NMBAQC

NE Atlantic Marine Biological Analytical Quality Control Scheme

Particle Size Report - PS78

Particle Size Component 2020/21

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APEM

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APPENDICES

BENCHMARK DATA

Table 1. Summary data for the benchmark replicates distributed as PS78.

	Method	% Gravel	% Sand	% Mud	Sediment Description (Post analysis)
PSA_2630 BM REP 1	NMBAQC	57.37	28.55	14.08	Muddy Sandy Gravel
PSA_2631 BM REP 2	NMBAQC	56.99	29.13	13.89	Muddy Sandy Gravel
PSA_2632 BM REP 3	NMBAQC	56.84	29.79	13.36	Muddy Sandy Gravel
PSA_2633 BM REP 4	NMBAQC	56.56	29.42	14.02	Muddy Sandy Gravel
PSA_2634 BM REP 5	NMBAQC	56.89	29.84	13.27	Muddy Sandy Gravel
BM REP AVERAGE	NMBAQC	56.93	29.35	13.72	Muddy Sandy Gravel

Table 2. Summary of sieve data for the benchmark replicates distributed as PS78.

		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		88.23	79.79	87.90	64.62	63.25	76.76
-4.00 to -3.50; 11.2 mm		157.13	169.80	159.16	180.73	169.97	167.36
-3.50 to -3.00; 8 mm		121.92	117.85	110.04	111.60	129.89	118.26
-3.00 to -2.50; 5.6 mm		16.43	13.55	18.48	16.34	17.29	16.42
-2.50 to -2.00; 4 mm		0.29	0.00	0.15	0.00	0.00	0.09
-2.00 to -1.50; 2.8 mm		0.05	0.05	0.04	0.14	0.03	0.06
-1.50 to -1.00; 2 mm		0.05	0.09	0.07	0.10	0.14	0.09
-1.00 to -0.50; 1.4 mm		0.09	0.15	0.03	0.16	0.10	0.11
-0.50 to 0.00; 1.0 mm		0.12	0.17	0.08	0.18	0.16	0.14
>1.0 mm		384.31	381.45	375.95	373.87	380.83	379.28
<1.0 mm	Base Pan	0.40	0.35	0.43	0.63	0.51	0.46
	Oven Dried	284.79	287.02	284.81	285.90	287.63	286.03
Total Weight (g)		669.50	668.82	661.19	660.40	668.97	665.78

BENCHMARK DATA

Table 3. Summary of final laser data for the benchmark replicates distributed as PS78.

	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)	0.34	0.21	0.24	0.31	0.32	0.28
0.50 to 1.00; (500 µm)	1.43	1.64	2.04	2.01	1.89	1.80
1.00 to 1.50; (353.6 µm)	4.65	4.94	5.49	4.89	5.13	5.02
1.50 to 2.00; (250 µm)	8.87	8.80	9.19	8.95	9.07	8.97
2.00 to 2.50; (176.8 µm)	13.57	13.72	14.09	13.75	14.14	13.85
2.50 to 3.00; (125 µm)	15.16	15.50	15.19	15.04	15.57	15.29
3.00 to 3.50; (88.39 µm)	12.93	12.95	12.84	12.91	13.25	12.97
3.50 to 4.00; (62.5 µm)	9.98	9.92	9.94	9.84	9.82	9.90
4.00 to 4.50; (44.19 µm)	6.85	6.65	6.65	6.61	6.46	6.64
4.50 to 5.00; (31.25 µm)	4.27	4.04	3.89	4.01	3.84	4.01
5.00 to 5.50; (22.097 µm)	2.76	2.58	2.46	2.47	2.31	2.52
5.50 to 6.00; (15.625 µm)	2.10	1.94	1.84	1.91	1.80	1.92
6.00 to 6.50; (11.049 µm)	1.79	1.68	1.59	1.73	1.59	1.68
6.50 to 7.00; (7.813 µm)	1.64	1.54	1.49	1.66	1.45	1.56
7.00 to 7.50; (5.524 µm)	1.63	1.57	1.52	1.73	1.51	1.59
7.50 to 8.00; (3.906 µm)	1.62	1.61	1.54	1.78	1.60	1.63
8.00 to 8.50; (2.762 µm)	1.54	1.55	1.49	1.68	1.55	1.56
8.50 to 9.00; (1.953 µm)	1.47	1.51	1.43	1.57	1.51	1.50
9.00 to 9.50; (1.381 µm)	1.42	1.49	1.39	1.48	1.49	1.46
9.50 to 10.00; (0.977 µm)	1.32	1.39	1.29	1.34	1.38	1.34
10.00 to 10.50; (0.691 µm)	1.15	1.20	1.11	1.13	1.16	1.15
10.50 to 11.00; (0.488 µm)	0.96	0.99	0.92	0.92	0.93	0.95
11.00 to 11.50; (0.345 µm)	0.79	0.80	0.74	0.73	0.73	0.76
11.50 to 12.00; (0.244 µm)	0.62	0.63	0.58	0.57	0.56	0.59
12.00 to 12.50; (0.173 µm)	0.47	0.47	0.43	0.41	0.40	0.44
12.50 to 13.00; (0.122 µm)	0.35	0.35	0.31	0.30	0.29	0.32
13.00 to 13.50; (0.086 µm)	0.22	0.22	0.20	0.19	0.18	0.20
13.50 to 14.00; (0.061 µm)	0.09	0.09	0.08	0.08	0.07	0.08
14.00 to 14.50; (0.043 µm)	0.01	0.01	0.01	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 Fine Sand	Very Fine Sand	Very Fine Sand	Very Fine Sand	Very Fine Sand	Very Fine Sand
SORTING:	Very Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted	Very Poorly Sorted
SKEWNESS:	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed
KURTOSIS:	Very Leptokurtic	Very Leptokurtic	Very Leptokurtic	Very Leptokurtic	Very Leptokurtic	Very Leptokurtic
MODE:	Unimodal	Unimodal	Unimodal	Unimodal	Unimodal	Unimodal
MODE 1 (µm):	150.9	150.9	150.9	150.9	150.9	150.9
MODE 2 (µm):	-	-	-	-	-	-
MODE 3 (µm):	-	-	-	-	-	-

BENCHMARK DATA

Table 4. Summary of Coefficient of Variation for Benchmark laser replicates for PS78.

		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	2.08	2.18	1.41	1.03	2.13
	Subsample 2	4.61	0.59	3.19	4.27	0.67
	Subsample 3	1.02	0.56	1.54	0.26	2.42
					n	
D_{50}	Subsample 1	1.61	0.32	0.47	0.46	0.70
	Subsample 2	0.95	0.44	0.54	0.72	0.21
	Subsample 3	1.42	0.19	1.11	0.10	0.23
D_{90}	Subsample 1	0.35	1.09	0.68	0.43	0.89
	Subsample 2	1.54	0.83	1.12	0.25	0.70
	Subsample 3	1.13	0.68	2.02	0.49	0.47

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

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 PS78.

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 distibuted as PS78 (Benchmark Data).

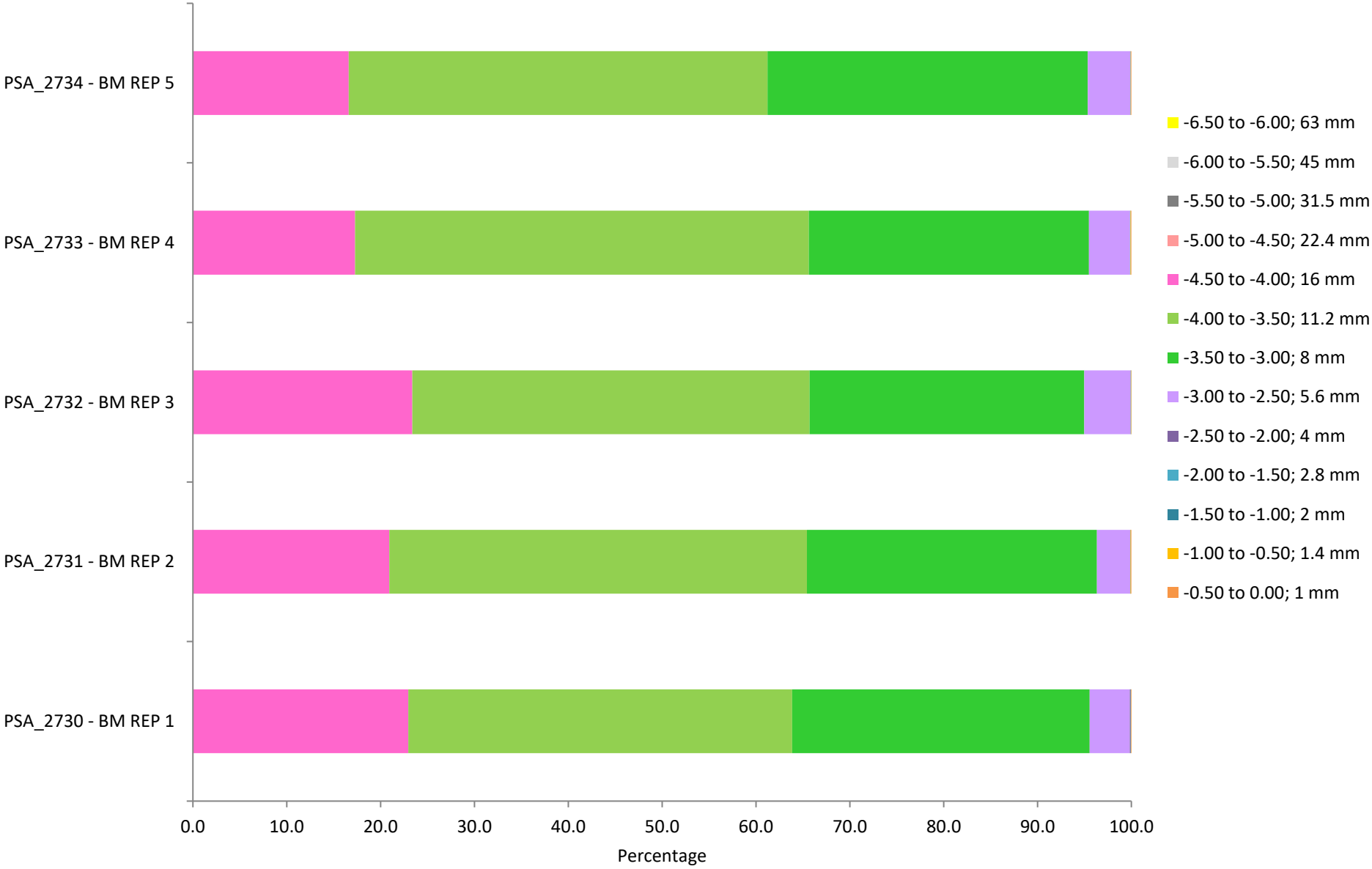

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Figure 1b. Particle size distribution curves resulting from final laser analysis of 5 replicate samples of sediment distibuted as PS78 (Benchmark Data).

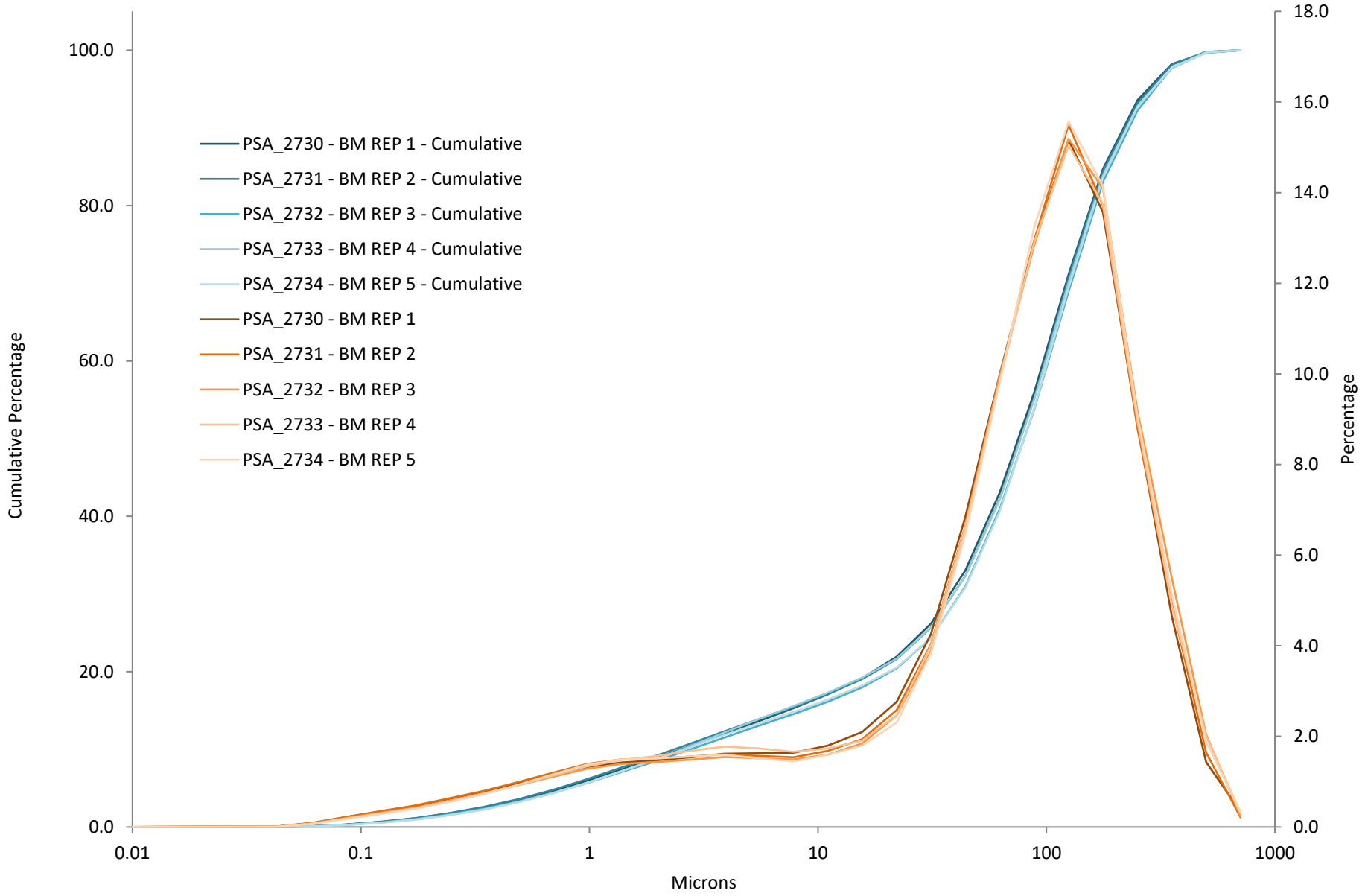
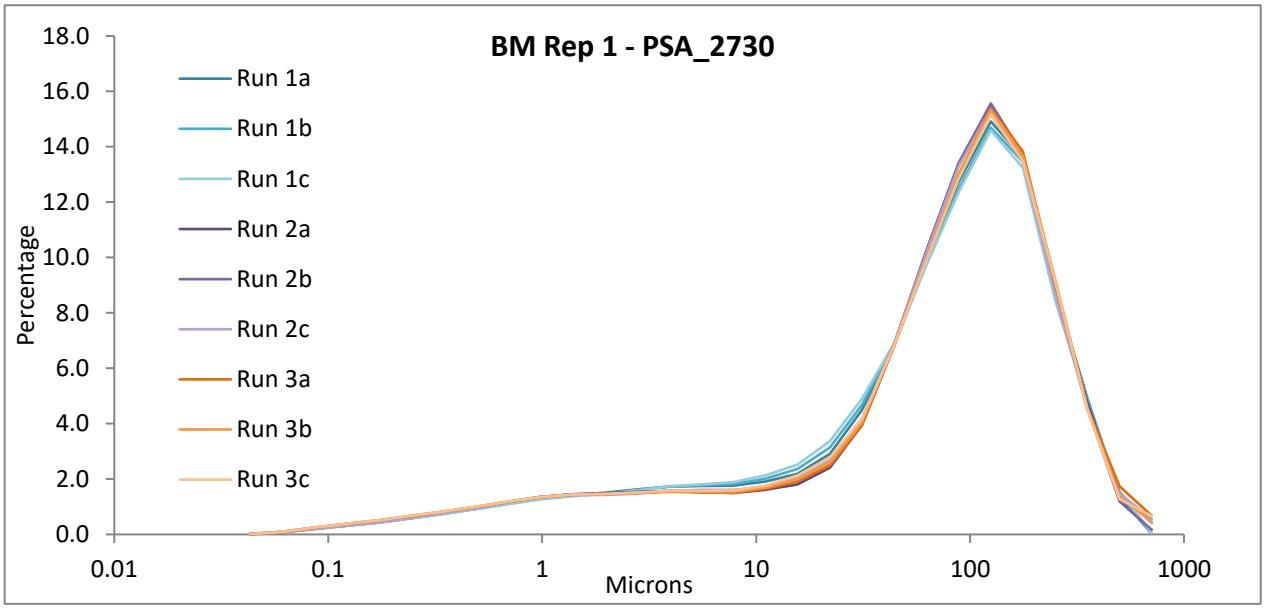
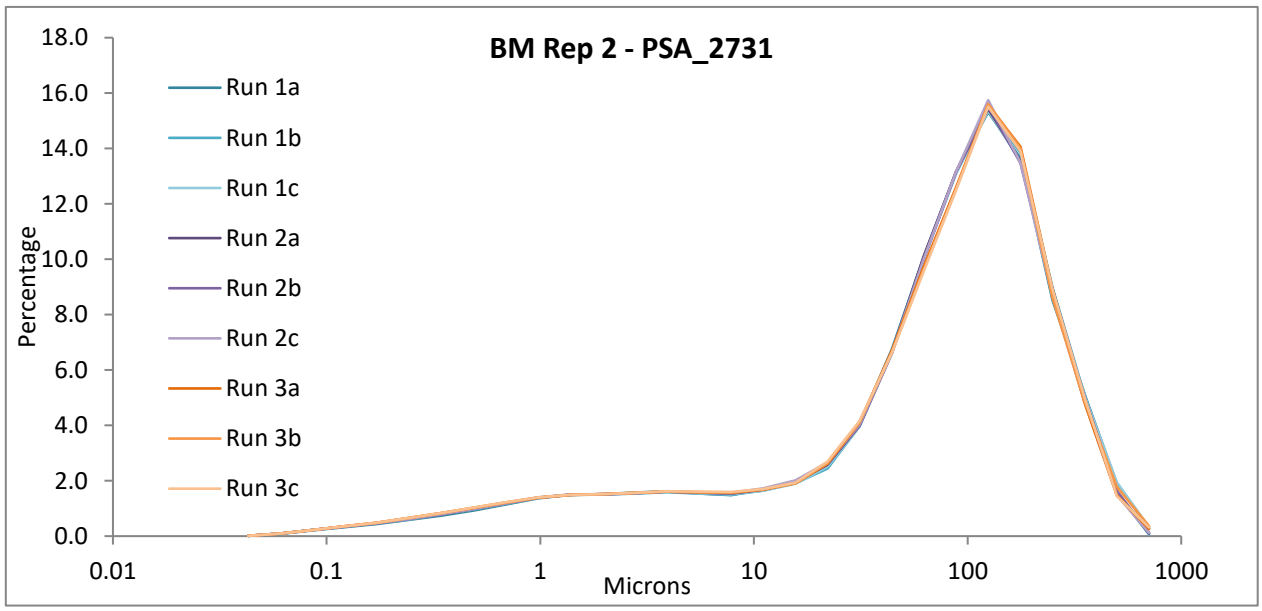


Figure 2. Particle size distribution curves resulting from laser analysis of five replicate samples of sediment distributed as PS78.





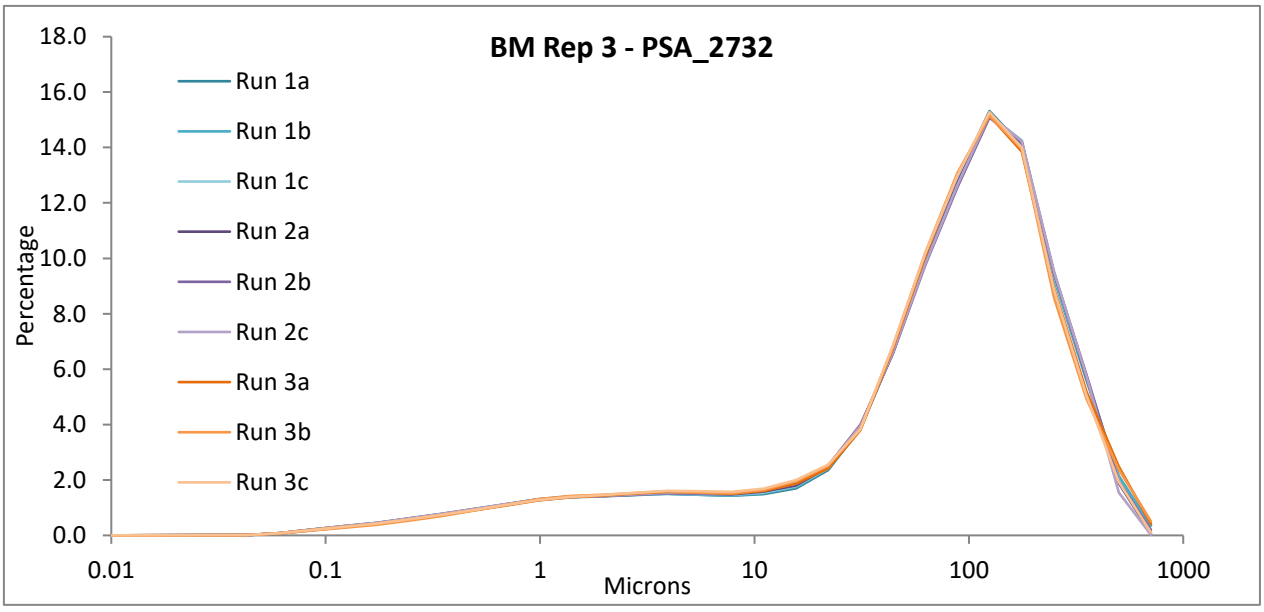
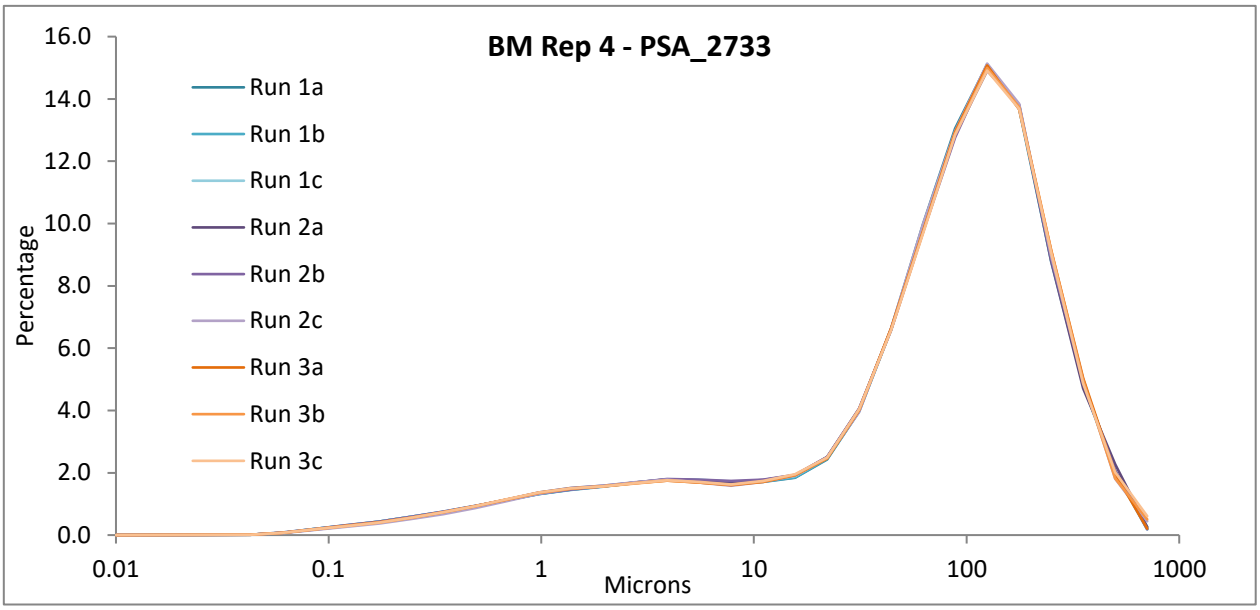


Figure 2. Particle size distribution curves resulting from laser analysis of five replicate samples of sediment distributed as PS78.



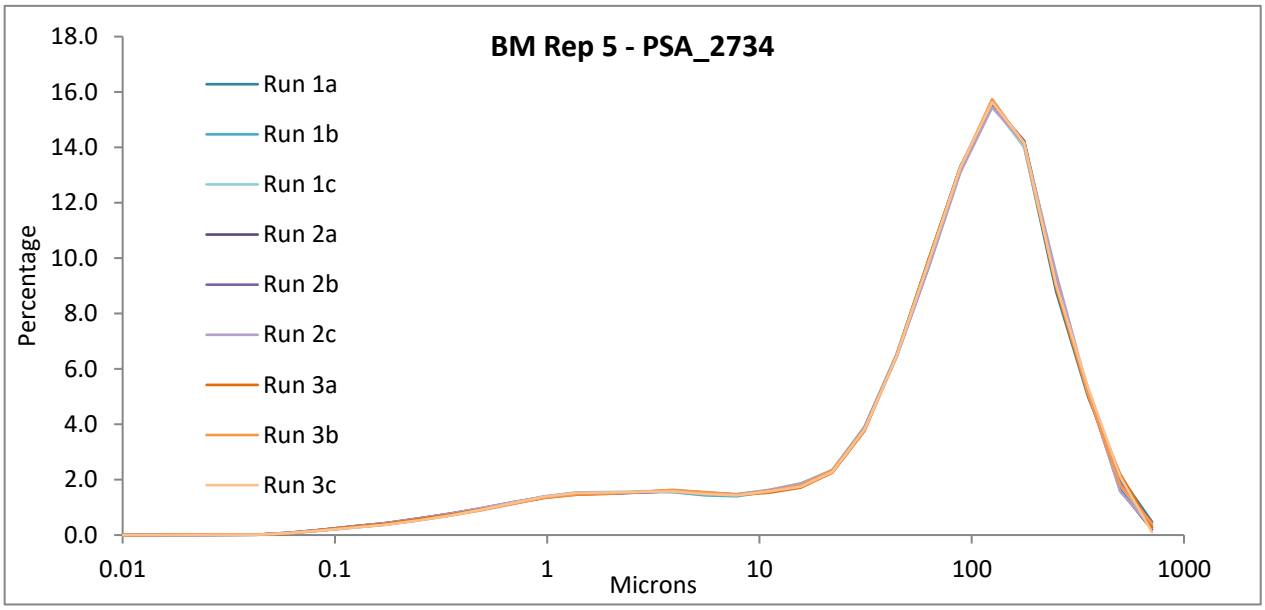
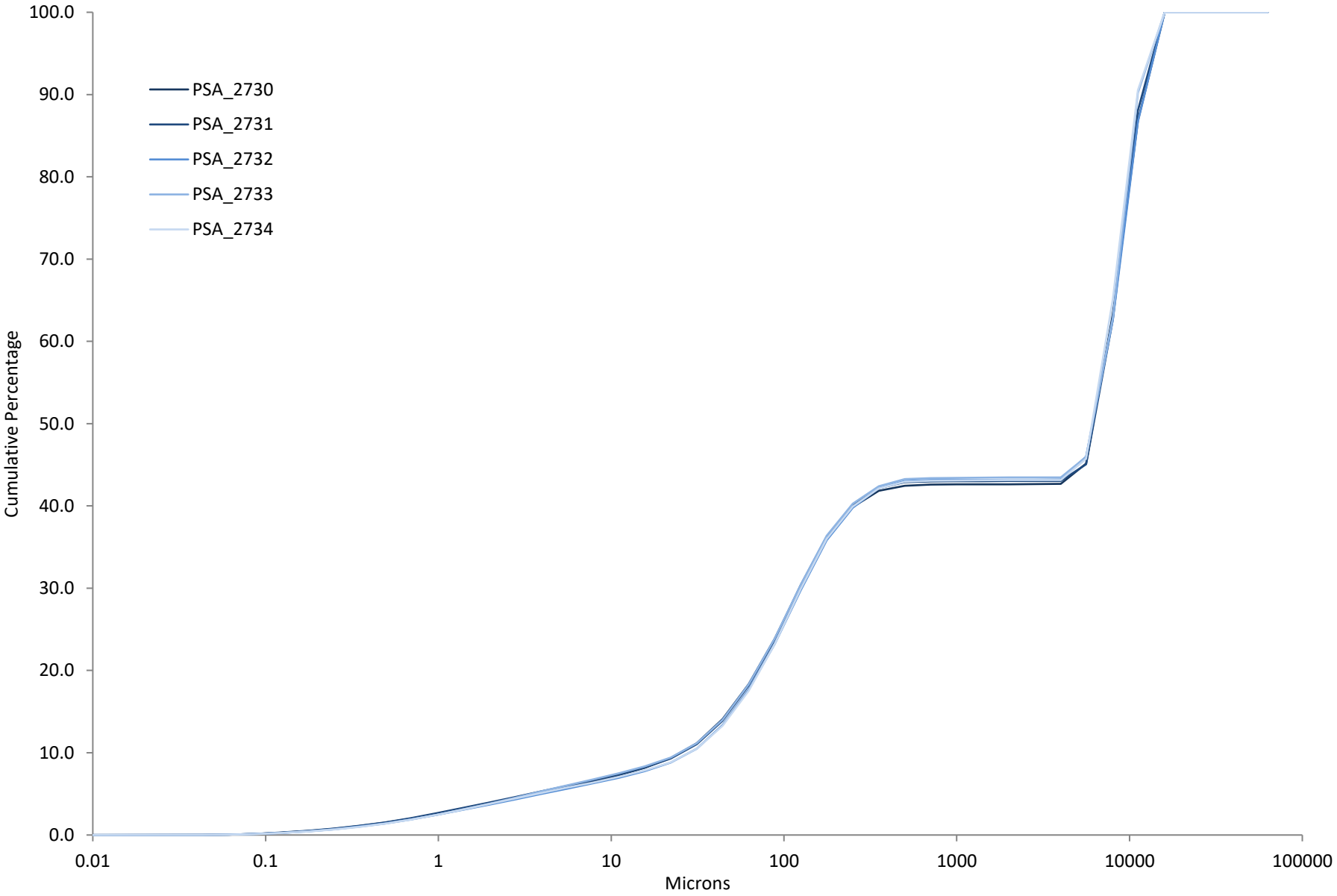


Figure 3. Particle size distribution curves resulting from analysis of 5 replicate samples of sediment distibuted as PS78 (Benchmark Data).



PARTICIPANT DATA

Table 6. Summary of equipment and methods used by participants and sample summary data provided by participants for sediment distributed as PS78.

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	56.93	29.35	13.72	Muddy Sandy Gravel	Muddy Sandy Gravel
PSA_2701	Yes	Yes	NMBAQC	No	No	55.99	34.13	9.88	Muddy Sandy Gravel	Muddy Sandy Gravel
PSA_2702	Yes	Yes	NMBAQC	No	No	57.6	32.6	9.8	Muddy Sandy Gravel	Muddy Sandy 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	Yes	NMBAQC	No	No	55.70	29.00	15.30	Muddy Sandy Gravel	Muddy Sandy Gravel
PSA_2705	Yes	Yes	NMBAQC	No	No	59.56	28.40	12.04	Silty sandy gravel	Muddy Sandy Gravel
PSA_2706	Yes	Yes	NMBAQC	No	No	59.4	31.6	9.0	Muddy Sandy Gravel	Muddy Sandy Gravel
PSA_2707	Yes	Yes	NMBAQC	No	No	51.70	34.14	14.16	Muddy Sandy Gravel	Muddy Sandy Gravel
PSA_2708	Yes	Yes	OTHER	No	No	59.09	29.18	11.73	Muddy Sandy Gravel	Muddy Sandy Gravel
PSA_2709	Yes	Yes	NMBAQC	No	No	56.22	35.72	8.06	Muddy Sandy Gravel	Muddy Sandy 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	Yes	NMBAQC	No	No	56.30	30.30	13.40	Muddy Sandy Gravel	Muddy Sandy Gravel
PSA_2712	Yes	Yes	NMBAQC	No	No	57.73	29.74	12.54	Muddy Sandy Gravel	Muddy Sandy Gravel
PSA_2713	Yes	Yes	NMBAQC	No	No	55.35	29.42	15.23	Muddy Sandy Gravel	Muddy Sandy Gravel
PSA_2714	Yes	Yes	NMBAQC	No	No	57.1	32.4	10.5	Muddy Sandy Gravel	Muddy Sandy Gravel
PSA_2715	Yes	Yes	NMBAQC	No	No	56.93	30.55	12.52	Muddy Sandy Gravel	Muddy Sandy Gravel
PSA_2716	Yes	Yes	NMBAQC	No	No	58.09	31.74	10.17	Muddy Sandy Gravel	Muddy Sandy Gravel
PSA_2717	Yes	Yes	NMBAQC	No	No	57.72	30.40	11.89	Muddy Sandy Gravel	Muddy Sandy Gravel
PSA_2718	Yes	No	OTHER	No	Yes	61.1	26.5	12.4	-	Muddy Sandy 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 PS78.

		Participant									
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
-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	6.94
-4.50 to -4.00; 16 mm		76.76	76.01	73.63	n/p	59.17	65.72	44.09	51.06	61.07	67.53
-4.00 to -3.50; 11.2 mm		167.36	149.74	185.10	n/p	168.53	193.80	201.16	157.28	183.93	140.52
-3.50 to -3.00; 8 mm		118.26	82.20	101.00	n/p	117.56	132.36	142.29	110.88	144.23	83.09
-3.00 to -2.50; 5.6 mm		16.42	9.63	16.69	n/p	16.33	19.22	22.36	14.70	24.53	23.14
-2.50 to -2.00; 4 mm		0.09	0.21	0.86	n/p	0.40	0.34	0.00	1.64	1.43	0.93
-2.00 to -1.50; 2.8 mm		0.06	0.00	0.26	n/p	0.03	0.20	0.00	0.81	0.47	0.91
-1.50 to -1.00; 2 mm		0.09	0.01	0.22	n/p	0.08	0.00	0.07	0.51	0.20	0.60
-1.00 to -0.50; 1.4 mm		0.11	0.08	0.49	n/p	0.13	0.10	0.12	0.15	0.20	0.50
-0.50 to 0.00; 1 mm		0.14	0.05	0.43	n/p	0.20	0.05	0.20	0.20	0.10	0.49
*Total **		379.28	317.93	378.68	n/p	362.43	411.79	410.28	337.23	416.17	324.65
Summary Data											
< 0.00; >1 mm		379.28	317.93	378.68	n/p	362.43	411.79	410.28	337.23	416.17	324.65
> 0.00; <1 mm	Base pan	0.46	0.19	2.34	n/p	1.58	-	1.75	5.71	-	0.64
	Oven dried	286.03	249.51	274.40	n/p	286.10	279.38	277.65	314.40	287.63	250.41
Total Sample Weight		665.78	567.63	655.42	n/p	650.11	691.17	689.68	657.34	703.80	575.70

- No data provided.

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 PS78.

		Participant								
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	45.90
-4.50 to -4.00; 16 mm		76.76	n/p	59.59	60.89	41.45	72.16	79.60	84.22	44.19
-4.00 to -3.50; 11.2 mm		167.36	n/p	167.90	178.90	168.08	189.36	150.90	141.55	191.88
-3.50 to -3.00; 8 mm		118.26	n/p	143.13	112.13	123.70	125.93	127.68	113.07	111.37
-3.00 to -2.50; 5.6 mm		16.42	n/p	23.96	20.29	17.90	20.66	20.38	15.92	19.85
-2.50 to -2.00; 4 mm		0.09	n/p	3.86	1.11	0.72	0.00	0.54	0.63	0.89
-2.00 to -1.50; 2.8 mm		0.06	n/p	0.84	0.78	0.10	0.08	0.06	0.14	0.00
-1.50 to -1.00; 2 mm		0.09	n/p	0.52	0.48	0.06	0.12	0.06	0.13	0.06
-1.00 to -0.50; 1.4 mm		0.11	n/p	0.80	0.40	0.10	0.16	0.13	0.31	0.11
-0.50 to 0.00; 1 mm		0.14	n/p	0.96	0.37	0.13	0.24	0.16	0.30	0.12
*Total**		379.28	n/p	401.57	375.35	352.24	408.71	379.51	356.27	414.37
Summary Data										
< 0.00; >1 mm		379.28	n/p	401.57	376.51	352.24	408.71	379.51	356.27	414.37
> 0.00; <1 mm	Base pan	0.46	n/p	6.14	1.16	1.44	0.76	0.34	1.09	0.16
	Oven dried	286.03	n/p	302.47	272.36	282.29	306.27	286.25	254.88	303.01
Total Sample Weight		665.78	n/p	710.17	648.87	635.97	715.74	666.10	612.24	717.54

- No data provided.

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

PARTICIPANT DATA

Table 8. Summary of final laser data for the participants for sediment distributed as PS78 with Gradistat output.

Microns	Benchmark Average	PSA_2701	PSA_2702	PSA_2703	PSA_2704	PSA_2705	PSA_2706
707	0.28	0.13	0.90	n/p	0.00	0.09	0.38
500	1.80	1.74	4.94	n/p	0.04	1.46	3.14
353.6	5.02	5.89	10.46	n/p	3.19	5.15	7.81
250	8.97	11.83	15.29	n/p	6.88	10.24	12.85
176.8	13.85	16.42	16.72	n/p	13.99	13.09	15.95
125	15.29	17.36	14.02	n/p	18.18	15.97	15.77
88.39	12.97	14.37	9.29	n/p	12.45	13.12	12.91
62.5	9.90	9.80	5.27	n/p	10.69	11.08	9.04
44.19	6.64	5.87	3.04	n/p	7.68	7.11	5.58
31.25	4.01	3.27	2.30	n/p	4.18	4.68	3.17
22.097	2.52	1.95	2.55	n/p	2.78	2.74	1.86
15.625	1.92	1.51	3.22	n/p	1.85	2.06	1.31
11.049	1.68	1.50	3.59	n/p	1.74	1.87	1.16
7.813	1.56	1.66	3.18	n/p	1.82	1.91	1.18
5.524	1.59	1.76	2.16	n/p	1.96	2.07	1.27
3.906	1.63	1.69	1.15	n/p	1.99	2.15	1.36
2.762	1.56	1.50	0.56	n/p	1.79	2.05	1.33
1.953	1.50	1.05	0.37	n/p	1.57	1.63	1.16
1.381	1.46	0.45	0.32	n/p	1.43	1.01	0.93
0.977	1.34	0.10	0.30	n/p	1.31	0.46	0.74
0.691	1.15	0.13	0.27	n/p	1.13	0.07	0.60
0.488	0.95	0.04	0.12	n/p	0.94	0.00	0.41
0.345	0.76	0.00	0.00	n/p	0.76	0.00	0.10
0.244	0.59	0.00	0.00	n/p	0.59	0.00	0.00
0.173	0.44	0.00	0.00	n/p	0.44	0.00	0.00
0.122	0.32	0.00	0.00	n/p	0.32	0.00	0.00
0.086	0.20	0.00	0.00	n/p	0.20	0.00	0.00
0.061	0.08	0.00	0.00	n/p	0.08	0.00	0.00
0.043	0.01	0.00	0.00	n/p	0.01	0.00	0.00
0.01	0.00	0.00	0.00	n/p	0.00	0.00	0.00
Total	100.00	100.00	100.00	n/p	100.00	100.00	100.00
GRADISTAT OUTPUTS							
MEAN:	Very Fine Sand	Very Fine Sand	Very Fine Sand	n/p	Very Coarse Silt	Very Fine Sand	Very Fine Sand
SORTING:	Very Poorly Sorted	Poorly Sorted	Poorly Sorted	n/p	Very Poorly Sorted	Poorly Sorted	Poorly Sorted
SKEWNESS:	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed	n/p	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed
KURTOSIS:	Very Leptokurtic	Leptokurtic	Leptokurtic	n/p	Very Leptokurtic	Leptokurtic	Very Leptokurtic
MODE:	Unimodal	Unimodal	Bimodal	n/p	Unimodal	Unimodal	Unimodal
MODE 1 (µm):	150.9	150.9	213.4	n/p	150.9	150.9	213.4
MODE 2 (µm):	-	-	13.337	n/p	-	-	-
MODE 3 (µm):	-	-	-	n/p	-	-	-

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

PARTICIPANT DATA

Table 8. Summary of final laser data for the participants for sediment distributed as PS78 with Gradistat output.

Microns	BM Average	PSA_2707	PSA_2708	PSA_2709	PSA_2710	PSA_2711	PSA_2712
707	0.28	0.80	0.00	0.10	n/p	0.00	0.15
500	1.80	9.21	0.72	3.84	n/p	0.74	1.79
353.6	5.02	12.32	4.17	10.15	n/p	4.79	5.42
250	8.97	7.72	9.50	15.72	n/p	9.26	10.21
176.8	13.85	11.33	13.56	17.79	n/p	13.26	13.83
125	15.29	9.84	17.39	15.66	n/p	15.29	15.24
88.39	12.97	11.20	14.29	11.26	n/p	14.49	13.57
62.5	9.90	8.23	11.66	7.00	n/p	11.37	10.15
44.19	6.64	5.91	7.52	4.02	n/p	7.41	6.55
31.25	4.01	4.34	4.26	2.32	n/p	4.20	3.83
22.097	2.52	2.73	3.01	1.50	n/p	2.43	2.36
15.625	1.92	1.60	2.25	1.21	n/p	1.78	1.78
11.049	1.68	0.86	2.01	1.22	n/p	1.64	1.61
7.813	1.56	1.06	1.78	1.37	n/p	1.64	1.83
5.524	1.59	1.07	1.61	1.49	n/p	1.69	2.05
3.906	1.63	1.24	1.41	1.46	n/p	1.79	2.14
2.762	1.56	1.48	1.17	1.26	n/p	1.85	2.17
1.953	1.50	1.57	0.97	0.96	n/p	1.76	1.68
1.381	1.46	1.39	0.80	0.66	n/p	1.49	1.32
0.977	1.34	1.07	0.64	0.46	n/p	1.21	1.05
0.691	1.15	0.63	0.67	0.35	n/p	0.99	0.95
0.488	0.95	0.76	0.48	0.21	n/p	0.69	0.31
0.345	0.76	0.81	0.13	0.00	n/p	0.25	0.00
0.244	0.59	0.91	0.00	0.00	n/p	0.00	0.00
0.173	0.44	0.91	0.00	0.00	n/p	0.00	0.00
0.122	0.32	0.70	0.00	0.00	n/p	0.00	0.00
0.086	0.20	0.31	0.00	0.00	n/p	0.00	0.00
0.061	0.08	0.00	0.00	0.00	n/p	0.00	0.00
0.043	0.01	0.00	0.00	0.00	n/p	0.00	0.00
0.01	0.00	0.00	0.00	0.00	n/p	0.00	0.00
Total	100.00	100.00	100.00	100.00	n/p	100.00	100.00
GRADISTAT OUTPUTS							
MEAN:	Very Fine Sand	Very Fine Sand	Very Fine Sand	Fine Sand	n/p	Very Fine Sand	Very Fine Sand
SORTING:	Very Poorly Sorted	Very Poorly Sorted	Poorly Sorted	Poorly Sorted	n/p	Very Poorly Sorted	Very Poorly Sorted
SKEWNESS:	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed	n/p	Very Fine Skewed	Very Fine Skewed
KURTOSIS:	Very Leptokurtic	Leptokurtic	Leptokurtic	Very Leptokurtic	n/p	Very Leptokurtic	Leptokurtic
MODE:	Unimodal	Trimodal	Unimodal	Unimodal	n/p	Unimodal	Unimodal
MODE 1 (µm):	150.9	426.8	150.9	213.4	n/p	150.9	150.9
MODE 2 (µm):	-	213.4	-	-	n/p		-
MODE 3 (µm):	-	106.695	-	-	n/p		-

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

PARTICIPANT DATA

Table 8. Summary of final laser data for the participants for sediment distributed as PS78 with Gradistat output.

Microns	BM Average	PSA_2713	PSA_2714	PSA_2715	PSA_2716	PSA_2717
707	0.28	0.15	0.00	0.26	0.01	0.07
500	1.80	1.31	2.33	2.07	0.79	1.37
353.6	5.02	3.27	7.87	5.31	4.23	5.31
250	8.97	7.04	12.54	9.38	9.85	9.36
176.8	13.85	13.63	15.18	14.60	14.07	14.33
125	15.29	15.23	15.13	16.00	18.41	16.24
88.39	12.97	13.97	12.81	13.37	15.62	14.47
62.5	9.90	11.26	9.48	9.92	12.71	10.70
44.19	6.64	7.32	6.33	6.35	6.81	6.85
31.25	4.01	4.04	4.06	3.62	3.82	3.94
22.097	2.52	3.00	2.76	2.20	1.97	2.34
15.625	1.92	1.67	2.11	1.64	1.53	1.75
11.049	1.68	1.32	1.75	1.46	1.47	1.62
7.813	1.56	1.87	1.49	1.38	1.55	1.65
5.524	1.59	2.16	1.29	1.42	1.72	1.79
3.906	1.63	2.11	1.12	1.47	1.83	1.84
2.762	1.56	1.92	0.96	1.43	1.67	1.76
1.953	1.50	1.75	0.78	1.38	1.22	1.48
1.381	1.46	1.58	0.60	1.34	0.65	1.05
0.977	1.34	1.36	0.50	1.24	0.07	0.86
0.691	1.15	1.11	0.46	1.06	0.00	0.87
0.488	0.95	0.88	0.36	0.88	0.00	0.33
0.345	0.76	0.68	0.09	0.71	0.00	0.00
0.244	0.59	0.52	0.00	0.55	0.00	0.00
0.173	0.44	0.37	0.00	0.41	0.00	0.00
0.122	0.32	0.26	0.00	0.30	0.00	0.00
0.086	0.20	0.16	0.00	0.18	0.00	0.00
0.061	0.08	0.06	0.00	0.07	0.00	0.00
0.043	0.01	0.01	0.00	0.01	0.00	0.00
0.01	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
GRADISTAT OUTPUTS						
MEAN:	Very Fine Sand	Very Coarse Silt	Very Fine Sand	Very Fine Sand	Very Fine Sand	Very Fine Sand
SORTING:	Very Poorly Sorted	Very Poorly Sorted	Poorly Sorted	Very Poorly Sorted	Poorly Sorted	Poorly Sorted
SKEWNESS:	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed	Very Fine Skewed
KURTOSIS:	Very Leptokurtic	Leptokurtic	Leptokurtic	Very Leptokurtic	Very Leptokurtic	Very Leptokurtic
MODE:	Unimodal	Unimodal	Unimodal	Unimodal	Unimodal	Unimodal
MODE 1 (µm):	150.9	150.9	213.4	150.9	151.9	150.9
MODE 2 (µm):	-	-	-	-	-	-
MODE 3 (µm):	-	-	-	-	-	-

Figure 4. Final sieve data (in percentages) provided by each participant for sediment distributed as PS78

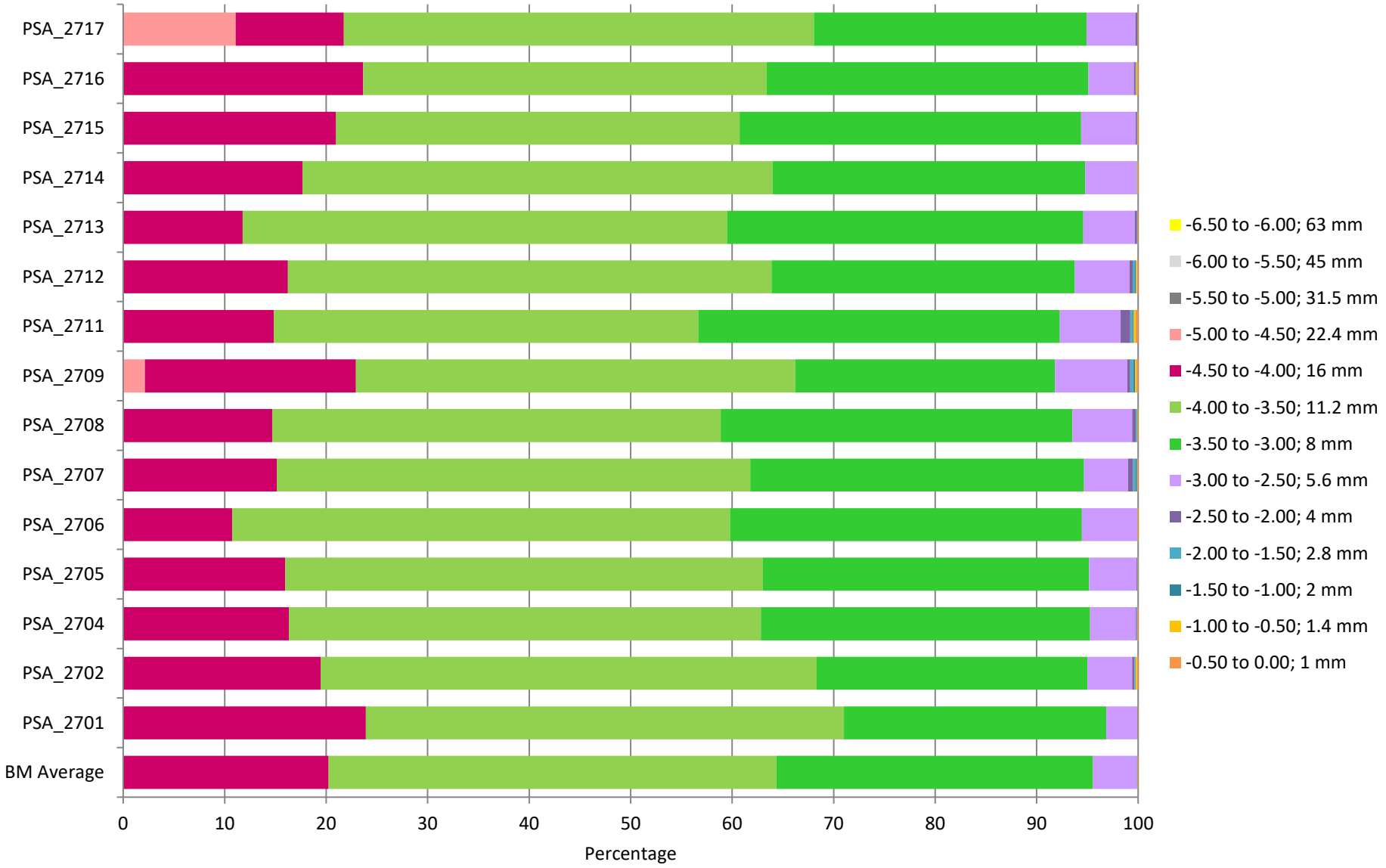


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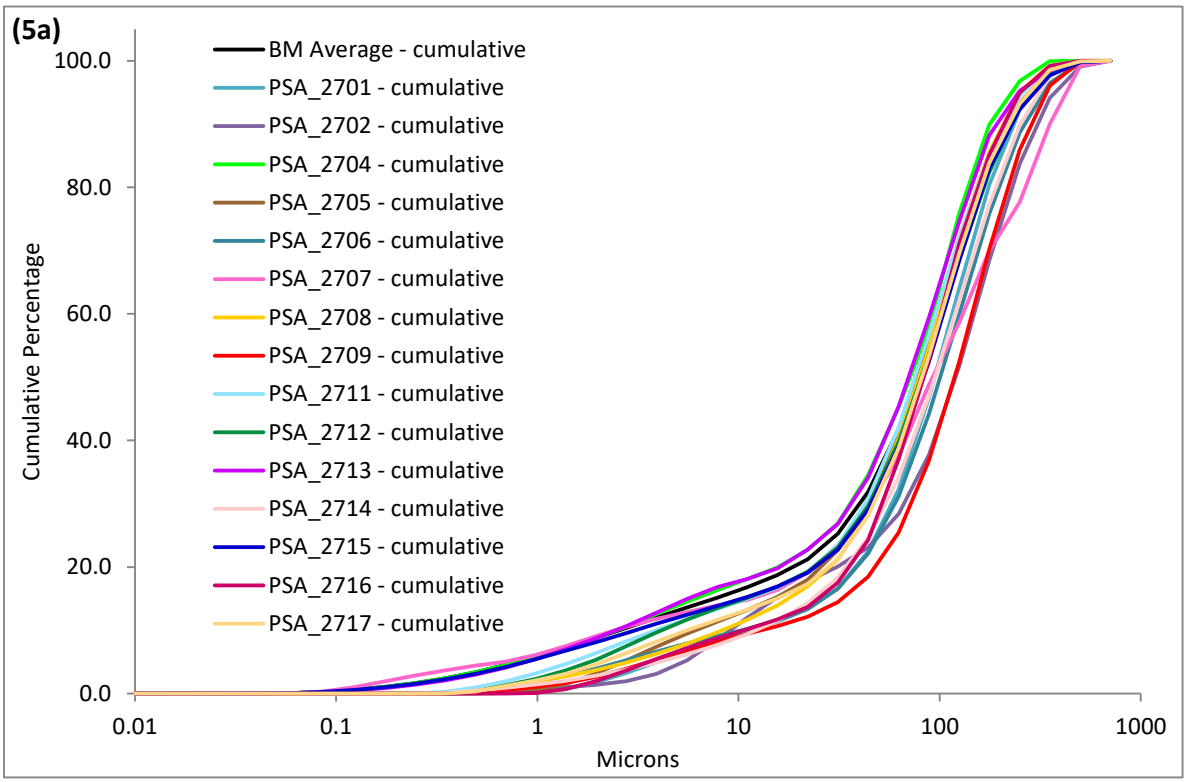
Figure 5. (a) Cumulative and (b) Differential final laser data provided by the participants and Benchmark average for sediment distributed as PS78.



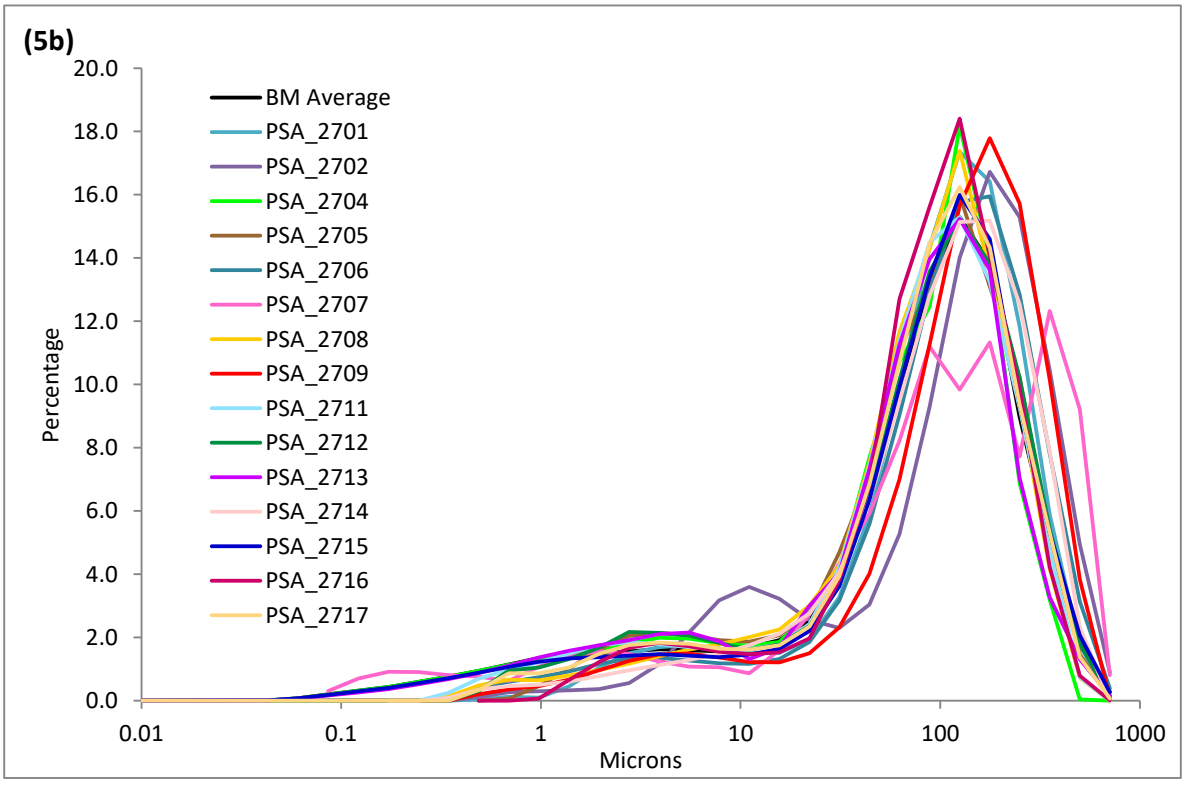


Figure 5c. Comparison of participant laser subsample data with the Benchmark Average for sediment distributed as PS78.

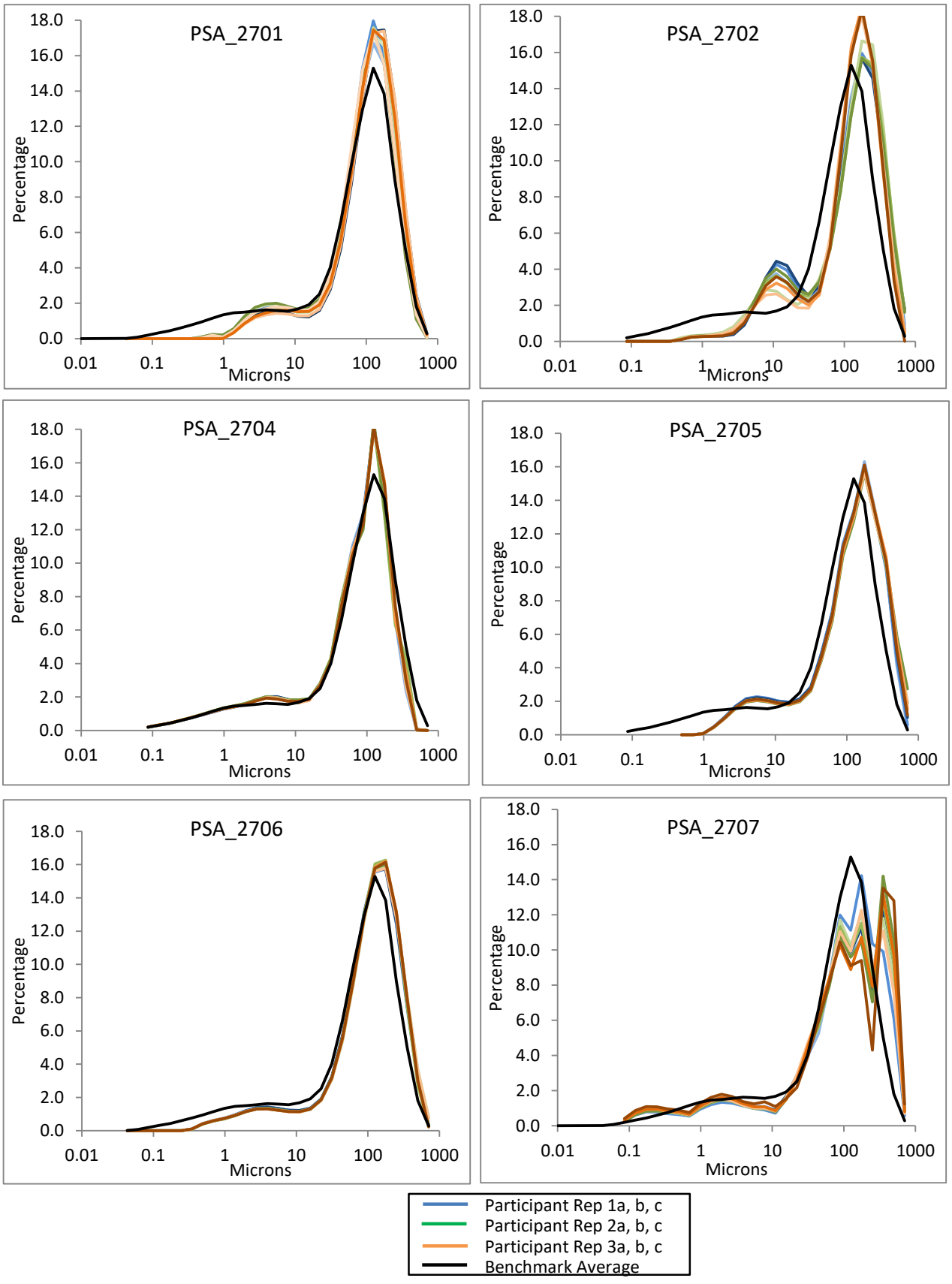


Figure 5c. Comparison of participant laser subsample data with the Benchmark Average for sediment distributed as PS78.

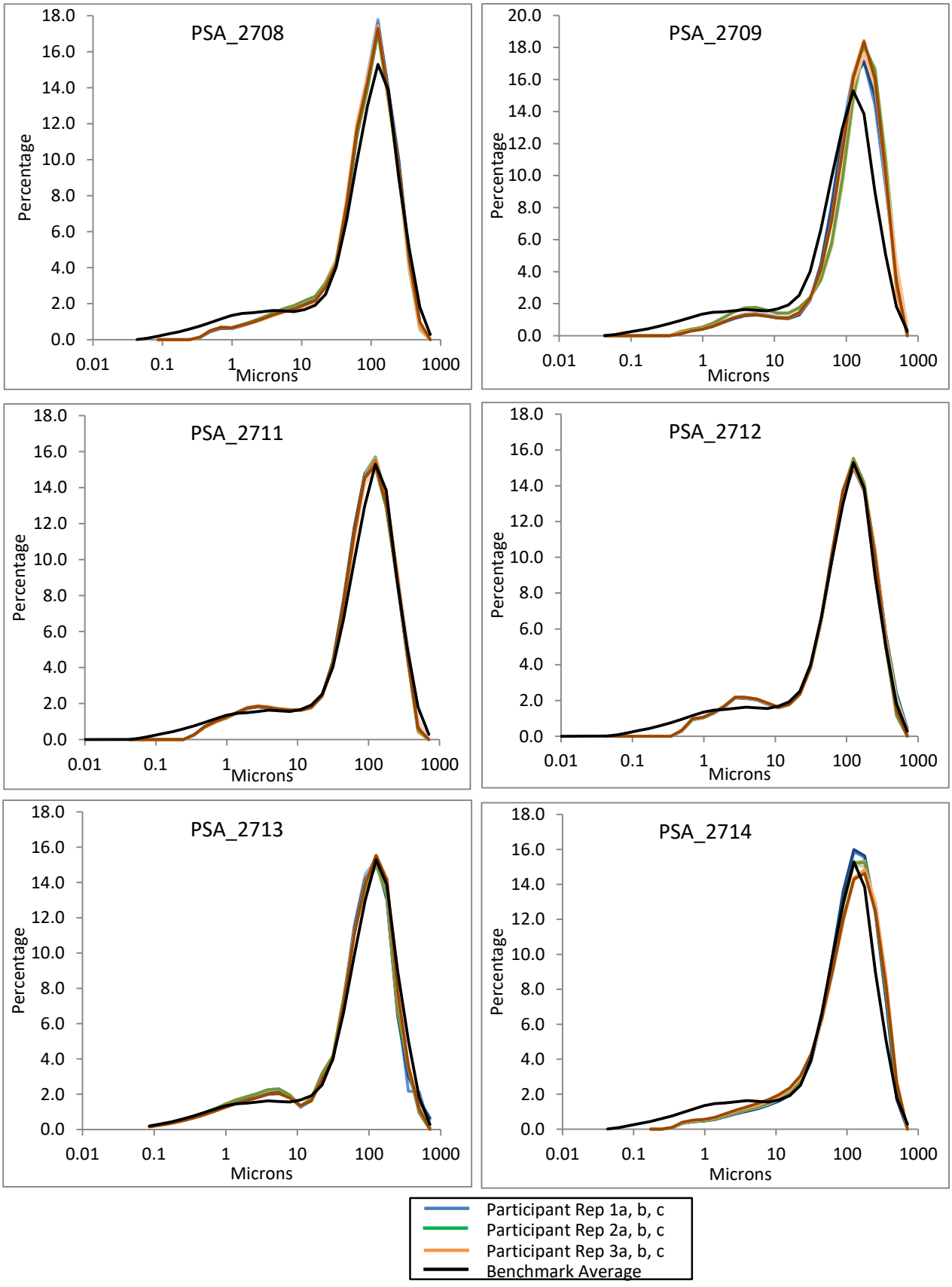


Figure 5c. Comparison of participant laser subsample data with the Benchmark Average for sediment distributed as PS78.

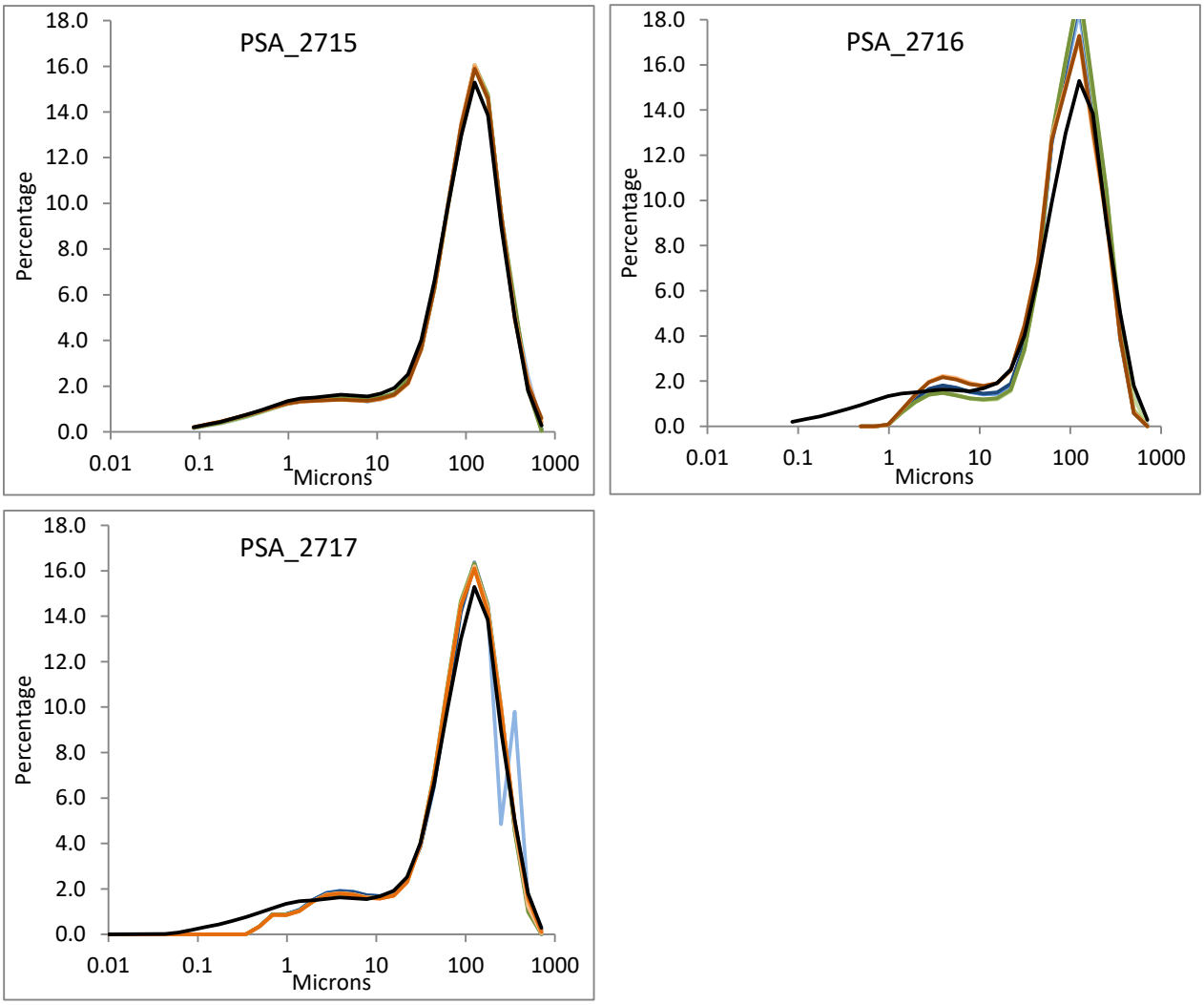


Figure 6. Particle size distribution curves from all participating laboratories and the Benchmark Average for sediment distributed as PS78.

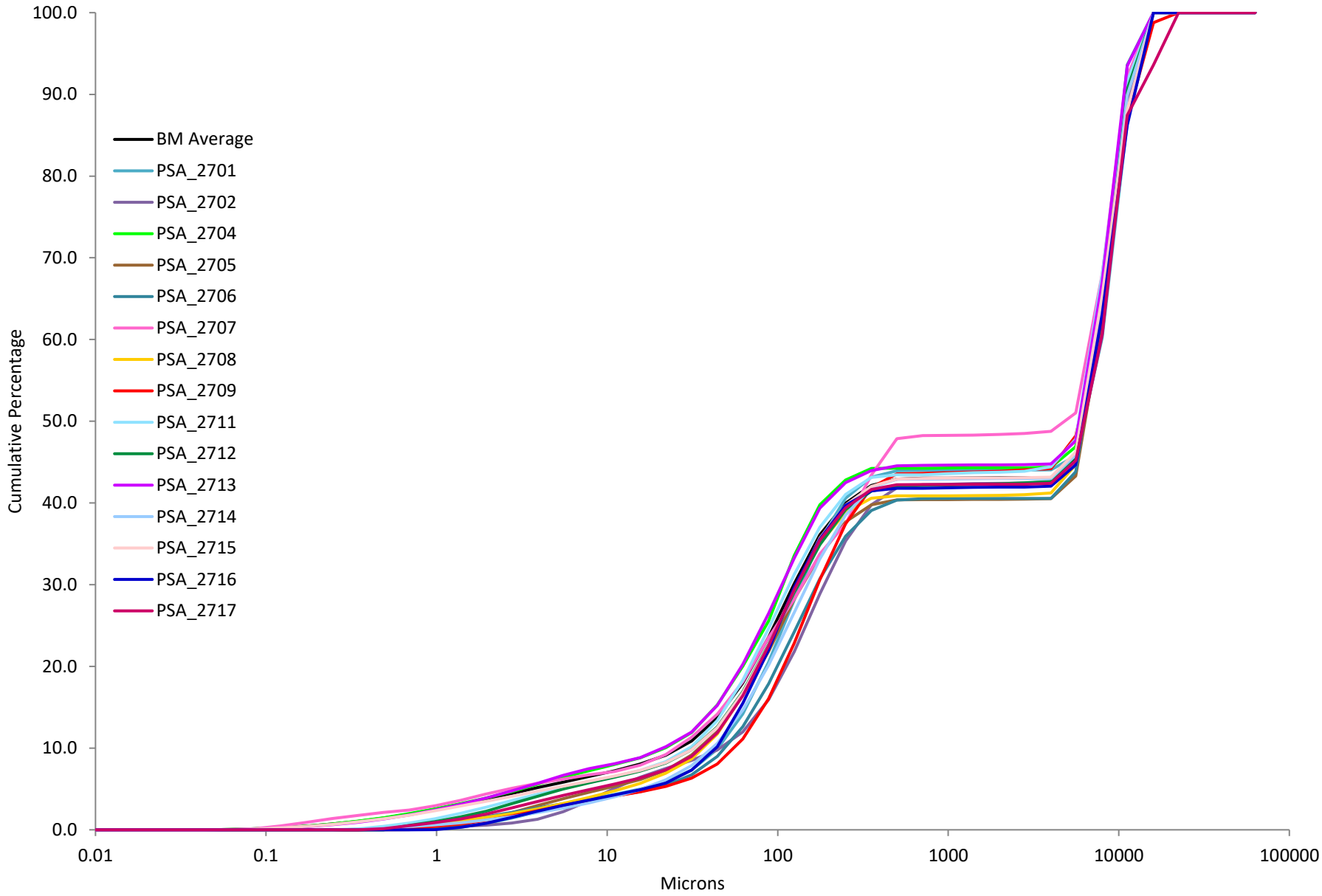
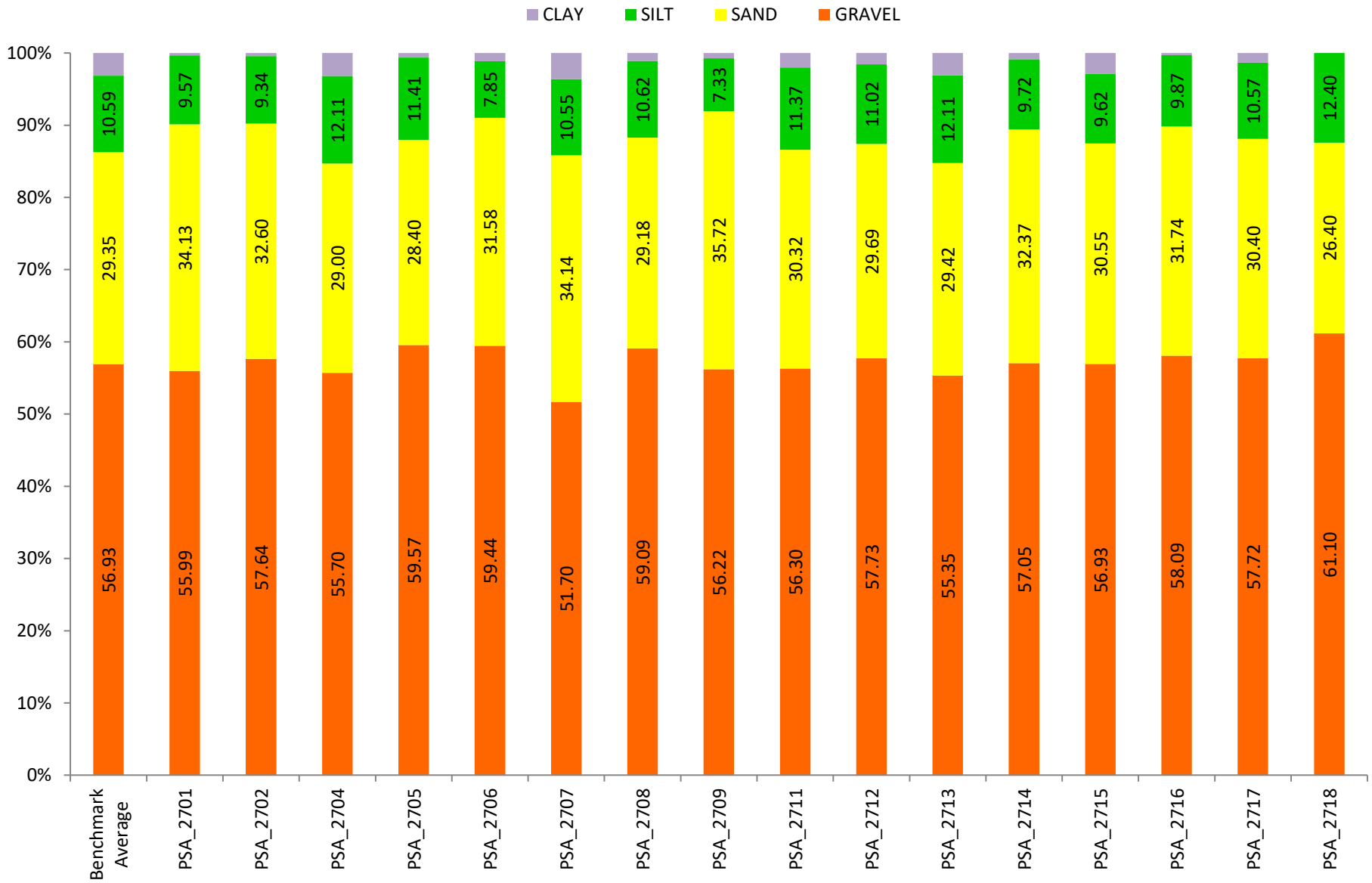


Figure 7. Bar chart showing the percentage gravel, sand, silt and clay recorded by each participating laboratory and the Benchmark Average for PS78.



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APPENDICES

APPENDIX 1. Benchmark laser replicate data for sediment distributed as PS78.

	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)	0.02	0.03	0.05	0.43	0.17	0.56	0.68	0.44	0.66
0.50 to 1.00; (500 µm)	1.35	1.46	1.56	1.49	1.19	1.47	1.73	1.37	1.28
1.00 to 1.50; (353.6 µm)	4.87	4.91	4.72	4.74	4.54	4.50	4.55	4.56	4.48
1.50 to 2.00; (250 µm)	8.81	8.71	8.46	8.91	8.88	8.69	9.04	9.21	9.14
2.00 to 2.50; (176.8 µm)	13.60	13.46	13.24	13.66	13.72	13.49	13.83	13.67	13.48
2.50 to 3.00; (125 µm)	14.91	14.69	14.59	15.48	15.56	15.38	15.37	15.32	15.15
3.00 to 3.50; (88.39 µm)	12.72	12.48	12.35	13.38	13.41	13.28	12.93	13.02	12.83
3.50 to 4.00; (62.5 µm)	9.92	9.80	9.73	10.22	10.27	10.16	9.92	9.94	9.90
4.00 to 4.50; (44.19 µm)	6.81	6.84	6.90	6.83	6.89	6.90	6.81	6.83	6.82
4.50 to 5.00; (31.25 µm)	4.49	4.67	4.89	3.95	4.07	4.17	3.94	4.04	4.17
5.00 to 5.50; (22.097 µm)	2.91	3.14	3.36	2.41	2.51	2.68	2.49	2.59	2.78
5.50 to 6.00; (15.625 µm)	2.19	2.36	2.52	1.81	1.93	2.02	1.92	1.99	2.13
6.00 to 6.50; (11.049 µm)	1.91	2.02	2.13	1.61	1.68	1.71	1.64	1.69	1.76
6.50 to 7.00; (7.813 µm)	1.76	1.82	1.89	1.50	1.52	1.61	1.50	1.53	1.59
7.00 to 7.50; (5.524 µm)	1.75	1.77	1.81	1.53	1.54	1.61	1.51	1.54	1.57
7.50 to 8.00; (3.906 µm)	1.73	1.73	1.74	1.57	1.57	1.57	1.54	1.56	1.57
8.00 to 8.50; (2.762 µm)	1.62	1.60	1.59	1.53	1.53	1.47	1.50	1.51	1.51
8.50 to 9.00; (1.953 µm)	1.50	1.48	1.47	1.48	1.48	1.43	1.46	1.46	1.46
9.00 to 9.50; (1.381 µm)	1.42	1.39	1.38	1.45	1.45	1.43	1.43	1.43	1.43
9.50 to 10.00; (0.977 µm)	1.29	1.27	1.27	1.35	1.35	1.35	1.33	1.34	1.34
10.00 to 10.50; (0.691 µm)	1.11	1.10	1.09	1.17	1.18	1.16	1.17	1.18	1.18
10.50 to 11.00; (0.488 µm)	0.93	0.92	0.91	0.98	0.99	0.95	0.99	1.00	1.00
11.00 to 11.50; (0.345 µm)	0.75	0.74	0.74	0.80	0.80	0.76	0.82	0.83	0.83
11.50 to 12.00; (0.244 µm)	0.59	0.58	0.58	0.63	0.64	0.59	0.67	0.67	0.67
12.00 to 12.50; (0.173 µm)	0.43	0.43	0.43	0.47	0.47	0.43	0.51	0.51	0.51
12.50 to 13.00; (0.122 µm)	0.32	0.32	0.31	0.34	0.35	0.32	0.38	0.39	0.39
13.00 to 13.50; (0.086 µm)	0.20	0.20	0.19	0.21	0.22	0.20	0.24	0.25	0.25
13.50 to 14.00; (0.061 µm)	0.08	0.08	0.08	0.09	0.09	0.08	0.10	0.10	0.10
14.00 to 14.50; (0.043 µm)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

d10	3.71	3.81	3.86	3.49	3.44	3.75	3.39	3.33	3.34
d50	104.90	103.66	101.62	108.98	107.22	107.17	109.92	108.21	106.85
d90	305.07	306.31	304.20	310.42	301.31	308.00	314.70	308.50	308.72

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	3.79	0.08	2.08	3.56	0.16	4.61	3.35	0.03	1.02
d50	103.39	1.66	1.61	107.79	1.03	0.95	108.33	1.54	1.42
d90	305.19	1.06	0.35	306.57	4.72	1.54	310.64	3.52	1.13

APPENDIX 1. Benchmark laser replicate data for sediment distributed as PS78.

	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)	0.29	0.06	0.33	0.09	0.12	0.11	0.25	0.36	0.32
0.50 to 1.00; (500 µm)	1.89	1.60	1.94	1.54	1.63	1.49	1.48	1.78	1.45
1.00 to 1.50; (353.6 µm)	5.10	5.06	5.03	4.96	4.96	4.80	4.78	4.82	4.98
1.50 to 2.00; (250 µm)	8.52	8.97	8.81	8.92	8.87	8.65	8.89	8.61	8.92
2.00 to 2.50; (176.8 µm)	13.63	13.84	13.52	13.54	13.47	13.48	14.06	14.00	13.89
2.50 to 3.00; (125 µm)	15.32	15.40	15.37	15.44	15.55	15.74	15.57	15.60	15.51
3.00 to 3.50; (88.39 µm)	13.16	13.14	13.09	13.16	13.16	13.17	12.60	12.54	12.52
3.50 to 4.00; (62.5 µm)	10.10	10.06	10.04	10.11	9.99	10.02	9.73	9.65	9.58
4.00 to 4.50; (44.19 µm)	6.74	6.68	6.61	6.64	6.59	6.62	6.70	6.63	6.61
4.50 to 5.00; (31.25 µm)	4.04	3.97	3.96	3.99	3.99	4.03	4.10	4.12	4.15
5.00 to 5.50; (22.097 µm)	2.46	2.44	2.51	2.58	2.61	2.66	2.61	2.64	2.69
5.50 to 6.00; (15.625 µm)	1.98	1.91	1.90	1.94	1.97	2.01	1.90	1.91	1.93
6.00 to 6.50; (11.049 µm)	1.69	1.64	1.64	1.67	1.69	1.72	1.67	1.69	1.70
6.50 to 7.00; (7.813 µm)	1.48	1.49	1.51	1.54	1.54	1.56	1.56	1.58	1.60
7.00 to 7.50; (5.524 µm)	1.54	1.53	1.55	1.57	1.57	1.58	1.58	1.59	1.61
7.50 to 8.00; (3.906 µm)	1.62	1.59	1.60	1.61	1.61	1.62	1.61	1.61	1.62
8.00 to 8.50; (2.762 µm)	1.57	1.54	1.54	1.55	1.55	1.55	1.56	1.56	1.56
8.50 to 9.00; (1.953 µm)	1.52	1.51	1.50	1.51	1.51	1.51	1.52	1.51	1.52
9.00 to 9.50; (1.381 µm)	1.50	1.49	1.49	1.50	1.49	1.50	1.49	1.49	1.50
9.50 to 10.00; (0.977 µm)	1.37	1.39	1.38	1.39	1.39	1.40	1.39	1.39	1.40
10.00 to 10.50; (0.691 µm)	1.15	1.18	1.18	1.19	1.19	1.20	1.22	1.22	1.23
10.50 to 11.00; (0.488 µm)	0.93	0.97	0.97	0.98	0.98	0.99	1.02	1.03	1.03
11.00 to 11.50; (0.345 µm)	0.74	0.78	0.78	0.79	0.79	0.80	0.83	0.84	0.84
11.50 to 12.00; (0.244 µm)	0.59	0.62	0.62	0.63	0.63	0.63	0.66	0.66	0.66
12.00 to 12.50; (0.173 µm)	0.44	0.47	0.46	0.47	0.47	0.47	0.49	0.49	0.49
12.50 to 13.00; (0.122 µm)	0.33	0.35	0.34	0.35	0.35	0.35	0.36	0.36	0.36
13.00 to 13.50; (0.086 µm)	0.21	0.22	0.22	0.22	0.22	0.22	0.22	0.23	0.23
13.50 to 14.00; (0.061 µm)	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
14.00 to 14.50; (0.043 µm)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

d10	3.54	3.40	3.42	3.35	3.36	3.32	3.21	3.21	3.18
d50	108.84	109.34	109.50	108.14	108.45	107.51	109.07	109.39	109.02
d90	316.49	311.43	317.96	309.78	311.01	306.10	308.75	312.88	311.50

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	3.45	0.08	2.18	3.34	0.02	0.59	3.20	0.02	0.56
d50	109.23	0.35	0.32	108.03	0.48	0.44	109.16	0.21	0.19
d90	315.29	3.43	1.09	308.96	2.55	0.83	311.05	2.10	0.68

APPENDIX 1. Benchmark laser replicate data for sediment distributed as PS78.

	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)	0.39	0.35	0.08	0.07	0.20	0.02	0.41	0.51	0.10
0.50 to 1.00; (500 µm)	2.07	2.15	1.99	1.88	1.95	1.55	2.48	2.38	1.93
1.00 to 1.50; (353.6 µm)	5.71	5.59	5.72	5.70	5.80	5.75	5.19	4.93	5.05
1.50 to 2.00; (250 µm)	9.31	9.25	9.38	9.46	9.46	9.51	8.90	8.57	8.84
2.00 to 2.50; (176.8 µm)	14.08	14.24	14.13	14.16	14.16	14.23	13.86	13.95	13.99
2.50 to 3.00; (125 µm)	15.32	15.16	15.23	15.17	15.08	15.17	15.15	15.15	15.28
3.00 to 3.50; (88.39 µm)	12.85	12.84	12.80	12.73	12.58	12.65	13.04	13.08	12.98
3.50 to 4.00; (62.5 µm)	9.93	9.92	9.87	9.83	9.74	9.79	10.07	10.18	10.17
4.00 to 4.50; (44.19 µm)	6.59	6.58	6.58	6.59	6.55	6.60	6.72	6.81	6.83
4.50 to 5.00; (31.25 µm)	3.85	3.89	3.92	3.95	4.00	3.95	3.80	3.84	3.84
5.00 to 5.50; (22.097 µm)	2.36	2.41	2.43	2.46	2.52	2.52	2.41	2.51	2.56
5.50 to 6.00; (15.625 µm)	1.70	1.74	1.77	1.81	1.87	1.88	1.88	1.95	2.00
6.00 to 6.50; (11.049 µm)	1.50	1.52	1.55	1.58	1.63	1.63	1.60	1.65	1.69
6.50 to 7.00; (7.813 µm)	1.43	1.43	1.47	1.49	1.51	1.52	1.50	1.51	1.57
7.00 to 7.50; (5.524 µm)	1.47	1.46	1.49	1.50	1.52	1.53	1.55	1.55	1.59
7.50 to 8.00; (3.906 µm)	1.50	1.50	1.51	1.52	1.54	1.54	1.58	1.59	1.61
8.00 to 8.50; (2.762 µm)	1.46	1.46	1.46	1.47	1.47	1.48	1.51	1.53	1.54
8.50 to 9.00; (1.953 µm)	1.41	1.44	1.42	1.42	1.42	1.43	1.44	1.47	1.45
9.00 to 9.50; (1.381 µm)	1.37	1.41	1.38	1.38	1.39	1.39	1.37	1.43	1.39
9.50 to 10.00; (0.977 µm)	1.27	1.31	1.29	1.29	1.29	1.30	1.25	1.30	1.27
10.00 to 10.50; (0.691 µm)	1.10	1.12	1.12	1.12	1.11	1.13	1.08	1.10	1.09
10.50 to 11.00; (0.488 µm)	0.92	0.92	0.94	0.94	0.92	0.95	0.90	0.89	0.91
11.00 to 11.50; (0.345 µm)	0.75	0.74	0.77	0.77	0.73	0.78	0.72	0.70	0.73
11.50 to 12.00; (0.244 µm)	0.60	0.57	0.61	0.61	0.57	0.61	0.57	0.53	0.58
12.00 to 12.50; (0.173 µm)	0.44	0.42	0.45	0.45	0.42	0.46	0.42	0.39	0.43
12.50 to 13.00; (0.122 µm)	0.33	0.30	0.33	0.33	0.30	0.33	0.31	0.28	0.31
13.00 to 13.50; (0.086 µm)	0.20	0.19	0.21	0.21	0.19	0.21	0.19	0.17	0.19
13.50 to 14.00; (0.061 µm)	0.08	0.07	0.08	0.08	0.07	0.08	0.08	0.07	0.08
14.00 to 14.50; (0.043 µm)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

d10	3.95	3.94	3.85	3.82	4.00	3.76	4.03	4.03	3.92
d50	114.87	114.46	113.81	113.48	113.98	112.77	112.37	110.89	109.92
d90	330.24	329.12	325.92	324.41	328.01	320.76	328.14	323.65	315.29

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	3.91	0.06	1.41	3.86	0.12	3.19	3.99	0.06	1.54
d50	114.38	0.54	0.47	113.41	0.61	0.54	111.06	1.24	1.11
d90	328.42	2.24	0.68	324.39	3.62	1.12	322.36	6.52	2.02

APPENDIX 1. Benchmark laser replicate data for sediment distributed as PS78.

	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)	0.19	0.25	0.17	0.25	0.18	0.44	0.20	0.50	0.61
0.50 to 1.00; (500 µm)	2.05	2.05	2.02	2.27	2.07	1.81	1.98	1.82	2.02
1.00 to 1.50; (353.6 µm)	4.90	4.84	4.81	4.71	4.89	5.00	5.04	4.97	4.87
1.50 to 2.00; (250 µm)	8.81	8.98	8.77	8.80	8.87	8.96	9.14	9.15	9.06
2.00 to 2.50; (176.8 µm)	13.68	13.77	13.78	13.79	13.81	13.84	13.67	13.74	13.67
2.50 to 3.00; (125 µm)	15.11	15.10	15.11	14.91	15.02	15.13	15.08	15.00	14.91
3.00 to 3.50; (88.39 µm)	13.05	12.93	12.91	12.86	12.76	12.97	12.94	12.89	12.84
3.50 to 4.00; (62.5 µm)	9.99	9.88	9.87	9.87	9.74	9.99	9.76	9.73	9.69
4.00 to 4.50; (44.19 µm)	6.62	6.59	6.62	6.61	6.58	6.64	6.64	6.59	6.58
4.50 to 5.00; (31.25 µm)	3.97	3.98	4.03	4.05	4.06	3.95	4.01	4.03	4.04
5.00 to 5.50; (22.097 µm)	2.43	2.44	2.48	2.51	2.50	2.48	2.46	2.47	2.49
5.50 to 6.00; (15.625 µm)	1.85	1.85	1.89	1.92	1.94	1.92	1.93	1.94	1.96
6.00 to 6.50; (11.049 µm)	1.71	1.72	1.75	1.77	1.78	1.70	1.70	1.72	1.74
6.50 to 7.00; (7.813 µm)	1.69	1.69	1.72	1.70	1.73	1.58	1.60	1.61	1.63
7.00 to 7.50; (5.524 µm)	1.76	1.76	1.78	1.76	1.78	1.68	1.69	1.69	1.71
7.50 to 8.00; (3.906 µm)	1.78	1.78	1.79	1.79	1.80	1.78	1.75	1.75	1.76
8.00 to 8.50; (2.762 µm)	1.68	1.67	1.69	1.69	1.69	1.69	1.66	1.66	1.66
8.50 to 9.00; (1.953 µm)	1.56	1.55	1.57	1.59	1.56	1.58	1.56	1.56	1.56
9.00 to 9.50; (1.381 µm)	1.46	1.45	1.47	1.51	1.46	1.49	1.50	1.49	1.50
9.50 to 10.00; (0.977 µm)	1.32	1.31	1.33	1.37	1.33	1.33	1.36	1.36	1.37
10.00 to 10.50; (0.691 µm)	1.12	1.12	1.13	1.14	1.13	1.09	1.14	1.14	1.15
10.50 to 11.00; (0.488 µm)	0.93	0.93	0.94	0.92	0.94	0.87	0.92	0.92	0.93
11.00 to 11.50; (0.345 µm)	0.74	0.74	0.75	0.72	0.75	0.67	0.73	0.73	0.73
11.50 to 12.00; (0.244 µm)	0.58	0.58	0.59	0.56	0.59	0.51	0.56	0.56	0.56
12.00 to 12.50; (0.173 µm)	0.43	0.43	0.43	0.40	0.43	0.37	0.41	0.41	0.41
12.50 to 13.00; (0.122 µm)	0.31	0.31	0.32	0.29	0.32	0.27	0.30	0.29	0.29
13.00 to 13.50; (0.086 µm)	0.20	0.20	0.20	0.18	0.20	0.17	0.18	0.18	0.18
13.50 to 14.00; (0.061 µm)	0.08	0.08	0.08	0.07	0.08	0.07	0.07	0.07	0.07
14.00 to 14.50; (0.043 µm)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

d10	3.58	3.60	3.53	3.56	3.53	3.81	3.58	3.59	3.58
d50	108.69	109.29	108.29	108.45	108.65	109.89	109.62	109.82	109.64
d90	316.00	316.55	313.99	317.11	316.24	317.83	318.21	319.18	321.27

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	3.57	0.04	1.03	3.63	0.16	4.27	3.58	0.01	0.26
d50	108.76	0.50	0.46	109.00	0.78	0.72	109.70	0.11	0.10
d90	315.51	1.35	0.43	317.06	0.80	0.25	319.55	1.56	0.49

APPENDIX 1. Benchmark laser replicate data for sediment distributed as PS78.

	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)	0.47	0.35	0.30	0.20	0.45	0.27	0.28	0.41	0.10
0.50 to 1.00; (500 µm)	2.12	2.00	1.70	1.62	1.88	1.57	2.20	1.82	2.12
1.00 to 1.50; (353.6 µm)	4.98	5.22	5.12	5.16	5.06	5.18	5.05	5.08	5.32
1.50 to 2.00; (250 µm)	8.78	9.02	9.08	9.23	9.11	9.44	8.92	9.03	9.04
2.00 to 2.50; (176.8 µm)	14.06	14.20	14.00	14.23	14.14	14.14	14.19	14.12	14.16
2.50 to 3.00; (125 µm)	15.57	15.47	15.54	15.56	15.53	15.45	15.64	15.74	15.64
3.00 to 3.50; (88.39 µm)	13.31	13.32	13.26	13.23	13.16	13.11	13.30	13.25	13.28
3.50 to 4.00; (62.5 µm)	9.93	9.85	9.86	9.75	9.67	9.64	9.93	9.88	9.84
4.00 to 4.50; (44.19 µm)	6.50	6.45	6.52	6.46	6.43	6.43	6.46	6.47	6.44
4.50 to 5.00; (31.25 µm)	3.85	3.82	3.91	3.87	3.86	3.88	3.76	3.83	3.80
5.00 to 5.50; (22.097 µm)	2.33	2.26	2.36	2.29	2.30	2.32	2.26	2.35	2.28
5.50 to 6.00; (15.625 µm)	1.80	1.76	1.86	1.81	1.83	1.86	1.71	1.79	1.75
6.00 to 6.50; (11.049 µm)	1.59	1.58	1.63	1.59	1.60	1.62	1.53	1.59	1.57
6.50 to 7.00; (7.813 µm)	1.44	1.40	1.46	1.46	1.46	1.48	1.45	1.46	1.43
7.00 to 7.50; (5.524 µm)	1.52	1.43	1.54	1.52	1.52	1.54	1.53	1.55	1.48
7.50 to 8.00; (3.906 µm)	1.61	1.55	1.62	1.59	1.59	1.60	1.61	1.63	1.57
8.00 to 8.50; (2.762 µm)	1.56	1.56	1.56	1.54	1.54	1.55	1.56	1.56	1.56
8.50 to 9.00; (1.953 µm)	1.51	1.55	1.51	1.50	1.50	1.51	1.50	1.50	1.54
9.00 to 9.50; (1.381 µm)	1.49	1.53	1.50	1.48	1.48	1.49	1.45	1.47	1.52
9.50 to 10.00; (0.977 µm)	1.37	1.40	1.39	1.38	1.38	1.39	1.34	1.35	1.39
10.00 to 10.50; (0.691 µm)	1.15	1.17	1.17	1.18	1.18	1.19	1.14	1.13	1.15
10.50 to 11.00; (0.488 µm)	0.91	0.93	0.93	0.96	0.96	0.97	0.93	0.90	0.91
11.00 to 11.50; (0.345 µm)	0.71	0.72	0.72	0.76	0.76	0.77	0.73	0.69	0.70
11.50 to 12.00; (0.244 µm)	0.54	0.54	0.54	0.59	0.59	0.59	0.56	0.52	0.53
12.00 to 12.50; (0.173 µm)	0.38	0.39	0.39	0.43	0.43	0.43	0.41	0.37	0.38
12.50 to 13.00; (0.122 µm)	0.27	0.28	0.28	0.31	0.31	0.31	0.30	0.27	0.27
13.00 to 13.50; (0.086 µm)	0.17	0.17	0.17	0.19	0.19	0.19	0.18	0.16	0.16
13.50 to 14.00; (0.061 µm)	0.07	0.07	0.07	0.08	0.08	0.08	0.07	0.06	0.07
14.00 to 14.50; (0.043 µm)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

d10	3.80	3.64	3.71	3.55	3.56	3.52	3.76	3.91	3.74
d50	112.60	113.42	111.83	112.58	113.00	112.60	113.45	113.20	113.72
d90	321.29	322.11	316.81	315.77	320.10	317.01	321.25	318.92	321.69

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	3.72	0.08	2.13	3.54	0.02	0.67	3.80	0.09	2.42
d50	112.62	0.79	0.70	112.73	0.23	0.21	113.46	0.26	0.23
d90	320.07	2.85	0.89	317.63	2.23	0.70	320.62	1.49	0.47

APPENDIX 2. Gradistat output of size categories based on final merged data provided by each participant and the Benchmark Average for sediment distributed as PS78 (used to create Figure 7).

	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	11.53	13.39	11.23	n/p	9.10	9.51	6.39	7.84	8.68	12.94
MEDIUM GRAVEL	42.90	40.86	43.65	n/p	44.01	47.19	49.80	41.15	46.63	38.84
FINE GRAVEL	2.48	1.73	2.68	n/p	2.57	2.83	3.24	2.51	3.69	4.18
VERY FINE GRAVEL	0.02	0.00	0.07	n/p	0.02	0.03	0.01	0.20	0.09	0.26
VERY COARSE SAND	0.04	0.02	0.14	n/p	0.05	0.02	0.05	0.05	0.04	0.17
COARSE SAND	0.90	0.83	2.46	n/p	0.02	0.63	1.43	4.83	0.30	1.72
MEDIUM SAND	6.02	7.79	10.87	n/p	4.46	6.22	8.37	9.67	5.58	11.28
FINE SAND	12.54	14.86	12.98	n/p	14.24	11.75	12.85	10.21	12.65	14.59
VERY FINE SAND	9.84	10.63	6.15	n/p	10.24	9.78	8.89	9.37	10.60	7.96
VERY COARSE SILT	4.58	4.02	2.26	n/p	5.25	4.76	3.54	4.95	4.81	2.76
COARSE SILT	1.91	1.52	2.43	n/p	2.05	1.94	1.28	2.09	2.15	1.18
MEDIUM SILT	1.39	1.39	2.86	n/p	1.58	1.52	0.95	0.93	1.55	1.13
FINE SILT	1.39	1.52	1.40	n/p	1.75	1.70	1.06	1.12	1.23	1.29
VERY FINE SILT	1.32	1.12	0.39	n/p	1.49	1.49	1.01	1.47	0.88	0.97
CLAY	3.14	0.31	0.42	n/p	3.19	0.62	1.12	3.61	1.11	0.74

GRAVEL	56.93	55.99	57.64	n/p	55.70	59.57	59.44	51.70	59.09	56.22
SAND	29.35	34.13	32.60	n/p	29.00	28.40	31.58	34.14	29.18	35.72
SILT	10.59	9.57	9.34	n/p	12.11	11.41	7.85	10.55	10.62	7.33
CLAY	3.14	0.31	0.42	n/p	3.19	0.62	1.12	3.61	1.11	0.74

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 PS78 (used to create Figure 7).

	BM Average	PSA_2710	PSA_2711	PSA_2712	PSA_2713	PSA_2714	PSA_2715	PSA_2716	PSA_2717	PSA_2718
VERY COARSE GRAVEL	0.00	n/p	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
COARSE GRAVEL	11.53	n/p	8.39	9.38	6.52	10.08	11.95	13.76	12.56	
MEDIUM GRAVEL	42.90	n/p	43.80	44.85	45.88	44.05	41.82	41.59	42.26	61.10
FINE GRAVEL	2.48	n/p	3.92	3.30	2.93	2.89	3.14	2.70	2.89	
VERY FINE GRAVEL	0.02	n/p	0.19	0.19	0.03	0.03	0.02	0.04	0.01	
VERY COARSE SAND	0.04	n/p	0.25	0.12	0.04	0.06	0.04	0.10	0.03	0.10
COARSE SAND	0.90	n/p	0.32	0.71	0.65	1.00	1.00	0.34	0.61	0.40
MEDIUM SAND	6.02	n/p	6.11	6.55	4.60	8.76	6.32	5.88	6.20	4.30
FINE SAND	12.54	n/p	12.41	12.23	12.87	13.00	13.16	13.58	12.92	11.30
VERY FINE SAND	9.84	n/p	11.24	10.08	11.25	9.56	10.02	11.84	10.64	10.30
VERY COARSE SILT	4.58	n/p	5.04	4.40	5.07	4.45	4.29	4.44	4.56	
COARSE SILT	1.91	n/p	1.83	1.74	2.09	2.09	1.65	1.47	1.73	
MEDIUM SILT	1.39	n/p	1.42	1.46	1.42	1.39	1.22	1.26	1.38	12.40
FINE SILT	1.39	n/p	1.51	1.78	1.90	1.03	1.24	1.49	1.53	
VERY FINE SILT	1.32	n/p	1.57	1.63	1.63	0.75	1.21	1.21	1.37	
CLAY	3.14	n/p	2.01	1.57	3.12	0.87	2.90	0.30	1.32	0.00

GRAVEL	56.93	n/p	56.30	57.73	55.35	57.05	56.93	58.09	57.72	61.10
SAND	29.35	n/p	30.32	29.69	29.42	32.37	30.55	31.74	30.40	26.40
SILT	10.59	n/p	11.37	11.02	12.11	9.72	9.62	9.87	10.57	12.40
CLAY	3.14	n/p	2.01	1.57	3.12	0.87	2.90	0.30	1.32	0.00

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

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS78.

Exercise Code:	PS78
LabCode:	PSA_2701
Sample Code:	PS782701

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage (mark as "0" for no material & leave blank for not analysed)	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	13.39	76.01
-4.00 to -3.50; 11.2 mm	26.38	149.74
-3.50 to -3.00; 8 mm	14.48	82.20
-3.00 to -2.50; 5.6 mm	1.70	9.63
-2.50 to -2.00; 4 mm	0.04	0.21
-2.00 to -1.50; 2.8 mm	0.00	0.00
-1.50 to -1.00; 2 mm	0.00	0.01
-1.00 to -0.50; 1.4 mm	0.01	0.08
-0.50 to 0.00; 1 mm	0.01	0.05
0.00 to 0.50; (707 µm)	0.06	0.31
0.50 to 1.00; (500 µm)	0.77	4.24
1.00 to 1.50; (353.6 µm)	2.59	14.52
1.50 to 2.00; (250 µm)	5.20	29.32
2.00 to 2.50; (176.8 µm)	7.22	40.85
2.50 to 3.00; (125 µm)	7.64	43.31
3.00 to 3.50; (88.39 µm)	6.32	35.95
3.50 to 4.00; (62.5 µm)	4.31	24.58
4.00 to 4.50; (44.19 µm)	2.58	14.74
4.50 to 5.00; (31.25 µm)	1.44	8.22
5.00 to 5.50; (22.097 µm)	0.86	4.87
5.50 to 6.00; (15.625 µm)	0.66	3.76
6.00 to 6.50; (11.049 µm)	0.66	3.74
6.50 to 7.00; (7.813 µm)	0.73	4.16
7.00 to 7.50; (5.524 µm)	0.78	4.45
7.50 to 8.00; (3.906 µm)	0.74	4.29
8.00 to 8.50; (2.762 µm)	0.66	3.81
8.50 to 9.00; (1.953 µm)	0.46	2.68
9.00 to 9.50; (1.381 µm)	0.20	1.16
9.50 to 10.00; (0.977 µm)	0.04	0.27
10.00 to 10.50; (0.691 µm)	0.06	0.36
10.50 to 11.00; (0.488 µm)	0.02	0.10
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)		
TOTAL	100.00	567.63

Notes: The summary report from the previous round commented on the absorption index. This was still set at 0.01 for this round but can be changed for future analysis. Some of the laser replicates do not add to 100%. The data has been normalised but may be an issue with the Malvern programme measuring to 3 decimal places and may be a rounding issue as the proportioning of the mastersiser results does not sum to 100%. Currently waiting on advice from Malvern.

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS78.

Exercise Code:	PS78
LabCode:	PSA_2702
Sample Code:	PS782702

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage (mark as "0" for no material & leave blank for not analysed)	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	11.23	73.63
-4.00 to -3.50; 11.2 mm	28.24	185.10
-3.50 to -3.00; 8 mm	15.41	101.00
-3.00 to -2.50; 5.6 mm	2.55	16.69
-2.50 to -2.00; 4 mm	0.13	0.86
-2.00 to -1.50; 2.8 mm	0.04	0.26
-1.50 to -1.00; 2 mm	0.03	0.22
-1.00 to -0.50; 1.4 mm	0.07	0.49
-0.50 to 0.00; 1 mm	0.07	0.43
0.00 to 0.50; (707 µm)	0.38	2.48
0.50 to 1.00; (500 µm)	2.09	13.68
1.00 to 1.50; (353.6 µm)	4.41	28.94
1.50 to 2.00; (250 µm)	6.46	42.32
2.00 to 2.50; (176.8 µm)	7.06	46.28
2.50 to 3.00; (125 µm)	5.92	38.79
3.00 to 3.50; (88.39 µm)	3.92	25.70
3.50 to 4.00; (62.5 µm)	2.22	14.58
4.00 to 4.50; (44.19 µm)	1.28	8.41
4.50 to 5.00; (31.25 µm)	0.97	6.37
5.00 to 5.50; (22.097 µm)	1.08	7.05
5.50 to 6.00; (15.625 µm)	1.36	8.91
6.00 to 6.50; (11.049 µm)	1.52	9.95
6.50 to 7.00; (7.813 µm)	1.34	8.79
7.00 to 7.50; (5.524 µm)	0.91	5.97
7.50 to 8.00; (3.906 µm)	0.49	3.18
8.00 to 8.50; (2.762 µm)	0.24	1.56
8.50 to 9.00; (1.953 µm)	0.16	1.02
9.00 to 9.50; (1.381 µm)	0.14	0.90
9.50 to 10.00; (0.977 µm)	0.13	0.82
10.00 to 10.50; (0.691 µm)	0.11	0.73
10.50 to 11.00; (0.488 µm)	0.05	0.33
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	655.42

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS78.

Exercise Code:	PS78
LabCode:	PSA_2704
Sample Code:	PS782704

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	9.10	
-4.00 to -3.50; 11.2 mm	25.92	
-3.50 to -3.00; 8 mm	18.08	
-3.00 to -2.50; 5.6 mm	2.51	
-2.50 to -2.00; 4 mm	0.06	
-2.00 to -1.50; 2.8 mm	0.00	
-1.50 to -1.00; 2 mm	0.01	
-1.00 to -0.50; 1.4 mm	0.02	
-0.50 to 0.00; 1 mm	0.03	
0.00 to 0.50; (707 µm)	0.00	
0.50 to 1.00; (500 µm)	0.02	
1.00 to 1.50; (353.6 µm)	1.41	
1.50 to 2.00; (250 µm)	3.04	
2.00 to 2.50; (176.8 µm)	6.19	
2.50 to 3.00; (125 µm)	8.04	
3.00 to 3.50; (88.39 µm)	5.51	
3.50 to 4.00; (62.5 µm)	4.73	
4.00 to 4.50; (44.19 µm)	3.40	
4.50 to 5.00; (31.25 µm)	1.85	
5.00 to 5.50; (22.097 µm)	1.23	
5.50 to 6.00; (15.625 µm)	0.82	
6.00 to 6.50; (11.049 µm)	0.77	
6.50 to 7.00; (7.813 µm)	0.81	
7.00 to 7.50; (5.524 µm)	0.87	
7.50 to 8.00; (3.906 µm)	0.88	
8.00 to 8.50; (2.762 µm)	0.79	
8.50 to 9.00; (1.953 µm)	0.69	
9.00 to 9.50; (1.381 µm)	0.63	
9.50 to 10.00; (0.977 µm)	0.58	
10.00 to 10.50; (0.691 µm)	0.50	
10.50 to 11.00; (0.488 µm)	0.42	
11.00 to 11.50; (0.345 µm)	0.34	
11.50 to 12.00; (0.244 µm)	0.26	
12.00 to 12.50; (0.173 µm)	0.19	
12.50 to 13.00; (0.122 µm)	0.14	
13.00 to 13.50; (0.086 µm)	0.09	
13.50 to 14.00; (0.061µm)	0.03	
14.00 to 14.50; (0.043µm)	0.00	
> 14.50; (0.01 µm)	0.00	
TOTAL	100.00	

Notes: The nature of the >1mm sediment (chalky gravel) meant that small amounts of excess fine material was sloughed off during sieving due to sediment interaction. This then accumulated around the sieves as well as in the pan.

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS78.

Exercise Code:	PS78
LabCode:	PSA_2705
Sample Code:	PS782705

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	9.51	
-4.00 to -3.50; 11.2 mm	28.04	
-3.50 to -3.00; 8 mm	19.15	
-3.00 to -2.50; 5.6 mm	2.78	
-2.50 to -2.00; 4 mm	0.05	
-2.00 to -1.50; 2.8 mm	0.03	
-1.50 to -1.00; 2 mm	0.00	
-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)	0.04	
0.50 to 1.00; (500 µm)	0.59	
1.00 to 1.50; (353.6 µm)	2.08	
1.50 to 2.00; (250 µm)	4.14	
2.00 to 2.50; (176.8 µm)	5.29	
2.50 to 3.00; (125 µm)	6.46	
3.00 to 3.50; (88.39 µm)	5.30	
3.50 to 4.00; (62.5 µm)	4.48	
4.00 to 4.50; (44.19 µm)	2.87	
4.50 to 5.00; (31.25 µm)	1.89	
5.00 to 5.50; (22.097 µm)	1.11	
5.50 to 6.00; (15.625 µm)	0.83	
6.00 to 6.50; (11.049 µm)	0.75	
6.50 to 7.00; (7.813 µm)	0.77	
7.00 to 7.50; (5.524 µm)	0.83	
7.50 to 8.00; (3.906 µm)	0.87	
8.00 to 8.50; (2.762 µm)	0.83	
8.50 to 9.00; (1.953 µm)	0.66	
9.00 to 9.50; (1.381 µm)	0.41	
9.50 to 10.00; (0.977 µm)	0.18	
10.00 to 10.50; (0.691 µm)	0.03	
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	99.99	

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 PS78.

Exercise Code:	PS78
LabCode:	PSA_2706
Sample Code:	PS782706

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	6.39	44.09
-4.00 to -3.50; 11.2 mm	29.17	201.16
-3.50 to -3.00; 8 mm	20.63	142.29
-3.00 to -2.50; 5.6 mm	3.24	22.36
-2.50 to -2.00; 4 mm	0.00	0.00
-2.00 to -1.50; 2.8 mm	0.00	0.00
-1.50 to -1.00; 2 mm	0.01	0.07
-1.00 to -0.50; 1.4 mm	0.02	0.12
-0.50 to 0.00; 1 mm	0.03	0.20
0.00 to 0.50; (707 µm)	0.15	1.06
0.50 to 1.00; (500 µm)	1.27	8.77
1.00 to 1.50; (353.6 µm)	3.16	21.82
1.50 to 2.00; (250 µm)	5.20	35.89
2.00 to 2.50; (176.8 µm)	6.46	44.56
2.50 to 3.00; (125 µm)	6.39	44.06
3.00 to 3.50; (88.39 µm)	5.23	36.07
3.50 to 4.00; (62.5 µm)	3.66	25.26
4.00 to 4.50; (44.19 µm)	2.26	15.58
4.50 to 5.00; (31.25 µm)	1.28	8.85
5.00 to 5.50; (22.097 µm)	0.75	5.18
5.50 to 6.00; (15.625 µm)	0.53	3.67
6.00 to 6.50; (11.049 µm)	0.47	3.25
6.50 to 7.00; (7.813 µm)	0.48	3.30
7.00 to 7.50; (5.524 µm)	0.51	3.55
7.50 to 8.00; (3.906 µm)	0.55	3.79
8.00 to 8.50; (2.762 µm)	0.54	3.72
8.50 to 9.00; (1.953 µm)	0.47	3.25
9.00 to 9.50; (1.381 µm)	0.38	2.59
9.50 to 10.00; (0.977 µm)	0.30	2.06
10.00 to 10.50; (0.691 µm)	0.24	1.68
10.50 to 11.00; (0.488 µm)	0.17	1.16
11.00 to 11.50; (0.345 µm)	0.04	0.27
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	689.68

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 PS78.

Exercise Code:	PS78
LabCode:	PSA_2707
Sample Code:	PS782707

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	7.84	
-4.00 to -3.50; 11.2 mm	24.14	
-3.50 to -3.00; 8 mm	17.02	
-3.00 to -2.50; 5.6 mm	2.26	
-2.50 to -2.00; 4 mm	0.25	
-2.00 to -1.50; 2.8 mm	0.12	
-1.50 to -1.00; 2 mm	0.08	
-1.00 to -0.50; 1.4 mm	0.02	
-0.50 to 0.00; 1 mm	0.03	
0.00 to 0.50; (707 µm)	0.39	
0.50 to 1.00; (500 µm)	4.44	
1.00 to 1.50; (353.6 µm)	5.95	
1.50 to 2.00; (250 µm)	3.72	
2.00 to 2.50; (176.8 µm)	5.47	
2.50 to 3.00; (125 µm)	4.75	
3.00 to 3.50; (88.39 µm)	5.40	
3.50 to 4.00; (62.5 µm)	3.97	
4.00 to 4.50; (44.19 µm)	2.85	
4.50 to 5.00; (31.25 µm)	2.09	
5.00 to 5.50; (22.097 µm)	1.32	
5.50 to 6.00; (15.625 µm)	0.77	
6.00 to 6.50; (11.049 µm)	0.42	
6.50 to 7.00; (7.813 µm)	0.51	
7.00 to 7.50; (5.524 µm)	0.52	
7.50 to 8.00; (3.906 µm)	0.60	
8.00 to 8.50; (2.762 µm)	0.71	
8.50 to 9.00; (1.953 µm)	0.76	
9.00 to 9.50; (1.381 µm)	0.67	
9.50 to 10.00; (0.977 µm)	0.52	
10.00 to 10.50; (0.691 µm)	0.30	
10.50 to 11.00; (0.488 µm)	0.36	
11.00 to 11.50; (0.345 µm)	0.39	
11.50 to 12.00; (0.244 µm)	0.44	
12.00 to 12.50; (0.173 µm)	0.44	
12.50 to 13.00; (0.122 µm)	0.34	
13.00 to 13.50; (0.086 µm)	0.15	
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 PS78.

Exercise Code:	PS78
LabCode:	PSA_2708
Sample Code:	PS782708

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	8.68	61.07
-4.00 to -3.50; 11.2 mm	26.13	183.93
-3.50 to -3.00; 8 mm	20.49	144.23
-3.00 to -2.50; 5.6 mm	3.49	24.53
-2.50 to -2.00; 4 mm	0.20	1.43
-2.00 to -1.50; 2.8 mm	0.07	0.47
-1.50 to -1.00; 2 mm	0.03	0.20
-1.00 to -0.50; 1.4 mm	0.03	0.20
-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)	0.30	2.08
1.00 to 1.50; (353.6 µm)	1.70	11.99
1.50 to 2.00; (250 µm)	3.88	27.32
2.00 to 2.50; (176.8 µm)	5.54	39.02
2.50 to 3.00; (125 µm)	7.11	50.02
3.00 to 3.50; (88.39 µm)	5.84	41.09
3.50 to 4.00; (62.5 µm)	4.77	33.54
4.00 to 4.50; (44.19 µm)	3.07	21.62
4.50 to 5.00; (31.25 µm)	1.74	12.25
5.00 to 5.50; (22.097 µm)	1.23	8.65
5.50 to 6.00; (15.625 µm)	0.92	6.46
6.00 to 6.50; (11.049 µm)	0.82	5.80
6.50 to 7.00; (7.813 µm)	0.73	5.12
7.00 to 7.50; (5.524 µm)	0.66	4.64
7.50 to 8.00; (3.906 µm)	0.58	4.05
8.00 to 8.50; (2.762 µm)	0.48	3.37
8.50 to 9.00; (1.953 µm)	0.40	2.79
9.00 to 9.50; (1.381 µm)	0.33	2.29
9.50 to 10.00; (0.977 µm)	0.26	1.84
10.00 to 10.50; (0.691 µm)	0.27	1.92
10.50 to 11.00; (0.488 µm)	0.20	1.39
11.00 to 11.50; (0.345 µm)	0.05	0.38
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	703.80

Notes:
Red text calculated 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 PS78.

Exercise Code:	PS78
LabCode:	PSA_2709
Sample Code:	PS782709

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	1.21	
-4.50 to -4.00; 16 mm	11.73	
-4.00 to -3.50; 11.2 mm	24.41	
-3.50 to -3.00; 8 mm	14.43	
-3.00 to -2.50; 5.6 mm	4.02	
-2.50 to -2.00; 4 mm	0.16	
-2.00 to -1.50; 2.8 mm	0.16	
-1.50 to -1.00; 2 mm	0.10	
-1.00 to -0.50; 1.4 mm	0.09	
-0.50 to 0.00; 1 mm	0.09	
0.00 to 0.50; (707 µm)	0.04	
0.50 to 1.00; (500 µm)	1.67	
1.00 to 1.50; (353.6 µm)	4.43	
1.50 to 2.00; (250 µm)	6.86	
2.00 to 2.50; (176.8 µm)	7.76	
2.50 to 3.00; (125 µm)	6.83	
3.00 to 3.50; (88.39 µm)	4.91	
3.50 to 4.00; (62.5 µm)	3.05	
4.00 to 4.50; (44.19 µm)	1.75	
4.50 to 5.00; (31.25 µm)	1.01	
5.00 to 5.50; (22.097 µm)	0.65	
5.50 to 6.00; (15.625 µm)	0.53	
6.00 to 6.50; (11.049 µm)	0.53	
6.50 to 7.00; (7.813 µm)	0.60	
7.00 to 7.50; (5.524 µm)	0.65	
7.50 to 8.00; (3.906 µm)	0.64	
8.00 to 8.50; (2.762 µm)	0.55	
8.50 to 9.00; (1.953 µm)	0.42	
9.00 to 9.50; (1.381 µm)	0.29	
9.50 to 10.00; (0.977 µm)	0.20	
10.00 to 10.50; (0.691 µm)	0.15	
10.50 to 11.00; (0.488 µm)	0.09	
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:

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS78.

Exercise Code:	PS78
LabCode:	PSA_2711
Sample Code:	PS782711

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	8.39	
-4.00 to -3.50; 11.2 mm	23.64	
-3.50 to -3.00; 8 mm	20.15	
-3.00 to -2.50; 5.6 mm	3.37	
-2.50 to -2.00; 4 mm	0.54	
-2.00 to -1.50; 2.8 mm	0.12	
-1.50 to -1.00; 2 mm	0.07	
-1.00 to -0.50; 1.4 mm	0.11	
-0.50 to 0.00; 1 mm	0.14	
0.00 to 0.50; (707 µm)	0.00	
0.50 to 1.00; (500 µm)	0.32	
1.00 to 1.50; (353.6 µm)	2.08	
1.50 to 2.00; (250 µm)	4.02	
2.00 to 2.50; (176.8 µm)	5.76	
2.50 to 3.00; (125 µm)	6.65	
3.00 to 3.50; (88.39 µm)	6.30	
3.50 to 4.00; (62.5 µm)	4.94	
4.00 to 4.50; (44.19 µm)	3.22	
4.50 to 5.00; (31.25 µm)	1.82	
5.00 to 5.50; (22.097 µm)	1.06	
5.50 to 6.00; (15.625 µm)	0.77	
6.00 to 6.50; (11.049 µm)	0.71	
6.50 to 7.00; (7.813 µm)	0.71	
7.00 to 7.50; (5.524 µm)	0.74	
7.50 to 8.00; (3.906 µm)	0.78	
8.00 to 8.50; (2.762 µm)	0.80	
8.50 to 9.00; (1.953 µm)	0.76	
9.00 to 9.50; (1.381 µm)	0.65	
9.50 to 10.00; (0.977 µm)	0.52	
10.00 to 10.50; (0.691 µm)	0.43	
10.50 to 11.00; (0.488 µm)	0.30	
11.00 to 11.50; (0.345 µm)	0.11	
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:

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS78.

Exercise Code:	PS78
LabCode:	PSA_2712
Sample Code:	PS782712

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	9.38	
-4.00 to -3.50; 11.2 mm	27.57	
-3.50 to -3.00; 8 mm	17.28	
-3.00 to -2.50; 5.6 mm	3.13	
-2.50 to -2.00; 4 mm	0.17	
-2.00 to -1.50; 2.8 mm	0.12	
-1.50 to -1.00; 2 mm	0.07	
-1.00 to -0.50; 1.4 mm	0.06	
-0.50 to 0.00; 1 mm	0.06	
0.00 to 0.50; (707 µm)	0.03	
0.50 to 1.00; (500 µm)	0.68	
1.00 to 1.50; (353.6 µm)	2.26	
1.50 to 2.00; (250 µm)	4.29	
2.00 to 2.50; (176.8 µm)	5.81	
2.50 to 3.00; (125 µm)	6.42	
3.00 to 3.50; (88.39 µm)	5.76	
3.50 to 4.00; (62.5 µm)	4.32	
4.00 to 4.50; (44.19 µm)	2.79	
4.50 to 5.00; (31.25 µm)	1.62	
5.00 to 5.50; (22.097 µm)	0.99	
5.50 to 6.00; (15.625 µm)	0.75	
6.00 to 6.50; (11.049 µm)	0.69	
6.50 to 7.00; (7.813 µm)	0.78	
7.00 to 7.50; (5.524 µm)	0.87	
7.50 to 8.00; (3.906 µm)	0.91	
8.00 to 8.50; (2.762 µm)	0.92	
8.50 to 9.00; (1.953 µm)	0.71	
9.00 to 9.50; (1.381 µm)	0.56	
9.50 to 10.00; (0.977 µm)	0.45	
10.00 to 10.50; (0.691 µm)	0.55	
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 PS78.

Exercise Code:	PS78
LabCode:	PSA_2713
Sample Code:	PS782713

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage (mark as "0" for no material & leave blank for not analysed)	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	6.52	41.45
-4.00 to -3.50; 11.2 mm	26.43	168.08
-3.50 to -3.00; 8 mm	19.45	123.70
-3.00 to -2.50; 5.6 mm	2.81	17.90
-2.50 to -2.00; 4 mm	0.11	0.72
-2.00 to -1.50; 2.8 mm	0.02	0.10
-1.50 to -1.00; 2 mm	0.01	0.06
-1.00 to -0.50; 1.4 mm	0.02	0.10
-0.50 to 0.00; 1 mm	0.02	0.13
0.00 to 0.50; (707 µm)	0.07	0.43
0.50 to 1.00; (500 µm)	0.58	3.71
1.00 to 1.50; (353.6 µm)	1.46	9.28
1.50 to 2.00; (250 µm)	3.14	19.99
2.00 to 2.50; (176.8 µm)	6.08	38.67
2.50 to 3.00; (125 µm)	6.79	43.21
3.00 to 3.50; (88.39 µm)	6.23	39.63
3.50 to 4.00; (62.5 µm)	5.02	31.95
4.00 to 4.50; (44.19 µm)	3.27	20.77
4.50 to 5.00; (31.25 µm)	1.80	11.45
5.00 to 5.50; (22.097 µm)	1.34	8.52
5.50 to 6.00; (15.625 µm)	0.75	4.75
6.00 to 6.50; (11.049 µm)	0.59	3.75
6.50 to 7.00; (7.813 µm)	0.84	5.31
7.00 to 7.50; (5.524 µm)	0.96	6.12
7.50 to 8.00; (3.906 µm)	0.94	5.98
8.00 to 8.50; (2.762 µm)	0.85	5.44
8.50 to 9.00; (1.953 µm)	0.78	4.96
9.00 to 9.50; (1.381 µm)	0.71	4.49
9.50 to 10.00; (0.977 µm)	0.61	3.86
10.00 to 10.50; (0.691 µm)	0.49	3.15
10.50 to 11.00; (0.488 µm)	0.39	2.49
11.00 to 11.50; (0.345 µm)	0.30	1.93
11.50 to 12.00; (0.244 µm)	0.23	1.46
12.00 to 12.50; (0.173 µm)	0.16	1.04
12.50 to 13.00; (0.122 µm)	0.12	0.75
13.00 to 13.50; (0.086 µm)	0.07	0.46
13.50 to 14.00; (0.061µm)	0.03	0.18
14.00 to 14.50; (0.043µm)	0.00	0.02
> 14.50; (0.01 µm)	0.00	0.00
TOTAL	100.00	635.97

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 PS78.

Exercise Code:	PS78
LabCode:	PSA_2714
Sample Code:	PS782714

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage (mark as "0" for no material & leave blank for not analysed)	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	10.08	72.16
-4.00 to -3.50; 11.2 mm	26.46	189.36
-3.50 to -3.00; 8 mm	17.59	125.93
-3.00 to -2.50; 5.6 mm	2.89	20.66
-2.50 to -2.00; 4 mm	0.00	0.00
-2.00 to -1.50; 2.8 mm	0.01	0.08
-1.50 to -1.00; 2 mm	0.02	0.12
-1.00 to -0.50; 1.4 mm	0.02	0.16
-0.50 to 0.00; 1 mm	0.03	0.24
0.00 to 0.50; (707 µm)	0.00	0.00
0.50 to 1.00; (500 µm)	1.00	7.15
1.00 to 1.50; (353.6 µm)	3.38	24.18
1.50 to 2.00; (250 µm)	5.38	38.49
2.00 to 2.50; (176.8 µm)	6.51	46.60
2.50 to 3.00; (125 µm)	6.49	46.46
3.00 to 3.50; (88.39 µm)	5.49	39.32
3.50 to 4.00; (62.5 µm)	4.06	29.09
4.00 to 4.50; (44.19 µm)	2.71	19.42
4.50 to 5.00; (31.25 µm)	1.74	12.46
5.00 to 5.50; (22.097 µm)	1.18	8.48
5.50 to 6.00; (15.625 µm)	0.91	6.48
6.00 to 6.50; (11.049 µm)	0.75	5.37
6.50 to 7.00; (7.813 µm)	0.64	4.56
7.00 to 7.50; (5.524 µm)	0.55	3.95
7.50 to 8.00; (3.906 µm)	0.48	3.45
8.00 to 8.50; (2.762 µm)	0.41	2.96
8.50 to 9.00; (1.953 µm)	0.34	2.40
9.00 to 9.50; (1.381 µm)	0.26	1.86
9.50 to 10.00; (0.977 µm)	0.22	1.55
10.00 to 10.50; (0.691 µm)	0.20	1.42
10.50 to 11.00; (0.488 µm)	0.15	1.10
11.00 to 11.50; (0.345 µm)	0.04	0.28
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	715.74

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 PS78.

Exercise Code:	PS78
LabCode:	PSA_2715
Sample Code:	PS782715

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	0.0000
-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	11.95	79.6000
-4.00 to -3.50; 11.2 mm	22.65	150.9000
-3.50 to -3.00; 8 mm	19.17	127.68
-3.00 to -2.50; 5.6 mm	3.06	20.38
-2.50 to -2.00; 4 mm	0.08	0.54
-2.00 to -1.50; 2.8 mm	0.01	0.06
-1.50 to -1.00; 2 mm	0.01	0.06
-1.00 to -0.50; 1.4 mm	0.02	0.13
-0.50 to 0.00; 1 mm	0.02	0.16
0.00 to 0.50; (707 µm)	0.11	0.73
0.50 to 1.00; (500 µm)	0.89	5.92
1.00 to 1.50; (353.6 µm)	2.28	15.22
1.50 to 2.00; (250 µm)	4.03	26.87
2.00 to 2.50; (176.8 µm)	6.28	41.84
2.50 to 3.00; (125 µm)	6.88	45.85
3.00 to 3.50; (88.39 µm)	5.75	38.33
3.50 to 4.00; (62.5 µm)	4.27	28.44
4.00 to 4.50; (44.19 µm)	2.73	18.20
4.50 to 5.00; (31.25 µm)	1.56	10.38
5.00 to 5.50; (22.097 µm)	0.95	6.31
5.50 to 6.00; (15.625 µm)	0.70	4.69
6.00 to 6.50; (11.049 µm)	0.63	4.20
6.50 to 7.00; (7.813 µm)	0.59	3.95
7.00 to 7.50; (5.524 µm)	0.61	4.08
7.50 to 8.00; (3.906 µm)	0.63	4.21
8.00 to 8.50; (2.762 µm)	0.61	4.09
8.50 to 9.00; (1.953 µm)	0.59	3.94
9.00 to 9.50; (1.381 µm)	0.57	3.83
9.50 to 10.00; (0.977 µm)	0.53	3.54
10.00 to 10.50; (0.691 µm)	0.46	3.05
10.50 to 11.00; (0.488 µm)	0.38	2.52
11.00 to 11.50; (0.345 µm)	0.30	2.03
11.50 to 12.00; (0.244 µm)	0.24	1.59
12.00 to 12.50; (0.173 µm)	0.17	1.16
12.50 to 13.00; (0.122 µm)	0.13	0.85
13.00 to 13.50; (0.086 µm)	0.08	0.53
13.50 to 14.00; (0.061µm)	0.03	0.21
14.00 to 14.50; (0.043µm)	0.00	0.03
> 14.50; (0.01 µm)	0.00	0.00
TOTAL	100.00	666.10

Notes: The bulk sample was removed from the pot and thoroughly mixed in a bowl to ensure it was well homogenised. The laser subsample was taken at this stage, which included some large pieces of gravel. Before laser analysis, the largest pieces of gravel were removed from the laser subsample pot and put to one side to enable the sample to be mixed before taking the laser subsamples. The rest of the bulk sample was wet separated at 1 mm, dried, and the >1 mm fraction dry sieved.

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS78.

Exercise Code:	PS78
LabCode:	PSA_2716
Sample Code:	PS782716

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	13.76	84.22
-4.00 to -3.50; 11.2 mm	23.12	141.55
-3.50 to -3.00; 8 mm	18.47	113.07
-3.00 to -2.50; 5.6 mm	2.60	15.92
-2.50 to -2.00; 4 mm	0.10	0.63
-2.00 to -1.50; 2.8 mm	0.02	0.14
-1.50 to -1.00; 2 mm	0.02	0.13
-1.00 to -0.50; 1.4 mm	0.05	0.31
-0.50 to 0.00; 1 mm	0.05	0.30
0.00 to 0.50; (707 µm)	0.00	0.02
0.50 to 1.00; (500 µm)	0.33	2.03
1.00 to 1.50; (353.6 µm)	1.77	10.82
1.50 to 2.00; (250 µm)	4.12	25.21
2.00 to 2.50; (176.8 µm)	5.88	36.02
2.50 to 3.00; (125 µm)	7.70	47.11
3.00 to 3.50; (88.39 µm)	6.53	39.98
3.50 to 4.00; (62.5 µm)	5.31	32.53
4.00 to 4.50; (44.19 µm)	2.85	17.44
4.50 to 5.00; (31.25 µm)	1.60	9.77
5.00 to 5.50; (22.097 µm)	0.82	5.05
5.50 to 6.00; (15.625 µm)	0.64	3.93
6.00 to 6.50; (11.049 µm)	0.61	3.76
6.50 to 7.00; (7.813 µm)	0.65	3.97
7.00 to 7.50; (5.524 µm)	0.72	4.41
7.50 to 8.00; (3.906 µm)	0.77	4.68
8.00 to 8.50; (2.762 µm)	0.70	4.27
8.50 to 9.00; (1.953 µm)	0.51	3.13
9.00 to 9.50; (1.381 µm)	0.27	1.68
9.50 to 10.00; (0.977 µm)	0.03	0.17
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)		
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	612.24

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 PS78.

Exercise Code:	PS78
LabCode:	PSA_2717
Sample Code:	PS782717

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	6.40	45.90
-4.50 to -4.00; 16 mm	6.16	44.19
-4.00 to -3.50; 11.2 mm	26.74	191.88
-3.50 to -3.00; 8 mm	15.52	111.37
-3.00 to -2.50; 5.6 mm	2.77	19.85
-2.50 to -2.00; 4 mm	0.12	0.89
-2.00 to -1.50; 2.8 mm	0.00	0.00
-1.50 to -1.00; 2 mm	0.01	0.06
-1.00 to -0.50; 1.4 mm	0.02	0.11
-0.50 to 0.00; 1 mm	0.02	0.12
0.00 to 0.50; (707 µm)	0.03	0.21
0.50 to 1.00; (500 µm)	0.58	4.16
1.00 to 1.50; (353.6 µm)	2.24	16.11
1.50 to 2.00; (250 µm)	3.96	28.39
2.00 to 2.50; (176.8 µm)	6.05	43.44
2.50 to 3.00; (125 µm)	6.86	49.25
3.00 to 3.50; (88.39 µm)	6.11	43.87
3.50 to 4.00; (62.5 µm)	4.52	32.44
4.00 to 4.50; (44.19 µm)	2.89	20.77
4.50 to 5.00; (31.25 µm)	1.66	11.93
5.00 to 5.50; (22.097 µm)	0.99	7.10
5.50 to 6.00; (15.625 µm)	0.74	5.30
6.00 to 6.50; (11.049 µm)	0.68	4.91
6.50 to 7.00; (7.813 µm)	0.70	5.00
7.00 to 7.50; (5.524 µm)	0.76	5.44
7.50 to 8.00; (3.906 µm)	0.78	5.57
8.00 to 8.50; (2.762 µm)	0.75	5.35
8.50 to 9.00; (1.953 µm)	0.62	4.48
9.00 to 9.50; (1.381 µm)	0.44	3.18
9.50 to 10.00; (0.977 µm)	0.37	2.62
10.00 to 10.50; (0.691 µm)	0.37	2.63
10.50 to 11.00; (0.488 µm)	0.14	1.01
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	717.54

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 PS78.

Exercise Code:	PS78
LabCode:	PSA_2718
Sample Code:	PS782718

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		
-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	61.1	
-1.00 to -0.50; 1.4 mm	0.0	
-0.50 to 0.00; 1 mm	0.1	
0.00 to 0.50; (707 µm)	0.1	
0.50 to 1.00; (500 µm)	0.3	
1.00 to 1.50; (353.6 µm)	1.0	
1.50 to 2.00; (250 µm)	3.3	
2.00 to 2.50; (176.8 µm)	4.6	
2.50 to 3.00; (125 µm)	6.7	
3.00 to 3.50; (88.39 µm)	5.3	
3.50 to 4.00; (62.5 µm)	5.0	
4.00 to 4.50; (44.19 µm)	12.4	
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)		
>14.5; (0.01)		
TOTAL	99.90	

Notes: we follow the ICRAM method which involves oven drying at 60°C and pretreatment with 1:8 hydrogen peroxide:water solution for 48 h.
Then the sediment is wet sieved on 0,063 mm sieve. Retained fraction is dried and sieved on a sieve series from 2mm to 0,063 mm (0,5phi interval).
Results are expressed as gravel (>2 mm); sand (2mm < x < 0,063 mm); mud (<0,063 mm).

We have processed about 100 g of dried sample and reported data in %

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS78.

LabCode:	PSA_2730
Sample Code:	Benchmark Replicate 1

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	13.18	88.23
-4.00 to -3.50; 11.2 mm	23.47	157.13
-3.50 to -3.00; 8 mm	18.21	121.92
-3.00 to -2.50; 5.6 mm	2.45	16.43
-2.50 to -2.00; 4 mm	0.04	0.29
-2.00 to -1.50; 2.8 mm	0.01	0.05
-1.50 to -1.00; 2 mm	0.01	0.05
-1.00 to -0.50; 1.4 mm	0.01	0.09
-0.50 to 0.00; 1 mm	0.02	0.12
0.00 to 0.50; (707 µm)	0.14	0.96
0.50 to 1.00; (500 µm)	0.61	4.09
1.00 to 1.50; (353.6 µm)	1.98	13.27
1.50 to 2.00; (250 µm)	3.78	25.30
2.00 to 2.50; (176.8 µm)	5.78	38.71
2.50 to 3.00; (125 µm)	6.46	43.24
3.00 to 3.50; (88.39 µm)	5.51	36.89
3.50 to 4.00; (62.5 µm)	4.25	28.47
4.00 to 4.50; (44.19 µm)	2.92	19.53
4.50 to 5.00; (31.25 µm)	1.82	12.16
5.00 to 5.50; (22.097 µm)	1.18	7.88
5.50 to 6.00; (15.625 µm)	0.89	5.98
6.00 to 6.50; (11.049 µm)	0.76	5.12
6.50 to 7.00; (7.813 µm)	0.70	4.67
7.00 to 7.50; (5.524 µm)	0.69	4.64
7.50 to 8.00; (3.906 µm)	0.69	4.62
8.00 to 8.50; (2.762 µm)	0.66	4.39
8.50 to 9.00; (1.953 µm)	0.63	4.19
9.00 to 9.50; (1.381 µm)	0.61	4.06
9.50 to 10.00; (0.977 µm)	0.56	3.77
10.00 to 10.50; (0.691 µm)	0.49	3.28
10.50 to 11.00; (0.488 µm)	0.41	2.75
11.00 to 11.50; (0.345 µm)	0.33	2.24
11.50 to 12.00; (0.244 µm)	0.27	1.78
12.00 to 12.50; (0.173 µm)	0.20	1.33
12.50 to 13.00; (0.122 µm)	0.15	0.98
13.00 to 13.50; (0.086 µm)	0.09	0.62
13.50 to 14.00; (0.061µm)	0.04	0.25
14.00 to 14.50; (0.043µm)	0.00	0.03
>14.5; (0.01)	0.00	0.00
TOTAL	100.00	669.50

Notes: The bulk sample was removed from the pot and thoroughly mixed in a bowl to ensure it was well homogenised. The laser subsample was taken at this stage, which included some large pieces of gravel. Before laser analysis, the largest pieces of gravel were removed from the laser subsample pot and put to one side to enable the sample to be mixed before taking the laser subsamples. The rest of the bulk sample was wet separated at 1 mm, dried, and the >1 mm fraction dry sieved.

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS78.

Exercise Code:	PS78
LabCode:	PSA_2731
Sample Code:	Benchmark Replicate 2

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage (mark as "0" for no material & leave blank for not analysed)	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	11.93	79.79
-4.00 to -3.50; 11.2 mm	25.39	169.80
-3.50 to -3.00; 8 mm	17.62	117.85
-3.00 to -2.50; 5.6 mm	2.03	13.55
-2.50 to -2.00; 4 mm	0.00	0.00
-2.00 to -1.50; 2.8 mm	0.01	0.05
-1.50 to -1.00; 2 mm	0.01	0.09
-1.00 to -0.50; 1.4 mm	0.02	0.15
-0.50 to 0.00; 1 mm	0.03	0.17
0.00 to 0.50; (707 µm)	0.09	0.62
0.50 to 1.00; (500 µm)	0.71	4.73
1.00 to 1.50; (353.6 µm)	2.12	14.21
1.50 to 2.00; (250 µm)	3.78	25.28
2.00 to 2.50; (176.8 µm)	5.89	39.42
2.50 to 3.00; (125 µm)	6.66	44.54
3.00 to 3.50; (88.39 µm)	5.56	37.21
3.50 to 4.00; (62.5 µm)	4.26	28.51
4.00 to 4.50; (44.19 µm)	2.86	19.10
4.50 to 5.00; (31.25 µm)	1.74	11.61
5.00 to 5.50; (22.097 µm)	1.11	7.41
5.50 to 6.00; (15.625 µm)	0.83	5.57
6.00 to 6.50; (11.049 µm)	0.72	4.83
6.50 to 7.00; (7.813 µm)	0.66	4.43
7.00 to 7.50; (5.524 µm)	0.68	4.51
7.50 to 8.00; (3.906 µm)	0.69	4.62
8.00 to 8.50; (2.762 µm)	0.67	4.46
8.50 to 9.00; (1.953 µm)	0.65	4.35
9.00 to 9.50; (1.381 µm)	0.64	4.29
9.50 to 10.00; (0.977 µm)	0.60	3.99
10.00 to 10.50; (0.691 µm)	0.51	3.44
10.50 to 11.00; (0.488 µm)	0.43	2.84
11.00 to 11.50; (0.345 µm)	0.34	2.30
11.50 to 12.00; (0.244 µm)	0.27	1.82
12.00 to 12.50; (0.173 µm)	0.20	1.36
12.50 to 13.00; (0.122 µm)	0.15	1.01
13.00 to 13.50; (0.086 µm)	0.09	0.63
13.50 to 14.00; (0.061µm)	0.04	0.26
14.00 to 14.50; (0.043µm)	0.01	0.04
>14.5; (0.01)	0.00	0.00
TOTAL	100.00	668.82

Notes: The bulk sample was removed from the pot and thoroughly mixed in a bowl to ensure it was well homogenised. The laser subsample was taken at this stage, which included some large pieces of gravel. Before laser analysis, the largest pieces of gravel were removed from the laser subsample pot and put to one side to enable the sample to be mixed before taking the laser subsamples. The rest of the bulk sample was wet separated at 1 mm, dried, and the >1 mm fraction dry sieved.

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS78.

Exercise Code:	PS78
LabCode:	PSA_2732
Sample Code:	Benchmark Replicate 3

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage (mark as "0" for no material & leave blank for not analysed)	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	13.29	87.90
-4.00 to -3.50; 11.2 mm	24.07	159.16
-3.50 to -3.00; 8 mm	16.64	110.04
-3.00 to -2.50; 5.6 mm	2.79	18.48
-2.50 to -2.00; 4 mm	0.02	0.15
-2.00 to -1.50; 2.8 mm	0.01	0.04
-1.50 to -1.00; 2 mm	0.01	0.07
-1.00 to -0.50; 1.4 mm	0.00	0.03
-0.50 to 0.00; 1 mm	0.01	0.08
0.00 to 0.50; (707 µm)	0.10	0.67
0.50 to 1.00; (500 µm)	0.88	5.82
1.00 to 1.50; (353.6 µm)	2.37	15.67
1.50 to 2.00; (250 µm)	3.96	26.20
2.00 to 2.50; (176.8 µm)	6.08	40.19
2.50 to 3.00; (125 µm)	6.55	43.33
3.00 to 3.50; (88.39 µm)	5.54	36.62
3.50 to 4.00; (62.5 µm)	4.29	28.36
4.00 to 4.50; (44.19 µm)	2.87	18.97
4.50 to 5.00; (31.25 µm)	1.68	11.10
5.00 to 5.50; (22.097 µm)	1.06	7.02
5.50 to 6.00; (15.625 µm)	0.80	5.26
6.00 to 6.50; (11.049 µm)	0.69	4.55
6.50 to 7.00; (7.813 µm)	0.64	4.25
7.00 to 7.50; (5.524 µm)	0.66	4.33
7.50 to 8.00; (3.906 µm)	0.67	4.40
8.00 to 8.50; (2.762 µm)	0.64	4.24
8.50 to 9.00; (1.953 µm)	0.62	4.09
9.00 to 9.50; (1.381 µm)	0.60	3.97
9.50 to 10.00; (0.977 µm)	0.55	3.67
10.00 to 10.50; (0.691 µm)	0.48	3.16
10.50 to 11.00; (0.488 µm)	0.40	2.63
11.00 to 11.50; (0.345 µm)	0.32	2.12
11.50 to 12.00; (0.244 µm)	0.25	1.66
12.00 to 12.50; (0.173 µm)	0.19	1.22
12.50 to 13.00; (0.122 µm)	0.14	0.90
13.00 to 13.50; (0.086 µm)	0.08	0.56
13.50 to 14.00; (0.061µm)	0.03	0.22
14.00 to 14.50; (0.043µm)	0.00	0.03
>14.5; (0.01)	0.00	0.00
TOTAL	100.00	661.19

Notes: The bulk sample was removed from the pot and thoroughly mixed in a bowl to ensure it was well homogenised. The laser subsample was taken at this stage, which included some large pieces of gravel. Before laser analysis, the largest pieces of gravel were removed from the laser subsample pot and put to one side to enable the sample to be mixed before taking the laser subsamples. The rest of the bulk sample was wet separated at 1 mm, dried, and the >1 mm fraction dry sieved.

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS78.

Exercise Code:	PS78
LabCode:	PSA_2733
Sample Code:	Benchmark Replicate 4

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	9.78	64.62
-4.00 to -3.50; 11.2 mm	27.37	180.73
-3.50 to -3.00; 8 mm	16.90	111.60
-3.00 to -2.50; 5.6 mm	2.47	16.34
-2.50 to -2.00; 4 mm	0.00	0.00
-2.00 to -1.50; 2.8 mm	0.02	0.14
-1.50 to -1.00; 2 mm	0.02	0.10
-1.00 to -0.50; 1.4 mm	0.02	0.16
-0.50 to 0.00; 1 mm	0.03	0.18
0.00 to 0.50; (707 µm)	0.14	0.89
0.50 to 1.00; (500 µm)	0.87	5.76
1.00 to 1.50; (353.6 µm)	2.12	14.01
1.50 to 2.00; (250 µm)	3.88	25.64
2.00 to 2.50; (176.8 µm)	5.97	39.40
2.50 to 3.00; (125 µm)	6.53	43.10
3.00 to 3.50; (88.39 µm)	5.60	36.98
3.50 to 4.00; (62.5 µm)	4.27	28.18
4.00 to 4.50; (44.19 µm)	2.87	18.93
4.50 to 5.00; (31.25 µm)	1.74	11.50
5.00 to 5.50; (22.097 µm)	1.07	7.08
5.50 to 6.00; (15.625 µm)	0.83	5.47
6.00 to 6.50; (11.049 µm)	0.75	4.97
6.50 to 7.00; (7.813 µm)	0.72	4.76
7.00 to 7.50; (5.524 µm)	0.75	4.97
7.50 to 8.00; (3.906 µm)	0.77	5.09
8.00 to 8.50; (2.762 µm)	0.73	4.81
8.50 to 9.00; (1.953 µm)	0.68	4.49
9.00 to 9.50; (1.381 µm)	0.64	4.25
9.50 to 10.00; (0.977 µm)	0.58	3.84
10.00 to 10.50; (0.691 µm)	0.49	3.24
10.50 to 11.00; (0.488 µm)	0.40	2.64
11.00 to 11.50; (0.345 µm)	0.32	2.09
11.50 to 12.00; (0.244 µm)	0.25	1.62
12.00 to 12.50; (0.173 µm)	0.18	1.18
12.50 to 13.00; (0.122 µm)	0.13	0.86
13.00 to 13.50; (0.086 µm)	0.08	0.53
13.50 to 14.00; (0.061µm)	0.03	0.22
14.00 to 14.50; (0.043µm)	0.00	0.03
>14.5; (0.01)	0.00	0.00
TOTAL	100.00	660.40

Notes: The bulk sample was removed from the pot and thoroughly mixed in a bowl to ensure it was well homogenised. The laser subsample was taken at this stage, which included some large pieces of gravel. Before laser analysis, the largest pieces of gravel were removed from the laser subsample pot and put to one side to enable the sample to be mixed before taking the laser subsamples. The rest of the bulk sample was wet separated at 1 mm, dried, and the >1 mm fraction dry sieved.

APPENDIX 3. Final Merged Data sheets (with comments) as supplied by participating laboratories (arranged by LabCode) and the Benchmark Replicates for sediment distributed as PS78.

Exercise Code:	PS78
LabCode:	PSA_2734
Sample Code:	Benchmark Replicate 5

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Percentage (mark as "0" for no material & leave blank for not analysed)	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	9.45	63.25
-4.00 to -3.50; 11.2 mm	25.41	169.97
-3.50 to -3.00; 8 mm	19.42	129.89
-3.00 to -2.50; 5.6 mm	2.58	17.29
-2.50 to -2.00; 4 mm	0.00	0.00
-2.00 to -1.50; 2.8 mm	0.00	0.03
-1.50 to -1.00; 2 mm	0.02	0.14
-1.00 to -0.50; 1.4 mm	0.01	0.10
-0.50 to 0.00; 1 mm	0.02	0.16
0.00 to 0.50; (707 µm)	0.14	0.91
0.50 to 1.00; (500 µm)	0.81	5.45
1.00 to 1.50; (353.6 µm)	2.21	14.78
1.50 to 2.00; (250 µm)	3.91	26.15
2.00 to 2.50; (176.8 µm)	6.09	40.73
2.50 to 3.00; (125 µm)	6.71	44.86
3.00 to 3.50; (88.39 µm)	5.71	38.17
3.50 to 4.00; (62.5 µm)	4.23	28.29
4.00 to 4.50; (44.19 µm)	2.78	18.62
4.50 to 5.00; (31.25 µm)	1.66	11.07
5.00 to 5.50; (22.097 µm)	0.99	6.64
5.50 to 6.00; (15.625 µm)	0.77	5.18
6.00 to 6.50; (11.049 µm)	0.68	4.58
6.50 to 7.00; (7.813 µm)	0.62	4.17
7.00 to 7.50; (5.524 µm)	0.65	4.36
7.50 to 8.00; (3.906 µm)	0.69	4.60
8.00 to 8.50; (2.762 µm)	0.67	4.48
8.50 to 9.00; (1.953 µm)	0.65	4.36
9.00 to 9.50; (1.381 µm)	0.64	4.30
9.50 to 10.00; (0.977 µm)	0.59	3.97
10.00 to 10.50; (0.691 µm)	0.50	3.34
10.50 to 11.00; (0.488 µm)	0.40	2.69
11.00 to 11.50; (0.345 µm)	0.31	2.10
11.50 to 12.00; (0.244 µm)	0.24	1.60
12.00 to 12.50; (0.173 µm)	0.17	1.15
12.50 to 13.00; (0.122 µm)	0.12	0.83
13.00 to 13.50; (0.086 µm)	0.08	0.51
13.50 to 14.00; (0.061µm)	0.03	0.20
14.00 to 14.50; (0.043µm)	0.00	0.03
>14.5; (0.01)	0.00	0.00
TOTAL	100.00	668.97

Notes: The bulk sample was removed from the pot and thoroughly mixed in a bowl to ensure it was well homogenised. The laser subsample was taken at this stage, which included some large pieces of gravel. Before laser analysis, the largest pieces of gravel were removed from the laser subsample pot and put to one side to enable the sample to be mixed before taking the laser subsamples. The rest of the bulk sample was wet separated at 1 mm, dried, and the >1 mm fraction dry sieved.

APPENDIX 4. Participant laser replicate data for sediment distributed as PS78.

PSA_2701 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	0.19	0.09	0.29	0.00	0.09	0.04	0.07	0.21	0.23
500	1.94	1.31	2.47	1.36	1.64	1.10	1.34	2.43	2.10
353.6	5.86	4.86	7.29	5.69	5.90	4.54	4.95	7.43	6.47
250	11.23	10.75	13.45	11.92	12.10	10.37	10.57	13.56	12.49
176.8	15.51	16.11	17.45	16.55	16.80	15.57	15.51	17.38	16.88
125	16.70	17.97	17.37	17.18	17.58	17.33	17.35	17.28	17.45
88.39	14.27	15.30	13.60	13.90	14.33	14.89	15.21	13.68	14.16
62.5	10.07	10.44	8.84	9.39	9.61	10.46	10.86	9.07	9.47
44.19	6.18	6.12	5.10	5.76	5.71	6.45	6.62	5.31	5.57
31.25	3.47	3.31	2.76	3.40	3.20	3.71	3.62	2.88	3.10
22.097	2.03	1.94	1.59	2.11	1.92	2.25	2.09	1.67	1.91
15.625	1.55	1.53	1.23	1.61	1.49	1.72	1.63	1.30	1.54
11.049	1.55	1.55	1.26	1.57	1.49	1.66	1.63	1.29	1.52
7.813	1.75	1.73	1.45	1.76	1.65	1.83	1.75	1.40	1.60
5.524	1.91	1.86	1.59	1.93	1.75	2.00	1.80	1.44	1.61
3.906	1.87	1.78	1.53	1.90	1.67	1.96	1.69	1.34	1.47
2.762	1.68	1.57	1.35	1.70	1.48	1.77	1.48	1.17	1.26
1.953	1.20	1.10	0.94	1.21	1.03	1.26	1.04	0.81	0.86
1.381	0.54	0.47	0.40	0.54	0.44	0.55	0.45	0.33	0.33
0.977	0.21	0.07	0.04	0.21	0.05	0.20	0.09	0.02	0.01
0.691	0.24	0.15	0.00	0.23	0.08	0.24	0.20	0.00	0.00
0.488	0.09	0.02	0.00	0.09	0.01	0.09	0.04	0.00	0.00
0.345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	12.47	14.62	23.15	12.14	16.99	11.28	15.06	26.66	21.18
d50	128.76	127.62	147.57	131.98	135.55	122.00	124.41	147.65	139.73
d90	332.35	313.33	354.38	324.47	330.41	306.13	313.83	354.82	341.93

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	16.75	5.65	33.72	13.47	3.08	22.87	20.97	5.80	27.66
d50	134.65	11.20	8.32	129.85	7.02	5.41	137.26	11.81	8.61
d90	333.35	20.54	6.16	320.34	12.66	3.95	336.86	20.96	6.22

APPENDIX 4. Participant laser replicate data for sediment distributed as PS78.

PSA_2702 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	0.91	0.66	1.79	0.39	1.67	1.61	0.56	0.46	0.00
500	5.66	5.23	5.25	5.49	5.94	5.52	4.31	3.77	3.31
353.6	10.80	10.59	10.23	11.89	11.33	10.85	9.79	9.20	9.42
250	14.91	14.98	14.58	16.43	15.36	15.13	15.34	15.34	15.55
176.8	15.97	15.91	15.67	16.64	15.72	15.68	18.01	18.54	18.37
125	13.53	13.21	13.06	13.06	12.53	12.55	16.06	16.31	15.82
88.39	9.30	8.96	8.80	8.56	8.25	8.30	10.84	10.45	10.12
62.5	5.45	5.29	5.13	5.31	5.06	5.08	5.72	5.18	5.20
44.19	3.05	3.10	3.03	3.46	3.29	3.30	2.80	2.57	2.77
31.25	2.15	2.44	2.52	2.43	2.52	2.61	1.84	2.01	2.21
22.097	2.42	2.98	3.20	2.05	2.60	2.84	1.87	2.36	2.60
15.625	3.25	3.93	4.20	2.31	3.21	3.59	2.27	2.93	3.27
11.049	3.75	4.27	4.44	2.79	3.65	4.01	2.64	3.23	3.58
7.813	3.36	3.52	3.52	2.85	3.29	3.51	2.58	2.87	3.09
5.524	2.28	2.16	2.06	2.29	2.28	2.32	2.01	1.97	2.03
3.906	1.21	1.01	0.90	1.48	1.23	1.18	1.26	1.06	1.02
2.762	0.58	0.45	0.38	0.83	0.61	0.55	0.69	0.51	0.46
1.953	0.37	0.33	0.30	0.51	0.40	0.36	0.42	0.33	0.31
1.381	0.33	0.32	0.30	0.39	0.35	0.33	0.33	0.29	0.29
0.977	0.31	0.30	0.28	0.35	0.31	0.30	0.30	0.27	0.27
0.691	0.28	0.26	0.25	0.31	0.28	0.27	0.27	0.24	0.24
0.488	0.12	0.11	0.10	0.19	0.12	0.11	0.11	0.10	0.10
0.345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	12.29	12.52	12.82	12.21	12.30	12.12	14.43	14.23	13.69
d50	169.05	165.00	165.54	179.94	176.88	170.99	169.36	167.01	164.28
d90	447.92	437.09	452.30	443.46	464.74	456.31	417.00	402.37	390.92

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	12.55	0.27	2.13	12.21	0.09	0.74	14.12	0.38	2.73
d50	166.53	2.20	1.32	175.94	4.55	2.58	166.88	2.55	1.53
d90	445.77	7.83	1.76	454.84	10.72	2.36	403.43	13.07	3.24

APPENDIX 4. Participant laser replicate data for sediment distributed as PS78.

PSA_2704 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500	0.02	0.03	0.03	0.03	0.08	0.03	0.02	0.07	0.03
353.6	2.36	2.93	3.21	3.31	4.29	3.48	2.66	3.46	3.02
250	6.56	6.73	7.01	6.97	6.30	7.02	7.27	6.61	7.44
176.8	14.57	14.15	13.81	13.14	12.86	13.23	14.64	14.87	14.68
125	18.10	18.24	18.04	18.20	18.40	18.51	18.02	17.98	18.12
88.39	12.95	12.73	12.68	12.10	12.26	11.98	12.66	12.45	12.27
62.5	11.00	10.75	10.76	10.79	10.66	10.50	10.75	10.62	10.43
44.19	7.72	7.64	7.66	7.94	7.82	7.83	7.56	7.48	7.49
31.25	4.14	4.14	4.14	4.33	4.30	4.28	4.07	4.11	4.10
22.097	2.80	2.82	2.81	2.83	2.80	2.81	2.75	2.69	2.70
15.625	1.83	1.84	1.83	1.90	1.89	1.90	1.79	1.84	1.85
11.049	1.69	1.70	1.69	1.83	1.81	1.82	1.64	1.74	1.75
7.813	1.86	1.86	1.86	1.85	1.82	1.84	1.79	1.76	1.75
5.524	2.02	2.02	2.02	1.97	1.95	1.96	1.95	1.89	1.88
3.906	2.02	2.02	2.02	2.02	2.00	2.01	1.96	1.94	1.93
2.762	1.79	1.79	1.79	1.84	1.82	1.83	1.75	1.77	1.76
1.953	1.55	1.55	1.55	1.62	1.60	1.61	1.53	1.55	1.55
1.381	1.40	1.41	1.41	1.48	1.47	1.48	1.41	1.42	1.43
0.977	1.27	1.28	1.28	1.34	1.34	1.35	1.29	1.30	1.31
0.691	1.10	1.11	1.11	1.16	1.15	1.16	1.12	1.13	1.13
0.488	0.91	0.92	0.93	0.96	0.96	0.97	0.94	0.94	0.95
0.345	0.74	0.74	0.75	0.77	0.77	0.78	0.76	0.76	0.77
0.244	0.58	0.58	0.59	0.60	0.60	0.60	0.60	0.60	0.60
0.173	0.43	0.43	0.43	0.44	0.44	0.44	0.44	0.44	0.44
0.122	0.31	0.31	0.31	0.32	0.32	0.32	0.32	0.32	0.32
0.086	0.19	0.19	0.19	0.20	0.20	0.20	0.20	0.20	0.20
0.061	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
0.043	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
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	3.64	3.60	3.60	3.36	3.39	3.34	3.56	3.53	3.50
d50	99.86	100.77	100.77	98.40	99.51	99.93	102.10	102.82	103.39
d90	243.76	248.14	253.22	253.91	259.48	256.56	249.68	251.72	255.67

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	3.62	0.02	0.58	3.36	0.02	0.73	3.53	0.03	0.82
d50	100.47	0.53	0.52	99.28	0.79	0.79	102.77	0.65	0.63
d90	248.37	4.74	1.91	256.65	2.79	1.09	252.36	3.04	1.21

APPENDIX 4. Participant laser replicate data for sediment distributed as PS78.

PSA_2705 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
1400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1000	0.00	0.00	0.00	0.06	0.09	0.56	0.07	0.00	0.00
707	0.40	0.60	1.04	1.85	1.92	2.74	1.89	1.53	1.18
500	4.13	4.44	4.88	5.48	5.35	5.92	5.54	5.53	5.06
353.6	9.99	9.88	10.22	10.29	10.11	10.40	10.29	10.64	10.32
250	13.39	13.04	13.18	12.97	12.96	12.90	12.89	13.31	13.22
176.8	16.31	16.10	15.99	15.86	16.02	15.62	15.71	16.03	16.11
125	13.28	13.36	13.07	13.09	13.22	12.76	13.00	13.04	13.24
88.39	11.28	11.41	11.09	11.05	11.07	10.69	11.06	10.93	11.19
62.5	7.36	7.39	7.20	7.03	7.00	6.79	7.11	6.95	7.14
44.19	4.93	4.89	4.80	4.59	4.56	4.45	4.65	4.56	4.68
31.25	2.88	2.86	2.82	2.69	2.68	2.62	2.70	2.67	2.73
22.097	2.15	2.15	2.12	2.04	2.04	1.98	2.04	2.01	2.05
15.625	1.95	1.95	1.91	1.85	1.84	1.79	1.85	1.81	1.85
11.049	2.02	2.01	1.97	1.88	1.88	1.82	1.89	1.85	1.89
7.813	2.18	2.17	2.13	2.03	2.03	1.96	2.04	2.00	2.04
5.524	2.27	2.26	2.22	2.12	2.11	2.04	2.12	2.08	2.12
3.906	2.16	2.16	2.11	2.02	2.02	1.95	2.03	1.98	2.03
2.762	1.71	1.71	1.67	1.61	1.60	1.55	1.61	1.58	1.62
1.953	1.06	1.06	1.04	1.00	0.99	0.96	1.01	0.99	1.01
1.381	0.48	0.48	0.47	0.45	0.45	0.43	0.46	0.45	0.46
0.977	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
0.691	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.488	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	99.94	99.91	99.44	99.93	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	11.18	11.23	11.63	12.58	12.64	13.30	12.49	12.98	12.45
d50	152.06	151.58	156.10	161.05	160.89	166.77	160.41	163.42	158.73
d90	413.66	420.22	435.38	457.14	455.51	478.98	458.64	454.31	440.64

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	11.35	0.25	2.17	12.84	0.40	3.09	12.64	0.30	2.35
d50	153.25	2.48	1.62	162.90	3.35	2.06	160.85	2.38	1.48
d90	423.09	11.14	2.63	463.88	13.11	2.83	451.20	9.39	2.08

APPENDIX 4. Participant laser replicate data for sediment distributed as PS78.

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	0.30	0.29	0.28	0.81	0.22	0.32	0.75	0.22	0.24
500	2.91	3.17	3.01	3.67	2.72	3.19	3.59	2.99	3.00
353.6	7.35	7.91	7.55	8.13	7.53	7.91	8.00	7.97	7.94
250	12.39	12.80	12.48	12.96	12.95	12.96	12.77	13.18	13.13
176.8	15.76	15.73	15.69	15.94	16.27	16.02	15.77	16.21	16.15
125	15.90	15.55	15.77	15.63	16.04	15.78	15.60	15.85	15.79
88.39	13.19	12.84	13.13	12.65	13.04	12.89	12.77	12.86	12.84
62.5	9.28	9.10	9.29	8.75	9.09	9.02	8.92	8.94	8.99
44.19	5.70	5.66	5.74	5.37	5.60	5.57	5.48	5.50	5.56
31.25	3.23	3.22	3.24	3.06	3.18	3.16	3.12	3.13	3.17
22.097	1.90	1.88	1.90	1.81	1.86	1.85	1.83	1.84	1.85
15.625	1.36	1.33	1.35	1.28	1.31	1.30	1.29	1.29	1.30
11.049	1.21	1.19	1.21	1.12	1.16	1.16	1.14	1.13	1.14
7.813	1.23	1.22	1.23	1.14	1.18	1.17	1.14	1.14	1.15
5.524	1.34	1.32	1.33	1.23	1.27	1.26	1.23	1.22	1.23
3.906	1.43	1.41	1.42	1.32	1.35	1.33	1.32	1.31	1.31
2.762	1.40	1.37	1.38	1.30	1.33	1.31	1.31	1.29	1.30
1.953	1.22	1.19	1.19	1.13	1.16	1.14	1.16	1.14	1.14
1.381	0.96	0.94	0.94	0.90	0.92	0.90	0.93	0.92	0.92
0.977	0.77	0.75	0.74	0.72	0.73	0.71	0.75	0.74	0.73
0.691	0.63	0.61	0.60	0.58	0.59	0.58	0.61	0.60	0.59
0.488	0.44	0.42	0.42	0.40	0.41	0.39	0.42	0.42	0.41
0.345	0.10	0.10	0.10	0.09	0.09	0.09	0.10	0.10	0.10
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	12.69	13.39	13.28	15.82	14.75	15.46	15.13	15.54	15.46
d50	138.22	141.15	138.86	146.43	141.48	143.17	144.39	143.86	143.39
d90	363.00	375.41	367.59	395.12	361.32	376.27	391.38	372.21	372.36

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	13.12	0.38	2.90	15.35	0.54	3.55	15.38	0.21	1.39
d50	139.41	1.54	1.11	143.69	2.52	1.75	143.88	0.50	0.35
d90	368.67	6.28	1.70	377.57	16.94	4.49	378.65	11.02	2.91

APPENDIX 4. Participant laser replicate data for sediment distributed as PS78.

PSA_2707 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	0.80	0.57	0.77	0.72	0.78	0.80	0.69	0.81	1.23
500	9.24	6.12	9.29	8.22	9.22	10.54	7.59	9.73	12.81
353.6	13.10	9.91	12.40	11.80	12.86	14.21	11.09	13.15	13.52
250	8.16	10.34	7.60	8.70	8.16	7.05	8.94	7.93	4.30
176.8	10.61	14.23	11.28	12.04	11.52	10.49	12.27	10.74	9.40
125	9.76	11.12	9.90	10.26	10.01	9.59	9.93	8.89	9.10
88.39	11.80	11.99	11.33	11.71	11.33	10.81	11.06	10.28	10.47
62.5	8.15	8.34	8.23	8.24	8.08	7.93	8.38	8.39	8.16
44.19	5.24	5.85	5.83	5.64	5.65	5.92	6.31	6.39	5.99
31.25	3.95	4.40	4.38	4.24	4.24	4.44	4.69	4.47	3.88
22.097	2.72	2.82	2.86	2.80	2.77	2.72	2.90	2.60	2.17
15.625	1.67	1.52	1.69	1.63	1.62	1.49	1.61	1.51	1.55
11.049	0.91	0.72	0.88	0.83	0.82	0.78	0.83	0.86	1.09
7.813	1.10	0.89	1.03	1.01	0.96	0.99	1.00	1.08	1.36
5.524	1.12	0.99	1.04	1.05	0.98	1.04	1.01	1.08	1.24
3.906	1.29	1.12	1.22	1.21	1.16	1.22	1.17	1.25	1.37
2.762	1.54	1.28	1.46	1.43	1.39	1.45	1.42	1.52	1.66
1.953	1.61	1.34	1.55	1.50	1.46	1.52	1.53	1.61	1.79
1.381	1.39	1.20	1.37	1.32	1.30	1.34	1.38	1.43	1.61
0.977	1.05	0.93	1.05	1.01	1.00	1.03	1.07	1.10	1.26
0.691	0.60	0.54	0.62	0.58	0.59	0.61	0.63	0.65	0.75
0.488	0.72	0.64	0.74	0.70	0.72	0.73	0.75	0.79	0.89
0.345	0.78	0.69	0.79	0.75	0.78	0.77	0.82	0.85	0.95
0.244	0.88	0.78	0.88	0.85	0.86	0.84	0.93	0.94	1.07
0.173	0.88	0.79	0.88	0.85	0.85	0.83	0.94	0.94	1.10
0.122	0.67	0.61	0.66	0.65	0.64	0.62	0.72	0.72	0.87
0.086	0.27	0.27	0.26	0.27	0.26	0.25	0.32	0.31	0.41
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	3.59	5.22	3.66	4.01	4.08	3.93	3.45	3.21	2.41
d50	132.66	134.25	130.60	132.56	136.49	137.72	127.25	131.16	126.78
d90	500.76	445.39	501.23	484.58	499.91	522.57	473.85	509.57	557.76

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	4.16	0.92	22.11	4.01	0.08	1.92	3.02	0.54	17.92
d50	132.50	1.83	1.38	135.59	2.69	1.99	128.40	2.41	1.87
d90	482.46	32.10	6.65	502.36	19.11	3.80	513.73	42.11	8.20

APPENDIX 4. Participant laser replicate data for sediment distributed as PS78.

PSA_2708 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500	0.59	0.65	0.91	0.52	0.86	0.67	0.68	0.66	0.99
353.6	3.84	4.18	4.52	3.79	4.23	4.24	4.12	4.16	4.42
250	9.21	9.73	9.98	9.15	9.33	9.63	9.36	9.52	9.58
176.8	13.61	13.92	13.93	13.32	13.23	13.55	13.43	13.60	13.50
125	17.81	17.69	17.50	17.20	17.00	17.10	17.44	17.47	17.30
88.39	14.73	14.34	14.10	14.22	14.04	13.90	14.58	14.41	14.26
62.5	11.97	11.52	11.31	11.74	11.55	11.32	12.08	11.81	11.66
44.19	7.60	7.32	7.18	7.72	7.54	7.37	7.81	7.62	7.51
31.25	4.23	4.13	4.05	4.48	4.36	4.29	4.33	4.27	4.21
22.097	2.94	2.93	2.89	3.21	3.16	3.14	2.93	2.95	2.93
15.625	2.18	2.20	2.19	2.40	2.40	2.41	2.12	2.16	2.17
11.049	1.96	1.98	1.99	2.13	2.15	2.17	1.88	1.92	1.94
7.813	1.74	1.76	1.78	1.88	1.89	1.91	1.66	1.69	1.71
5.524	1.58	1.60	1.61	1.70	1.70	1.72	1.51	1.54	1.56
3.906	1.37	1.39	1.39	1.48	1.49	1.50	1.33	1.36	1.38
2.762	1.13	1.15	1.15	1.23	1.23	1.24	1.12	1.15	1.16
1.953	0.93	0.94	0.95	1.01	1.02	1.02	0.94	0.96	0.97
1.381	0.76	0.77	0.77	0.83	0.83	0.84	0.78	0.80	0.80
0.977	0.61	0.61	0.61	0.67	0.67	0.67	0.63	0.65	0.65
0.691	0.63	0.63	0.63	0.69	0.69	0.69	0.67	0.68	0.68
0.488	0.45	0.45	0.45	0.50	0.50	0.50	0.49	0.49	0.50
0.345	0.12	0.12	0.12	0.14	0.14	0.14	0.14	0.14	0.14
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	12.44	12.21	12.12	10.80	10.74	10.61	12.69	12.19	11.97
d50	111.30	113.92	115.63	107.94	109.51	110.86	111.05	111.95	112.82
d90	286.77	294.04	301.66	284.95	294.57	294.40	291.61	292.90	299.48

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	12.26	0.17	1.37	10.72	0.10	0.91	12.28	0.37	3.00
d50	113.62	2.18	1.92	109.44	1.46	1.34	111.94	0.89	0.79
d90	294.15	7.44	2.53	291.31	5.51	1.89	294.66	4.22	1.43

APPENDIX 4. Participant laser replicate data for sediment distributed as PS78.

PSA_2709 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	0.00	0.10	0.16	0.00	0.00	0.00	0.62	0.00	0.00
500	3.64	3.76	4.24	4.40	4.17	3.69	4.57	2.76	3.32
353.6	9.29	9.25	10.11	11.20	10.97	10.59	10.21	9.71	10.06
250	14.53	14.40	14.99	16.75	16.64	16.57	15.57	15.94	16.08
176.8	17.19	17.13	17.10	17.97	18.02	18.21	17.66	18.45	18.36
125	16.27	16.36	15.92	14.58	14.75	15.01	15.62	16.32	16.09
88.39	12.67	12.78	12.34	9.50	9.65	9.89	11.29	11.72	11.52
62.5	8.19	8.25	7.99	5.57	5.66	5.81	7.05	7.27	7.18
44.19	4.49	4.49	4.39	3.42	3.47	3.54	4.04	4.16	4.14
31.25	2.27	2.26	2.22	2.34	2.38	2.41	2.27	2.36	2.34
22.097	1.35	1.34	1.29	1.70	1.74	1.76	1.41	1.47	1.44
15.625	1.13	1.12	1.07	1.38	1.41	1.43	1.10	1.13	1.11
11.049	1.18	1.17	1.11	1.39	1.40	1.41	1.10	1.13	1.10
7.813	1.31	1.29	1.22	1.59	1.60	1.60	1.24	1.26	1.23
5.524	1.40	1.37	1.29	1.77	1.77	1.77	1.34	1.37	1.32
3.906	1.36	1.33	1.25	1.75	1.75	1.74	1.32	1.34	1.30
2.762	1.17	1.15	1.08	1.50	1.50	1.50	1.14	1.15	1.11
1.953	0.90	0.88	0.83	1.15	1.14	1.14	0.88	0.89	0.86
1.381	0.63	0.61	0.58	0.79	0.78	0.77	0.61	0.62	0.59
0.977	0.44	0.43	0.40	0.55	0.54	0.53	0.43	0.43	0.41
0.691	0.35	0.33	0.30	0.42	0.41	0.40	0.33	0.33	0.31
0.488	0.22	0.20	0.12	0.27	0.26	0.25	0.21	0.20	0.13
0.345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	21.41	22.76	27.00	11.65	11.75	11.94	23.81	22.90	25.17
d50	157.77	157.81	164.18	177.91	175.98	173.01	171.48	165.36	168.71
d90	394.45	397.22	412.68	420.51	415.91	406.73	424.71	386.13	397.28

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	23.72	2.91	12.28	11.78	0.15	1.26	23.96	1.14	4.78
d50	159.92	3.69	2.31	175.63	2.47	1.41	168.52	3.06	1.82
d90	401.45	9.82	2.45	414.38	7.02	1.69	402.71	19.86	4.93

APPENDIX 4. Participant laser replicate data for sediment distributed as PS78.

PSA_2711 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500	1.09	0.47	0.63	0.92	0.42	0.91	1.05	0.56	0.64
353.6	5.28	4.50	4.54	5.01	4.50	4.82	5.20	4.67	4.63
250	9.51	9.24	8.91	9.35	9.36	8.99	9.47	9.40	9.10
176.8	13.23	13.54	12.93	13.18	13.63	12.89	13.27	13.55	13.08
125	15.09	15.71	15.21	15.07	15.66	15.07	15.08	15.53	15.22
88.39	14.23	14.77	14.74	14.26	14.66	14.53	14.14	14.53	14.59
62.5	11.14	11.42	11.77	11.21	11.34	11.58	11.04	11.25	11.55
44.19	7.25	7.35	7.73	7.34	7.32	7.62	7.21	7.28	7.56
31.25	4.12	4.14	4.35	4.18	4.14	4.31	4.13	4.13	4.27
22.097	2.40	2.40	2.47	2.44	2.40	2.46	2.43	2.41	2.45
15.625	1.77	1.76	1.78	1.80	1.77	1.79	1.79	1.77	1.79
11.049	1.63	1.61	1.63	1.67	1.62	1.64	1.65	1.63	1.65
7.813	1.64	1.61	1.63	1.68	1.62	1.64	1.66	1.63	1.65
5.524	1.70	1.66	1.67	1.74	1.67	1.68	1.73	1.69	1.69
3.906	1.79	1.75	1.76	1.84	1.77	1.77	1.83	1.78	1.79
2.762	1.85	1.81	1.82	1.90	1.83	1.84	1.90	1.85	1.85
1.953	1.75	1.72	1.74	1.80	1.74	1.75	1.79	1.75	1.77
1.381	1.47	1.46	1.49	1.51	1.47	1.50	1.51	1.49	1.51
0.977	1.19	1.18	1.22	1.21	1.19	1.23	1.21	1.20	1.23
0.691	0.96	0.97	1.01	0.98	0.97	1.01	0.98	0.98	1.01
0.488	0.68	0.68	0.72	0.69	0.68	0.72	0.68	0.69	0.72
0.345	0.24	0.24	0.26	0.24	0.24	0.26	0.24	0.24	0.26
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	5.60	5.75	5.52	5.35	5.64	5.44	5.39	5.55	5.38
d50	108.51	107.25	104.12	106.82	107.38	104.97	108.11	107.56	105.01
d90	309.75	292.86	293.05	304.00	292.95	299.88	308.23	296.47	295.19

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	5.62	0.12	2.07	5.48	0.15	2.73	5.44	0.10	1.83
d50	106.63	2.26	2.12	106.39	1.26	1.19	106.89	1.65	1.55
d90	298.55	9.70	3.25	298.95	5.59	1.87	299.96	7.19	2.40

APPENDIX 4. Participant laser replicate data for sediment distributed as PS78.

PSA_2712 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	0.11	0.09	0.43	0.34	0.20	0.00	0.20	0.00	0.00
500	1.88	1.70	2.41	2.20	1.91	1.15	1.85	1.54	1.48
353.6	5.70	5.42	5.74	5.52	5.37	4.97	5.26	5.56	5.27
250	10.48	10.32	10.20	10.06	10.02	10.28	9.99	10.38	10.14
176.8	13.82	13.95	13.68	13.73	13.79	14.16	13.78	13.73	13.81
125	15.01	15.30	15.01	15.18	15.38	15.53	15.33	15.08	15.31
88.39	13.40	13.57	13.32	13.50	13.67	13.70	13.67	13.57	13.73
62.5	10.12	10.12	9.96	10.06	10.10	10.20	10.19	10.26	10.31
44.19	6.58	6.55	6.46	6.49	6.46	6.60	6.56	6.63	6.65
31.25	3.84	3.86	3.81	3.80	3.79	3.88	3.82	3.84	3.85
22.097	2.36	2.39	2.36	2.35	2.37	2.39	2.35	2.34	2.35
15.625	1.77	1.78	1.77	1.77	1.79	1.80	1.78	1.77	1.77
11.049	1.59	1.59	1.59	1.61	1.62	1.64	1.62	1.63	1.63
7.813	1.80	1.80	1.80	1.82	1.84	1.86	1.83	1.85	1.86
5.524	2.03	2.03	2.02	2.04	2.06	2.09	2.06	2.07	2.08
3.906	2.12	2.13	2.11	2.14	2.16	2.18	2.14	2.15	2.16
2.762	2.16	2.16	2.14	2.17	2.19	2.21	2.18	2.18	2.18
1.953	1.66	1.66	1.65	1.67	1.68	1.70	1.69	1.69	1.69
1.381	1.30	1.30	1.29	1.31	1.32	1.33	1.34	1.34	1.34
0.977	1.03	1.04	1.03	1.04	1.05	1.06	1.07	1.07	1.07
0.691	0.93	0.93	0.93	0.93	0.94	0.95	0.97	0.98	0.98
0.488	0.30	0.30	0.30	0.29	0.29	0.30	0.33	0.34	0.34
0.345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	6.02	5.99	6.07	5.97	5.88	5.78	5.79	5.76	5.75
d50	115.68	115.15	117.02	115.79	114.88	113.26	114.11	113.70	113.02
d90	327.60	321.97	336.93	330.71	324.07	310.25	322.07	320.96	316.41

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	6.03	0.04	0.66	5.87	0.10	1.62	5.77	0.02	0.38
d50	115.95	0.97	0.83	114.64	1.29	1.12	113.61	0.55	0.48
d90	328.83	7.55	2.30	321.68	10.44	3.24	319.81	3.00	0.94

APPENDIX 4. Participant laser replicate data for sediment distributed as PS78.

PSA_2713 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	0.56	0.11	0.65	0.01	0.00	0.00	0.02	0.01	0.01
500	1.41	2.13	1.65	1.12	0.94	0.93	1.27	1.14	1.18
353.6	3.03	2.17	3.00	3.58	3.50	3.41	3.59	3.56	3.60
250	6.39	6.86	6.48	6.71	6.87	6.73	7.83	7.71	7.83
176.8	12.96	14.23	13.05	13.30	13.30	13.37	14.11	14.21	14.12
125	15.31	14.93	15.14	15.06	14.96	15.05	15.54	15.55	15.53
88.39	14.46	14.21	14.18	13.71	13.64	13.65	14.01	13.92	13.92
62.5	11.62	11.41	11.41	11.20	11.19	11.18	11.12	11.12	11.07
44.19	7.38	7.32	7.32	7.48	7.46	7.45	7.13	7.18	7.16
31.25	4.03	3.97	4.04	4.13	4.16	4.17	3.91	3.96	3.96
22.097	2.99	3.02	3.03	3.13	3.17	3.18	2.81	2.85	2.85
15.625	1.63	1.64	1.67	1.77	1.74	1.75	1.60	1.62	1.63
11.049	1.30	1.26	1.33	1.37	1.32	1.34	1.31	1.33	1.34
7.813	1.85	1.86	1.88	1.98	1.95	1.96	1.78	1.80	1.80
5.524	2.14	2.13	2.15	2.27	2.30	2.30	2.03	2.04	2.04
3.906	2.10	2.05	2.11	2.21	2.26	2.26	1.99	2.00	2.00
2.762	1.91	1.87	1.91	2.01	2.05	2.05	1.81	1.82	1.81
1.953	1.74	1.75	1.75	1.86	1.86	1.85	1.64	1.64	1.63
1.381	1.58	1.62	1.59	1.70	1.67	1.67	1.46	1.47	1.46
0.977	1.37	1.40	1.39	1.45	1.43	1.44	1.25	1.26	1.25
0.691	1.13	1.14	1.15	1.15	1.17	1.17	1.03	1.03	1.03
0.488	0.91	0.89	0.92	0.88	0.92	0.93	0.82	0.82	0.82
0.345	0.72	0.68	0.72	0.66	0.71	0.72	0.64	0.64	0.64
0.244	0.55	0.51	0.55	0.48	0.54	0.54	0.49	0.49	0.49
0.173	0.40	0.36	0.40	0.34	0.38	0.39	0.35	0.35	0.35
0.122	0.28	0.26	0.28	0.23	0.27	0.28	0.25	0.25	0.25
0.086	0.18	0.16	0.18	0.14	0.17	0.17	0.16	0.16	0.16
0.061	0.07	0.06	0.07	0.06	0.07	0.07	0.06	0.06	0.06
0.043	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
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	3.35	3.42	3.31	3.30	3.17	3.15	3.93	3.90	3.93
d50	97.55	98.98	97.83	96.54	95.89	95.75	103.46	102.88	103.10
d90	269.58	266.62	275.04	268.97	267.09	264.27	281.71	278.70	280.68

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	3.36	0.06	1.70	3.21	0.08	2.54	3.92	0.02	0.38
d50	98.12	0.76	0.77	96.06	0.42	0.44	103.14	0.29	0.28
d90	270.41	4.27	1.58	266.78	2.37	0.89	280.36	1.53	0.54

APPENDIX 4. Participant laser replicate data for sediment distributed as PS78.

PSA_2714 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500	2.05	1.92	1.70	2.75	2.21	2.30	2.73	2.65	2.64
353.6	7.33	7.43	7.31	8.03	7.81	7.82	8.72	8.28	8.13
250	12.23	12.46	12.39	12.42	12.65	12.53	13.04	12.67	12.43
176.8	15.48	15.59	15.62	15.02	15.34	15.24	14.86	14.83	14.62
125	15.94	15.83	15.99	15.12	15.23	15.21	14.21	14.37	14.29
88.39	13.64	13.45	13.63	12.90	12.87	12.85	11.85	12.02	12.05
62.5	9.95	9.83	9.92	9.53	9.54	9.47	8.91	9.03	9.09
44.19	6.39	6.37	6.36	6.31	6.36	6.30	6.20	6.29	6.35
31.25	3.89	3.92	3.88	4.02	4.03	4.03	4.18	4.25	4.31
22.097	2.56	2.58	2.56	2.72	2.70	2.75	2.94	2.99	3.06
15.625	1.94	1.95	1.95	2.07	2.05	2.11	2.26	2.30	2.37
11.049	1.60	1.61	1.62	1.70	1.71	1.75	1.87	1.91	1.97
7.813	1.36	1.37	1.37	1.43	1.46	1.48	1.59	1.63	1.68
5.524	1.16	1.18	1.18	1.24	1.26	1.28	1.39	1.42	1.47
3.906	1.02	1.03	1.03	1.09	1.10	1.12	1.21	1.24	1.28
2.762	0.88	0.88	0.88	0.94	0.94	0.96	1.04	1.06	1.10
1.953	0.71	0.72	0.72	0.76	0.76	0.78	0.84	0.86	0.89
1.381	0.55	0.56	0.56	0.59	0.59	0.60	0.65	0.66	0.68
0.977	0.47	0.47	0.47	0.49	0.49	0.50	0.54	0.55	0.56
0.691	0.43	0.43	0.43	0.45	0.45	0.46	0.49	0.50	0.52
0.488	0.33	0.33	0.33	0.35	0.35	0.35	0.38	0.39	0.40
0.345	0.08	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.10
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	20.10	19.82	19.78	18.08	17.88	17.32	15.34	14.74	13.93
d50	133.53	134.18	133.46	134.92	134.58	134.18	136.34	133.74	131.58
d90	347.45	347.27	343.96	365.67	353.93	355.52	374.57	367.63	365.41

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	19.90	0.17	0.86	17.76	0.39	2.22	14.67	0.70	4.80
d50	133.72	0.40	0.30	134.56	0.37	0.27	133.89	2.38	1.78
d90	346.23	1.97	0.57	358.37	6.37	1.78	369.20	4.78	1.29

APPENDIX 4. Participant laser replicate data for sediment distributed as PS78.

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	0.29	0.11	0.10	0.29	0.05	0.04	0.41	0.42	0.59
500	2.43	2.02	1.99	2.04	1.80	1.88	2.27	2.10	2.06
353.6	5.36	5.43	5.39	5.50	5.32	5.68	5.02	5.14	4.94
250	9.11	9.48	9.38	9.34	9.42	9.49	9.23	9.50	9.45
176.8	14.54	14.60	14.54	14.49	14.77	14.70	14.57	14.61	14.58
125	15.94	16.05	16.03	15.97	16.07	15.98	16.06	15.98	15.89
88.39	13.51	13.43	13.41	13.23	13.26	13.09	13.53	13.47	13.44
62.5	9.99	9.96	9.97	9.89	9.92	9.81	9.97	9.88	9.91
44.19	6.40	6.37	6.40	6.35	6.33	6.27	6.36	6.33	6.34
31.25	3.62	3.60	3.63	3.64	3.64	3.61	3.60	3.60	3.64
22.097	2.16	2.19	2.23	2.31	2.28	2.29	2.11	2.11	2.13
15.625	1.60	1.61	1.64	1.70	1.68	1.68	1.59	1.60	1.62
11.049	1.42	1.43	1.46	1.52	1.50	1.52	1.43	1.44	1.46
7.813	1.32	1.37	1.39	1.41	1.43	1.44	1.34	1.35	1.37
5.524	1.40	1.43	1.45	1.46	1.47	1.48	1.37	1.37	1.38
3.906	1.49	1.48	1.49	1.52	1.51	1.51	1.41	1.40	1.41
2.762	1.46	1.43	1.44	1.46	1.45	1.45	1.39	1.38	1.39
1.953	1.42	1.37	1.38	1.39	1.38	1.38	1.36	1.35	1.36
1.381	1.37	1.32	1.34	1.33	1.34	1.34	1.33	1.32	1.33
0.977	1.25	1.22	1.23	1.22	1.24	1.24	1.24	1.24	1.25
0.691	1.05	1.05	1.06	1.03	1.06	1.06	1.08	1.08	1.09
0.488	0.85	0.86	0.87	0.84	0.88	0.88	0.91	0.91	0.92
0.345	0.66	0.69	0.70	0.66	0.70	0.70	0.75	0.75	0.75
0.244	0.51	0.54	0.54	0.51	0.55	0.55	0.59	0.59	0.60
0.173	0.36	0.39	0.40	0.37	0.40	0.40	0.44	0.44	0.45
0.122	0.26	0.29	0.29	0.27	0.29	0.29	0.33	0.33	0.33
0.086	0.16	0.18	0.18	0.17	0.18	0.18	0.20	0.20	0.21
0.061	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08
0.043	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
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	4.46	4.47	4.39	4.55	4.33	4.34	4.19	4.21	4.15
d50	117.77	117.76	116.95	117.48	116.86	117.79	117.44	117.96	117.27
d90	328.68	323.43	322.13	326.30	318.60	323.84	324.36	324.63	323.83

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	4.44	0.04	0.97	4.41	0.13	2.86	4.18	0.03	0.82
d50	117.49	0.47	0.40	117.38	0.47	0.40	117.56	0.36	0.31
d90	324.75	3.47	1.07	322.91	3.93	1.22	324.27	0.41	0.13

APPENDIX 4. Participant laser replicate data for sediment distributed as PS78.

PSA_2716 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	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500	1.41	0.66	0.61	1.29	0.73	0.59	0.62	0.64	0.58
353.6	4.65	4.24	3.84	4.84	4.39	4.26	3.95	3.92	3.94
250	10.00	10.15	9.85	10.39	10.30	10.48	9.06	9.09	9.31
176.8	14.11	14.56	14.49	14.61	14.79	15.01	12.85	13.03	13.19
125	18.38	18.83	18.94	19.08	19.33	19.42	17.10	17.30	17.28
88.39	15.52	15.69	15.84	16.09	16.23	16.19	15.05	15.05	14.94
62.5	12.51	12.50	12.65	12.78	12.89	12.81	12.85	12.73	12.64
44.19	6.60	6.55	6.64	6.51	6.60	6.55	7.36	7.27	7.24
31.25	3.59	3.59	3.65	3.33	3.41	3.39	4.49	4.45	4.45
22.097	1.81	1.84	1.89	1.56	1.61	1.62	2.47	2.48	2.48
15.625	1.43	1.46	1.51	1.19	1.24	1.25	1.91	1.91	1.92
11.049	1.41	1.42	1.46	1.16	1.19	1.19	1.80	1.79	1.79
7.813	1.52	1.51	1.54	1.22	1.24	1.23	1.93	1.88	1.87
5.524	1.70	1.69	1.71	1.37	1.38	1.37	2.15	2.10	2.06
3.906	1.80	1.79	1.82	1.47	1.50	1.48	2.24	2.20	2.17
2.762	1.63	1.63	1.66	1.38	1.41	1.40	1.99	1.97	1.95
1.953	1.18	1.19	1.22	1.06	1.08	1.08	1.40	1.40	1.40
1.381	0.62	0.63	0.65	0.59	0.61	0.61	0.72	0.73	0.73
0.977	0.06	0.06	0.07	0.06	0.07	0.07	0.07	0.07	0.07
0.691	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.488	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	15.91	15.90	15.22	24.65	23.44	23.64	10.12	10.38	10.54
d50	121.23	120.77	118.93	125.52	123.78	124.36	107.83	108.81	109.52
d90	309.35	297.11	290.88	310.84	300.04	298.25	287.29	287.35	288.35

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	15.68	0.39	2.52	23.91	0.65	2.72	10.35	0.21	2.05
d50	120.31	1.22	1.01	124.55	0.89	0.71	108.72	0.85	0.78
d90	299.11	9.40	3.14	303.05	6.81	2.25	287.66	0.59	0.21

APPENDIX 4. Participant laser replicate data for sediment distributed as PS78.

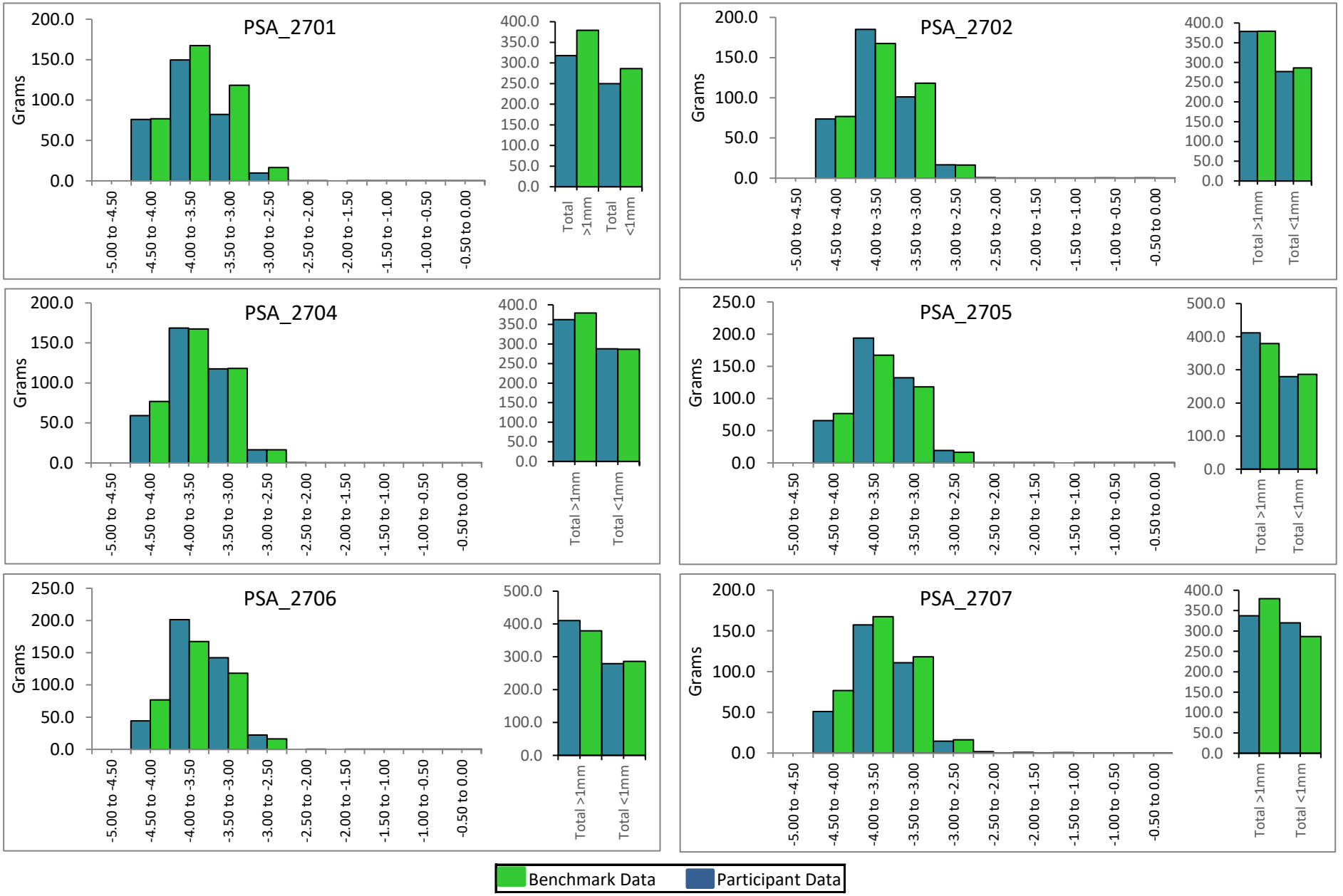
PSA_2717 LASER DATA

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	0.10	0.00	0.20	0.05	0.04	0.00	0.04	0.09	0.11
500	1.56	1.27	1.74	1.25	1.17	0.99	1.23	1.53	1.62
353.6	9.80	4.68	4.92	4.69	4.55	4.54	4.74	4.97	4.93
250	4.85	9.90	9.89	9.85	9.80	10.07	10.04	9.98	9.89
176.8	14.25	14.48	14.37	14.23	14.31	14.52	14.38	14.23	14.20
125	16.29	16.38	16.24	16.23	16.33	16.32	16.21	16.10	16.10
88.39	14.42	14.33	14.16	14.65	14.68	14.57	14.51	14.46	14.45
62.5	10.43	10.36	10.21	10.96	10.96	10.90	10.86	10.82	10.81
44.19	6.58	6.62	6.52	7.01	7.02	7.03	6.98	6.94	6.95
31.25	3.85	3.92	3.88	3.96	3.99	4.00	3.95	3.93	3.95
22.097	2.39	2.44	2.42	2.30	2.33	2.32	2.30	2.29	2.30
15.625	1.81	1.84	1.83	1.71	1.73	1.71	1.70	1.70	1.70
11.049	1.67	1.69	1.68	1.59	1.60	1.59	1.59	1.58	1.58
7.813	1.71	1.73	1.71	1.63	1.62	1.61	1.62	1.61	1.60
5.524	1.87	1.88	1.86	1.77	1.76	1.75	1.77	1.75	1.74
3.906	1.91	1.92	1.89	1.81	1.80	1.79	1.82	1.80	1.79
2.762	1.82	1.83	1.80	1.74	1.74	1.73	1.75	1.73	1.73
1.953	1.52	1.53	1.51	1.46	1.46	1.46	1.46	1.45	1.45
1.381	1.08	1.09	1.07	1.04	1.04	1.04	1.03	1.03	1.03
0.977	0.88	0.89	0.88	0.86	0.86	0.86	0.85	0.85	0.85
0.691	0.88	0.89	0.88	0.86	0.87	0.87	0.85	0.86	0.86
0.488	0.34	0.34	0.33	0.33	0.34	0.34	0.32	0.33	0.33
0.345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	7.39	7.30	7.50	8.03	8.03	8.09	8.07	8.16	8.19
d50	115.87	115.43	117.19	114.55	114.27	114.84	115.36	116.01	115.95
d90	372.32	306.83	316.75	307.07	304.35	303.15	308.09	314.06	314.56

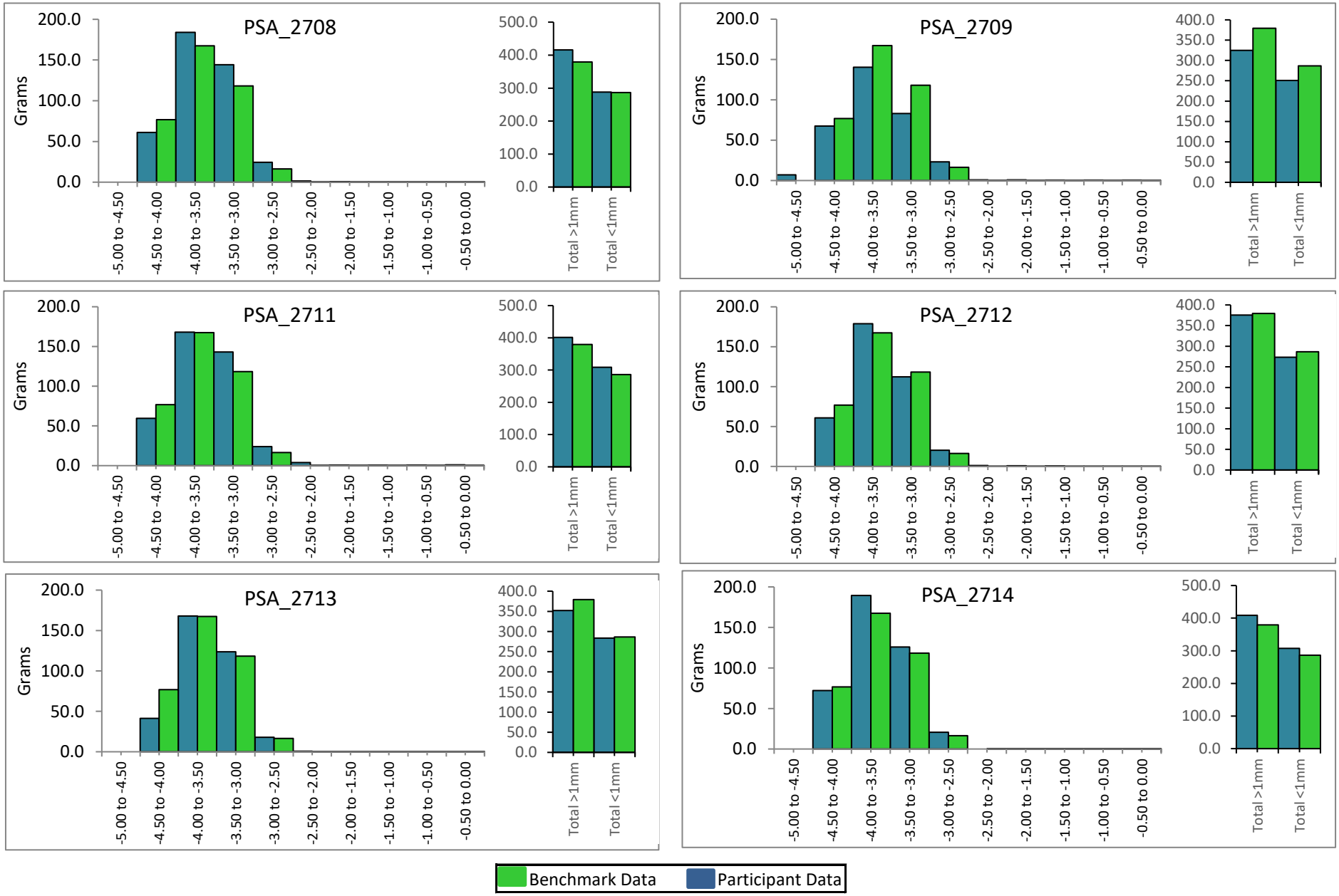
	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	7.40	0.10	1.34	8.05	0.03	0.41	8.14	0.06	0.78
d50	116.16	0.92	0.79	114.55	0.28	0.25	115.77	0.36	0.31
d90	331.97	35.29	10.63	304.86	2.01	0.66	312.24	3.60	1.15

APPENDIX 5. Individual comparisons of participant sieve data with the Benchmark Average for sediment distributed as PS78.



NMBAQC Particle Size Analysis
2020/21 - PS78

APPENDIX 5. Individual comparisons of participant sieve data with the Benchmark Average for sediment distributed as PS78.



NMBAQC Particle Size Analysis
2020/21 - PS78

APPENDIX 5. Individual comparisons of participant sieve data with the Benchmark Average for sediment distributed as PS78.