment distributed as PS79.

NMBAQC Particle Size Analysis

2020/21 - PS79
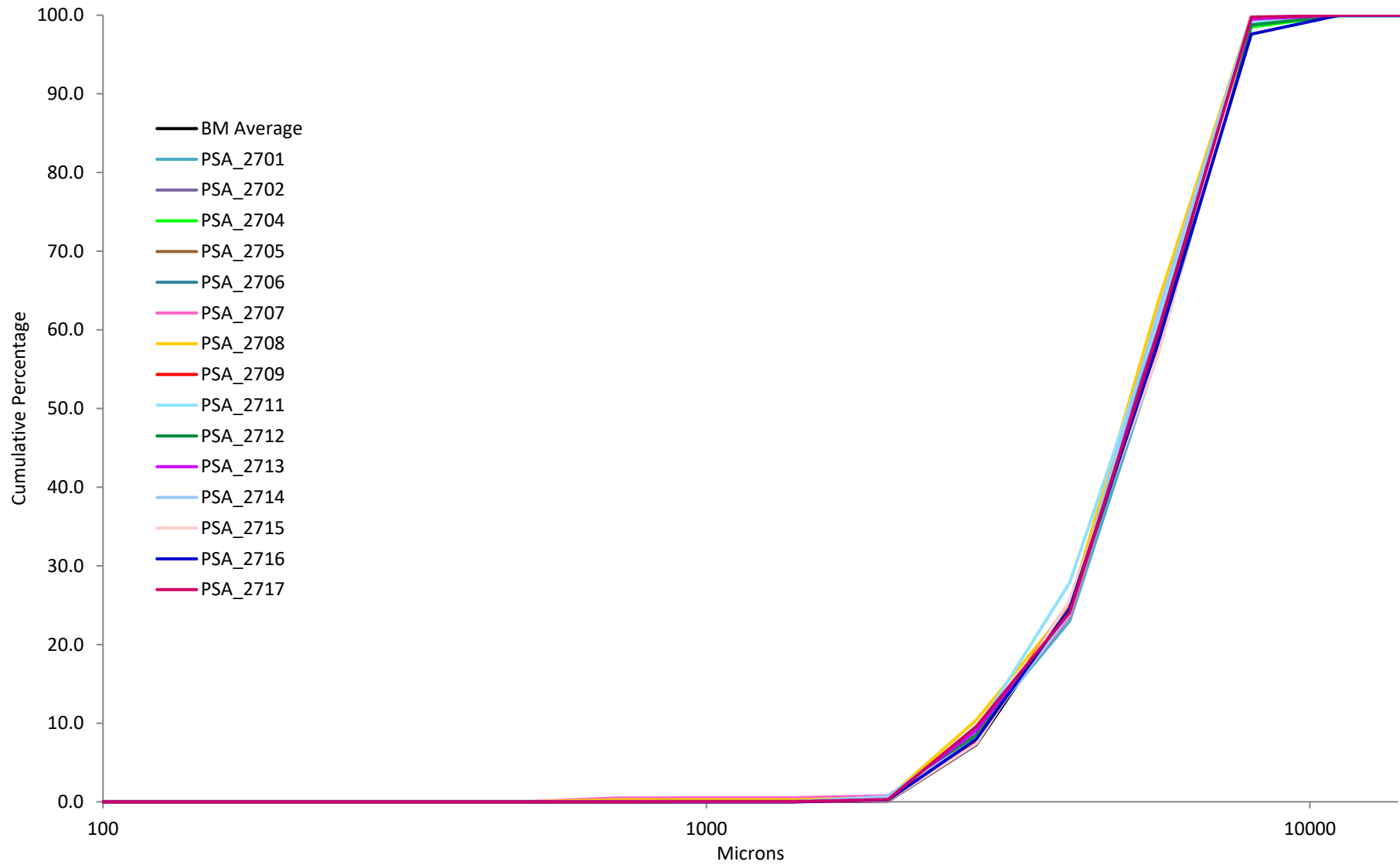
Figure 8. Bar chart showing the percentage very fine, fine and medium gravel recorded by each participating laboratory and the Benchmark Average for PS79.
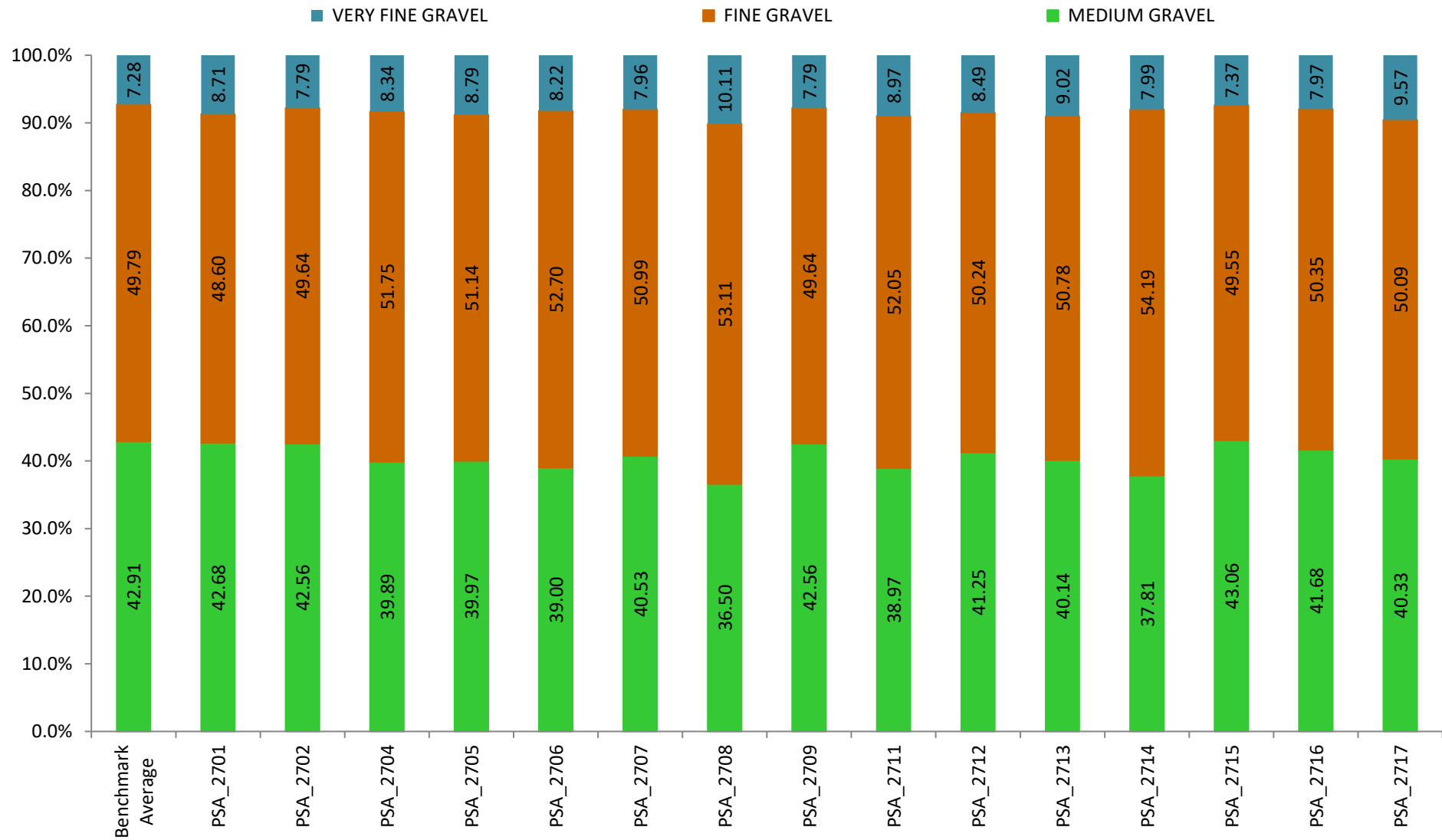
APPENDICES

APPENDIX 1. Benchmark laser replicate data for sediment distributed as PS79.

	Replicate Sample 1								
	Subsample 1			Subsample 2			Subsample 3		
	Run 1a	Run 1b	Run 1c	Run 2a	Run 2b	Run 2c	Run 3a	Run 3b	Run 3c
0.00 to 0.50; (707 μm)	1.88	3.02	2.20	-	-	-	-	-	-
0.50 to 1.00; (500 μm)	6.50	6.44	6.93	-	-	-	-	-	-
1.00 to 1.50; (353.6 μm)	10.04	10.14	10.12	-	-	-	-	-	-
1.50 to 2.00; (250 μm)	9.07	9.66	9.38	-	-	-	-	-	-
2.00 to 2.50; (176.8 μm)	9.09	9.10	9.16	-	-	-	-	-	-
2.50 to 3.00; (125 μm)	8.14	8.12	7.71	-	-	-	-	-	-
3.00 to 3.50; (88.39 μm)	7.39	6.86	6.64	-	-	-	-	-	-
3.50 to 4.00; (62.5 μm)	5.78	5.37	5.34	-	-	-	-	-	-
4.00 to 4.50; (44.19 μm)	4.17	3.98	3.97	-	-	-	-	-	-
4.50 to 5.00; (31.25 μm)	3.58	3.42	3.42	-	-	-	-	-	-
5.00 to 5.50; (22.097 μm)	2.80	2.77	2.85	-	-	-	-	-	-
5.50 to 6.00; (15.625 μm)	2.65	2.64	2.73	-	-	-	-	-	-
6.00 to 6.50; (11.049 μm)	2.82	2.79	2.90	-	-	-	-	-	-
6.50 to 7.00; (7.813 μm)	2.77	2.73	2.84	-	-	-	-	-	-
7.00 to 7.50; (5.524 μm)	3.26	3.17	3.28	-	-	-	-	-	-
7.50 to 8.00; (3.906 μm)	3.66	3.55	3.67	-	-	-	-	-	-
8.00 to 8.50; (2.762 μm)	3.31	3.24	3.35	-	-	-	-	-	-
8.50 to 9.00; (1.953 μm)	2.80	2.80	2.91	-	-	-	-	-	-
9.00 to 9.50; (1.381 μm)	2.48	2.53	2.66	-	-	-	-	-	-
9.50 to 10.00; (0.977 μm)	2.14	2.20	2.31	-	-	-	-	-	-
10.00 to 10.50; (0.691 μm)	1.71	1.73	1.82	-	-	-	-	-	-
10.50 to 11.00; (0.488 μm)	1.30	1.29	1.34	-	-	-	-	-	-
11.00 to 11.50; (0.345 μm)	0.95	0.92	0.94	-	-	-	-	-	-
11.50 to 12.00; (0.244 μm)	0.68	0.64	0.65	-	-	-	-	-	-
12.00 to 12.50; (0.173 μm)	0.46	0.41	0.41	-	-	-	-	-	-
12.50 to 13.00; (0.122 μm)	0.31	0.27	0.27	-	-	-	-	-	-
13.00 to 13.50; (0.086 μm)	0.18	0.16	0.16	-	-	-	-	-	-
13.50 to 14.00; (0.061 μm)	0.07	0.06	0.06	-	-	-	-	-	-
14.00 to 14.50; (0.043 μm)	0.01	0.01	0.01	-	-	-	-	-	-

	Run 1a	Run 1b	Run 1c	Run 2a	Run 2b	Run 2c	Run 3a	Run 3b	Run 3c
d10	1.87	1.90	1.80	-	-	-	-	-	-
d50	97.60	104.60	98.81	-	-	-	-	-	-
d90	472.79	490.86	485.30	-	-	-	-	-	-

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	1.86	0.05	2.61	-	-	-	-	-	-
d50	100.34	3.74	3.73	-	-	-	-	-	-
d90	482.99	9.26	1.92	-	-	-	-	-	-

APPENDIX 1. Benchmark laser replicate data for sediment distributed as PS79.

| | Replicate Sample 2 | | | | | | | | |
| | Subsample 1 | | | Subsample 2 | | | Subsample 3 | | |
	Run 1a	Run 1b	Run 1c	Run 2a	Run 2b	Run 2c	Run 3a	Run 3b	Run 3c
0.00 to 0.50; (707 μm)	0.61	0.03	0.69	-	-	-	-	-	-
0.50 to 1.00; (500 μm)	3.28	2.07	2.72	-	-	-	-	-	-
1.00 to 1.50; (353.6 μm)	6.10	6.76	5.22	-	-	-	-	-	-
1.50 to 2.00; (250 μm)	5.76	6.36	5.75	-	-	-	-	-	-
2.00 to 2.50; (176.8 μm)	7.24	7.02	7.62	-	-	-	-	-	-
2.50 to 3.00; (125 μm)	8.66	7.89	8.04	-	-	-	-	-	-
3.00 to 3.50; (88.39 μm)	7.47	6.99	6.79	-	-	-	-	-	-
3.50 to 4.00; (62.5 μm)	5.87	5.74	5.83	-	-	-	-	-	-
4.00 to 4.50; (44.19 μm)	4.39	4.31	4.15	-	-	-	-	-	-
4.50 to 5.00; (31.25 μm)	3.75	3.97	4.00	-	-	-	-	-	-
5.00 to 5.50; (22.097 μm)	3.06	3.21	3.29	-	-	-	-	-	-
5.50 to 6.00; (15.625 μm)	2.85	2.94	2.91	-	-	-	-	-	-
6.00 to 6.50; (11.049 μm)	3.25	3.44	3.52	-	-	-	-	-	-
6.50 to 7.00; (7.813 μm)	3.26	3.37	3.40	-	-	-	-	-	-
7.00 to 7.50; (5.524 μm)	4.47	4.51	4.48	-	-	-	-	-	-
7.50 to 8.00; (3.906 μm)	5.71	5.77	5.74	-	-	-	-	-	-
8.00 to 8.50; (2.762 μm)	5.36	5.52	5.53	-	-	-	-	-	-
8.50 to 9.00; (1.953 μm)	4.41	4.76	4.84	-	-	-	-	-	-
9.00 to 9.50; (1.381 μm)	3.72	4.15	4.29	-	-	-	-	-	-
9.50 to 10.00; (0.977 μm)	3.07	3.43	3.54	-	-	-	-	-	-
10.00 to 10.50; (0.691 μm)	2.39	2.58	2.64	-	-	-	-	-	-
10.50 to 11.00; (0.488 μm)	1.78	1.84	1.85	-	-	-	-	-	-
11.00 to 11.50; (0.345 μm)	1.29	1.27	1.25	-	-	-	-	-	-
11.50 to 12.00; (0.244 μm)	0.91	0.86	0.82	-	-	-	-	-	-
12.00 to 12.50; (0.173 μm)	0.61	0.55	0.51	-	-	-	-	-	-
12.50 to 13.00; (0.122 μm)	0.41	0.36	0.33	-	-	-	-	-	-
13.00 to 13.50; (0.086 μm)	0.24	0.20	0.18	-	-	-	-	-	-
13.50 to 14.00; (0.061 μm)	0.09	0.08	0.07	-	-	-	-	-	-
14.00 to 14.50; (0.043 μm)	0.01	0.01	0.01	-	-	-	-	-	-

	Run 1a	Run 1b	Run 1c	Run 2a	Run 2b	Run 2c	Run 3a	Run 3b	Run 3c
d10	1.26	1.23	1.23	-	-	-	-	-	-
d50	41.70	34.54	33.52	-	-	-	-	-	-
d90	353.24	332.47	325.55	-	-	-	-	-	-

| | Subsample 1 | | | Subsample 2 | | | Subsample 3 | | |
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	1.24	0.02	1.57	-	-	-	-	-	-
d50	36.58	4.46	12.19	-	-	-	-	-	-
d90	337.08	14.41	4.28	-	-	-	-	-	-

APPENDIX 1. Benchmark laser replicate data for sediment distributed as PS79.

	Replicate Sample 3								
	Subsample 1			Subsample 2			Subsample 3		
	Run 1a	Run 1b	Run 1c	Run 2a	Run 2b	Run 2c	Run 3a	Run 3b	Run 3c
0.00 to 0.50; (707 µm)	2.02	0.57	1.65	-	-	-	-	-	-
0.50 to 1.00; (500 µm)	6.40	5.51	6.56	-	-	-	-	-	-
1.00 to 1.50; (353.6 µm)	9.66	9.36	10.19	-	-	-	-	-	-
1.50 to 2.00; (250 µm)	7.70	7.16	7.91	-	-	-	-	-	-
2.00 to 2.50; (176.8 µm)	7.71	7.66	7.93	-	-	-	-	-	-
2.50 to 3.00; (125 µm)	6.75	6.72	5.97	-	-	-	-	-	-
3.00 to 3.50; (88.39 µm)	5.22	4.97	5.47	-	-	-	-	-	-
3.50 to 4.00; (62.5 µm)	4.96	5.25	5.37	-	-	-	-	-	-
4.00 to 4.50; (44.19 µm)	4.08	4.23	3.78	-	-	-	-	-	-
4.50 to 5.00; (31.25 µm)	3.84	4.06	3.75	-	-	-	-	-	-
5.00 to 5.50; (22.097 µm)	2.60	2.77	2.55	-	-	-	-	-	-
5.50 to 6.00; (15.625 µm)	2.81	3.01	2.75	-	-	-	-	-	-
6.00 to 6.50; (11.049 µm)	3.31	3.57	3.36	-	-	-	-	-	-
6.50 to 7.00; (7.813 µm)	3.09	3.32	3.02	-	-	-	-	-	-
7.00 to 7.50; (5.524 µm)	3.88	4.14	3.75	-	-	-	-	-	-
7.50 to 8.00; (3.906 µm)	4.69	5.00	4.60	-	-	-	-	-	-
8.00 to 8.50; (2.762 µm)	4.39	4.67	4.31	-	-	-	-	-	-
8.50 to 9.00; (1.953 µm)	3.92	4.20	3.97	-	-	-	-	-	-
9.00 to 9.50; (1.381 µm)	3.64	3.93	3.77	-	-	-	-	-	-
9.50 to 10.00; (0.977 µm)	3.09	3.34	3.18	-	-	-	-	-	-
10.00 to 10.50; (0.691 µm)	2.30	2.47	2.32	-	-	-	-	-	-
10.50 to 11.00; (0.488 µm)	1.58	1.67	1.56	-	-	-	-	-	-
11.00 to 11.50; (0.345 µm)	1.02	1.07	0.99	-	-	-	-	-	-
11.50 to 12.00; (0.244 µm)	0.63	0.65	0.60	-	-	-	-	-	-
12.00 to 12.50; (0.173 µm)	0.36	0.36	0.34	-	-	-	-	-	-
12.50 to 13.00; (0.122 µm)	0.21	0.21	0.20	-	-	-	-	-	-
13.00 to 13.50; (0.086 µm)	0.11	0.11	0.10	-	-	-	-	-	-
13.50 to 14.00; (0.061 µm)	0.04	0.04	0.04	-	-	-	-	-	-
14.00 to 14.50; (0.043 µm)	0.00	0.00	0.00	-	-	-	-	-	-

	Run 1a	Run 1b	Run 1c	Run 2a	Run 2b	Run 2c	Run 3a	Run 3b	Run 3c
d10	1.47	1.39	1.47	-	-	-	-	-	-
d50	64.38	49.66	66.90	-	-	-	-	-	-
d90	472.35	432.45	470.37	-	-	-	-	-	-

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	1.44	0.05	3.14	-	-	-	-	-	-
d50	60.31	9.31	15.44	-	-	-	-	-	-
d90	458.39	22.49	4.91	-	-	-	-	-	-

APPENDIX 1. Benchmark laser replicate data for sediment distributed as PS79.

| | Replicate Sample 4 | | | | | | | | |
| | Subsample 1 | | | Subsample 2 | | | Subsample 3 | | |
	Run 1a	Run 1b	Run 1c	Run 2a	Run 2b	Run 2c	Run 3a	Run 3b	Run 3c
0.00 to 0.50; (707 µm)	0.88	1.22	0.64	-	-	-	-	-	-
0.50 to 1.00; (500 µm)	4.83	3.93	4.57	-	-	-	-	-	-
1.00 to 1.50; (353.6 µm)	7.44	8.80	7.97	-	-	-	-	-	-
1.50 to 2.00; (250 µm)	5.45	6.58	5.98	-	-	-	-	-	-
2.00 to 2.50; (176.8 µm)	7.21	7.23	7.15	-	-	-	-	-	-
2.50 to 3.00; (125 µm)	7.26	7.17	7.09	-	-	-	-	-	-
3.00 to 3.50; (88.39 µm)	5.45	4.87	4.80	-	-	-	-	-	-
3.50 to 4.00; (62.5 µm)	5.09	4.66	4.80	-	-	-	-	-	-
4.00 to 4.50; (44.19 µm)	4.24	4.13	4.25	-	-	-	-	-	-
4.50 to 5.00; (31.25 µm)	3.09	2.95	2.90	-	-	-	-	-	-
5.00 to 5.50; (22.097 µm)	2.74	2.70	2.85	-	-	-	-	-	-
5.50 to 6.00; (15.625 µm)	2.63	2.56	2.61	-	-	-	-	-	-
6.00 to 6.50; (11.049 µm)	3.42	3.40	3.48	-	-	-	-	-	-
6.50 to 7.00; (7.813 µm)	3.33	3.30	3.32	-	-	-	-	-	-
7.00 to 7.50; (5.524 µm)	4.32	4.27	4.29	-	-	-	-	-	-
7.50 to 8.00; (3.906 µm)	5.50	5.43	5.53	-	-	-	-	-	-
8.00 to 8.50; (2.762 µm)	5.30	5.19	5.27	-	-	-	-	-	-
8.50 to 9.00; (1.953 µm)	4.96	4.91	5.08	-	-	-	-	-	-
9.00 to 9.50; (1.381 µm)	4.80	4.84	5.10	-	-	-	-	-	-
9.50 to 10.00; (0.977 µm)	4.11	4.15	4.37	-	-	-	-	-	-
10.00 to 10.50; (0.691 µm)	2.99	3.00	3.12	-	-	-	-	-	-
10.50 to 11.00; (0.488 µm)	1.99	1.95	2.01	-	-	-	-	-	-
11.00 to 11.50; (0.345 µm)	1.26	1.21	1.23	-	-	-	-	-	-
11.50 to 12.00; (0.244 µm)	0.77	0.72	0.74	-	-	-	-	-	-
12.00 to 12.50; (0.173 µm)	0.45	0.41	0.42	-	-	-	-	-	-
12.50 to 13.00; (0.122 µm)	0.27	0.24	0.25	-	-	-	-	-	-
13.00 to 13.50; (0.086 µm)	0.15	0.13	0.13	-	-	-	-	-	-
13.50 to 14.00; (0.061 µm)	0.05	0.05	0.05	-	-	-	-	-	-
14.00 to 14.50; (0.043 µm)	0.01	0.01	0.01	-	-	-	-	-	-

	Run 1a	Run 1b	Run 1c	Run 2a	Run 2b	Run 2c	Run 3a	Run 3b	Run 3c
d10	1.16	1.18	1.15	-	-	-	-	-	-
d50	34.73	37.45	31.79	-	-	-	-	-	-
d90	409.34	413.05	405.94	-	-	-	-	-	-

| | Subsample 1 | | | Subsample 2 | | | Subsample 3 | | |
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	1.16	0.02	1.48	-	-	-	-	-	-
d50	34.65	2.83	8.16	-	-	-	-	-	-
d90	409.45	3.55	0.87	-	-	-	-	-	-

APPENDIX 1. Benchmark laser replicate data for sediment distributed as PS79.

| | Replicate Sample 5 | | | | | | | | |
| | Subsample 1 | | | Subsample 2 | | | Subsample 3 | | |
	Run 1a	Run 1b	Run 1c	Run 2a	Run 2b	Run 2c	Run 3a	Run 3b	Run 3c
0.00 to 0.50; (707 µm)	0.96	2.33	1.50	-	-	-	-	-	-
0.50 to 1.00; (500 µm)	3.40	3.97	4.54	-	-	-	-	-	-
1.00 to 1.50; (353.6 µm)	8.96	8.76	8.92	-	-	-	-	-	-
1.50 to 2.00; (250 µm)	8.97	8.86	8.96	-	-	-	-	-	-
2.00 to 2.50; (176.8 µm)	10.20	10.27	10.40	-	-	-	-	-	-
2.50 to 3.00; (125 µm)	10.56	9.90	9.94	-	-	-	-	-	-
3.00 to 3.50; (88.39 µm)	8.41	8.05	7.81	-	-	-	-	-	-
3.50 to 4.00; (62.5 µm)	7.32	6.98	6.76	-	-	-	-	-	-
4.00 to 4.50; (44.19 µm)	5.61	5.54	5.49	-	-	-	-	-	-
4.50 to 5.00; (31.25 µm)	3.15	3.05	2.96	-	-	-	-	-	-
5.00 to 5.50; (22.097 µm)	2.14	2.21	2.17	-	-	-	-	-	-
5.50 to 6.00; (15.625 µm)	1.99	1.98	2.05	-	-	-	-	-	-
6.00 to 6.50; (11.049 µm)	2.29	2.30	2.31	-	-	-	-	-	-
6.50 to 7.00; (7.813 µm)	2.31	2.25	2.33	-	-	-	-	-	-
7.00 to 7.50; (5.524 µm)	2.97	2.84	2.94	-	-	-	-	-	-
7.50 to 8.00; (3.906 µm)	3.64	3.53	3.58	-	-	-	-	-	-
8.00 to 8.50; (2.762 µm)	3.48	3.38	3.42	-	-	-	-	-	-
8.50 to 9.00; (1.953 µm)	3.10	3.16	3.16	-	-	-	-	-	-
9.00 to 9.50; (1.381 µm)	2.82	3.00	3.01	-	-	-	-	-	-
9.50 to 10.00; (0.977 µm)	2.39	2.54	2.59	-	-	-	-	-	-
10.00 to 10.50; (0.691 µm)	1.81	1.87	1.92	-	-	-	-	-	-
10.50 to 11.00; (0.488 µm)	1.28	1.27	1.31	-	-	-	-	-	-
11.00 to 11.50; (0.345 µm)	0.87	0.82	0.84	-	-	-	-	-	-
11.50 to 12.00; (0.244 µm)	0.58	0.52	0.51	-	-	-	-	-	-
12.00 to 12.50; (0.173 µm)	0.36	0.31	0.30	-	-	-	-	-	-
12.50 to 13.00; (0.122 µm)	0.23	0.19	0.17	-	-	-	-	-	-
13.00 to 13.50; (0.086 µm)	0.13	0.10	0.09	-	-	-	-	-	-
13.50 to 14.00; (0.061 µm)	0.05	0.04	0.03	-	-	-	-	-	-
14.00 to 14.50; (0.043 µm)	0.01	0.00	0.00	-	-	-	-	-	-

	Run 1a	Run 1b	Run 1c	Run 2a	Run 2b	Run 2c	Run 3a	Run 3b	Run 3c
d10	1.83	1.81	1.79	-	-	-	-	-	-
d50	93.84	96.93	96.89	-	-	-	-	-	-
d90	401.96	431.99	428.67	-	-	-	-	-	-

| | Subsample 1 | | | Subsample 2 | | | Subsample 3 | | |
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	1.81	0.02	1.22	-	-	-	-	-	-
d50	95.89	1.77	1.85	-	-	-	-	-	-
d90	420.88	16.46	3.91	-	-	-	-	-	-

APPENDIX 2. Gradistat output of size categories based on final merged data provided by each participant and the Benchmark Average for sediment distributed as PS79 (used to create Figure 8).

	BM Average	PSA_2701	PSA_2702	PSA_2703	PSA_2704	PSA_2705	PSA_2706	PSA_2707	PSA_2708	PSA_2709
VERY COARSE GRAVEL	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00
COARSE GRAVEL	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00
MEDIUM GRAVEL	42.91	42.68	42.56	n/p	39.89	39.97	39.00	40.53	36.50	42.56
FINE GRAVEL	49.79	48.60	49.64	n/p	51.75	51.14	52.70	50.99	53.11	49.64
VERY FINE GRAVEL	7.28	8.71	7.79	n/p	8.34	8.79	8.22	7.96	10.11	7.79
VERY COARSE SAND	0.00	0.01	0.01	n/p	0.02	0.10	0.01	0.02	0.01	0.01
COARSE SAND	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.50	0.26	0.00
MEDIUM SAND	0.00	0.00	0.00	n/p	0.00	0.00	0.01	0.00	0.00	0.00
FINE SAND	0.00	0.00	0.00	n/p	0.00	0.00	0.01	0.00	0.00	0.00
VERY FINE SAND	0.00	0.00	0.00	n/p	0.00	0.00	0.01	0.00	0.00	0.00
VERY COARSE SILT	0.00	0.00	0.00	n/p	0.00	0.00	0.01	0.00	0.00	0.00
COARSE SILT	0.00	0.00	0.00	n/p	0.00	0.00	0.01	0.00	0.00	0.00
MEDIUM SILT	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00
FINE SILT	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00
VERY FINE SILT	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00
CLAY	0.00	0.00	0.00	n/p	0.00	0.00	0.01	0.00	0.00	0.00
GRAVEL	99.98	99.99	99.99	n/p	99.98	99.90	99.93	99.47	99.72	99.99
SAND	0.01	0.01	0.01	n/p	0.02	0.10	0.04	0.53	0.28	0.01
SILT	0.01	0.00	0.00	n/p	0.00	0.00	0.03	0.00	0.00	0.00
CLAY	0.00	0.00	0.00	n/p	0.00	0.00	0.01	0.00	0.00	0.00

n/p - not participating in this exercise at current time.

APPENDIX 2. Gradistat output of size categories based on final merged data provided by each participant and the Benchmark Average for sediment distributed as PS79 (used to create Figure 8).

	BM Average	PSA_2710	PSA_2711	PSA_2712	PSA_2713	PSA_2714	PSA_2715	PSA_2716	PSA_2717
VERY COARSE GRAVEL	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COARSE GRAVEL	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEDIUM GRAVEL	42.91	n/p	38.97	41.25	40.14	37.81	43.06	41.68	40.33
FINE GRAVEL	49.79	n/p	52.05	50.24	50.78	54.19	49.55	50.35	50.09
VERY FINE GRAVEL	7.28	n/p	8.97	8.49	9.02	7.99	7.37	7.97	9.57
VERY COARSE SAND	0.00	n/p	0.00	0.01	0.01	0.01	0.00	0.00	0.02
COARSE SAND	0.00	n/p	0.00	0.00	0.05	0.00	0.00	0.00	0.00
MEDIUM SAND	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FINE SAND	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VERY FINE SAND	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VERY COARSE SILT	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COARSE SILT	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEDIUM SILT	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FINE SILT	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VERY FINE SILT	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CLAY	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRAVEL	99.98	n/p	100.00	99.99	99.94	99.99	99.98	100.00	99.98
SAND	0.01	n/p	0.00	0.01	0.06	0.01	0.01	0.00	0.02
SILT	0.01	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CLAY	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00

n/p - not participating in this exercise at current time.

NMBAQC Particle Size Analysis
2020/21 - PS79

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79
LabCode:	PSA_2701
Sample Code:	PS792701

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage	Grams
	(mark as "0" for no material & leave blank for not analysed)	
-6.50 to -6.00; 63 mm	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00
-4.00 to -3.50; 11.2 mm	1.00	7.94
-3.50 to -3.00; 8 mm	41.63	329.17
-3.00 to -2.50; 5.6 mm	34.29	271.07
-2.50 to -2.00; 4 mm	14.26	112.77
-2.00 to -1.50; 2.8 mm	8.32	65.77
-1.50 to -1.00; 2 mm	0.38	3.04
-1.00 to -0.50; 1.4 mm	0.00	0.02
-0.50 to 0.00; 1 mm	0.00	0.02
0.00 to 0.50; (707 µm)	0.10	0.81
0.50 to 1.00; (500 µm)		
1.00 to 1.50; (353.6 µm)		
1.50 to 2.00; (250 µm)		
2.00 to 2.50; (176.8 µm)		
2.50 to 3.00; (125 µm)		
3.00 to 3.50; (88.39 µm)		
3.50 to 4.00; (62.5 µm)		
4.00 to 4.50; (44.19 µm)		
4.50 to 5.00; (31.25 µm)		
5.00 to 5.50; (22.097 µm)		
5.50 to 6.00; (15.625 µm)		
6.00 to 6.50; (11.049 µm)		
6.50 to 7.00; (7.813 µm)		
7.00 to 7.50; (5.524 µm)		
7.50 to 8.00; (3.906 µm)		
8.00 to 8.50; (2.762 µm)		
8.50 to 9.00; (1.953 µm)		
9.00 to 9.50; (1.381 µm)		
11.00 to 11.50; (0.345 µm)		
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)		
13.50 to 14.00; (0.061µm)		
14.00 to 14.50; (0.043µm)		
> 14.50; (0.01 µm)		
TOTAL	100.00	790.61

Notes: Data re-submitted following the Interim Report.

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79	
LabCode:	PSA_2702	
Sample Code:	PS792702	

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage	Grams
		(mark as "0" for no material & leave blank for not analysed)
-6.50 to -6.00; 63 mm	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00
-4.00 to -3.50; 11.2 mm	0.21	1.70
-3.50 to -3.00; 8 mm	42.35	337.00
-3.00 to -2.50; 5.6 mm	31.97	254.40
-2.50 to -2.00; 4 mm	17.67	140.60
-2.00 to -1.50; 2.8 mm	7.65	60.90
-1.50 to -1.00; 2 mm	0.14	1.10
-1.00 to -0.50; 1.4 mm	0.00	0.00
-0.50 to 0.00; 1 mm	0.01	0.10
0.00 to 0.50; (707 µm)	0.00	0.00
0.50 to 1.00; (500 µm)	0.00	0.00
1.00 to 1.50; (353.6 µm)	0.00	0.00
1.50 to 2.00; (250 µm)	0.00	0.00
2.00 to 2.50; (176.8 µm)	0.00	0.00
2.50 to 3.00; (125 µm)	0.00	0.00
3.00 to 3.50; (88.39 µm)	0.00	0.00
3.50 to 4.00; (62.5 µm)	0.00	0.00
4.00 to 4.50; (44.19 µm)	0.00	0.00
4.50 to 5.00; (31.25 µm)	0.00	0.00
5.00 to 5.50; (22.097 µm)	0.00	0.00
5.50 to 6.00; (15.625 µm)	0.00	0.00
6.00 to 6.50; (11.049 µm)	0.00	0.00
6.50 to 7.00; (7.813 µm)	0.00	0.00
7.00 to 7.50; (5.524 µm)	0.00	0.00
7.50 to 8.00; (3.906 µm)	0.00	0.00
8.00 to 8.50; (2.762 µm)	0.00	0.00
8.50 to 9.00; (1.953 µm)	0.00	0.00
9.00 to 9.50; (1.381 µm)	0.00	0.00
9.50 to 10.00; (0.977 µm)	0.00	0.00
10.00 to 10.50; (0.691 µm)	0.00	0.00
10.50 to 11.00; (0.488 µm)	0.00	0.00
11.00 to 11.50; (0.345 µm)	0.00	0.00
11.50 to 12.00; (0.244 µm)	0.00	0.00
12.00 to 12.50; (0.173 µm)	0.00	0.00
12.50 to 13.00; (0.122 µm)	0.00	0.00
13.00 to 13.50; (0.086 µm)	0.00	0.00
13.50 to 14.00; (0.061µm)		
14.00 to 14.50; (0.043µm)		
> 14.50; (0.01 µm)		
TOTAL	100.00	795.80

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79
LabCode:	PSA_2703
Sample Code:	PS792703

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage	Grams
	(mark as "0" for no material & leave blank for not analysed)	
-6.50 to -6.00; 63 mm		
-6.00 to -5.50; 45 mm		
-5.50 to -5.00; 31.5 mm		
-5.00 to -4.50; 22.4 mm		
-4.50 to -4.00; 16 mm		
-4.00 to -3.50; 11.2 mm		
-3.50 to -3.00; 8 mm		
-3.00 to -2.50; 5.6 mm		
-2.50 to -2.00; 4 mm		
-2.00 to -1.50; 2.8 mm		
-1.50 to -1.00; 2 mm		
-1.00 to -0.50; 1.4 mm		
-0.50 to 0.00; 1 mm		
0.00 to 0.50; (707 µm)		
0.50 to 1.00; (500 µm)		
1.00 to 1.50; (353.6 µm)		
1.50 to 2.00; (250 µm)		
2.00 to 2.50; (176.8 µm)		
2.50 to 3.00; (125 µm)		
3.00 to 3.50; (88.39 µm)		
3.50 to 4.00; (62.5 µm)		
4.00 to 4.50; (44.19 µm)		
4.50 to 5.00; (31.25 µm)		
5.00 to 5.50; (22.097 µm)		
5.50 to 6.00; (15.625 µm)		
6.00 to 6.50; (11.049 µm)		
6.50 to 7.00; (7.813 µm)		
7.00 to 7.50; (5.524 µm)		
7.50 to 8.00; (3.906 µm)		
8.00 to 8.50; (2.762 µm)		
8.50 to 9.00; (1.953 µm)		
9.00 to 9.50; (1.381 µm)		
9.50 to 10.00; (0.977 µm)		
10.00 to 10.50; (0.691 µm)		
10.50 to 11.00; (0.488 µm)		
11.00 to 11.50; (0.345 µm)		
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)		
13.50 to 14.00; (0.061µm)		
14.00 to 14.50; (0.043µm)		
> 14.50; (0.01 µm)		
TOTAL		
Notes:		

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79	
LabCode:	PSA_2704	
Sample Code:	PS792704	

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage (mark as "0" for no material & leave blank for not analysed)	Grams
-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	1.51	
-3.50 to -3.00; 8 mm	38.38	
-3.00 to -2.50; 5.6 mm	35.18	
-2.50 to -2.00; 4 mm	16.57	
-2.00 to -1.50; 2.8 mm	7.95	
-1.50 to -1.00; 2 mm	0.39	
-1.00 to -0.50; 1.4 mm	0.01	
-0.50 to 0.00; 1 mm	0.01	
0.00 to 0.50; (707 µm)		
0.50 to 1.00; (500 µm)		
1.00 to 1.50; (353.6 µm)		
1.50 to 2.00; (250 µm)		
2.00 to 2.50; (176.8 µm)		
2.50 to 3.00; (125 µm)		
3.00 to 3.50; (88.39 µm)		
3.50 to 4.00; (62.5 µm)		
4.00 to 4.50; (44.19 µm)		
4.50 to 5.00; (31.25 µm)		
5.00 to 5.50; (22.097 µm)		
5.50 to 6.00; (15.625 µm)		
6.00 to 6.50; (11.049 µm)		
6.50 to 7.00; (7.813 µm)		
7.00 to 7.50; (5.524 µm)		
7.50 to 8.00; (3.906 µm)		
8.00 to 8.50; (2.762 µm)		
8.50 to 9.00; (1.953 µm)		
9.00 to 9.50; (1.381 µm)		
9.50 to 10.00; (0.977 µm)		
10.00 to 10.50; (0.691 µm)		
10.50 to 11.00; (0.488 µm)		
11.00 to 11.50; (0.345 µm)		
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)		
13.50 to 14.00; (0.061µm)		
14.00 to 14.50; (0.043µm)		
> 14.50; (0.01 µm)		
TOTAL	100.00	

Notes:

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79
LabCode:	PSA_2705
Sample Code:	PS792705

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage (mark as "0" for no material & leave blank for not analysed)	Grams
-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	39.97	
-3.00 to -2.50; 5.6 mm	35.80	
-2.50 to -2.00; 4 mm	15.34	
-2.00 to -1.50; 2.8 mm	8.58	
-1.50 to -1.00; 2 mm	0.21	
-1.00 to -0.50; 1.4 mm	0.10	
-0.50 to 0.00; 1 mm	0.00	
0.00 to 0.50; (707 µm)	0.00	
0.50 to 1.00; (500 µm)	0.00	
1.00 to 1.50; (353.6 µm)	0.00	
1.50 to 2.00; (250 µm)	0.00	
2.00 to 2.50; (176.8 µm)	0.00	
2.50 to 3.00; (125 µm)	0.00	
3.00 to 3.50; (88.39 µm)	0.00	
3.50 to 4.00; (62.5 µm)	0.00	
4.00 to 4.50; (44.19 µm)	0.00	
4.50 to 5.00; (31.25 µm)	0.00	
5.00 to 5.50; (22.097 µm)	0.00	
5.50 to 6.00; (15.625 µm)	0.00	
6.00 to 6.50; (11.049 µm)	0.00	
6.50 to 7.00; (7.813 µm)	0.00	
7.00 to 7.50; (5.524 µm)	0.00	
7.50 to 8.00; (3.906 µm)	0.00	
8.00 to 8.50; (2.762 µm)	0.00	
8.50 to 9.00; (1.953 µm)	0.00	
9.00 to 9.50; (1.381 µm)	0.00	
9.50 to 10.00; (0.977 µm)	0.00	
10.00 to 10.50; (0.691 µm)	0.00	
10.50 to 11.00; (0.488 µm)	0.00	
11.00 to 11.50; (0.345 µm)	0.00	
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)		
13.50 to 14.00; (0.061µm)		
14.00 to 14.50; (0.043µm)		
> 14.50; (0.01 µm)		
TOTAL	100.00	

Notes:

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79	
LabCode:	PSA_2706	
Sample Code:	PS792706	

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage (mark as "0" for no material & leave blank for not analysed)	Grams
-6.50 to -6.00; 63 mm	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00
-4.00 to -3.50; 11.2 mm	0.00	0.00
-3.50 to -3.00; 8 mm	39.00	310.00
-3.00 to -2.50; 5.6 mm	36.00	286.16
-2.50 to -2.00; 4 mm	16.70	132.75
-2.00 to -1.50; 2.8 mm	7.54	59.94
-1.50 to -1.00; 2 mm	0.68	5.43
-1.00 to -0.50; 1.4 mm	0.01	0.05
-0.50 to 0.00; 1 mm	0.00	0.03
0.00 to 0.50; (707 µm)	0.00	0.02
0.50 to 1.00; (500 µm)	0.00	0.02
1.00 to 1.50; (353.6 µm)	0.00	0.02
1.50 to 2.00; (250 µm)	0.00	0.02
2.00 to 2.50; (176.8 µm)	0.00	0.02
2.50 to 3.00; (125 µm)	0.00	0.03
3.00 to 3.50; (88.39 µm)	0.00	0.03
3.50 to 4.00; (62.5 µm)	0.00	0.04
4.00 to 4.50; (44.19 µm)	0.01	0.04
4.50 to 5.00; (31.25 µm)	0.01	0.04
5.00 to 5.50; (22.097 µm)	0.00	0.03
5.50 to 6.00; (15.625 µm)	0.00	0.03
6.00 to 6.50; (11.049 µm)	0.00	0.02
6.50 to 7.00; (7.813 µm)	0.00	0.02
7.00 to 7.50; (5.524 µm)	0.00	0.02
7.50 to 8.00; (3.906 µm)	0.00	0.02
8.00 to 8.50; (2.762 µm)	0.00	0.02
8.50 to 9.00; (1.953 µm)	0.00	0.02
9.00 to 9.50; (1.381 µm)	0.00	0.02
9.50 to 10.00; (0.977 µm)	0.00	0.01
10.00 to 10.50; (0.691 µm)	0.00	0.01
10.50 to 11.00; (0.488 µm)	0.00	0.01
11.00 to 11.50; (0.345 µm)	0.00	0.00
11.50 to 12.00; (0.244 µm)	0.00	0.00
12.00 to 12.50; (0.173 µm)	0.00	0.00
12.50 to 13.00; (0.122 µm)	0.00	0.00
13.00 to 13.50; (0.086 µm)	0.00	0.00
13.50 to 14.00; (0.061µm)	0.00	0.00
14.00 to 14.50; (0.043µm)	0.00	0.00
> 14.50; (0.01 µm)	0.00	0.00
TOTAL	100.00	794.86

Notes: NMBAQC PSA SOP for supporting biological data - incorporating BS1377: Parts 1: 2016 and 2: 1990 (dry sieving) and BS13320: 2020 (laser diffraction).

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79
LabCode:	PSA_2707
Sample Code:	PS792707

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage (mark as "0" for no material & leave blank for not analysed)	Grams
-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	0.65	
-3.50 to -3.00; 8 mm	39.88	
-3.00 to -2.50; 5.6 mm	35.84	
-2.50 to -2.00; 4 mm	15.15	
-2.00 to -1.50; 2.8 mm	7.70	
-1.50 to -1.00; 2 mm	0.26	
-1.00 to -0.50; 1.4 mm	0.01	
-0.50 to 0.00; 1 mm	0.01	
0.00 to 0.50; (707 µm)	0.50	
0.50 to 1.00; (500 µm)		
1.00 to 1.50; (353.6 µm)		
1.50 to 2.00; (250 µm)		
2.00 to 2.50; (176.8 µm)		
2.50 to 3.00; (125 µm)		
3.00 to 3.50; (88.39 µm)		
3.50 to 4.00; (62.5 µm)		
4.00 to 4.50; (44.19 µm)		
4.50 to 5.00; (31.25 µm)		
5.00 to 5.50; (22.097 µm)		
5.50 to 6.00; (15.625 µm)		
6.00 to 6.50; (11.049 µm)		
6.50 to 7.00; (7.813 µm)		
7.00 to 7.50; (5.524 µm)		
7.50 to 8.00; (3.906 µm)		
8.00 to 8.50; (2.762 µm)		
8.50 to 9.00; (1.953 µm)		
9.00 to 9.50; (1.381 µm)		
9.50 to 10.00; (0.977 µm)		
10.00 to 10.50; (0.691 µm)		
10.50 to 11.00; (0.488 µm)		
11.00 to 11.50; (0.345 µm)		
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)		
13.50 to 14.00; (0.061µm)		
14.00 to 14.50; (0.043µm)		
> 14.50; (0.01 µm)		
TOTAL	100.00	

Notes: Fine powder released in the sieving process as the sample consists of soft sedimentary limestone which is being ground down during sieving producing fines <1mm and 0.5% (added to the 0.00 to 0.50 phi)

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79
LabCode:	PSA_2708
Sample Code:	PS792708

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage	Grams
	(mark as "0" for no material & leave blank for not analysed)	
-6.50 to -6.00; 63 mm	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00
-4.00 to -3.50; 11.2 mm	0.00	0.00
-3.50 to -3.00; 8 mm	36.50	289.67
-3.00 to -2.50; 5.6 mm	38.61	306.37
-2.50 to -2.00; 4 mm	14.50	115.10
-2.00 to -1.50; 2.8 mm	9.85	78.13
-1.50 to -1.00; 2 mm	0.26	2.07
-1.00 to -0.50; 1.4 mm	0.01	0.10
-0.50 to 0.00; 1 mm	0.00	0.00
0.00 to 0.50; (707 μm)	0.26	2.10
0.50 to 1.00; (500 μm)		
1.00 to 1.50; (353.6 μm)		
1.50 to 2.00; (250 μm)		
2.00 to 2.50; (176.8 μm)		
2.50 to 3.00; (125 μm)		
3.00 to 3.50; (88.39 μm)		
3.50 to 4.00; (62.5 μm)		
4.00 to 4.50; (44.19 μm)		
4.50 to 5.00; (31.25 μm)		
5.00 to 5.50; (22.097 μm)		
5.50 to 6.00; (15.625 μm)		
6.00 to 6.50; (11.049 μm)		
6.50 to 7.00; (7.813 μm)		
7.00 to 7.50; (5.524 μm)		
7.50 to 8.00; (3.906 μm)		
8.00 to 8.50; (2.762 μm)		
8.50 to 9.00; (1.953 μm)		
9.00 to 9.50; (1.381 μm)		
9.50 to 10.00; (0.977 μm)		
10.00 to 10.50; (0.691 μm)		
10.50 to 11.00; (0.488 μm)		
11.00 to 11.50; (0.345 μm)		
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)		
13.50 to 14.00; (0.061μm)		
14.00 to 14.50; (0.043μm)		
> 14.50; (0.01 μm)		
TOTAL	100.00	793.53

Notes: <1mm fraction accounted for only 2.1g which was not sufficient to carry out multiple runs through the mastersizer. This <1mm fraction equates to ~0.26% of the total weight (793.53g) of the whole sample and was therefore added to the 707μm fraction in the final data (as previously suggested). Sand and fines fractions are likely a result of chipped off gravel particles caused during the sieving process.

Red text calculated by Apem Ltd.

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79
LabCode:	PSA_2709
Sample Code:	PS792709

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage (mark as "0" for no material & leave blank for not analysed)	Grams
-6.50 to -6.00; 63 mm	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00
-4.00 to -3.50; 11.2 mm	0.21	1.70
-3.50 to -3.00; 8 mm	42.35	337.00
-3.00 to -2.50; 5.6 mm	31.97	254.40
-2.50 to -2.00; 4 mm	17.67	140.60
-2.00 to -1.50; 2.8 mm	7.65	60.90
-1.50 to -1.00; 2 mm	0.14	1.10
-1.00 to -0.50; 1.4 mm	0.00	0.00
-0.50 to 0.00; 1 mm	0.01	0.10
0.00 to 0.50; (707 µm)	0.00	0.00
0.50 to 1.00; (500 µm)	0.00	0.00
1.00 to 1.50; (353.6 µm)	0.00	0.00
1.50 to 2.00; (250 µm)	0.00	0.00
2.00 to 2.50; (176.8 µm)	0.00	0.00
2.50 to 3.00; (125 µm)	0.00	0.00
3.00 to 3.50; (88.39 µm)	0.00	0.00
3.50 to 4.00; (62.5 µm)	0.00	0.00
4.00 to 4.50; (44.19 µm)	0.00	0.00
4.50 to 5.00; (31.25 µm)	0.00	0.00
5.00 to 5.50; (22.097 µm)	0.00	0.00
5.50 to 6.00; (15.625 µm)	0.00	0.00
6.00 to 6.50; (11.049 µm)	0.00	0.00
6.50 to 7.00; (7.813 µm)	0.00	0.00
7.00 to 7.50; (5.524 µm)	0.00	0.00
7.50 to 8.00; (3.906 µm)	0.00	0.00
8.00 to 8.50; (2.762 µm)	0.00	0.00
8.50 to 9.00; (1.953 µm)	0.00	0.00
9.00 to 9.50; (1.381 µm)	0.00	0.00
9.50 to 10.00; (0.977 µm)	0.00	0.00
10.00 to 10.50; (0.691 µm)	0.00	0.00
10.50 to 11.00; (0.488 µm)	0.00	0.00
11.00 to 11.50; (0.345 µm)	0.00	0.00
11.50 to 12.00; (0.244 µm)	0.00	0.00
12.00 to 12.50; (0.173 µm)	0.00	0.00
12.50 to 13.00; (0.122 µm)	0.00	0.00
13.00 to 13.50; (0.086 µm)	0.00	0.00
13.50 to 14.00; (0.061µm)	0.00	0.00
14.00 to 14.50; (0.043µm)	0.00	0.00
> 14.50; (0.01 µm)	0.00	0.00
TOTAL	100.00	795.80

Notes:

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79
LabCode:	PSA_2710
Sample Code:	PS792710

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage	Grams
	(mark as "0" for no material & leave blank for not analysed)	
-6.50 to -6.00; 63 mm		
-6.00 to -5.50; 45 mm		
-5.50 to -5.00; 31.5 mm		
-5.00 to -4.50; 22.4 mm		
-4.50 to -4.00; 16 mm		
-4.00 to -3.50; 11.2 mm		
-3.50 to -3.00; 8 mm		
-3.00 to -2.50; 5.6 mm		
-2.50 to -2.00; 4 mm		
-2.00 to -1.50; 2.8 mm		
-1.50 to -1.00; 2 mm		
-1.00 to -0.50; 1.4 mm		
-0.50 to 0.00; 1 mm		
0.00 to 0.50; (707 µm)		
0.50 to 1.00; (500 µm)		
1.00 to 1.50; (353.6 µm)		
1.50 to 2.00; (250 µm)		
2.00 to 2.50; (176.8 µm)		
2.50 to 3.00; (125 µm)		
3.00 to 3.50; (88.39 µm)		
3.50 to 4.00; (62.5 µm)		
4.00 to 4.50; (44.19 µm)		
4.50 to 5.00; (31.25 µm)		
5.00 to 5.50; (22.097 µm)		
5.50 to 6.00; (15.625 µm)		
6.00 to 6.50; (11.049 µm)		
6.50 to 7.00; (7.813 µm)		
7.00 to 7.50; (5.524 µm)		
7.50 to 8.00; (3.906 µm)		
8.00 to 8.50; (2.762 µm)		
8.50 to 9.00; (1.953 µm)		
9.00 to 9.50; (1.381 µm)		
9.50 to 10.00; (0.977 µm)		
10.00 to 10.50; (0.691 µm)		
10.50 to 11.00; (0.488 µm)		
11.00 to 11.50; (0.345 µm)		
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)		
13.50 to 14.00; (0.061µm)		
14.00 to 14.50; (0.043µm)		
> 14.50; (0.01 µm)		
TOTAL		
Notes:		

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79
LabCode:	PSA_2711
Sample Code:	PS792711

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage (mark as "0" for no material & leave blank for not analysed)	Grams
-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	0.94	
-3.50 to -3.00; 8 mm	38.03	
-3.00 to -2.50; 5.6 mm	33.19	
-2.50 to -2.00; 4 mm	18.86	
-2.00 to -1.50; 2.8 mm	8.31	
-1.50 to -1.00; 2 mm	0.67	
-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)	0.00	
0.50 to 1.00; (500 µm)	0.00	
1.00 to 1.50; (353.6 µm)	0.00	
1.50 to 2.00; (250 µm)	0.00	
2.00 to 2.50; (176.8 µm)	0.00	
2.50 to 3.00; (125 µm)	0.00	
3.00 to 3.50; (88.39 µm)	0.00	
3.50 to 4.00; (62.5 µm)	0.00	
4.00 to 4.50; (44.19 µm)	0.00	
4.50 to 5.00; (31.25 µm)	0.00	
5.00 to 5.50; (22.097 µm)	0.00	
5.50 to 6.00; (15.625 µm)	0.00	
6.00 to 6.50; (11.049 µm)	0.00	
6.50 to 7.00; (7.813 µm)	0.00	
7.00 to 7.50; (5.524 µm)	0.00	
7.50 to 8.00; (3.906 µm)	0.00	
8.00 to 8.50; (2.762 µm)	0.00	
8.50 to 9.00; (1.953 µm)	0.00	
9.00 to 9.50; (1.381 µm)	0.00	
9.50 to 10.00; (0.977 µm)	0.00	
10.00 to 10.50; (0.691 µm)	0.00	
10.50 to 11.00; (0.488 µm)	0.00	
11.00 to 11.50; (0.345 µm)	0.00	
11.50 to 12.00; (0.244 µm)	0.00	
12.00 to 12.50; (0.173 µm)	0.00	
12.50 to 13.00; (0.122 µm)	0.00	
13.00 to 13.50; (0.086 µm)	0.00	
13.50 to 14.00; (0.061µm)	0.00	
14.00 to 14.50; (0.043µm)	0.00	
> 14.50; (0.01 µm)	0.00	
TOTAL	100.00	

Notes: No fine material prior to sieving was recorded. We believe the material in the pan (limestone dust) was the result of the sieving process and from the erosion of coarse particles. The sample was split into 3 fractions to prevent sieves clogging and each fraction was sieved for 30 minutes

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79	
LabCode:	PSA_2712	
Sample Code:	PS792712	

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage (mark as "0" for no material & leave blank for not analysed)	Grams
-6.50 to -6.00; 63 mm		
-6.00 to -5.50; 45 mm		
-5.50 to -5.00; 31.5 mm		
-5.00 to -4.50; 22.4 mm		
-4.50 to -4.00; 16 mm		
-4.00 to -3.50; 11.2 mm	1.20	9.4800
-3.50 to -3.00; 8 mm	40.03	315.3900
-3.00 to -2.50; 5.6 mm	34.43	271.2900
-2.50 to -2.00; 4 mm	15.79	124.3900
-2.00 to -1.50; 2.8 mm	8.13	64.0300
-1.50 to -1.00; 2 mm	0.36	2.8300
-1.00 to -0.50; 1.4 mm	0.01	0.0800
-0.50 to 0.00; 1 mm	0.00	0.0300
0.00 to 0.50; (707 µm)		
0.50 to 1.00; (500 µm)		
1.00 to 1.50; (353.6 µm)		
1.50 to 2.00; (250 µm)		
2.00 to 2.50; (176.8 µm)		
2.50 to 3.00; (125 µm)		
3.00 to 3.50; (88.39 µm)		
3.50 to 4.00; (62.5 µm)		
4.00 to 4.50; (44.19 µm)		
4.50 to 5.00; (31.25 µm)		
5.00 to 5.50; (22.097 µm)		
5.50 to 6.00; (15.625 µm)		
6.00 to 6.50; (11.049 µm)		
6.50 to 7.00; (7.813 µm)		
7.00 to 7.50; (5.524 µm)		
7.50 to 8.00; (3.906 µm)		
8.00 to 8.50; (2.762 µm)		
8.50 to 9.00; (1.953 µm)		
9.00 to 9.50; (1.381 µm)		
9.50 to 10.00; (0.977 µm)		
10.00 to 10.50; (0.691 µm)		
10.50 to 11.00; (0.488 µm)		
11.00 to 11.50; (0.345 µm)		
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)		
13.50 to 14.00; (0.061µm)		
14.00 to 14.50; (0.043µm)		
> 14.50; (0.01 µm)		
TOTAL	99.96	787.5200

Notes:No laser data analysis as sample contained no mud/ sand component.

Red text calculated by APEM Ltd.

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79
LabCode:	PSA_2713
Sample Code:	PS792713

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage	Grams
		(mark as "0" for no material & leave blank for not analysed)
-6.50 to -6.00; 63 mm	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00
-4.00 to -3.50; 11.2 mm	0.48	3.79
-3.50 to -3.00; 8 mm	39.67	315.12
-3.00 to -2.50; 5.6 mm	35.52	282.14
-2.50 to -2.00; 4 mm	15.26	121.26
-2.00 to -1.50; 2.8 mm	8.63	68.56
-1.50 to -1.00; 2 mm	0.39	3.06
-1.00 to -0.50; 1.4 mm	0.01	0.04
-0.50 to 0.00; 1 mm	0.00	0.02
0.00 to 0.50; (707 µm)	0.05	0.42
0.50 to 1.00; (500 µm)		
1.00 to 1.50; (353.6 µm)		
1.50 to 2.00; (250 µm)		
2.00 to 2.50; (176.8 µm)		
2.50 to 3.00; (125 µm)		
3.00 to 3.50; (88.39 µm)		
3.50 to 4.00; (62.5 µm)		
4.00 to 4.50; (44.19 µm)		
4.50 to 5.00; (31.25 µm)		
5.00 to 5.50; (22.097 µm)		
5.50 to 6.00; (15.625 µm)		
6.00 to 6.50; (11.049 µm)		
6.50 to 7.00; (7.813 µm)		
7.00 to 7.50; (5.524 µm)		
7.50 to 8.00; (3.906 µm)		
8.00 to 8.50; (2.762 µm)		
8.50 to 9.00; (1.953 µm)		
9.00 to 9.50; (1.381 µm)		
9.50 to 10.00; (0.977 µm)		
10.00 to 10.50; (0.691 µm)		
10.50 to 11.00; (0.488 µm)		
11.00 to 11.50; (0.345 µm)		
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)		
13.50 to 14.00; (0.061µm)		
14.00 to 14.50; (0.043µm)		
> 14.50; (0.01 µm)		
TOTAL	100.00	794.41

Notes:

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79
LabCode:	PSA_2714
Sample Code:	PS792714

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage	Grams
	(mark as "0" for no material & leave blank for not analysed)	
-6.50 to -6.00; 63 mm	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00
-4.00 to -3.50; 11.2 mm	0.00	0.00
-3.50 to -3.00; 8 mm	37.81	301.34
-3.00 to -2.50; 5.6 mm	38.22	304.58
-2.50 to -2.00; 4 mm	15.97	127.24
-2.00 to -1.50; 2.8 mm	7.35	58.54
-1.50 to -1.00; 2 mm	0.65	5.17
-1.00 to -0.50; 1.4 mm	0.01	0.04
-0.50 to 0.00; 1 mm	0.00	0.02
0.00 to 0.50; (707 µm)		
0.50 to 1.00; (500 µm)		
1.00 to 1.50; (353.6 µm)		
1.50 to 2.00; (250 µm)		
2.00 to 2.50; (176.8 µm)		
2.50 to 3.00; (125 µm)		
3.00 to 3.50; (88.39 µm)		
3.50 to 4.00; (62.5 µm)		
4.00 to 4.50; (44.19 µm)		
4.50 to 5.00; (31.25 µm)		
5.00 to 5.50; (22.097 µm)		
5.50 to 6.00; (15.625 µm)		
6.00 to 6.50; (11.049 µm)		
6.50 to 7.00; (7.813 µm)		
7.00 to 7.50; (5.524 µm)		
7.50 to 8.00; (3.906 µm)		
8.00 to 8.50; (2.762 µm)		
8.50 to 9.00; (1.953 µm)		
9.00 to 9.50; (1.381 µm)		
9.50 to 10.00; (0.977 µm)		
10.00 to 10.50; (0.691 µm)		
10.50 to 11.00; (0.488 µm)		
11.00 to 11.50; (0.345 µm)		
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)		
13.50 to 14.00; (0.061µm)		
14.00 to 14.50; (0.043µm)		
> 14.50; (0.01 µm)		
TOTAL	100.00	796.93

Notes:

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79
LabCode:	PSA_2715
Sample Code:	PS792715

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage	Grams
	(mark as "0" for no material & leave blank for not analysed)	
-6.50 to -6.00; 63 mm	0.00	0.0000
-6.00 to -5.50; 45 mm	0.00	0.0000
-5.50 to -5.00; 31.5 mm	0.00	0.0000
-5.00 to -4.50; 22.4 mm	0.00	0.0000
-4.50 to -4.00; 16 mm	0.00	0.0000
-4.00 to -3.50; 11.2 mm	0.00	0.0000
-3.50 to -3.00; 8 mm	43.06	340.92
-3.00 to -2.50; 5.6 mm	31.39	248.52
-2.50 to -2.00; 4 mm	18.15	143.73
-2.00 to -1.50; 2.8 mm	7.25	57.43
-1.50 to -1.00; 2 mm	0.12	0.95
-1.00 to -0.50; 1.4 mm	0.00	0.03
-0.50 to 0.00; 1 mm	0.00	0.00
0.00 to 0.50; (707 µm)	0.00	0.00
0.50 to 1.00; (500 µm)	0.00	0.01
1.00 to 1.50; (353.6 µm)	0.00	0.01
1.50 to 2.00; (250 µm)	0.00	0.01
2.00 to 2.50; (176.8 µm)	0.00	0.01
2.50 to 3.00; (125 µm)	0.00	0.01
3.00 to 3.50; (88.39 µm)	0.00	0.01
3.50 to 4.00; (62.5 µm)	0.00	0.01
4.00 to 4.50; (44.19 µm)	0.00	0.01
4.50 to 5.00; (31.25 µm)	0.00	0.01
5.00 to 5.50; (22.097 µm)	0.00	0.00
5.50 to 6.00; (15.625 µm)	0.00	0.00
6.00 to 6.50; (11.049 µm)	0.00	0.00
6.50 to 7.00; (7.813 µm)	0.00	0.00
7.00 to 7.50; (5.524 µm)	0.00	0.00
7.50 to 8.00; (3.906 µm)	0.00	0.00
8.00 to 8.50; (2.762 µm)	0.00	0.00
8.50 to 9.00; (1.953 µm)	0.00	0.00
9.00 to 9.50; (1.381 µm)	0.00	0.00
9.50 to 10.00; (0.977 µm)	0.00	0.00
10.00 to 10.50; (0.691 µm)	0.00	0.00
10.50 to 11.00; (0.488 µm)	0.00	0.00
11.00 to 11.50; (0.345 µm)	0.00	0.00
11.50 to 12.00; (0.244 µm)	0.00	0.00
12.00 to 12.50; (0.173 µm)	0.00	0.00
12.50 to 13.00; (0.122 µm)	0.00	0.00
13.00 to 13.50; (0.086 µm)	0.00	0.00
13.50 to 14.00; (0.061µm)	0.00	0.00
14.00 to 14.50; (0.043µm)	0.00	0.00
> 14.50; (0.01 µm)	0.00	0.00
TOTAL	**100.00**	**791.70**

Notes: This sample was oven dried and then dry sieved to 1 mm. A small amount of sediment (c. 0.1 g) was retained in the sieve pan. For completeness, this material was analysed by laser diffraction in the small volume module (ULM). The volume of sediment was so small that the whole sample was analysed once, but run three times. For the purposes of this speadsheet the data has been entered three times to generate 9 sets of results.

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79
LabCode:	PSA_2716
Sample Code:	PS792716

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage	Grams
	(mark as "0" for no material & leave blank for not analysed)	
-6.50 to -6.00; 63 mm	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00
-4.00 to -3.50; 11.2 mm	2.39	19.06
-3.50 to -3.00; 8 mm	39.28	312.94
-3.00 to -2.50; 5.6 mm	33.74	268.75
-2.50 to -2.00; 4 mm	16.61	132.35
-2.00 to -1.50; 2.8 mm	7.72	61.53
-1.50 to -1.00; 2 mm	0.25	1.97
-1.00 to -0.50; 1.4 mm	0.00	0.01
-0.50 to 0.00; 1 mm	0.00	0.01
0.00 to 0.50; (707 µm)		
0.50 to 1.00; (500 µm)		
1.00 to 1.50; (353.6 µm)		
1.50 to 2.00; (250 µm)		
2.00 to 2.50; (176.8 µm)		
2.50 to 3.00; (125 µm)		
3.00 to 3.50; (88.39 µm)		
3.50 to 4.00; (62.5 µm)		
4.00 to 4.50; (44.19 µm)		
4.50 to 5.00; (31.25 µm)		
5.00 to 5.50; (22.097 µm)		
5.50 to 6.00; (15.625 µm)		
6.00 to 6.50; (11.049 µm)		
6.50 to 7.00; (7.813 µm)		
7.00 to 7.50; (5.524 µm)		
7.50 to 8.00; (3.906 µm)		
8.00 to 8.50; (2.762 µm)		
8.50 to 9.00; (1.953 µm)		
9.00 to 9.50; (1.381 µm)		
9.50 to 10.00; (0.977 µm)		
10.00 to 10.50; (0.691 µm)		
10.50 to 11.00; (0.488 µm)		
11.00 to 11.50; (0.345 µm)		
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)		
13.50 to 14.00; (0.061µm)		
14.00 to 14.50; (0.043µm)		
> 14.50; (0.01 µm)		
TOTAL	100.00	796.62

Notes:Red text calculates by APEM.

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79	
LabCode:	PSA_2717	
Sample Code:	PS792717	

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage	Grams
	(mark as "0" for no material & leave blank for not analysed)	
-6.50 to -6.00; 63 mm	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00
-4.00 to -3.50; 11.2 mm	0.26	2.09
-3.50 to -3.00; 8 mm	40.06	318.82
-3.00 to -2.50; 5.6 mm	35.61	283.34
-2.50 to -2.00; 4 mm	14.49	115.27
-2.00 to -1.50; 2.8 mm	9.29	73.94
-1.50 to -1.00; 2 mm	0.27	2.18
-1.00 to -0.50; 1.4 mm	0.01	0.10
-0.50 to 0.00; 1 mm	0.01	0.04
0.00 to 0.50; (707 µm)		
0.50 to 1.00; (500 µm)		
1.00 to 1.50; (353.6 µm)		
1.50 to 2.00; (250 µm)		
2.00 to 2.50; (176.8 µm)		
2.50 to 3.00; (125 µm)		
3.00 to 3.50; (88.39 µm)		
3.50 to 4.00; (62.5 µm)		
4.00 to 4.50; (44.19 µm)		
4.50 to 5.00; (31.25 µm)		
5.00 to 5.50; (22.097 µm)		
5.50 to 6.00; (15.625 µm)		
6.00 to 6.50; (11.049 µm)		
6.50 to 7.00; (7.813 µm)		
7.00 to 7.50; (5.524 µm)		
7.50 to 8.00; (3.906 µm)		
8.00 to 8.50; (2.762 µm)		
8.50 to 9.00; (1.953 µm)		
9.00 to 9.50; (1.381 µm)		
9.50 to 10.00; (0.977 µm)		
10.00 to 10.50; (0.691 µm)		
10.50 to 11.00; (0.488 µm)		
11.00 to 11.50; (0.345 µm)		
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)		
13.50 to 14.00; (0.061µm)		
14.00 to 14.50; (0.043µm)		
> 14.50; (0.01 µm)		
TOTAL	100.00	795.78
Notes:		

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79	
LabCode:	PSA_2730	
Sample Code:	Benchmark Replicate 1	

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage	Grams
	(mark as "0" for no material & leave blank for not analysed)	
-6.50 to -6.00; 63 mm	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00
-4.00 to -3.50; 11.2 mm	0.00	0.00
-3.50 to -3.00; 8 mm	41.92	332.59
-3.00 to -2.50; 5.6 mm	33.33	264.42
-2.50 to -2.00; 4 mm	17.70	140.43
-2.00 to -1.50; 2.8 mm	6.99	55.49
-1.50 to -1.00; 2 mm	0.04	0.33
-1.00 to -0.50; 1.4 mm	0.00	0.01
-0.50 to 0.00; 1 mm	0.00	0.02
0.00 to 0.50; (707 µm)	0.00	0.00
0.50 to 1.00; (500 µm)	0.00	0.01
1.00 to 1.50; (353.6 µm)	0.00	0.01
1.50 to 2.00; (250 µm)	0.00	0.01
2.00 to 2.50; (176.8 µm)	0.00	0.01
2.50 to 3.00; (125 µm)	0.00	0.01
3.00 to 3.50; (88.39 µm)	0.00	0.01
3.50 to 4.00; (62.5 µm)	0.00	0.01
4.00 to 4.50; (44.19 µm)	0.00	0.00
4.50 to 5.00; (31.25 µm)	0.00	0.00
5.00 to 5.50; (22.097 µm)	0.00	0.00
5.50 to 6.00; (15.625 µm)	0.00	0.00
6.00 to 6.50; (11.049 µm)	0.00	0.00
6.50 to 7.00; (7.813 µm)	0.00	0.00
7.00 to 7.50; (5.524 µm)	0.00	0.00
7.50 to 8.00; (3.906 µm)	0.00	0.00
8.00 to 8.50; (2.762 µm)	0.00	0.00
8.50 to 9.00; (1.953 µm)	0.00	0.00
9.00 to 9.50; (1.381 µm)	0.00	0.00
9.50 to 10.00; (0.977 µm)	0.00	0.00
10.00 to 10.50; (0.691 µm)	0.00	0.00
10.50 to 11.00; (0.488 µm)	0.00	0.00
11.00 to 11.50; (0.345 µm)	0.00	0.00
11.50 to 12.00; (0.244 µm)	0.00	0.00
12.00 to 12.50; (0.173 µm)	0.00	0.00
12.50 to 13.00; (0.122 µm)	0.00	0.00
13.00 to 13.50; (0.086 µm)	0.00	0.00
13.50 to 14.00; (0.061µm)	0.00	0.00
14.00 to 14.50; (0.043µm)	0.00	0.00
>14.5; (0.01)	0.00	0.00
TOTAL	100.00	793.40

Notes: This sample was oven dried and then dry sieved to 1 mm. A small amount of sediment (c. 0.1 g) was retained in the sieve pan. For completeness, this material was analysed by laser diffraction in the small volume module (ULM). The volume of sediment was so small that the whole sample was analysed once, but run three times. For the purposes of this speadsheet the data has been entered three times to generate 9 sets of results.

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79	
LabCode:	PSA_2731	
Sample Code:	Benchmark Replicate 2	

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage	Grams
	(mark as "0" for no material & leave blank for not analysed)	
-6.50 to -6.00; 63 mm	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00
-4.00 to -3.50; 11.2 mm	0.00	0.00
-3.50 to -3.00; 8 mm	42.63	338.26
-3.00 to -2.50; 5.6 mm	32.66	259.18
-2.50 to -2.00; 4 mm	17.07	135.44
-2.00 to -1.50; 2.8 mm	7.57	60.06
-1.50 to -1.00; 2 mm	0.04	0.34
-1.00 to -0.50; 1.4 mm	0.00	0.03
-0.50 to 0.00; 1 mm	0.00	0.01
0.00 to 0.50; (707 µm)	0.00	0.00
0.50 to 1.00; (500 µm)	0.00	0.00
1.00 to 1.50; (353.6 µm)	0.00	0.01
1.50 to 2.00; (250 µm)	0.00	0.01
2.00 to 2.50; (176.8 µm)	0.00	0.01
2.50 to 3.00; (125 µm)	0.00	0.01
3.00 to 3.50; (88.39 µm)	0.00	0.01
3.50 to 4.00; (62.5 µm)	0.00	0.01
4.00 to 4.50; (44.19 µm)	0.00	0.01
4.50 to 5.00; (31.25 µm)	0.00	0.01
5.00 to 5.50; (22.097 µm)	0.00	0.00
5.50 to 6.00; (15.625 µm)	0.00	0.00
6.00 to 6.50; (11.049 µm)	0.00	0.00
6.50 to 7.00; (7.813 µm)	0.00	0.00
7.00 to 7.50; (5.524 µm)	0.00	0.01
7.50 to 8.00; (3.906 µm)	0.00	0.01
8.00 to 8.50; (2.762 µm)	0.00	0.01
8.50 to 9.00; (1.953 µm)	0.00	0.01
9.00 to 9.50; (1.381 µm)	0.00	0.01
9.50 to 10.00; (0.977 µm)	0.00	0.00
10.00 to 10.50; (0.691 µm)	0.00	0.00
10.50 to 11.00; (0.488 µm)	0.00	0.00
11.00 to 11.50; (0.345 µm)	0.00	0.00
11.50 to 12.00; (0.244 µm)	0.00	0.00
12.00 to 12.50; (0.173 µm)	0.00	0.00
12.50 to 13.00; (0.122 µm)	0.00	0.00
13.00 to 13.50; (0.086 µm)	0.00	0.00
13.50 to 14.00; (0.061µm)	0.00	0.00
14.00 to 14.50; (0.043µm)	0.00	0.00
>14.5; (0.01)	0.00	0.00
TOTAL	100.00	793.46

Notes: This sample was oven dried and then dry sieved to 1 mm. A small amount of sediment (c. 0.1 g) was retained in the sieve pan. For completeness, this material was analysed by laser diffraction in the small volume module (ULM). The volume of sediment was so small that the whole sample was analysed once, but run three times. For the purposes of this speadsheet the data has been entered three times to generate 9 sets of results.

Exercise Code:	PS79	
LabCode:	PSA_2732	
Sample Code:	Benchmark Replicate 3	

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage	Grams
	(mark as "0" for no material & leave blank for not analysed)	
-6.50 to -6.00; 63 mm	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00
-4.00 to -3.50; 11.2 mm	0.00	0.00
-3.50 to -3.00; 8 mm	42.68	339.24
-3.00 to -2.50; 5.6 mm	32.87	261.28
-2.50 to -2.00; 4 mm	17.21	136.79
-2.00 to -1.50; 2.8 mm	7.14	56.76
-1.50 to -1.00; 2 mm	0.07	0.57
-1.00 to -0.50; 1.4 mm	0.00	0.02
-0.50 to 0.00; 1 mm	0.00	0.03
0.00 to 0.50; (707 µm)	0.00	0.00
0.50 to 1.00; (500 µm)	0.00	0.01
1.00 to 1.50; (353.6 µm)	0.00	0.01
1.50 to 2.00; (250 µm)	0.00	0.01
2.00 to 2.50; (176.8 µm)	0.00	0.01
2.50 to 3.00; (125 µm)	0.00	0.01
3.00 to 3.50; (88.39 µm)	0.00	0.01
3.50 to 4.00; (62.5 µm)	0.00	0.01
4.00 to 4.50; (44.19 µm)	0.00	0.01
4.50 to 5.00; (31.25 µm)	0.00	0.01
5.00 to 5.50; (22.097 µm)	0.00	0.00
5.50 to 6.00; (15.625 µm)	0.00	0.00
6.00 to 6.50; (11.049 µm)	0.00	0.00
6.50 to 7.00; (7.813 µm)	0.00	0.00
7.00 to 7.50; (5.524 µm)	0.00	0.01
7.50 to 8.00; (3.906 µm)	0.00	0.01
8.00 to 8.50; (2.762 µm)	0.00	0.01
8.50 to 9.00; (1.953 µm)	0.00	0.01
9.00 to 9.50; (1.381 µm)	0.00	0.01
9.50 to 10.00; (0.977 µm)	0.00	0.00
10.00 to 10.50; (0.691 µm)	0.00	0.00
10.50 to 11.00; (0.488 µm)	0.00	0.00
11.00 to 11.50; (0.345 µm)	0.00	0.00
11.50 to 12.00; (0.244 µm)	0.00	0.00
12.00 to 12.50; (0.173 µm)	0.00	0.00
12.50 to 13.00; (0.122 µm)	0.00	0.00
13.00 to 13.50; (0.086 µm)	0.00	0.00
13.50 to 14.00; (0.061µm)	0.00	0.00
14.00 to 14.50; (0.043µm)	0.00	0.00
>14.5; (0.01)	0.00	0.00
TOTAL	**100.00**	**794.83**

Notes: This sample was oven dried and then dry sieved to 1 mm. A small amount of sediment (c. 0.1 g) was retained in the sieve pan. For completeness, this material was analysed by laser diffraction in the small volume module (ULM). The volume of sediment was so small that the whole sample was analysed once, but run three times. For the purposes of this speadsheet the data has been entered three times to generate 9 sets of results.

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79	
LabCode:	PSA_2733	
Sample Code:	Benchmark Replicate 4	

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage	Grams
	(mark as "0" for no material & leave blank for not analysed)	
-6.50 to -6.00; 63 mm	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00
-4.00 to -3.50; 11.2 mm	0.00	0.00
-3.50 to -3.00; 8 mm	43.45	344.51
-3.00 to -2.50; 5.6 mm	32.00	253.75
-2.50 to -2.00; 4 mm	17.20	136.41
-2.00 to -1.50; 2.8 mm	7.24	57.38
-1.50 to -1.00; 2 mm	0.09	0.75
-1.00 to -0.50; 1.4 mm	0.00	0.02
-0.50 to 0.00; 1 mm	0.00	0.01
0.00 to 0.50; (707 µm)	0.00	0.00
0.50 to 1.00; (500 µm)	0.00	0.00
1.00 to 1.50; (353.6 µm)	0.00	0.01
1.50 to 2.00; (250 µm)	0.00	0.01
2.00 to 2.50; (176.8 µm)	0.00	0.01
2.50 to 3.00; (125 µm)	0.00	0.01
3.00 to 3.50; (88.39 µm)	0.00	0.01
3.50 to 4.00; (62.5 µm)	0.00	0.00
4.00 to 4.50; (44.19 µm)	0.00	0.00
4.50 to 5.00; (31.25 µm)	0.00	0.00
5.00 to 5.50; (22.097 µm)	0.00	0.00
5.50 to 6.00; (15.625 µm)	0.00	0.00
6.00 to 6.50; (11.049 µm)	0.00	0.00
6.50 to 7.00; (7.813 µm)	0.00	0.00
7.00 to 7.50; (5.524 µm)	0.00	0.00
7.50 to 8.00; (3.906 µm)	0.00	0.01
8.00 to 8.50; (2.762 µm)	0.00	0.01
8.50 to 9.00; (1.953 µm)	0.00	0.00
9.00 to 9.50; (1.381 µm)	0.00	0.00
9.50 to 10.00; (0.977 µm)	0.00	0.00
10.00 to 10.50; (0.691 µm)	0.00	0.00
10.50 to 11.00; (0.488 µm)	0.00	0.00
11.00 to 11.50; (0.345 µm)	0.00	0.00
11.50 to 12.00; (0.244 µm)	0.00	0.00
12.00 to 12.50; (0.173 µm)	0.00	0.00
12.50 to 13.00; (0.122 µm)	0.00	0.00
13.00 to 13.50; (0.086 µm)	0.00	0.00
13.50 to 14.00; (0.061µm)	0.00	0.00
14.00 to 14.50; (0.043µm)	0.00	0.00
>14.5; (0.01)	0.00	0.00
TOTAL	100.00	792.93

Notes: This sample was oven dried and then dry sieved to 1 mm. A small amount of sediment (c. 0.1 g) was retained in the sieve pan. For completeness, this material was analysed by laser diffraction in the small volume module (ULM). The volume of sediment was so small that the whole sample was analysed once, but run three times. For the purposes of this speadsheet the data has been entered three times to generate 9 sets of results.

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS79

Exercise Code:	PS79	
LabCode:	PSA_2734	
Sample Code:	Benchmark Replicate 5	

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage	Grams
	(mark as "0" for no material & leave blank for not analysed)	
-6.50 to -6.00; 63 mm	0.00	0.00
-6.00 to -5.50; 45 mm	0.00	0.00
-5.50 to -5.00; 31.5 mm	0.00	0.00
-5.00 to -4.50; 22.4 mm	0.00	0.00
-4.50 to -4.00; 16 mm	0.00	0.00
-4.00 to -3.50; 11.2 mm	0.00	0.00
-3.50 to -3.00; 8 mm	43.89	347.28
-3.00 to -2.50; 5.6 mm	31.08	245.94
-2.50 to -2.00; 4 mm	17.82	141.02
-2.00 to -1.50; 2.8 mm	7.15	56.54
-1.50 to -1.00; 2 mm	0.04	0.32
-1.00 to -0.50; 1.4 mm	0.00	0.01
-0.50 to 0.00; 1 mm	0.00	0.02
0.00 to 0.50; (707 µm)	0.00	0.00
0.50 to 1.00; (500 µm)	0.00	0.00
1.00 to 1.50; (353.6 µm)	0.00	0.01
1.50 to 2.00; (250 µm)	0.00	0.01
2.00 to 2.50; (176.8 µm)	0.00	0.01
2.50 to 3.00; (125 µm)	0.00	0.01
3.00 to 3.50; (88.39 µm)	0.00	0.01
3.50 to 4.00; (62.5 µm)	0.00	0.01
4.00 to 4.50; (44.19 µm)	0.00	0.01
4.50 to 5.00; (31.25 µm)	0.00	0.00
5.00 to 5.50; (22.097 µm)	0.00	0.00
5.50 to 6.00; (15.625 µm)	0.00	0.00
6.00 to 6.50; (11.049 µm)	0.00	0.00
6.50 to 7.00; (7.813 µm)	0.00	0.00
7.00 to 7.50; (5.524 µm)	0.00	0.00
7.50 to 8.00; (3.906 µm)	0.00	0.00
8.00 to 8.50; (2.762 µm)	0.00	0.00
8.50 to 9.00; (1.953 µm)	0.00	0.00
9.00 to 9.50; (1.381 µm)	0.00	0.00
9.50 to 10.00; (0.977 µm)	0.00	0.00
10.00 to 10.50; (0.691 µm)	0.00	0.00
10.50 to 11.00; (0.488 µm)	0.00	0.00
11.00 to 11.50; (0.345 µm)	0.00	0.00
11.50 to 12.00; (0.244 µm)	0.00	0.00
12.00 to 12.50; (0.173 µm)	0.00	0.00
12.50 to 13.00; (0.122 µm)	0.00	0.00
13.00 to 13.50; (0.086 µm)	0.00	0.00
13.50 to 14.00; (0.061µm)	0.00	0.00
14.00 to 14.50; (0.043µm)	0.00	0.00
>14.5; (0.01)	0.00	0.00
TOTAL	**100.00**	**791.25**

Notes: This sample was oven dried and then dry sieved to 1 mm. A small amount of sediment (c. 0.1 g) was retained in the sieve pan. For completeness, this material was analysed by laser diffraction in the small volume module (ULM). The volume of sediment was so small that the whole sample was analysed once, but run three times. For the purposes of this speadsheet the data has been entered three times to generate 9 sets of results.

APPENDIX 4. Participant laser replicate data for sediment distributed as PS79.

PSA_2706 LASER DATA

Microns	Run 1 - a	Run 1 - b	Run 1 - c	Run 2 - a	Run 2 - b	Run 2 - c	Run 3 - a	Run 3 - b	Run 3 - c
707	2.24	4.52	3.35	2.83	2.02	3.01	6.11	3.75	5.01
500	3.89	4.69	3.99	3.48	3.46	4.11	4.43	3.13	4.17
353.6	4.96	4.87	4.83	3.79	4.44	4.24	3.35	2.78	3.49
250	5.29	5.03	5.63	4.05	4.78	4.11	3.49	3.11	3.56
176.8	5.21	5.11	5.99	4.41	4.92	4.44	4.12	3.85	4.10
125	5.38	5.38	6.12	5.04	5.35	5.28	4.83	4.84	4.87
88.39	6.19	6.14	6.57	6.13	6.30	6.38	5.87	6.18	5.98
62.5	7.36	7.21	7.36	7.50	7.50	7.46	7.24	7.74	7.33
44.19	8.10	7.83	7.83	8.43	8.28	8.09	8.24	8.78	8.26
31.25	7.75	7.43	7.36	8.22	7.99	7.81	8.08	8.58	8.07
22.097	6.48	6.17	6.08	6.98	6.75	6.67	6.83	7.23	6.85
15.625	5.02	4.79	4.69	5.44	5.28	5.27	5.26	5.60	5.33
11.049	3.96	3.80	3.72	4.27	4.17	4.20	4.07	4.36	4.18
7.813	3.44	3.32	3.25	3.68	3.62	3.65	3.47	3.74	3.59
5.524	3.34	3.23	3.17	3.56	3.51	3.54	3.35	3.62	3.48
3.906	3.46	3.33	3.26	3.66	3.60	3.62	3.46	3.72	3.57
2.762	3.50	3.36	3.29	3.69	3.61	3.63	3.51	3.75	3.59
1.953	3.34	3.19	3.12	3.48	3.40	3.41	3.33	3.55	3.39
1.381	3.03	2.89	2.83	3.13	3.04	3.05	3.01	3.20	3.05
0.977	2.78	2.66	2.60	2.85	2.77	2.78	2.75	2.93	2.80
0.691	2.54	2.43	2.38	2.60	2.53	2.54	2.51	2.68	2.56
0.488	1.93	1.86	1.83	1.97	1.92	1.93	1.91	2.04	1.96
0.345	0.80	0.77	0.76	0.80	0.78	0.79	0.78	0.84	0.81
0.244	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.173	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.122	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.086	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.061	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.043	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

	Run 1 - a	Run 1 - b	Run 1 - c	Run 2 - a	Run 2 - b	Run 2 - c	Run 3 - a	Run 3 - b	Run 3 - c
d10	1.73	1.82	1.86	1.68	1.73	1.73	1.75	1.63	1.71
d50	41.56	45.72	47.57	36.82	38.85	38.88	39.99	34.91	38.47
d90	381.68	472.68	413.01	356.85	351.40	395.18	521.71	340.53	460.93

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	1.80	0.07	3.78	-	-	-	-	-	-
d50	44.95	3.08	6.85	-	-	-	-	-	-
d90	422.46	46.23	10.94	-	-	-	-	-	-

APPENDIX 4. Participant laser replicate data for sediment distributed as PS79.

PSA_2715 LASER DATA

Microns	Run 1 - a	Run 1 - b	Run 1 - c	Run 2 - a	Run 2 - b	Run 2 - c	Run 3 - a	Run 3 - b	Run 3 - c
707	0.17	0.27	0.37	-	-	-	-	-	-
500	4.34	5.43	5.03	-	-	-	-	-	-
353.6	10.28	11.02	10.66	-	-	-	-	-	-
250	11.17	11.11	11.24	-	-	-	-	-	-
176.8	11.38	10.76	10.67	-	-	-	-	-	-
125	10.82	10.15	10.22	-	-	-	-	-	-
88.39	9.07	8.48	8.53	-	-	-	-	-	-
62.5	7.06	6.67	6.43	-	-	-	-	-	-
44.19	5.69	5.54	5.52	-	-	-	-	-	-
31.25	4.73	4.78	4.87	-	-	-	-	-	-
22.097	3.38	3.42	3.44	-	-	-	-	-	-
15.625	2.41	2.47	2.58	-	-	-	-	-	-
11.049	2.02	2.14	2.23	-	-	-	-	-	-
7.813	1.96	2.04	2.10	-	-	-	-	-	-
5.524	2.25	2.29	2.35	-	-	-	-	-	-
3.906	2.45	2.46	2.53	-	-	-	-	-	-
2.762	2.21	2.23	2.28	-	-	-	-	-	-
1.953	1.80	1.84	1.89	-	-	-	-	-	-
1.381	1.48	1.55	1.61	-	-	-	-	-	-
0.977	1.24	1.31	1.36	-	-	-	-	-	-
0.691	1.03	1.08	1.11	-	-	-	-	-	-
0.488	0.85	0.87	0.89	-	-	-	-	-	-
0.345	0.69	0.68	0.69	-	-	-	-	-	-
0.244	0.54	0.52	0.52	-	-	-	-	-	-
0.173	0.40	0.37	0.37	-	-	-	-	-	-
0.122	0.29	0.27	0.27	-	-	-	-	-	-
0.086	0.18	0.17	0.16	-	-	-	-	-	-
0.061	0.08	0.07	0.07	-	-	-	-	-	-
0.043	0.01	0.01	0.01	-	-	-	-	-	-
Total	100.00	100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00

	Run 1 - a	Run 1 - b	Run 1 - c	Run 2 - a	Run 2 - b	Run 2 - c	Run 3 - a	Run 3 - b	Run 3 - c
d10	3.44	3.36	3.24	-	-	-	-	-	-
d50	116.59	118.75	116.13	-	-	-	-	-	-
d90	415.64	436.83	430.53	-	-	-	-	-	-

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	3.35	0.10	2.98	-	-	-	-	-	-
d50	117.15	1.40	1.19	-	-	-	-	-	-
d90	427.67	10.88	2.54	-	-	-	-	-	-

Appendix 5. Comparison of participant laser subsample data with the Benchmark Average for sediment distributed as PS79.