



NMQC

NE Atlantic Marine Biological Analytical Quality Control Scheme

Particle Size Report – PS84

Particle Size Component 2022/23

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- Appendix 1. Benchmark laser replicates with d10, d50, d90 and Coefficient of Variance calculations for sediment distributed as PS84.
- Appendix 2. Gradistat output of size categories based on final merged data provided by each participant and the Benchmark Average for sediment distributed as PS84 (used to create Figure 7).
- Appendix 3. Participant laser replicates with d10, d50, d90 and Coefficient of Variance calculations for sediment distributed as PS84.
- Appendix 4. Final Merged Data as supplied by participating laboratories and the benchmark replicates for sediment distributed as PS84.
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- No data provided.

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

n/p* - not participating in this exercise at current time - non-participation communicated.

BENCHMARK DATA

Table 1. Summary data for the benchmark replicates distributed as PS84.

	Method	% Gravel	% Sand	% Mud	Sediment Description (Post analysis)
PSA_2936 BM REP 1	NMBAQC	0.00	62.57	37.43	Muddy sand
PSA_2937 BM REP 2	NMBAQC	0.00	62.86	37.14	Muddy sand
PSA_2938 BM REP 3	NMBAQC	0.00	59.76	40.24	Muddy sand
PSA_2939 BM REP 4	NMBAQC	0.00	58.67	41.33	Muddy sand
PSA_2940 BM REP 5	NMBAQC	0.00	57.78	42.22	Muddy sand
BM REP AVERAGE	NMBAQC	0.00	60.33	39.67	Muddy sand

Table 2. Summary of sieve data for the benchmark replicates distributed as PS84.

	PSA_2936 BM REP 1	PSA_2937 BM REP 2	PSA_2938 BM REP 3	PSA_2939 BM REP 4	PSA_2940 BM REP 5	BM Average	
Sieves used	No	No	No	No	No	No	
Phi interval	Microns						
-6.5 to -6.0	>63000						
-6.0 to -5.5	45000 - 63000						
-5.5 to -5.0	31500 - 45000						
-5.0 to -4.5	22400 - 31500						
-4.5 to -4.0	16000 - 22400						
-4.0 to -3.5	11200 - 16000						
-3.5 to -3.0	8000 - 11200						
-3.0 to -2.5	5600 - 8000						
-2.5 to -2.0	4000 - 5600						
-2.0 to -1.5	2800 - 4000						
-1.5 to -1.0	2000 - 2800						
-1.0 to -0.5	1400 - 2000						
-0.5 to 0.0	1000 - 1400						
>1.0 mm							
<1.0 mm							Base Pan
							Oven Dried
Total Weight (g)							

BENCHMARK DATA

Table 3. Summary of final laser data for the benchmark replicates distributed as PS84.

Phi interval	Microns	PSA_2936	PSA_2937	PSA_2938	PSA_2939	PSA_2940	BM
		BM REP 1	BM REP 2	BM REP 3	BM REP 4	BM REP 5	AVERAGE
0.0 to 0.5	710 - 1000	0.01	0.08	0.01	0.03	0.02	0.03
0.5 to 1.0	500 - 710	2.38	3.04	2.41	2.40	2.60	2.57
1.0 to 1.5	355 - 500	16.16	17.17	14.93	14.39	14.21	15.37
1.5 to 2.0	250 - 355	19.47	20.24	18.75	18.45	17.79	18.94
2.0 to 2.5	180 - 250	9.01	8.22	8.80	8.52	8.60	8.63
2.5 to 3.0	125 - 180	6.21	5.30	5.81	5.75	5.56	5.73
3.0 to 3.5	90 - 125	6.03	5.78	5.97	6.01	6.00	5.96
3.5 to 4.0	63 - 90	3.30	3.04	3.08	3.12	3.00	3.11
4.0 to 4.5	44.19 - 63	2.17	2.11	2.20	2.26	2.21	2.19
4.5 to 5.0	31.25 - 44.19	2.54	2.54	2.62	2.67	2.69	2.61
5.0 to 5.5	22.097 - 31.25	2.32	2.26	2.33	2.45	2.43	2.36
5.5 to 6.0	15.625 - 22.097	2.63	2.71	2.94	2.93	3.01	2.84
6.0 to 6.5	11.049 - 15.625	3.55	3.40	3.90	3.94	3.96	3.75
6.5 to 7.0	7.813 - 11.049	3.79	3.55	4.12	4.28	4.44	4.04
7.0 to 7.5	5.524 - 7.813	3.94	3.76	4.25	4.38	4.61	4.19
7.5 to 8.0	3.906 - 5.524	3.69	3.59	3.96	4.03	4.22	3.90
8.0 to 8.5	2.762 - 3.906	2.83	2.80	3.04	3.13	3.22	3.00
8.5 to 9.0	1.953 - 2.762	2.01	2.03	2.15	2.23	2.27	2.14
9.0 to 9.5	1.381 - 1.953	1.52	1.57	1.63	1.66	1.70	1.61
9.5 to 10.0	0.977 - 1.381	1.19	1.25	1.28	1.32	1.36	1.28
10.0 to 10.5	0.691 - .0977	0.98	1.04	1.08	1.13	1.16	1.08
10.5 to 11.0	0.488 - 0.691	0.91	0.96	1.01	1.06	1.08	1.00
11.0 to 11.5	0.345 - 0.488	0.89	0.94	0.99	1.02	1.03	0.97
11.5 to 12.0	0.244 - 0.345	0.83	0.88	0.92	0.94	0.94	0.90
12.0 to 12.5	0.173 - 0.244	0.68	0.71	0.75	0.77	0.77	0.74
12.5 to 13.0	0.122 - 0.173	0.51	0.54	0.57	0.59	0.59	0.56
13.0 to 13.5	0.086 - 0.122	0.32	0.34	0.36	0.38	0.38	0.36
13.5 to 14.0	0.061 - 0.086	0.13	0.14	0.14	0.15	0.15	0.14
14.0 to 14.5	0.043 - 0.061	0.02	0.02	0.02	0.02	0.02	0.02
> 14.5	0.01 - 0.043	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:		66.57	68.45	60.63	58.17	56.80	61.87
SORTING:		7.51	7.76	7.89	8.02	8.09	7.87
SKEWNESS:		-0.60	-0.63	-0.56	-0.54	-0.53	-0.57
KURTOSIS:		0.79	0.79	0.77	0.77	0.76	0.77
MODE:		Bimodal	Trimodal	Trimodal	Trimodal	Polymodal	Trimodal
MODE 1 (µm):		301.8	301.8	301.8	301.8	301.8	301.8
MODE 2 (µm):		6.7	106.7	106.7	106.7	106.7	106.7
MODE 3 (µm):		0.0	6.7	6.7	6.7	6.7	6.7

BENCHMARK DATA

Table 4. Summary of Coefficient of Variation for Benchmark laser replicates for PS84.

		PSA_2936 BM REP 1	PSA_2937 BM REP 2	PSA_2938 BM REP 3	PSA_2939 BM REP 4	PSA_2940 BM REP 5
D ₁₀	Subsample 1	1.82	3.76	1.63	3.02	1.35
	Subsample 2	1.69	0.29	1.39	1.75	2.78
	Subsample 3	3.40	3.78	0.88	2.23	1.48
					n	
D ₅₀	Subsample 1	1.75	3.36	1.62	3.15	0.99
	Subsample 2	2.56	2.42	2.05	1.68	2.35
	Subsample 3	0.91	1.75	0.84	1.88	2.36
D ₉₀	Subsample 1	0.11	0.27	0.56	0.94	0.77
	Subsample 2	0.54	0.64	0.47	0.31	0.94
	Subsample 3	0.04	0.31	0.41	0.11	0.59

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

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 PS84.

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)	80%
Stirrer speed (% or rpm)	n/a
Ultrasonic duration (seconds)	20
Ultrasonic level (eg %, unit as described by instrument manual)	2

Figure 1a. Percentage bar charts resulting from final sieve analysis of 5 replicate samples of sediment distributed as PS84 (Benchmark Data).

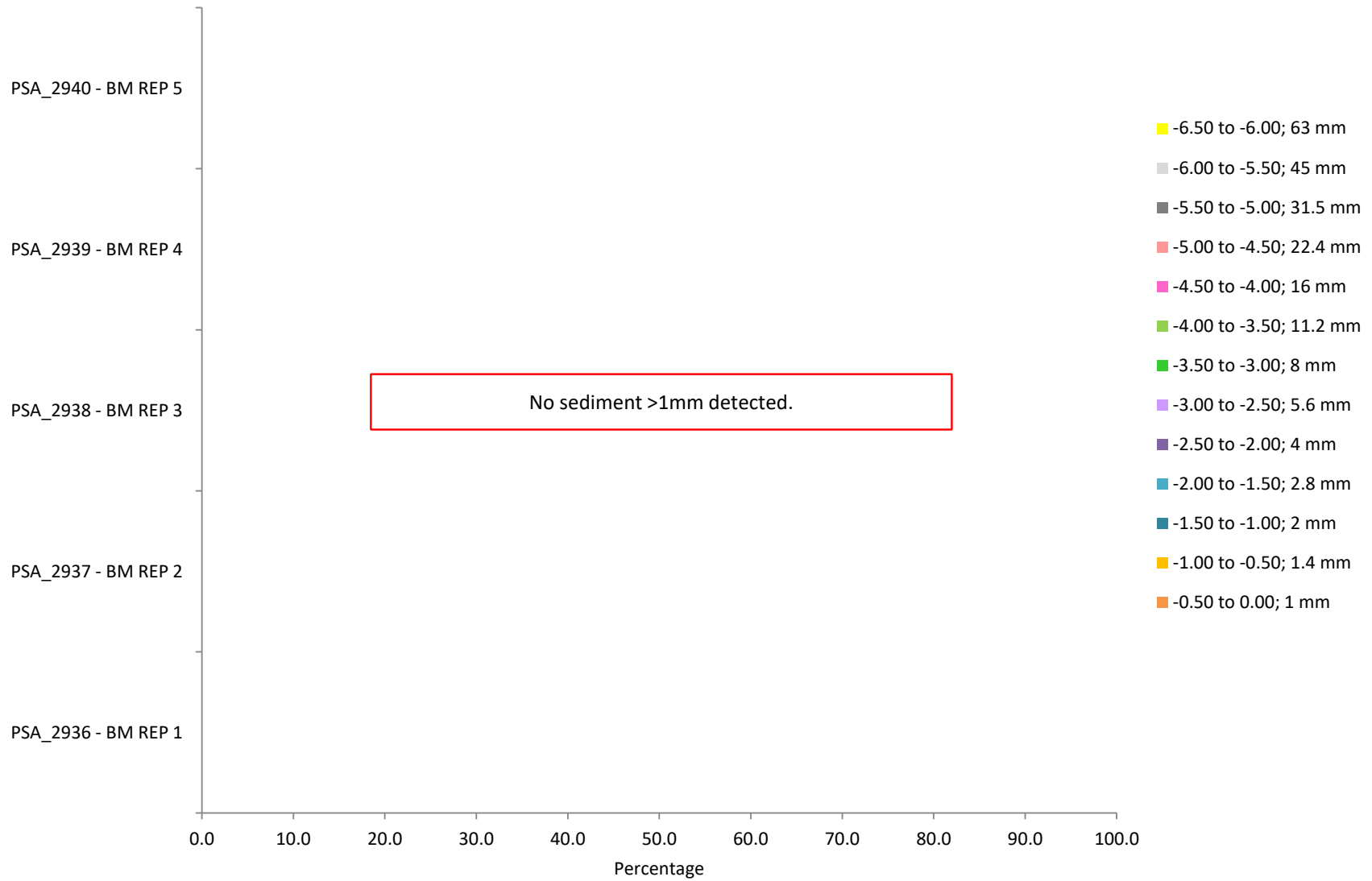


Figure 1b. Particle size distribution curves resulting from final laser analysis of 5 replicate samples of sediment distributed as PS84 (Benchmark Data).

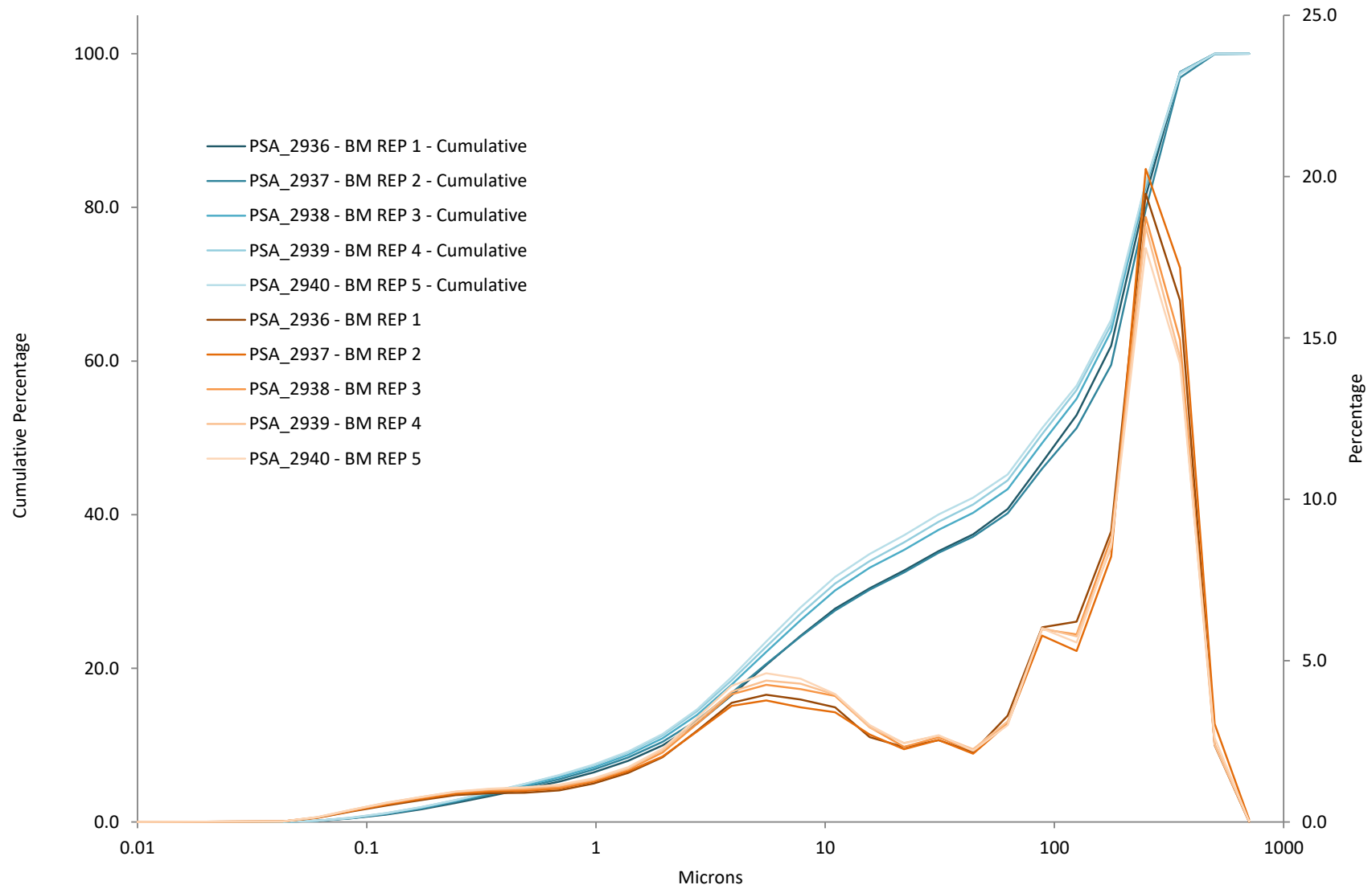


Figure 2. Particle size distribution curves resulting from laser analysis of five replicate samples of sediment distributed as PS84.

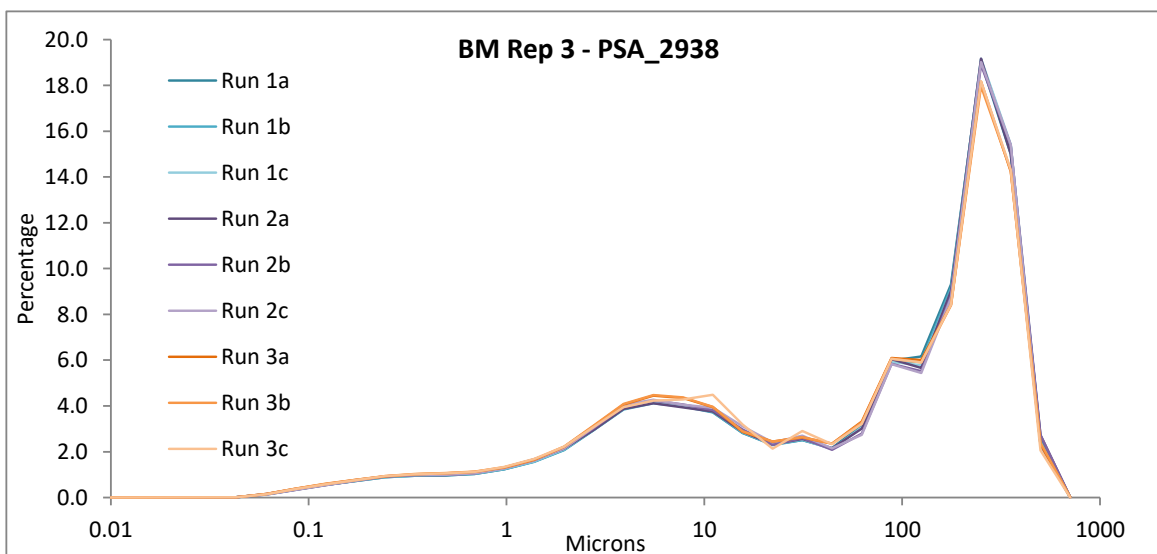
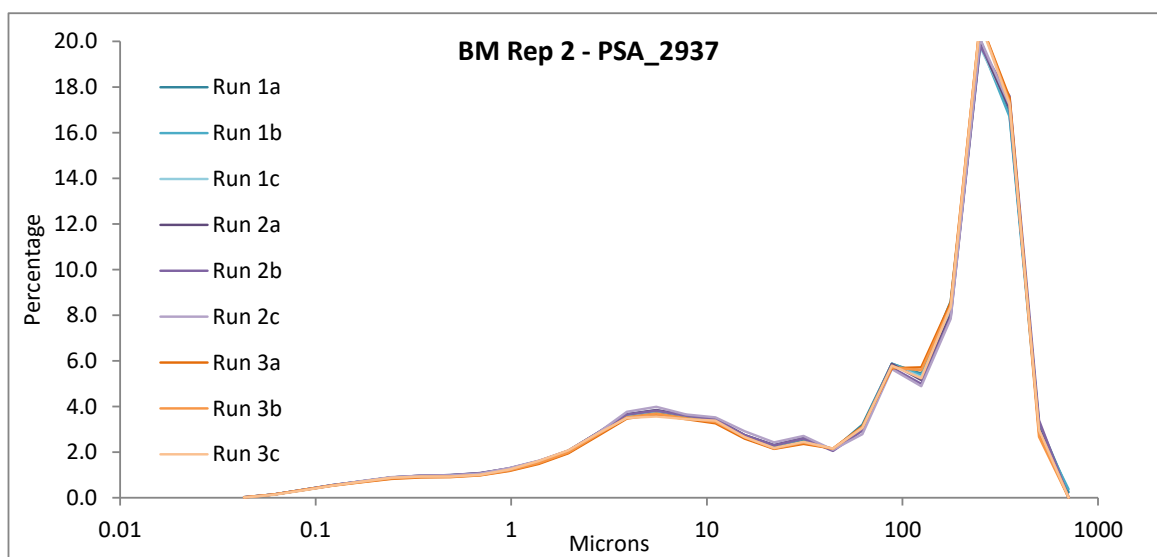
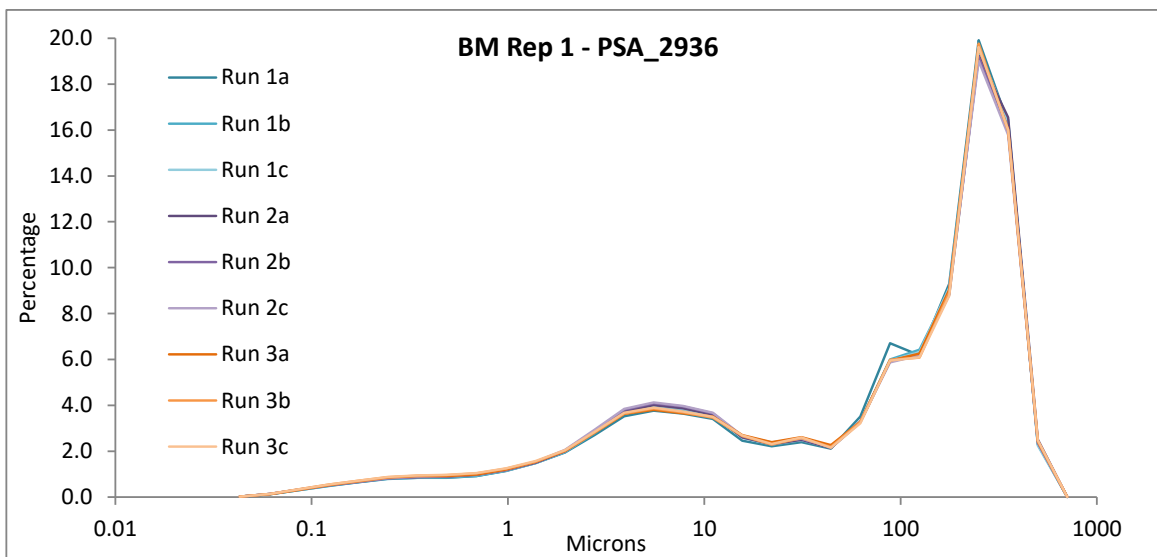


Figure 2. Particle size distribution curves resulting from laser analysis of five replicate samples of sediment distributed as PS84.

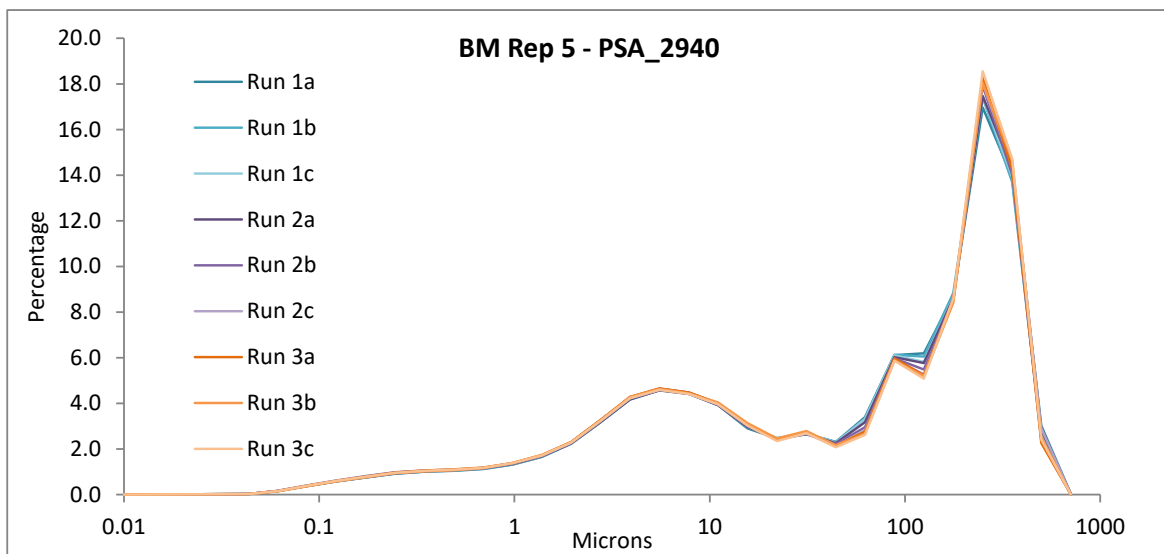
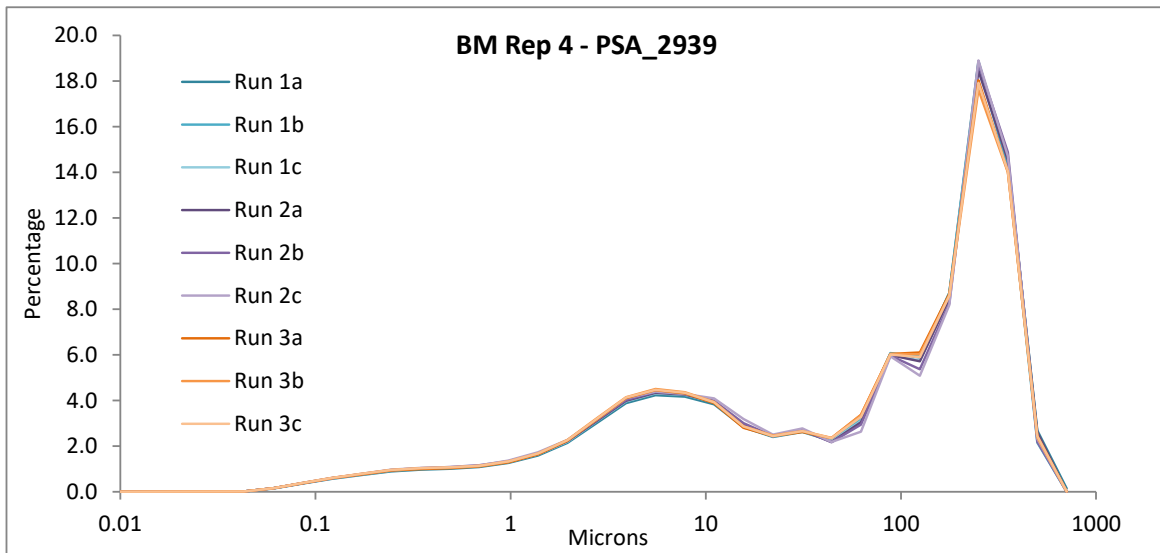
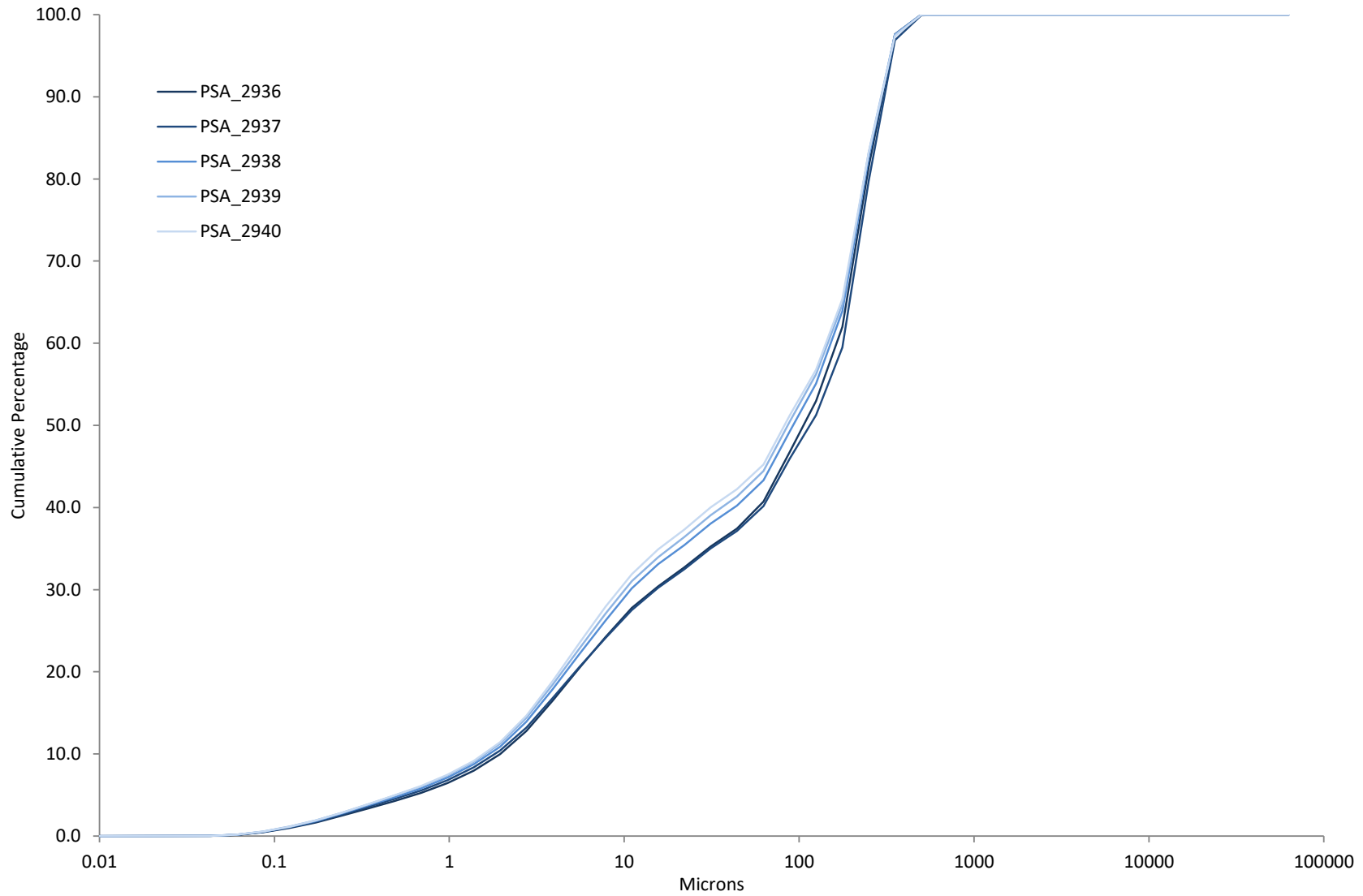


Figure 3. Particle size distribution curves resulting from analysis of 5 replicate samples of sediment distributed as PS84 (Benchmark Data).



PARTICIPANT DATA

Table 6. Summary of equipment and methods used by participants and sample summary data provided by participants for sediment distributed as PS84.

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	No	Yes	NMBAQC	No	No	0.00	60.33	39.67	Muddy Sand	Muddy Sand
PSA_2901	No	Yes	NMBAQC	No	No	0.00	58.27	41.73	Muddy Sand	Muddy Sand
PSA_2902	No	Yes	NMBAQC	No	No	0.00	50.33	49.67	Muddy Sand	Muddy Sand
PSA_2903	No	Yes	NMBAQC	No	No	0.0	63.5	36.5	Muddy Sand	Muddy Sand
PSA_2904	Yes	Yes	NMBAQC	No	No	0.00	63.12	36.88	Muddy Sand	Muddy Sand
PSA_2905	No	Yes	OTHER	No	No	0.00	47.44	52.56	Sandy Mud	Sandy Mud
PSA_2906	n/p	n/p	n/p	n/p	n/p	n/p	n/p	n/p	n/p	n/p
PSA_2907	No	Yes	NMBAQC	No	No	0.00	54.27	45.73	Muddy Sand	Muddy Sand
PSA_2908	n/p*	n/p*	n/p*	n/p*	n/p*	n/p*	n/p*	n/p*	n/p*	n/p*
PSA_2909	No	Yes	NMBAQC	No	No	0.00	55.91	44.09	Mud and Sandy Mud	Muddy Sand
PSA_2910	Yes	Yes	NMBAQC	No	No	0.00	69.59	30.41	Muddy Sand	Muddy Sand
PSA_2911	No	Yes	OTHER	No	No	0.00	64.18	35.81	Muddy Sand	Muddy Sand
PSA_2912	Yes	Yes	NMBAQC	No	No	0.00	67.64	32.36	Muddy Sand	Muddy Sand
PSA_2913	n/p	n/p	n/p	n/p	n/p	n/p	n/p	n/p	n/p	n/p
PSA_2914	No	Yes	OTHER	No	No	0.00	63.51	36.49	Muddy Sand	Muddy Sand
PSA_2916	No	Yes	NMBAQC	No	No	0.00	51.55	48.46	Muddy Sand	Muddy Sand
PSA_2917	No	Yes	NMBAQC	No	No	0.00	60.43	39.57	Muddy Sand	Muddy Sand
PSA_2918	No	Yes	NMBAQC	No	No	0.0	62.1	39.9	Muddy Sand	Muddy Sand

NB: Decimal places as supplied by participant.

* Sediment description from Gradistat textural group based on final data supplied by participant.

PARTICIPANT DATA

Table 7. Raw sieve data (weight in grams) provided by participants for sediment distributed as PS84.

Phi interval Microns		Participant																	
		Benchmark Average	PSA_2901	PSA_2902	PSA_2903	PSA_2904	PSA_2905	PSA_2906	PSA_2907	PSA_2908	PSA_2909	PSA_2910	PSA_2911	PSA_2912	PSA_2913	PSA_2914	PSA_2916	PSA_2917	PSA_2918
Sieves Used		No	No	No	No	Yes	No	n/p	No	a/d	No	Yes	No	Yes	n/p	No	No	No	No
-6.5 to -6.0	>63000	-	-	-	-	0.0000	-	n/p	-	n/p*	-	0.00	-	0.000	n/p	-	-	-	-
-6.0 to -5.5	45000 - 63000	-	-	-	-	0.0000	-	n/p	-	n/p*	-	0.00	-	0.000	n/p	-	-	-	-
-5.5 to -5.0	31500 - 45000	-	-	-	-	0.0000	-	n/p	-	n/p*	-	0.00	-	0.000	n/p	-	-	-	-
-5.0 to -4.5	22400 - 31500	-	-	-	-	0.0000	-	n/p	-	n/p*	-	0.00	-	0.000	n/p	-	-	-	-
-4.5 to -4.0	16000 - 22400	-	-	-	-	0.0000	-	n/p	-	n/p*	-	0.00	-	0.000	n/p	-	-	-	-
-4.0 to -3.5	11200 - 16000	-	-	-	-	0.0000	-	n/p	-	n/p*	-	0.00	-	0.000	n/p	-	-	-	-
-3.5 to -3.0	8000 - 11200	-	-	-	-	0.0000	-	n/p	-	n/p*	-	0.00	-	0.000	n/p	-	-	-	-
-3.0 to -2.5	5600 - 8000	-	-	-	-	0.0000	-	n/p	-	n/p*	-	0.00	-	0.000	n/p	-	-	-	-
-2.5 to -2.0	4000 - 5600	-	-	-	-	0.0000	-	n/p	-	n/p*	-	0.00	-	0.000	n/p	-	-	-	-
-2.0 to -1.5	2800 - 4000	-	-	-	-	0.0000	-	n/p	-	n/p*	-	0.00	-	0.000	n/p	-	-	-	-
-1.5 to -1.0	2000 - 2800	-	-	-	-	0.0000	-	n/p	-	n/p*	-	0.00	-	0.000	n/p	-	-	-	-
-1.0 to -0.5	1400 - 2000	-	-	-	-	0.0000	-	n/p	-	n/p*	-	0.00	-	0.000	n/p	-	-	-	-
-0.5 to 0.0	1000 - 1400	-	-	-	-	0.0057	-	n/p	-	n/p*	-	0.00	-	0.009	n/p	-	-	-	-
<i>Total</i>		-	-	-	-	0.0057	-	-	-	-	-	0.00	-	0.0090	n/p	-	-	-	-
Summary Data																			
< 0.00; >1 mm		-	-	-	-	0.0057	-	n/p	-	n/p*	-	0.00	-	0.009	n/p	-	-	-	-
> 0.00; <1 mm	Base pan	-	-	-	-	0.0593	-	n/p	-	n/p*	-	0.02	-	0.007	n/p	-	-	-	-
	Oven dried	-	-	-	-	94.19	-	n/p	-	n/p*	-	100.68	-	83.52	n/p	-	-	-	-
Total Sample Weight		-	-	-	-	94.26	-	n/p	-	n/p*	-	100.70	-	83.54	n/p	-	-	-	-

PARTICIPANT DATA

Table 8. Summary of final laser data for the participants for sediment distributed as PS84 with Gradistat output.

Microns	Benchmark Average	PSA_2901	PSA_2902	PSA_2903	PSA_2904	PSA_2905	PSA_2906	PSA_2907	PSA_2908
1400 - 2000	-	0.00	-	-	-	-	n/p	0.00	n/p*
1000 - 1400	-	0.05	-	-	-	-	n/p	0.00	n/p*
710 - 1000	0.03	0.08	0.00	0.35	0.10	0.14	n/p	0.07	n/p*
500 - 710	2.57	0.32	3.85	6.41	4.20	2.20	n/p	5.87	n/p*
355 - 500	15.37	11.43	10.46	13.66	11.67	7.68	n/p	19.49	n/p*
250 - 355	18.94	20.00	11.91	15.65	15.23	10.69	n/p	17.46	n/p*
180 - 250	8.63	10.28	8.85	11.56	12.43	9.27	n/p	6.45	n/p*
125 - 180	5.73	8.48	5.77	6.56	8.62	7.02	n/p	1.05	n/p*
90 - 125	5.96	5.12	4.79	4.55	6.26	5.73	n/p	1.24	n/p*
63 - 90	3.11	2.51	4.69	4.74	4.62	4.70	n/p	2.64	n/p*
44.19 - 63	2.19	3.13	4.14	5.03	3.12	3.68	n/p	3.27	n/p*
31.25 - 44.19	2.61	2.53	3.38	4.70	2.32	3.18	n/p	3.16	n/p*
22.097 - 31.25	2.36	3.03	3.14	4.15	2.36	3.33	n/p	2.86	n/p*
15.625 - 22.097	2.84	3.09	3.59	3.76	2.74	3.88	n/p	3.07	n/p*
11.049 - 15.625	3.75	3.18	4.40	3.52	3.20	4.71	n/p	2.66	n/p*
7.813 - 11.049	4.04	4.09	5.11	3.26	3.51	5.61	n/p	4.17	n/p*
5.524 - 7.813	4.19	4.64	5.43	2.89	3.77	6.20	n/p	4.64	n/p*
3.906 - 5.524	3.90	4.29	5.27	2.46	3.77	6.16	n/p	4.75	n/p*
2.762 - 3.906	3.00	3.09	4.63	2.01	3.58	5.36	n/p	4.37	n/p*
1.953 - 2.762	2.14	2.01	3.60	1.54	2.80	3.85	n/p	3.58	n/p*
1.381 - 1.953	1.61	1.53	2.48	1.08	1.70	2.20	n/p	2.63	n/p*
0.977 - 1.381	1.28	1.34	1.71	0.79	1.36	1.57	n/p	1.81	n/p*
0.691 - .0977	1.08	1.20	1.35	0.68	1.74	1.88	n/p	0.97	n/p*
0.488 - 0.691	1.00	1.10	1.02	0.52	0.87	0.92	n/p	1.00	n/p*
0.345 - 0.488	0.97	1.00	0.42	0.13	0.04	0.04	n/p	0.85	n/p*
0.244 - 0.345	0.90	0.87	0.00	0.00	0.00	0.00	n/p	0.76	n/p*
0.173 - 0.244	0.74	0.67	0.00	0.00	0.00	0.00	n/p	0.63	n/p*
0.122 - 0.173	0.56	0.49	0.00	0.00	0.00	0.00	n/p	0.41	n/p*
0.086 - 0.122	0.36	0.31	0.00	0.00	0.00	0.00	n/p	0.13	n/p*
0.061 - 0.086	0.14	0.12	0.00	0.00	0.00	0.00	n/p	0.00	n/p*
0.043 - 0.061	0.02	0.01	0.00	0.00	0.00	0.00	n/p	0.00	n/p*
0.01 - 0.043	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00	n/p*
Total	100.00	100.00	100.00	100.00	100.00	100.00	n/p	100.00	n/p*

GRADISTAT OUTPUTS

MEAN:	61.87	58.28	44.60	147.18	64.67	38.37	n/p	59.64	n/p*
SORTING:	7.87	7.55	7.22	3.84	6.65	6.93	n/p	8.48	n/p*
SKEWNESS:	-0.57	-0.59	-0.27	-0.50	-0.55	-0.20	n/p	-0.56	n/p*
KURTOSIS:	0.77	0.76	0.67	1.16	0.76	0.67	n/p	0.65	n/p*
MODE:	Trimodal	Trimodal	Bimodal	Unimodal	Bimodal	Trimodal	n/p	Polymodal	n/p*
MODE 1 (µm):	301.8	301.80	301.80	301.80	301.80	301.80	n/p	426.80	n/p*
MODE 2 (µm):	106.7	6.67	6.67	-	6.67	6.67	n/p	4.72	n/p*
MODE 3 (µm):	6.7	53.35	-	-	-	0.83	n/p	53.35	n/p*

PARTICIPANT DATA

Table 8. Summary of final laser data for the participants for sediment distributed as PS84 with Gradistat output.

Microns	Benchmark Average	PSA_2909	PSA_2910	PSA_2911	PSA_2912	PSA_2913	PSA_2914	PSA_2916	PSA_2917	PSA_2918
1400 - 2000	-	-	-	0.00	-	n/p	-	-	-	-
1000 - 1400	-	-	-	0.01	-	n/p	-	-	-	-
710 - 1000	0.03	0.31	0.38	1.50	0.76	n/p	0.60	0.00	0.01	0.02
500 - 710	2.57	2.10	7.93	7.64	7.01	n/p	7.96	1.71	2.29	3.61
355 - 500	15.37	12.60	16.90	14.81	14.60	n/p	16.00	8.20	15.32	12.10
250 - 355	18.94	16.09	18.53	16.42	16.96	n/p	17.32	12.47	19.28	16.20
180 - 250	8.63	8.30	12.96	11.45	12.88	n/p	11.49	10.88	8.70	12.58
125 - 180	5.73	6.20	6.59	5.79	7.47	n/p	5.09	7.81	5.86	7.62
90 - 125	5.96	6.30	3.54	3.41	4.52	n/p	2.45	5.83	5.83	4.98
63 - 90	3.11	4.01	2.78	3.15	3.44	n/p	2.59	4.65	3.14	3.87
44.19 - 63	2.19	3.01	2.40	2.92	2.75	n/p	3.35	3.58	2.23	2.87
31.25 - 44.19	2.61	2.44	2.00	2.41	2.19	n/p	3.94	2.99	2.49	2.31
22.097 - 31.25	2.36	3.31	1.95	2.25	2.05	n/p	4.29	3.29	2.36	2.62
15.625 - 22.097	2.84	2.59	2.41	2.72	2.35	n/p	4.32	4.15	2.75	3.38
11.049 - 15.625	3.75	3.07	3.17	3.52	2.86	n/p	4.02	5.18	3.75	4.16
7.813 - 11.049	4.04	4.59	3.80	4.11	3.32	n/p	3.58	5.87	4.15	5.10
5.524 - 7.813	4.19	4.90	3.93	4.19	3.57	n/p	3.14	6.13	4.26	5.27
3.906 - 5.524	3.90	4.36	3.48	3.78	3.50	n/p	2.73	5.48	3.91	4.67
2.762 - 3.906	3.00	3.43	2.64	3.05	3.03	n/p	2.26	4.35	3.00	3.73
1.953 - 2.762	2.14	2.59	1.77	2.20	2.27	n/p	1.71	2.90	2.12	2.15
1.381 - 1.953	1.61	1.91	1.09	1.46	1.54	n/p	1.17	1.61	1.57	1.23
0.977 - 1.381	1.28	1.39	0.72	1.07	1.08	n/p	0.81	1.17	1.25	0.78
0.691 - .0977	1.08	1.16	0.58	0.99	0.89	n/p	0.63	1.28	1.08	0.64
0.488 - 0.691	1.00	1.16	0.40	0.82	0.67	n/p	0.44	0.48	1.00	0.12
0.345 - 0.488	0.97	1.20	0.08	0.33	0.27	n/p	0.09	0.00	0.96	0.00
0.244 - 0.345	0.90	1.11	0.00	0.00	0.00	n/p	0.00	0.00	0.88	0.00
0.173 - 0.244	0.74	0.84	0.00	0.00	0.00	n/p	0.00	0.00	0.72	0.00
0.122 - 0.173	0.56	0.58	0.00	0.00	0.00	n/p	0.00	0.00	0.56	0.00
0.086 - 0.122	0.36	0.33	0.00	0.00	0.00	n/p	0.00	0.00	0.36	0.00
0.061 - 0.086	0.14	0.12	0.00	0.00	0.00	n/p	0.00	0.00	0.14	0.00
0.043 - 0.061	0.02	0.02	0.00	0.00	0.00	n/p	0.00	0.00	0.02	0.00
0.01 - 0.043	0.00	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
Total	100.00	100.00	100.00	100.00	100.00	n/p	100.00	100.00	100.00	100.00
GRADISTAT OUTPUTS										
MEAN:	61.87	51.24	92.63	81.02	82.23	n/p	95.53	47.43	62.15	68.33
SORTING:	7.87	8.33	5.89	6.68	6.42	n/p	5.66	6.22	7.81	5.90
SKEWNESS:	-0.57	-0.48	-0.63	-0.60	-0.61	n/p	-0.59	-0.30	-0.58	-0.52
KURTOSIS:	0.77	0.75	0.83	0.74	0.83	n/p	0.79	0.67	0.77	0.67
MODE:	Trimodal	Polymodal	Bimodal	Bimodal	Bimodal	n/p	Bimodal	Bimodal	Bimodal	Bimodal
MODE 1 (µm):	301.80	301.80	301.80	301.80	301.80	n/p	301.8	301.8	301.8	301.8
MODE 2 (µm):	106.70	106.70	6.67	6.67	6.67	n/p	18.9	6.7	6.7	6.7
MODE 3 (µm):	6.67	6.67	-	-	-	n/p	-	-	-	-

Figure 4. Final sieve data (in percentages) provided by each participant for sediment distributed as PS84.

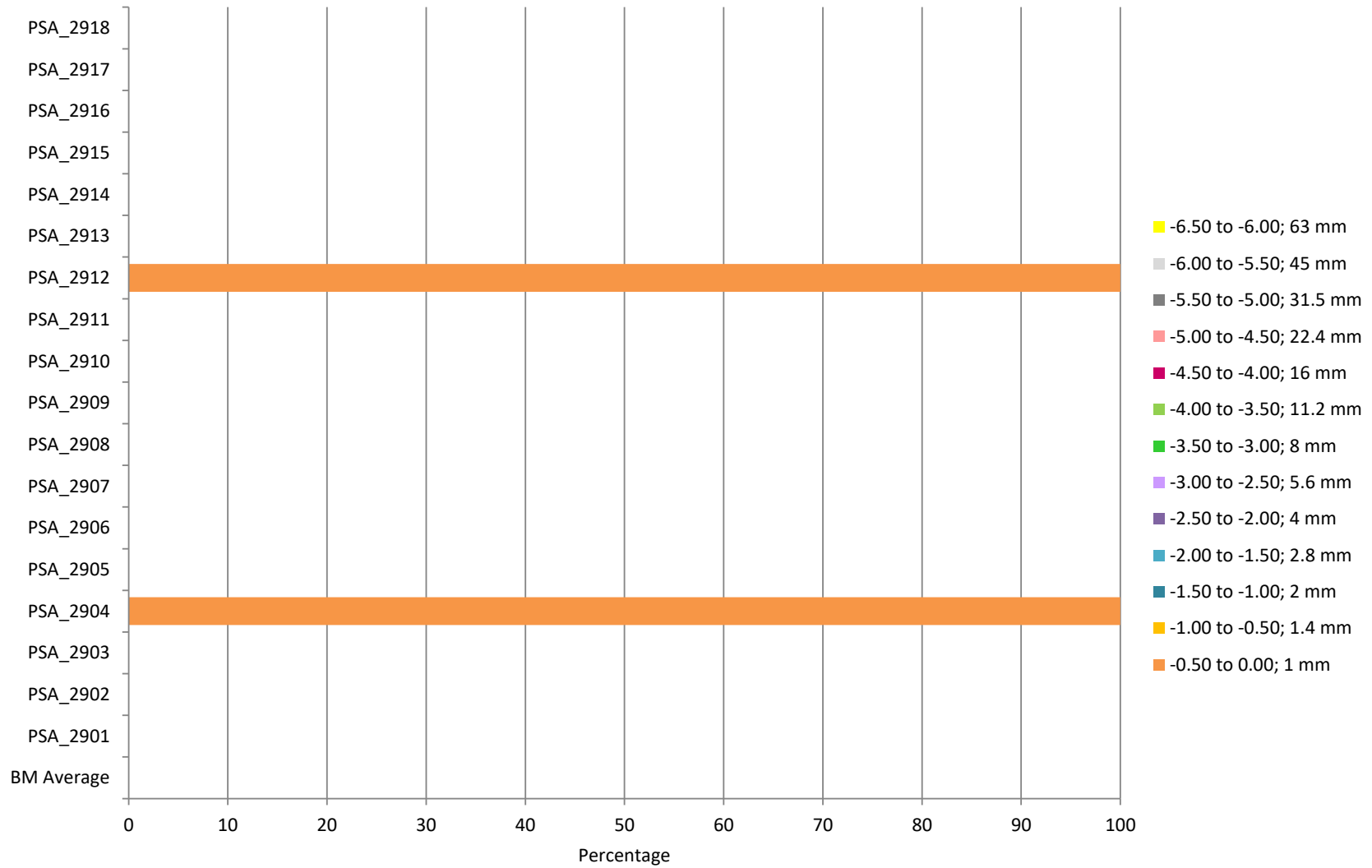


Figure 5. (a) Cumulative and (b) Differential final laser data provided by the participants and Benchmark average for sediment distributed as PS84.

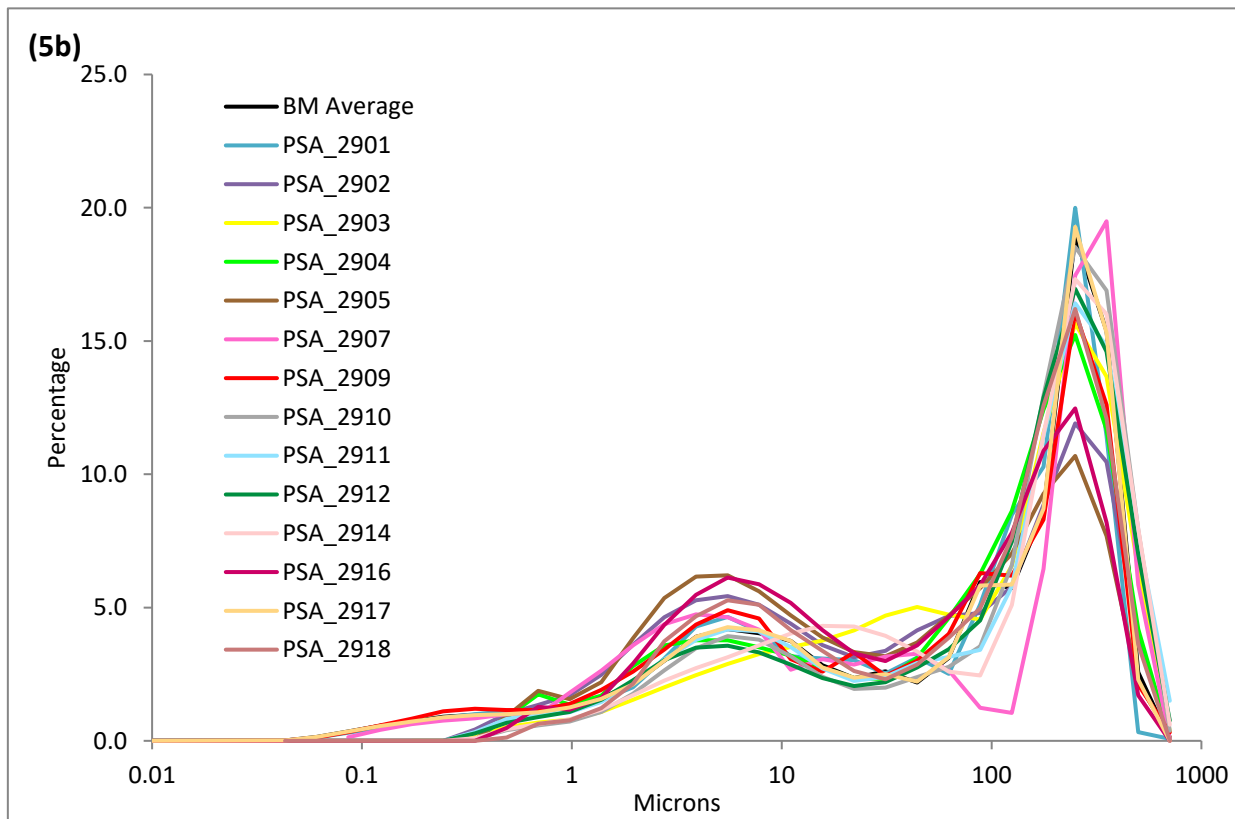
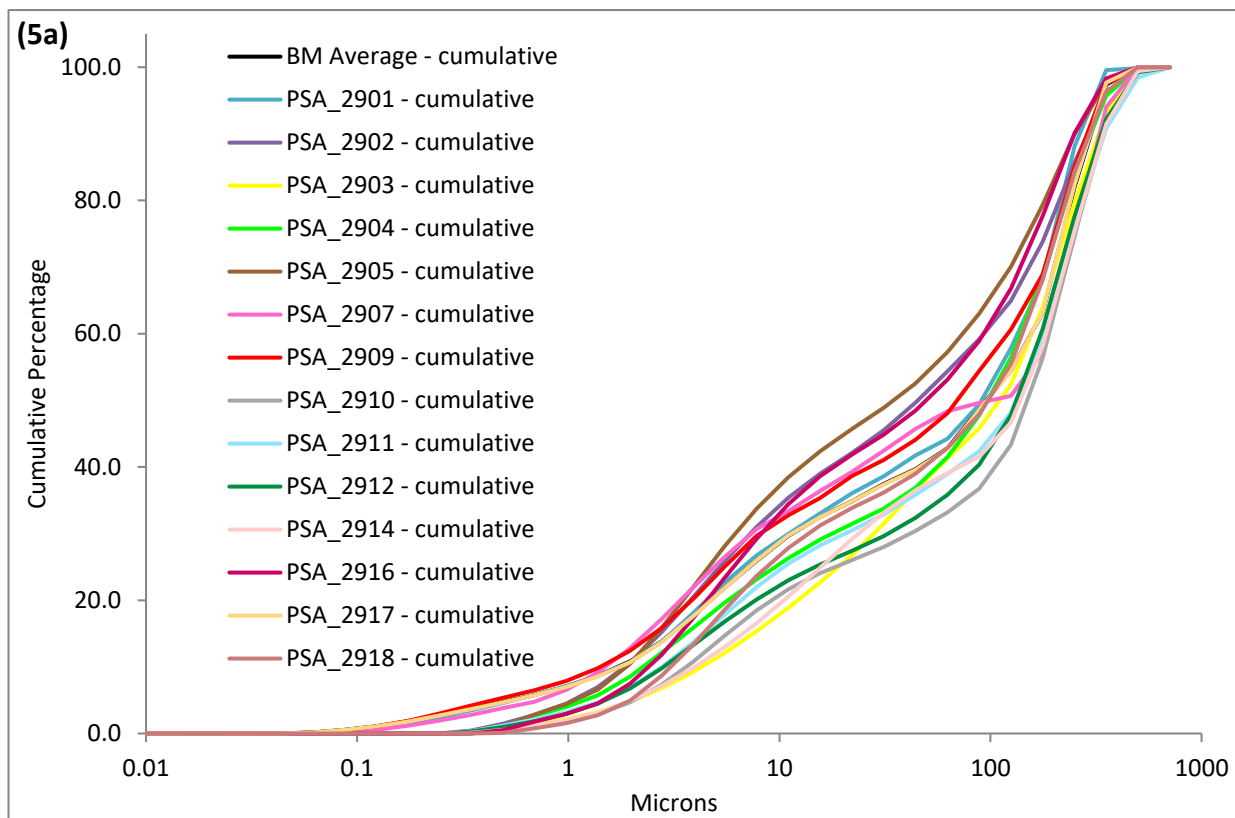


Figure 6. Particle size distribution curves from all participating laboratories and the Benchmark Average for sediment distributed as PS84.

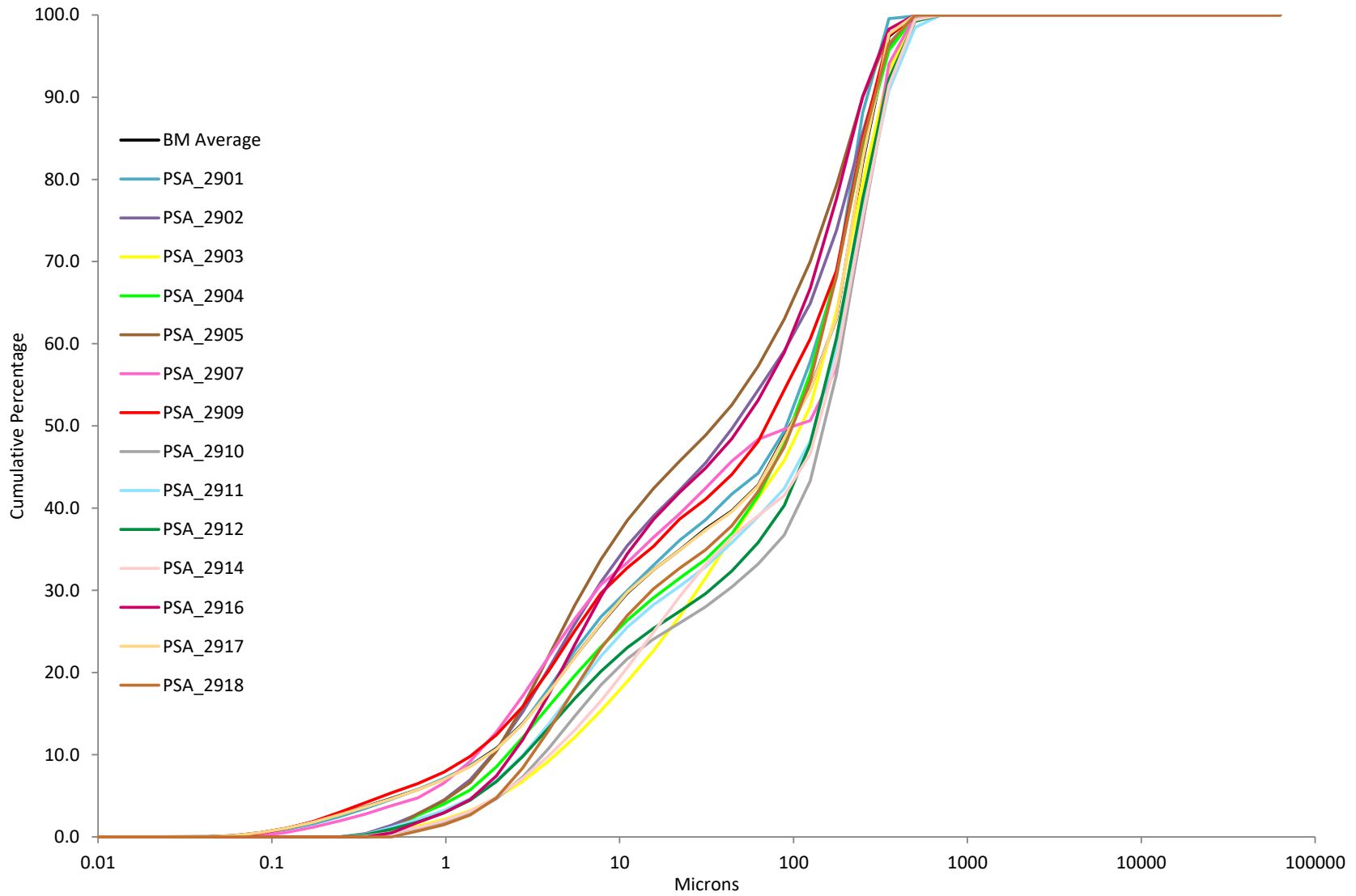


Figure 7. Bar chart showing the percentage gravel, sand, silt and clay recorded by each participating laboratory and the Benchmark Average for PS84.

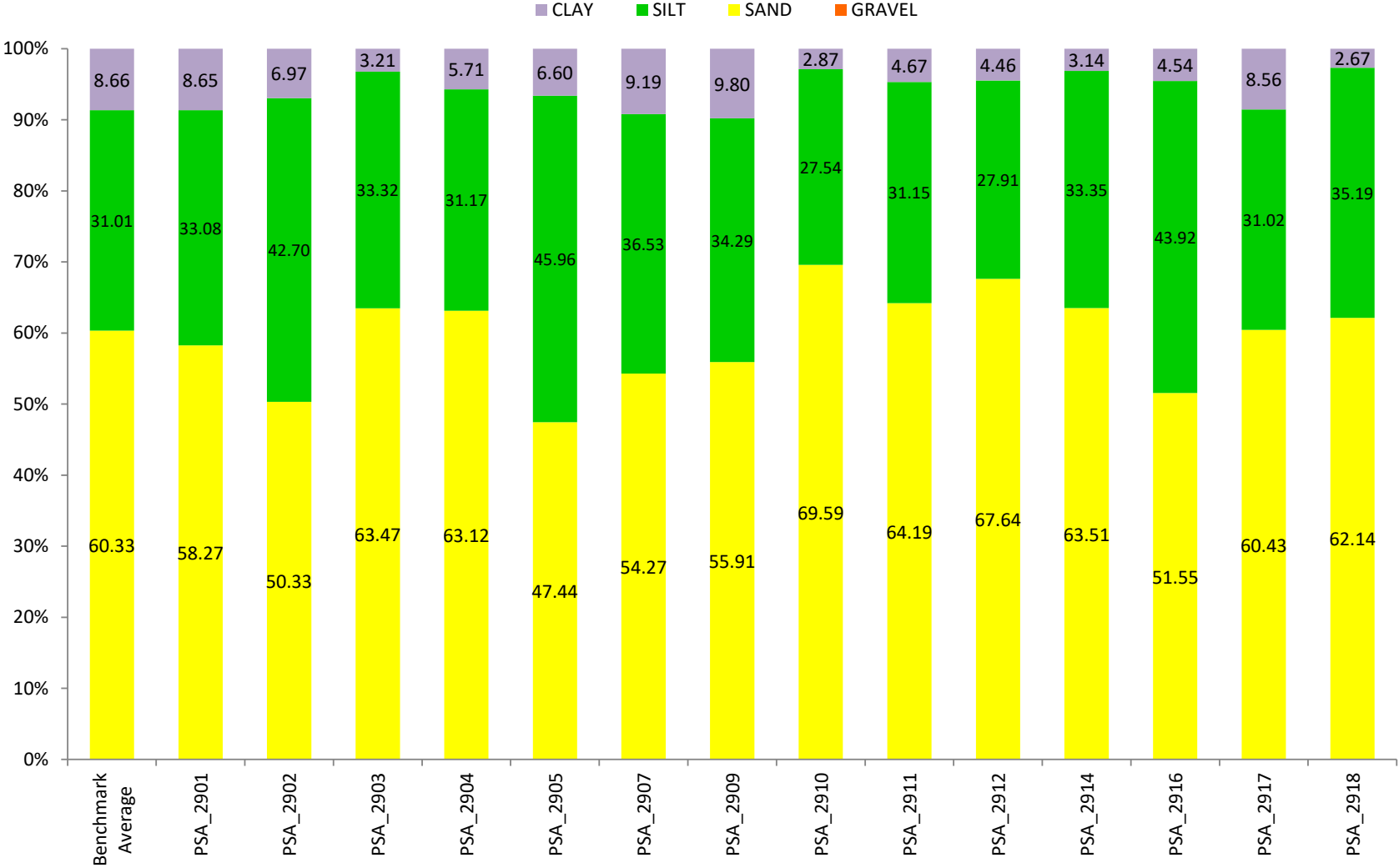


Figure 8. Comparison of participant laser replicate data with the Benchmark Average for sediment distributed as PS84.

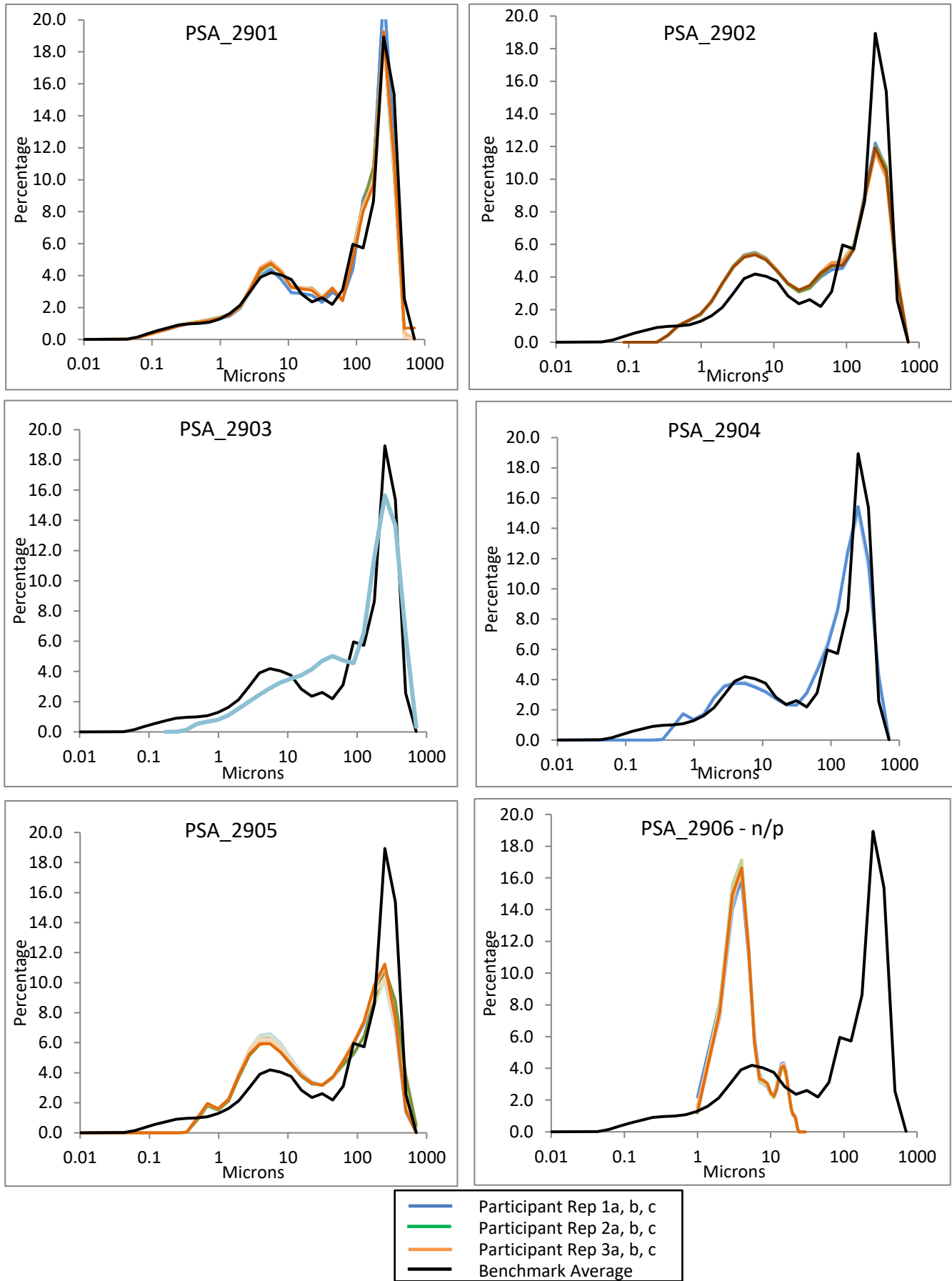


Figure 8. Comparison of participant laser replicate data with the Benchmark Average for sediment distributed as PS84.

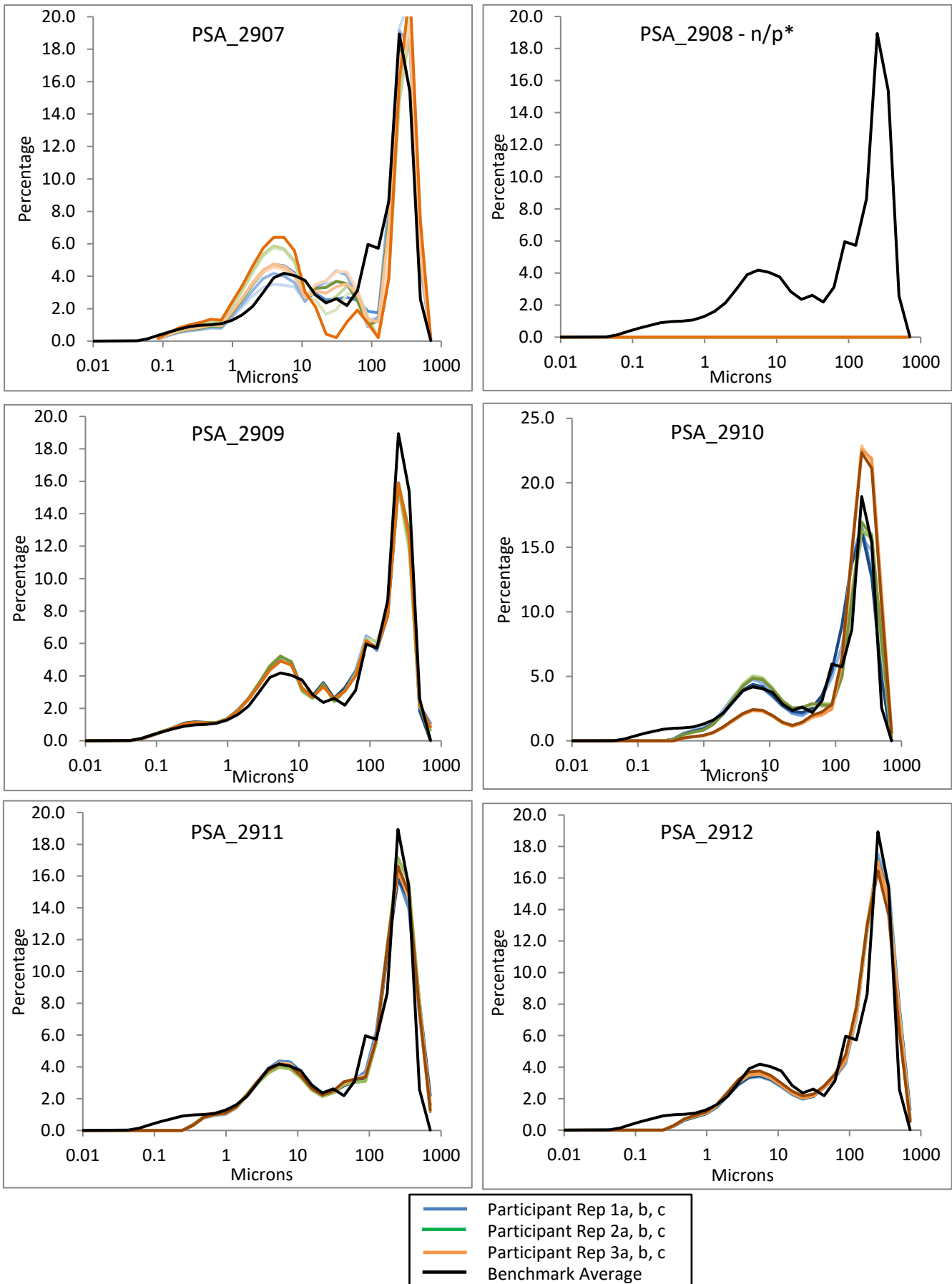
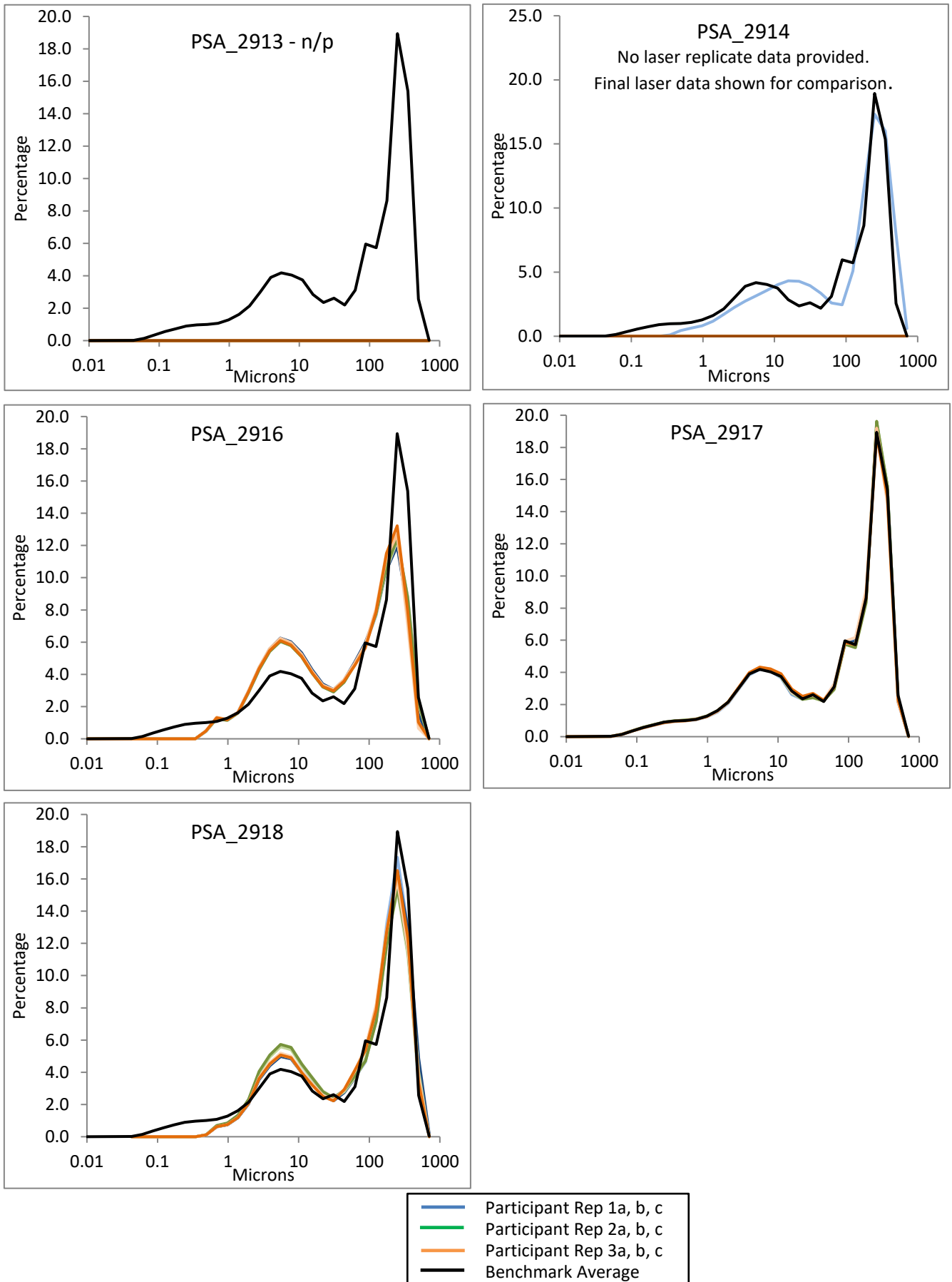


Figure 8. Comparison of participant laser replicate data with the Benchmark Average for sediment distributed as PS84.



APPENDICES

APPENDIX 1. Benchmark laser replicate data for sediment distributed as PS84.

Microns	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
710 - 1000	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
500 - 710	2.30	2.29	2.24	2.51	2.36	2.40	2.42	2.46	2.47
355 - 500	16.30	16.45	16.35	16.55	15.99	15.79	16.04	15.97	16.01
250 - 355	19.92	19.38	19.51	19.23	19.19	19.01	19.60	19.77	19.62
180 - 250	9.30	9.04	9.13	8.83	9.00	9.03	9.03	8.92	8.77
125 - 180	6.19	6.42	6.32	6.20	6.15	6.18	6.25	6.08	6.09
90 - 125	6.70	6.00	5.95	5.94	5.92	5.87	5.95	5.99	5.95
63 - 90	3.51	3.29	3.27	3.27	3.28	3.30	3.28	3.28	3.22
44.19 - 63	2.11	2.19	2.15	2.14	2.17	2.17	2.26	2.19	2.15
31.25 - 44.19	2.40	2.55	2.49	2.50	2.55	2.55	2.61	2.57	2.60
22.097 - 31.25	2.21	2.39	2.29	2.31	2.34	2.37	2.39	2.30	2.32
15.625 - 22.097	2.46	2.64	2.58	2.60	2.65	2.67	2.71	2.66	2.69
11.049 - 15.625	3.41	3.60	3.56	3.59	3.65	3.68	3.51	3.46	3.50
7.813 - 11.049	3.64	3.79	3.85	3.87	3.94	3.98	3.65	3.68	3.72
5.524 - 7.813	3.77	3.94	3.99	4.02	4.09	4.13	3.81	3.86	3.90
3.906 - 5.524	3.52	3.68	3.70	3.73	3.80	3.84	3.62	3.64	3.68
2.762 - 3.906	2.70	2.78	2.83	2.84	2.90	2.93	2.80	2.82	2.85
1.953 - 2.762	1.94	1.95	1.98	2.00	2.04	2.06	2.00	2.02	2.04
1.381 - 1.953	1.48	1.49	1.49	1.50	1.53	1.54	1.53	1.55	1.57
0.977 - 1.381	1.14	1.15	1.16	1.17	1.19	1.20	1.20	1.23	1.25
0.691 - .0977	0.92	0.92	0.96	0.97	0.98	0.99	0.99	1.03	1.04
0.488 - 0.691	0.85	0.85	0.89	0.89	0.91	0.92	0.92	0.96	0.97
0.345 - 0.488	0.84	0.84	0.87	0.87	0.88	0.89	0.91	0.94	0.94
0.244 - 0.345	0.80	0.79	0.81	0.81	0.82	0.83	0.85	0.87	0.88
0.173 - 0.244	0.65	0.64	0.66	0.66	0.67	0.68	0.69	0.71	0.72
0.122 - 0.173	0.49	0.48	0.51	0.51	0.52	0.52	0.51	0.54	0.55
0.086 - 0.122	0.31	0.30	0.32	0.32	0.33	0.33	0.32	0.34	0.34
0.061 - 0.086	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.14	0.14
0.043 - 0.061	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
0.01 - 0.043	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

d10	2.92	2.92	2.83	2.81	2.75	2.72	2.73	2.60	2.56
d50	156.48	151.77	151.92	150.53	145.51	143.20	150.53	150.12	147.98
d90	424.58	425.13	424.24	427.45	423.74	423.27	424.52	424.64	424.89

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	2.89	0.05	1.82	2.76	0.05	1.69	2.63	0.09	3.40
d50	153.39	2.68	1.75	146.42	3.75	2.56	149.54	1.37	0.91
d90	424.65	0.45	0.11	424.82	2.29	0.54	424.68	0.19	0.04

APPENDIX 1. Benchmark laser replicate data for sediment distributed as PS84.

Microns	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
710 - 1000	0.24	0.37	0.01	0.01	0.02	0.01	0.01	0.01	0.01
500 - 710	3.27	2.99	3.11	3.08	3.39	2.98	2.88	2.67	2.96
355 - 500	16.77	16.69	17.10	17.04	17.60	17.20	17.52	17.35	17.25
250 - 355	20.10	19.91	19.75	19.91	19.79	20.11	20.87	20.88	20.82
180 - 250	8.60	8.17	8.12	8.02	7.92	7.84	8.55	8.42	8.36
125 - 180	5.44	5.38	5.28	5.16	4.99	4.88	5.72	5.58	5.23
90 - 125	5.86	5.88	5.84	5.87	5.70	5.64	5.68	5.72	5.80
63 - 90	3.20	3.10	3.05	3.04	2.94	2.79	3.12	3.10	3.05
44.19 - 63	2.11	2.11	2.10	2.09	2.05	2.10	2.15	2.15	2.16
31.25 - 44.19	2.54	2.59	2.60	2.61	2.59	2.71	2.36	2.41	2.45
22.097 - 31.25	2.24	2.30	2.30	2.30	2.29	2.43	2.13	2.15	2.18
15.625 - 22.097	2.61	2.70	2.74	2.75	2.74	2.92	2.59	2.65	2.66
11.049 - 15.625	3.34	3.43	3.45	3.45	3.43	3.53	3.26	3.32	3.38
7.813 - 11.049	3.51	3.60	3.61	3.62	3.60	3.64	3.44	3.49	3.44
5.524 - 7.813	3.71	3.80	3.82	3.84	3.82	3.98	3.63	3.69	3.56
3.906 - 5.524	3.53	3.62	3.65	3.66	3.64	3.77	3.47	3.52	3.50
2.762 - 3.906	2.74	2.82	2.84	2.85	2.84	2.83	2.71	2.75	2.82
1.953 - 2.762	1.98	2.04	2.06	2.07	2.06	2.04	1.95	1.99	2.08
1.381 - 1.953	1.52	1.58	1.60	1.61	1.60	1.62	1.49	1.52	1.61
0.977 - 1.381	1.22	1.26	1.28	1.29	1.28	1.30	1.17	1.20	1.24
0.691 - .0977	1.01	1.06	1.07	1.08	1.07	1.06	0.98	1.00	1.00
0.488 - 0.691	0.94	0.98	0.99	1.00	0.99	0.98	0.91	0.93	0.93
0.345 - 0.488	0.92	0.96	0.96	0.97	0.97	0.97	0.89	0.91	0.93
0.244 - 0.345	0.86	0.89	0.89	0.89	0.89	0.90	0.83	0.85	0.88
0.173 - 0.244	0.70	0.72	0.72	0.73	0.72	0.73	0.68	0.70	0.71
0.122 - 0.173	0.54	0.55	0.55	0.55	0.55	0.55	0.53	0.54	0.53
0.086 - 0.122	0.34	0.34	0.35	0.35	0.34	0.34	0.34	0.34	0.33
0.061 - 0.086	0.14	0.14	0.14	0.14	0.14	0.13	0.14	0.14	0.13
0.043 - 0.061	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
0.01 - 0.043	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

d10	2.67	2.52	2.49	2.47	2.48	2.48	2.79	2.70	2.59
d50	165.65	156.79	155.98	155.31	161.72	154.95	174.94	169.57	169.97
d90	437.24	435.68	434.97	434.49	439.17	434.17	434.39	431.97	434.22

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	2.56	0.10	3.76	2.47	0.01	0.29	2.70	0.10	3.78
d50	159.47	5.37	3.36	157.33	3.81	2.42	171.49	2.99	1.75
d90	435.96	1.16	0.27	435.94	2.80	0.64	433.53	1.35	0.31

APPENDIX 1. Benchmark laser replicate data for sediment distributed as PS84.

Microns	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
710 - 1000	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.00
500 - 710	2.30	2.60	2.29	2.72	2.73	2.30	2.32	2.39	2.06
355 - 500	15.00	15.36	15.41	15.01	15.38	15.40	14.24	14.29	14.31
250 - 355	19.04	19.12	19.17	19.17	18.91	19.02	18.16	17.97	18.18
180 - 250	9.30	9.16	9.00	9.02	8.80	8.72	8.42	8.39	8.42
125 - 180	6.16	5.93	5.77	5.66	5.52	5.44	6.00	5.91	5.90
90 - 125	5.99	5.90	5.92	6.04	5.84	5.83	6.10	6.07	6.06
63 - 90	3.18	3.07	3.06	3.01	2.80	2.74	3.32	3.28	3.22
44.19 - 63	2.16	2.13	2.11	2.15	2.09	2.15	2.35	2.36	2.33
31.25 - 44.19	2.51	2.51	2.55	2.56	2.60	2.70	2.63	2.63	2.91
22.097 - 31.25	2.32	2.29	2.32	2.31	2.30	2.41	2.44	2.44	2.13
15.625 - 22.097	2.82	2.83	2.87	2.88	2.98	3.12	2.86	2.90	3.19
11.049 - 15.625	3.74	3.71	3.77	3.75	3.82	3.93	3.95	3.97	4.49
7.813 - 11.049	4.01	3.97	4.02	3.94	4.06	4.05	4.35	4.37	4.28
5.524 - 7.813	4.15	4.12	4.18	4.12	4.23	4.27	4.45	4.47	4.24
3.906 - 5.524	3.87	3.84	3.90	3.87	3.96	4.05	4.07	4.09	3.95
2.762 - 3.906	2.96	2.95	2.99	2.96	3.04	3.07	3.13	3.15	3.09
1.953 - 2.762	2.08	2.08	2.11	2.14	2.15	2.14	2.21	2.23	2.23
1.381 - 1.953	1.57	1.56	1.59	1.67	1.62	1.62	1.65	1.66	1.68
0.977 - 1.381	1.24	1.23	1.26	1.31	1.28	1.28	1.31	1.33	1.33
0.691 - .0977	1.04	1.04	1.05	1.05	1.07	1.06	1.12	1.14	1.12
0.488 - 0.691	0.97	0.97	0.99	0.97	1.01	1.00	1.05	1.07	1.05
0.345 - 0.488	0.95	0.95	0.97	0.98	0.99	0.99	1.01	1.03	1.02
0.244 - 0.345	0.89	0.88	0.90	0.92	0.93	0.93	0.93	0.94	0.94
0.173 - 0.244	0.72	0.72	0.74	0.74	0.76	0.74	0.77	0.78	0.77
0.122 - 0.173	0.55	0.55	0.56	0.55	0.58	0.55	0.59	0.60	0.58
0.086 - 0.122	0.35	0.35	0.35	0.34	0.37	0.33	0.38	0.38	0.37
0.061 - 0.086	0.14	0.14	0.14	0.13	0.15	0.13	0.15	0.15	0.15
0.043 - 0.061	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
0.01 - 0.043	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

d10	2.54	2.55	2.47	2.42	2.37	2.43	2.29	2.25	2.27
d50	138.32	142.04	137.96	137.80	135.96	132.33	119.08	117.74	117.15
d90	418.56	423.25	420.45	422.80	424.54	420.57	414.84	415.83	412.54

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	2.52	0.04	1.63	2.41	0.03	1.39	2.27	0.02	0.88
d50	139.44	2.26	1.62	135.36	2.78	2.05	117.99	0.99	0.84
d90	420.75	2.36	0.56	422.64	1.99	0.47	414.40	1.68	0.41

APPENDIX 1. Benchmark laser replicate data for sediment distributed as PS84.

Microns	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
710 - 1000	0.15	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.02
500 - 710	2.69	2.16	2.37	2.61	2.19	2.33	2.44	2.39	2.44
355 - 500	14.46	14.25	14.63	14.53	14.88	14.71	14.03	14.00	14.05
250 - 355	18.87	18.68	18.75	18.45	18.77	18.91	18.03	17.62	17.92
180 - 250	8.71	8.71	8.47	8.47	8.24	8.18	8.67	8.59	8.59
125 - 180	5.89	5.92	5.75	5.71	5.37	5.09	6.10	6.03	5.90
90 - 125	6.06	6.08	5.99	5.98	5.96	5.93	6.04	6.04	6.01
63 - 90	3.16	3.18	3.10	3.05	2.95	2.64	3.38	3.37	3.28
44.19 - 63	2.23	2.26	2.22	2.19	2.17	2.18	2.35	2.37	2.35
31.25 - 44.19	2.62	2.67	2.65	2.69	2.71	2.78	2.63	2.66	2.66
22.097 - 31.25	2.40	2.44	2.43	2.44	2.44	2.51	2.44	2.47	2.44
15.625 - 22.097	2.83	2.91	2.91	2.95	3.01	3.19	2.81	2.86	2.87
11.049 - 15.625	3.84	3.93	3.92	3.95	3.99	4.09	3.88	3.94	3.92
7.813 - 11.049	4.17	4.26	4.25	4.26	4.30	4.29	4.32	4.37	4.33
5.524 - 7.813	4.24	4.33	4.32	4.34	4.37	4.39	4.45	4.50	4.47
3.906 - 5.524	3.89	3.98	3.97	3.99	4.03	4.09	4.10	4.15	4.12
2.762 - 3.906	3.01	3.08	3.08	3.10	3.14	3.17	3.17	3.21	3.19
1.953 - 2.762	2.14	2.20	2.20	2.22	2.25	2.27	2.23	2.27	2.26
1.381 - 1.953	1.59	1.64	1.64	1.66	1.69	1.72	1.64	1.68	1.68
0.977 - 1.381	1.26	1.31	1.31	1.32	1.35	1.36	1.30	1.33	1.33
0.691 - .0977	1.08	1.12	1.12	1.14	1.16	1.15	1.11	1.14	1.14
0.488 - 0.691	1.01	1.05	1.06	1.06	1.08	1.07	1.04	1.07	1.07
0.345 - 0.488	0.97	1.00	1.01	1.02	1.04	1.04	1.00	1.03	1.03
0.244 - 0.345	0.90	0.92	0.93	0.94	0.95	0.97	0.93	0.95	0.95
0.173 - 0.244	0.74	0.76	0.76	0.77	0.78	0.79	0.76	0.79	0.78
0.122 - 0.173	0.57	0.59	0.59	0.59	0.60	0.60	0.59	0.61	0.61
0.086 - 0.122	0.37	0.38	0.38	0.38	0.39	0.38	0.38	0.39	0.39
0.061 - 0.086	0.15	0.15	0.15	0.15	0.16	0.15	0.15	0.16	0.16
0.043 - 0.061	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
0.01 - 0.043	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

d10	2.42	2.31	2.29	2.26	2.20	2.19	2.31	2.22	2.22
d50	130.69	123.11	124.84	123.50	121.18	119.44	120.03	115.63	117.44
d90	421.11	413.30	417.39	419.41	416.95	417.41	415.01	414.29	415.15

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	2.34	0.07	3.02	2.22	0.04	1.75	2.25	0.05	2.23
d50	126.21	3.97	3.15	121.37	2.04	1.68	117.70	2.21	1.88
d90	417.27	3.91	0.94	417.92	1.30	0.31	414.81	0.46	0.11

APPENDIX 1. Benchmark laser replicate data for sediment distributed as PS84.

Microns	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
710 - 1000	0.04	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.01
500 - 710	3.02	2.56	2.58	2.83	2.37	2.90	2.25	2.52	2.41
355 - 500	13.89	13.69	13.92	14.28	14.03	14.39	14.28	14.65	14.72
250 - 355	16.96	17.40	17.46	17.47	17.92	18.02	18.26	18.04	18.55
180 - 250	8.69	8.84	8.66	8.60	8.56	8.54	8.53	8.41	8.59
125 - 180	6.18	6.05	5.82	5.77	5.47	5.27	5.22	5.19	5.08
90 - 125	6.12	6.12	6.10	6.02	5.97	5.93	5.97	5.88	5.87
63 - 90	3.39	3.32	3.31	3.17	2.95	2.83	2.76	2.67	2.62
44.19 - 63	2.30	2.30	2.28	2.26	2.22	2.14	2.15	2.16	2.08
31.25 - 44.19	2.65	2.66	2.66	2.64	2.68	2.67	2.73	2.78	2.70
22.097 - 31.25	2.46	2.48	2.47	2.44	2.45	2.40	2.41	2.47	2.35
15.625 - 22.097	2.90	2.95	2.96	2.96	3.05	3.02	3.07	3.13	3.02
11.049 - 15.625	3.91	3.94	3.95	3.92	4.00	3.95	4.01	4.04	3.96
7.813 - 11.049	4.43	4.45	4.45	4.41	4.47	4.42	4.47	4.44	4.41
5.524 - 7.813	4.57	4.60	4.61	4.57	4.65	4.59	4.65	4.63	4.59
3.906 - 5.524	4.17	4.20	4.21	4.18	4.26	4.21	4.28	4.28	4.23
2.762 - 3.906	3.18	3.20	3.21	3.19	3.26	3.22	3.27	3.25	3.24
1.953 - 2.762	2.22	2.24	2.26	2.24	2.30	2.27	2.31	2.29	2.28
1.381 - 1.953	1.65	1.67	1.68	1.67	1.72	1.70	1.72	1.74	1.71
0.977 - 1.381	1.31	1.33	1.34	1.34	1.37	1.36	1.38	1.39	1.38
0.691 - .0977	1.12	1.14	1.15	1.14	1.17	1.16	1.18	1.16	1.18
0.488 - 0.691	1.05	1.06	1.07	1.06	1.10	1.08	1.10	1.06	1.09
0.345 - 0.488	1.00	1.01	1.02	1.02	1.06	1.04	1.06	1.02	1.05
0.244 - 0.345	0.92	0.92	0.93	0.93	0.98	0.95	0.97	0.94	0.96
0.173 - 0.244	0.75	0.76	0.76	0.76	0.80	0.78	0.79	0.76	0.78
0.122 - 0.173	0.58	0.58	0.59	0.59	0.62	0.60	0.60	0.58	0.60
0.086 - 0.122	0.37	0.37	0.37	0.37	0.40	0.38	0.38	0.36	0.38
0.061 - 0.086	0.15	0.15	0.15	0.15	0.16	0.15	0.15	0.14	0.15
0.043 - 0.061	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
0.01 - 0.043	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

d10	2.31	2.28	2.25	2.26	2.14	2.20	2.15	2.21	2.18
d50	116.69	115.18	114.44	117.75	113.63	118.83	114.99	116.55	120.37
d90	420.49	414.36	415.80	420.36	414.24	421.64	414.41	418.99	418.33

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	2.28	0.03	1.35	2.20	0.06	2.78	2.18	0.03	1.48
d50	115.44	1.15	0.99	116.74	2.75	2.35	117.30	2.77	2.36
d90	416.89	3.21	0.77	418.75	3.95	0.94	417.24	2.48	0.59

APPENDIX 2. Gradistat output of size categories based on final merged data provided by each participant and the Benchmark Average for sediment distributed as PS84 (used to create Figure 7).

	BM Average	PSA_2901	PSA_2902	PSA_2903	PSA_2904	PSA_2905	PSA_2906	PSA_2907	PSA_2908	PSA_2909	PSA_2910	PSA_2911	PSA_2912	PSA_2913	PSA_2914	PSA_2916	PSA_2917	PSA_2918
VERY COARSE GRAVEL	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
COARSE GRAVEL	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
MEDIUM GRAVEL	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
FINE GRAVEL	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
VERY FINE GRAVEL	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
VERY COARSE SAND	0.00	0.05	0.00	0.00	0.01	0.00	n/p	0.00	n/p*	0.00	0.00	0.01	0.01	n/p	0.00	0.00	0.00	0.00
COARSE SAND	2.59	0.41	3.85	6.76	4.30	2.34	n/p	5.94	n/p*	2.41	8.30	9.15	7.76	n/p	8.56	1.71	2.30	3.49
MEDIUM SAND	34.31	31.43	22.37	29.31	26.89	18.37	n/p	36.95	n/p*	28.69	35.42	31.22	31.56	n/p	33.33	20.67	34.60	28.23
FINE SAND	14.36	18.76	14.62	18.12	21.05	16.30	n/p	7.50	n/p*	14.50	19.55	17.24	20.34	n/p	16.58	18.68	14.56	20.84
VERY FINE SAND	9.07	7.63	9.48	9.29	10.88	10.43	n/p	3.88	n/p*	10.31	6.32	6.57	7.96	n/p	5.04	10.48	8.97	9.57
VERY COARSE SILT	4.80	5.65	7.52	9.73	5.44	6.86	n/p	6.43	n/p*	5.44	4.39	5.33	4.95	n/p	7.30	6.56	4.72	5.18
COARSE SILT	5.20	6.12	6.73	7.91	5.10	7.21	n/p	5.93	n/p*	5.90	4.36	4.96	4.41	n/p	8.61	7.44	5.11	5.74
MEDIUM SILT	7.79	7.27	9.51	6.78	6.71	10.32	n/p	6.84	n/p*	7.66	6.97	7.63	6.18	n/p	7.60	11.05	7.90	8.92
FINE SILT	8.09	8.93	10.71	5.35	7.54	12.36	n/p	9.38	n/p*	9.25	7.41	7.97	7.07	n/p	5.87	11.61	8.17	9.65
VERY FINE SILT	5.14	5.10	8.24	3.55	6.38	9.21	n/p	7.95	n/p*	6.03	4.41	5.26	5.30	n/p	3.98	7.25	5.12	5.71
CLAY	8.66	8.65	6.97	3.21	5.71	6.60	n/p	9.19	n/p*	9.80	2.87	4.67	4.46	n/p	3.14	4.54	8.56	2.67
GRAVEL	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
SAND	60.33	58.27	50.33	63.47	63.12	47.44	n/p	54.27	n/p*	55.91	69.59	64.19	67.64	n/p	63.51	51.55	60.43	62.14
SILT	31.01	33.08	42.70	33.32	31.17	45.96	n/p	36.53	n/p*	34.29	27.54	31.15	27.91	n/p	33.35	43.92	31.02	35.19
CLAY	8.66	8.65	6.97	3.21	5.71	6.60	n/p	9.19	n/p*	9.80	2.87	4.67	4.46	n/p	3.14	4.54	8.56	2.67

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2901 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
2000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	0.00	0.00	0.00	0.00	0.00	0.42
707	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72
500	0.19	0.20	0.20	0.39	0.30	0.29	0.17	0.46	0.70
353.6	12.24	12.54	12.32	11.27	10.72	10.40	10.58	11.45	11.39
250	21.97	21.92	21.77	19.18	19.14	18.87	19.33	18.53	19.27
176.8	10.45	10.25	10.40	10.45	10.81	10.76	9.91	9.80	9.66
125	8.74	8.61	8.80	8.47	8.50	8.52	8.33	8.33	8.01
88.39	4.55	4.40	4.41	5.60	5.54	5.60	5.53	5.42	5.04
62.5	2.56	2.57	2.58	2.48	2.48	2.46	2.54	2.51	2.42
44.19	2.93	2.95	2.95	3.21	3.20	3.20	3.26	3.27	3.20
31.25	2.31	2.32	2.33	2.65	2.65	2.67	2.64	2.62	2.54
22.097	2.74	2.76	2.76	3.17	3.18	3.22	3.18	3.16	3.09
15.625	2.87	2.89	2.89	3.12	3.16	3.22	3.25	3.25	3.17
11.049	2.92	2.93	2.94	3.24	3.27	3.33	3.37	3.35	3.26
7.813	3.76	3.77	3.77	4.16	4.20	4.26	4.37	4.32	4.21
5.524	4.38	4.40	4.39	4.62	4.66	4.73	4.93	4.90	4.77
3.906	4.10	4.12	4.12	4.21	4.26	4.33	4.54	4.54	4.42
2.762	2.96	2.99	2.99	3.02	3.06	3.11	3.25	3.25	3.17
1.953	1.92	1.95	1.96	1.99	2.02	2.06	2.08	2.09	2.04
1.381	1.45	1.48	1.48	1.55	1.57	1.60	1.56	1.56	1.52
0.977	1.28	1.30	1.30	1.36	1.38	1.40	1.35	1.35	1.32
0.691	1.17	1.18	1.18	1.22	1.23	1.24	1.21	1.21	1.18
0.488	1.08	1.08	1.08	1.11	1.12	1.13	1.11	1.11	1.08
0.345	0.99	0.98	0.97	1.01	1.02	1.04	1.01	1.02	0.99
0.244	0.85	0.84	0.84	0.88	0.89	0.90	0.87	0.88	0.85
0.173	0.66	0.65	0.65	0.68	0.69	0.70	0.67	0.68	0.65
0.122	0.49	0.48	0.48	0.50	0.51	0.51	0.50	0.49	0.48
0.086	0.30	0.30	0.30	0.31	0.31	0.32	0.31	0.30	0.29
0.061	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11
0.043	0.01	0.01	0.01	0.02	0.02	0.02	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	2.60	2.58	2.59	2.42	2.38	2.32	2.41	2.41	2.52
d50	144.19	144.00	143.43	123.26	120.93	116.34	112.55	114.11	125.94
d90	378.82	381.40	379.60	372.19	365.44	361.85	362.42	374.60	390.14

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	2.59	0.01	0.44	2.37	0.05	2.16	2.45	0.06	2.61
d50	143.87	0.40	0.28	120.18	3.52	2.93	117.54	7.32	6.23
d90	379.94	1.32	0.35	366.49	5.25	1.43	375.72	13.90	3.70

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2902 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	3.83	3.59	3.86	3.49	4.23	4.00	4.14	3.63	3.87
353.6	10.61	10.32	10.75	10.04	10.80	10.62	10.42	10.14	10.46
250	12.22	11.99	12.21	11.65	12.02	11.86	11.64	11.67	11.94
176.8	9.12	9.01	8.98	8.87	8.82	8.69	8.60	8.72	8.84
125	5.84	5.83	5.67	6.01	5.74	5.67	5.72	5.78	5.69
88.39	4.70	4.72	4.54	5.06	4.78	4.76	4.93	4.92	4.72
62.5	4.57	4.59	4.43	4.85	4.65	4.67	4.89	4.87	4.71
44.19	4.05	4.09	3.99	4.18	4.06	4.09	4.30	4.30	4.22
31.25	3.32	3.36	3.32	3.37	3.29	3.32	3.47	3.49	3.46
22.097	3.09	3.13	3.11	3.14	3.07	3.11	3.18	3.22	3.19
15.625	3.55	3.60	3.58	3.63	3.54	3.59	3.60	3.64	3.60
11.049	4.37	4.44	4.41	4.45	4.35	4.41	4.37	4.42	4.37
7.813	5.09	5.18	5.14	5.16	5.05	5.13	5.04	5.10	5.05
5.524	5.42	5.53	5.49	5.49	5.38	5.47	5.34	5.42	5.37
3.906	5.25	5.36	5.33	5.32	5.22	5.31	5.19	5.27	5.23
2.762	4.59	4.69	4.67	4.67	4.58	4.67	4.57	4.65	4.61
1.953	3.55	3.63	3.61	3.62	3.56	3.63	3.57	3.63	3.61
1.381	2.43	2.49	2.48	2.49	2.44	2.49	2.47	2.52	2.50
0.977	1.67	1.70	1.69	1.71	1.68	1.71	1.72	1.74	1.73
0.691	1.32	1.34	1.33	1.36	1.33	1.35	1.36	1.38	1.37
0.488	1.00	1.01	1.00	1.03	1.00	1.02	1.03	1.04	1.03
0.345	0.41	0.41	0.41	0.42	0.41	0.41	0.43	0.43	0.43
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	2.58	2.57	2.56	2.53	2.56	2.52	2.52	2.55	2.51
d50	44.31	43.96	43.03	37.44	40.45	37.18	41.60	44.68	41.71
d90	300.82	294.57	291.30	293.38	301.20	292.84	294.25	305.56	298.23

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	2.57	0.01	0.44	2.54	0.02	0.79	2.53	0.02	0.86
d50	43.77	0.66	1.51	38.36	1.81	4.73	42.66	1.75	4.09
d90	295.56	4.84	1.64	295.81	4.68	1.58	299.34	5.74	1.92

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2903 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	3.51	3.43	3.44	0.00	0.84	0.78	0.21	0.15	0.32
500	9.72	9.09	9.27	7.50	9.10	8.98	6.87	6.55	7.10
353.6	15.91	15.51	15.82	17.55	17.46	17.59	15.50	15.24	15.41
250	17.04	17.17	17.27	19.34	18.68	19.10	18.50	18.22	18.06
176.8	12.57	12.94	12.81	13.26	12.85	13.24	14.52	14.32	14.15
125	7.71	7.97	7.81	6.94	6.82	6.95	9.16	9.16	9.12
88.39	5.72	5.79	5.74	4.76	4.65	4.58	6.59	6.79	6.76
62.5	5.32	5.31	5.30	4.93	4.74	4.62	5.88	6.14	6.03
44.19	4.65	4.67	4.65	4.81	4.63	4.52	4.95	5.16	5.02
31.25	3.54	3.59	3.55	3.93	3.80	3.71	3.60	3.72	3.63
22.097	2.57	2.62	2.58	3.01	2.91	2.83	2.55	2.60	2.57
15.625	2.04	2.07	2.05	2.47	2.38	2.31	2.06	2.10	2.08
11.049	1.82	1.85	1.84	2.23	2.15	2.09	1.88	1.93	1.91
7.813	1.68	1.70	1.68	2.03	1.96	1.90	1.73	1.77	1.75
5.524	1.49	1.51	1.49	1.77	1.72	1.66	1.50	1.54	1.52
3.906	1.27	1.29	1.27	1.49	1.45	1.40	1.25	1.28	1.27
2.762	1.03	1.05	1.03	1.21	1.18	1.14	1.01	1.04	1.03
1.953	0.79	0.80	0.79	0.92	0.89	0.86	0.77	0.79	0.78
1.381	0.54	0.55	0.54	0.63	0.61	0.59	0.52	0.54	0.53
0.977	0.39	0.39	0.39	0.45	0.44	0.42	0.37	0.38	0.38
0.691	0.34	0.35	0.34	0.39	0.38	0.36	0.32	0.33	0.33
0.488	0.27	0.27	0.26	0.30	0.30	0.28	0.26	0.26	0.26
0.345	0.07	0.07	0.07	0.07	0.07	0.07	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	16.44	16.05	16.41	12.39	12.98	13.75	16.68	15.99	16.27
d50	225.00	219.89	223.15	215.89	224.90	227.88	202.07	197.02	200.00
d90	561.07	550.54	553.21	475.95	499.40	497.66	468.41	463.85	471.81

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	16.30	0.22	1.33	13.04	0.68	5.23	16.31	0.35	2.14
d50	222.68	2.59	1.16	222.89	6.24	2.80	199.69	2.54	1.27
d90	554.94	5.47	0.99	491.00	13.07	2.66	468.03	3.99	0.85

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2904 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	0.09	0.12	0.09	-	-	-	-	-	-
500	4.02	4.35	4.23	-	-	-	-	-	-
353.6	11.31	11.84	11.85	-	-	-	-	-	-
250	14.92	15.31	15.45	-	-	-	-	-	-
176.8	12.35	12.42	12.51	-	-	-	-	-	-
125	8.74	8.56	8.56	-	-	-	-	-	-
88.39	6.42	6.21	6.16	-	-	-	-	-	-
62.5	4.71	4.58	4.56	-	-	-	-	-	-
44.19	3.15	3.10	3.10	-	-	-	-	-	-
31.25	2.34	2.30	2.31	-	-	-	-	-	-
22.097	2.39	2.34	2.34	-	-	-	-	-	-
15.625	2.78	2.72	2.72	-	-	-	-	-	-
11.049	3.25	3.18	3.18	-	-	-	-	-	-
7.813	3.57	3.48	3.48	-	-	-	-	-	-
5.524	3.84	3.74	3.74	-	-	-	-	-	-
3.906	3.84	3.74	3.73	-	-	-	-	-	-
2.762	3.64	3.55	3.54	-	-	-	-	-	-
1.953	2.85	2.78	2.77	-	-	-	-	-	-
1.381	1.72	1.69	1.68	-	-	-	-	-	-
0.977	1.38	1.36	1.36	-	-	-	-	-	-
0.691	1.76	1.73	1.73	-	-	-	-	-	-
0.488	0.88	0.86	0.86	-	-	-	-	-	-
0.345	0.04	0.04	0.04	-	-	-	-	-	-
0.244	0.00	0.00	0.00	-	-	-	-	-	-
0.173	0.00	0.00	0.00	-	-	-	-	-	-
0.122	0.00	0.00	0.00	-	-	-	-	-	-
0.086	0.00	0.00	0.00	-	-	-	-	-	-
0.061	0.00	0.00	0.00	-	-	-	-	-	-
0.043	0.00	0.00	0.00	-	-	-	-	-	-
Total	100.00	100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00

	Run 1 - a	Run 1 - b	Run 1 - c	Run 2 - a	Run 2 - b	Run 2 - c	Run 3 - a	Run 3 - b	Run 3 - c
d10	3.15	3.21	3.22	-	-	-	-	-	-
d50	132.30	138.86	139.36	-	-	-	-	-	-
d90	417.37	425.22	423.49	-	-	-	-	-	-

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	3.19	0.04	1.25	-	-	-	-	-	-
d50	136.84	3.94	2.88	-	-	-	-	-	-
d90	422.03	4.12	0.98	-	-	-	-	-	-

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2905 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	0.36	0.40	0.51	0.00	0.00	0.00
500	1.40	1.35	1.55	3.27	3.49	3.82	1.80	1.63	1.48
353.6	6.79	7.27	7.40	8.01	8.53	8.78	7.19	7.55	7.61
250	10.05	10.78	10.82	10.20	10.84	10.91	10.34	11.01	11.24
176.8	9.11	9.51	9.56	8.53	8.91	8.95	9.32	9.71	9.87
125	7.24	7.26	7.33	6.32	6.38	6.44	7.39	7.39	7.43
88.39	6.02	5.90	5.95	5.22	5.19	5.26	6.11	5.97	5.95
62.5	4.83	4.76	4.77	4.46	4.50	4.56	4.86	4.78	4.78
44.19	3.69	3.69	3.67	3.62	3.71	3.73	3.68	3.68	3.68
31.25	3.19	3.19	3.17	3.16	3.21	3.20	3.14	3.15	3.16
22.097	3.41	3.36	3.35	3.34	3.30	3.26	3.33	3.31	3.31
15.625	4.03	3.93	3.91	3.95	3.82	3.75	3.90	3.84	3.83
11.049	4.96	4.80	4.75	4.84	4.62	4.53	4.71	4.60	4.57
7.813	5.99	5.76	5.68	5.81	5.50	5.37	5.60	5.43	5.37
5.524	6.62	6.35	6.25	6.47	6.09	5.94	6.21	5.99	5.92
3.906	6.51	6.24	6.15	6.43	6.06	5.90	6.22	5.99	5.92
2.762	5.58	5.38	5.30	5.57	5.27	5.14	5.46	5.29	5.23
1.953	3.95	3.85	3.80	3.94	3.78	3.69	3.94	3.86	3.83
1.381	2.23	2.21	2.19	2.20	2.14	2.10	2.25	2.24	2.23
0.977	1.56	1.57	1.57	1.55	1.53	1.51	1.60	1.61	1.61
0.691	1.87	1.88	1.87	1.85	1.82	1.80	1.93	1.95	1.95
0.488	0.91	0.93	0.93	0.86	0.85	0.84	0.96	0.98	0.98
0.345	0.04	0.04	0.04	0.03	0.03	0.03	0.04	0.04	0.04
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	2.63	2.65	2.66	2.66	2.72	2.77	2.59	2.60	2.61
d50	40.27	46.36	48.79	44.20	53.11	58.17	47.25	51.93	53.53
d90	332.27	338.20	341.90	379.57	390.20	399.80	341.91	344.54	343.76

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	2.65	0.02	0.70	2.72	0.05	1.97	2.60	0.01	0.24
d50	45.14	4.39	9.73	51.83	7.07	13.65	50.90	3.26	6.40
d90	337.46	4.86	1.44	389.86	10.12	2.60	343.40	1.35	0.39

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2906 LASER DATA - n/p

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	-	-	-	-	-	-	-	-	-
500	-	-	-	-	-	-	-	-	-
353.6	-	-	-	-	-	-	-	-	-
250	-	-	-	-	-	-	-	-	-
176.8	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-
88.39	-	-	-	-	-	-	-	-	-
62.5	-	-	-	-	-	-	-	-	-
44.19	-	-	-	-	-	-	-	-	-
31.25	-	-	-	-	-	-	-	-	-
22.097	-	-	-	-	-	-	-	-	-
15.625	-	-	-	-	-	-	-	-	-
11.049	-	-	-	-	-	-	-	-	-
7.813	-	-	-	-	-	-	-	-	-
5.524	-	-	-	-	-	-	-	-	-
3.906	-	-	-	-	-	-	-	-	-
2.762	-	-	-	-	-	-	-	-	-
1.953	-	-	-	-	-	-	-	-	-
1.381	-	-	-	-	-	-	-	-	-
0.977	-	-	-	-	-	-	-	-	-
0.691	-	-	-	-	-	-	-	-	-
0.488	-	-	-	-	-	-	-	-	-
0.345	-	-	-	-	-	-	-	-	-
0.244	-	-	-	-	-	-	-	-	-
0.173	-	-	-	-	-	-	-	-	-
0.122	-	-	-	-	-	-	-	-	-
0.086	-	-	-	-	-	-	-	-	-
0.061	-	-	-	-	-	-	-	-	-
0.043	-	-	-	-	-	-	-	-	-
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Run 1 - a	Run 1 - b	Run 1 - c	Run 2 - a	Run 2 - b	Run 2 - c	Run 3 - a	Run 3 - b	Run 3 - c
d10	-	-	-	-	-	-	-	-	-
d50	-	-	-	-	-	-	-	-	-
d90	-	-	-	-	-	-	-	-	-

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	-	-	-	-	-	-	-	-	-
d50	-	-	-	-	-	-	-	-	-
d90	-	-	-	-	-	-	-	-	-

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2907 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	0.01	0.05	0.11	0.11	0.05	0.07	0.05	0.15
500	6.25	4.73	5.83	6.64	6.34	5.26	6.06	5.29	7.43
353.6	21.09	18.18	19.30	20.21	19.05	18.56	19.51	18.56	21.65
250	19.29	19.13	17.51	15.83	14.74	17.95	16.38	17.54	15.94
176.8	7.53	8.66	7.12	4.18	3.86	7.40	4.99	6.89	3.85
125	1.40	1.52	1.74	0.25	0.23	1.25	0.34	1.18	0.21
88.39	1.37	0.86	1.83	1.47	1.35	0.99	1.00	1.34	1.10
62.5	2.60	2.57	2.51	3.09	3.14	2.48	3.12	2.86	1.91
44.19	3.40	4.06	2.70	2.87	3.39	3.54	4.27	3.54	1.17
31.25	3.68	4.34	2.60	1.94	2.75	3.69	4.29	3.35	0.22
22.097	3.54	3.72	2.54	1.66	2.32	3.31	3.71	2.95	0.42
15.625	3.40	3.27	2.94	2.52	2.86	3.26	3.49	3.08	2.10
11.049	2.46	2.43	2.65	2.79	2.88	2.65	2.71	2.65	3.02
7.813	3.33	3.60	4.21	4.86	4.94	4.05	4.00	4.13	5.57
5.524	3.44	4.01	4.65	5.61	5.71	4.48	4.41	4.60	6.39
3.906	3.51	4.17	4.73	5.76	5.87	4.61	4.58	4.74	6.40
2.762	3.31	3.86	4.33	5.24	5.36	4.26	4.28	4.39	5.74
1.953	2.78	3.13	3.55	4.22	4.32	3.48	3.56	3.60	4.62
1.381	2.11	2.26	2.63	3.07	3.13	2.55	2.64	2.65	3.41
0.977	1.48	1.51	1.82	2.09	2.12	1.72	1.81	1.82	2.37
0.691	0.80	0.79	0.98	1.12	1.13	0.90	0.97	0.97	1.29
0.488	0.83	0.82	1.02	1.17	1.16	0.93	1.00	1.00	1.35
0.345	0.70	0.71	0.86	1.01	0.99	0.79	0.85	0.85	1.14
0.244	0.62	0.65	0.75	0.90	0.88	0.71	0.77	0.76	1.00
0.173	0.52	0.55	0.62	0.75	0.74	0.60	0.64	0.64	0.82
0.122	0.34	0.36	0.40	0.49	0.48	0.40	0.42	0.42	0.53
0.086	0.11	0.12	0.13	0.16	0.15	0.13	0.14	0.14	0.17
0.061	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.043	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

	Run 1 - a	Run 1 - b	Run 1 - c	Run 2 - a	Run 2 - b	Run 2 - c	Run 3 - a	Run 3 - b	Run 3 - c
d10	1.09	1.14	1.11	1.08	1.09	1.13	1.10	1.13	1.06
d50	2.22	2.46	2.55	3.71	4.18	2.81	3.76	3.18	3.35
d90	8.55	8.64	8.89	9.12	9.13	8.82	8.89	8.90	9.31

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	1.11	0.03	2.64	1.10	0.02	2.15	1.09	0.04	3.22
d50	2.41	0.17	7.20	3.56	0.70	19.51	3.43	0.30	8.77
d90	8.69	0.17	2.01	9.02	0.18	1.96	9.03	0.24	2.63

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2908 LASER DATA - n/p*

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	-	-	-	-	-	-	-	-	-
500	-	-	-	-	-	-	-	-	-
353.6	-	-	-	-	-	-	-	-	-
250	-	-	-	-	-	-	-	-	-
176.8	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-
88.39	-	-	-	-	-	-	-	-	-
62.5	-	-	-	-	-	-	-	-	-
44.19	-	-	-	-	-	-	-	-	-
31.25	-	-	-	-	-	-	-	-	-
22.097	-	-	-	-	-	-	-	-	-
15.625	-	-	-	-	-	-	-	-	-
11.049	-	-	-	-	-	-	-	-	-
7.813	-	-	-	-	-	-	-	-	-
5.524	-	-	-	-	-	-	-	-	-
3.906	-	-	-	-	-	-	-	-	-
2.762	-	-	-	-	-	-	-	-	-
1.953	-	-	-	-	-	-	-	-	-
1.381	-	-	-	-	-	-	-	-	-
0.977	-	-	-	-	-	-	-	-	-
0.691	-	-	-	-	-	-	-	-	-
0.488	-	-	-	-	-	-	-	-	-
0.345	-	-	-	-	-	-	-	-	-
0.244	-	-	-	-	-	-	-	-	-
0.173	-	-	-	-	-	-	-	-	-
0.122	-	-	-	-	-	-	-	-	-
0.086	-	-	-	-	-	-	-	-	-
0.061	-	-	-	-	-	-	-	-	-
0.043	-	-	-	-	-	-	-	-	-
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Run 1 - a	Run 1 - b	Run 1 - c	Run 2 - a	Run 2 - b	Run 2 - c	Run 3 - a	Run 3 - b	Run 3 - c
d10	-	-	-	-	-	-	-	-	-
d50	-	-	-	-	-	-	-	-	-
d90	-	-	-	-	-	-	-	-	-

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	-	-	-	-	-	-	-	-	-
d50	-	-	-	-	-	-	-	-	-
d90	-	-	-	-	-	-	-	-	-

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2909 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
2000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1000	0.00	0.82	0.00	0.50	0.48	0.00	0.00	0.59	0.00
707	0.00	1.07	0.00	0.90	0.66	0.01	0.00	0.86	0.01
500	1.85	2.19	1.84	2.08	2.20	2.29	1.59	2.21	2.47
353.6	12.25	12.09	12.49	11.70	12.16	12.94	12.53	12.64	13.15
250	15.93	15.58	15.87	15.54	15.67	15.86	15.80	15.88	15.89
176.8	8.09	7.67	7.77	8.16	7.80	7.82	7.79	7.68	7.70
125	6.05	5.57	5.77	6.13	5.76	5.83	6.23	5.70	5.72
88.39	6.48	6.15	6.15	6.32	6.11	6.00	6.62	6.19	6.24
62.5	4.35	4.20	4.24	4.17	4.07	4.00	4.31	4.03	4.05
44.19	3.29	3.21	3.26	3.09	3.07	3.09	3.15	3.05	3.06
31.25	2.61	2.58	2.63	2.40	2.43	2.48	2.60	2.60	2.62
22.097	3.51	3.48	3.59	3.46	3.51	3.49	3.42	3.32	3.36
15.625	2.73	2.71	2.78	2.59	2.62	2.68	2.69	2.70	2.73
11.049	3.17	3.15	3.24	3.02	3.06	3.18	3.23	3.27	3.31
7.813	4.77	4.73	4.87	4.75	4.82	4.88	4.72	4.66	4.72
5.524	5.06	5.03	5.18	5.17	5.24	5.20	5.07	4.91	4.98
3.906	4.44	4.42	4.54	4.56	4.63	4.58	4.51	4.36	4.41
2.762	3.43	3.41	3.51	3.50	3.55	3.56	3.51	3.43	3.45
1.953	2.55	2.53	2.61	2.54	2.58	2.62	2.57	2.57	2.59
1.381	1.85	1.84	1.90	1.82	1.85	1.87	1.86	1.85	1.89
0.977	1.33	1.32	1.36	1.33	1.36	1.34	1.37	1.33	1.37
0.691	1.09	1.09	1.13	1.12	1.14	1.11	1.15	1.09	1.12
0.488	1.10	1.10	1.13	1.09	1.11	1.12	1.12	1.09	1.11
0.345	1.14	1.15	1.18	1.10	1.12	1.15	1.13	1.13	1.14
0.244	1.06	1.07	1.09	1.03	1.04	1.06	1.05	1.04	1.06
0.173	0.81	0.81	0.83	0.81	0.82	0.81	0.83	0.80	0.81
0.122	0.57	0.56	0.57	0.60	0.60	0.56	0.61	0.56	0.57
0.086	0.33	0.32	0.33	0.36	0.37	0.33	0.38	0.33	0.33
0.061	0.12	0.12	0.12	0.14	0.14	0.12	0.15	0.12	0.12
0.043	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
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	2.11	2.12	2.05	2.11	2.06	2.09	2.05	2.13	2.08
d50	91.51	94.28	87.64	95.07	92.72	92.38	91.02	97.48	94.35
d90	397.14	422.05	398.82	412.26	413.53	406.90	396.25	420.26	410.11

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	2.09	0.04	1.92	2.09	0.02	1.14	2.09	0.04	2.02
d50	91.14	3.33	3.66	93.39	1.46	1.57	94.28	3.23	3.43
d90	406.00	13.92	3.43	410.90	3.52	0.86	408.87	12.06	2.95

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2910 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	0.22	0.56	0.34	0.71	0.93	0.63
500	5.94	4.94	4.83	7.13	8.03	7.74	10.79	11.45	10.52
353.6	14.75	13.02	12.66	15.44	15.67	15.96	21.57	21.90	21.12
250	15.72	16.71	16.23	17.03	16.33	16.93	22.87	22.58	22.34
176.8	11.65	14.00	13.70	11.53	10.72	11.05	14.92	14.38	14.66
125	7.36	9.00	8.94	5.31	5.03	4.97	6.33	5.97	6.44
88.39	4.89	5.42	5.45	2.73	2.87	2.70	2.52	2.45	2.82
62.5	3.44	3.50	3.53	2.65	2.86	2.79	1.96	2.05	2.24
44.19	2.40	2.48	2.56	2.75	2.87	2.89	1.79	1.89	1.97
31.25	1.92	2.06	2.19	2.50	2.56	2.60	1.33	1.38	1.44
22.097	2.10	2.15	2.28	2.49	2.54	2.54	1.11	1.12	1.20
15.625	2.76	2.67	2.77	3.10	3.11	3.07	1.39	1.38	1.45
11.049	3.67	3.42	3.52	4.09	4.05	3.98	1.92	1.89	1.97
7.813	4.47	4.08	4.19	4.91	4.83	4.72	2.33	2.28	2.37
5.524	4.74	4.26	4.38	5.04	4.95	4.84	2.39	2.33	2.42
3.906	4.33	3.84	3.95	4.40	4.33	4.24	2.07	2.03	2.12
2.762	3.39	2.97	3.06	3.27	3.23	3.18	1.54	1.52	1.60
1.953	2.35	2.04	2.11	2.13	2.13	2.11	1.01	1.01	1.07
1.381	1.50	1.28	1.34	1.26	1.28	1.28	0.59	0.61	0.65
0.977	1.02	0.86	0.91	0.81	0.83	0.83	0.38	0.39	0.42
0.691	0.85	0.70	0.75	0.67	0.68	0.68	0.30	0.30	0.33
0.488	0.60	0.49	0.52	0.46	0.46	0.46	0.20	0.20	0.22
0.345	0.15	0.12	0.13	0.10	0.10	0.10	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	3.95	4.49	4.33	4.33	4.33	4.36	9.80	9.99	9.25
d50	161.30	167.96	159.95	184.09	184.42	188.35	273.55	277.71	268.53
d90	454.51	437.05	433.99	471.08	484.63	479.52	524.70	537.26	519.24

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	4.26	0.28	6.50	4.34	0.02	0.44	9.68	0.38	3.93
d50	163.07	4.29	2.63	185.62	2.37	1.28	273.26	4.60	1.68
d90	441.85	11.07	2.51	478.41	6.84	1.43	527.07	9.24	1.75

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2911 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
2000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1000	0.00	0.03	0.09	0.00	0.00	0.00	0.00	0.00	0.00
707	1.63	1.59	2.20	1.21	1.53	1.18	1.27	1.67	1.29
500	7.72	7.16	8.13	7.61	8.06	7.53	7.32	7.73	7.50
353.6	14.58	13.97	14.60	15.23	15.64	14.88	14.59	14.80	14.96
250	16.07	15.87	15.79	17.11	17.15	16.43	16.39	16.30	16.64
176.8	11.33	11.54	10.98	12.00	11.60	11.36	11.49	11.27	11.48
125	5.94	6.21	5.61	5.99	5.48	5.73	5.82	5.65	5.68
88.39	3.57	3.71	3.32	3.38	3.10	3.46	3.47	3.38	3.35
62.5	3.14	3.17	3.03	3.08	3.02	3.26	3.26	3.20	3.23
44.19	2.80	2.83	2.82	2.86	2.89	3.01	3.04	2.99	3.06
31.25	2.34	2.39	2.39	2.34	2.36	2.46	2.49	2.45	2.49
22.097	2.30	2.34	2.30	2.15	2.14	2.25	2.29	2.25	2.23
15.625	2.86	2.88	2.79	2.57	2.55	2.68	2.75	2.70	2.65
11.049	3.71	3.72	3.61	3.34	3.31	3.45	3.57	3.51	3.45
7.813	4.29	4.32	4.21	3.91	3.87	4.04	4.18	4.11	4.05
5.524	4.32	4.37	4.28	3.99	3.97	4.15	4.26	4.20	4.15
3.906	3.83	3.91	3.84	3.62	3.61	3.79	3.84	3.81	3.77
2.762	3.03	3.12	3.09	2.94	2.95	3.11	3.10	3.09	3.07
1.953	2.14	2.22	2.22	2.13	2.15	2.28	2.23	2.23	2.23
1.381	1.39	1.45	1.46	1.42	1.44	1.54	1.47	1.47	1.48
0.977	1.00	1.06	1.07	1.05	1.07	1.14	1.08	1.08	1.09
0.691	0.93	0.98	0.99	0.96	0.98	1.05	1.00	1.00	1.01
0.488	0.78	0.82	0.83	0.80	0.82	0.87	0.82	0.82	0.83
0.345	0.32	0.34	0.35	0.33	0.34	0.37	0.30	0.30	0.31
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	4.06	3.91	3.90	4.05	4.00	3.75	3.91	3.91	3.90
d50	184.11	177.64	187.06	193.70	199.03	184.39	182.54	186.67	187.06
d90	492.29	485.09	508.90	486.72	495.45	485.19	483.51	493.02	486.19

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	3.96	0.09	2.25	3.93	0.16	4.03	3.91	0.01	0.22
d50	182.94	4.82	2.63	192.37	7.41	3.85	185.42	2.51	1.35
d90	495.43	12.21	2.46	489.12	5.54	1.13	487.57	4.90	1.01

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2912 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	0.84	0.68	1.28	0.96	0.54	0.62	0.56	0.75	0.55
500	7.84	7.13	7.73	7.52	6.52	6.74	6.36	7.05	6.19
353.6	15.66	14.92	15.05	14.95	14.36	14.37	13.87	14.63	13.64
250	17.53	17.23	17.01	16.91	17.09	16.82	16.58	17.00	16.47
176.8	12.77	12.95	12.69	12.56	13.13	12.89	12.97	12.91	13.01
125	7.06	7.42	7.26	7.19	7.63	7.61	7.77	7.44	7.85
88.39	4.20	4.46	4.37	4.40	4.58	4.67	4.77	4.44	4.79
62.5	3.31	3.43	3.36	3.42	3.48	3.51	3.57	3.36	3.54
44.19	2.70	2.76	2.69	2.74	2.79	2.76	2.81	2.71	2.81
31.25	2.12	2.20	2.14	2.17	2.22	2.20	2.24	2.17	2.28
22.097	1.95	2.04	2.00	2.02	2.07	2.08	2.11	2.04	2.16
15.625	2.24	2.33	2.30	2.32	2.37	2.39	2.42	2.34	2.47
11.049	2.73	2.82	2.79	2.83	2.89	2.90	2.95	2.86	2.99
7.813	3.15	3.26	3.22	3.29	3.35	3.37	3.43	3.32	3.47
5.524	3.38	3.49	3.44	3.55	3.61	3.63	3.71	3.58	3.75
3.906	3.31	3.41	3.36	3.48	3.54	3.56	3.65	3.52	3.69
2.762	2.86	2.95	2.90	3.01	3.06	3.08	3.16	3.05	3.20
1.953	2.15	2.21	2.18	2.26	2.30	2.31	2.37	2.29	2.40
1.381	1.45	1.49	1.47	1.52	1.55	1.56	1.61	1.55	1.63
0.977	1.02	1.05	1.03	1.07	1.09	1.10	1.14	1.10	1.15
0.691	0.84	0.86	0.84	0.88	0.89	0.90	0.94	0.90	0.95
0.488	0.63	0.65	0.63	0.67	0.68	0.68	0.71	0.69	0.72
0.345	0.25	0.26	0.25	0.27	0.28	0.28	0.30	0.28	0.30
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	4.25	4.12	4.20	4.03	3.97	3.95	3.81	3.96	3.76
d50	200.51	191.09	195.93	191.50	184.64	183.73	178.40	188.30	175.64
d90	485.63	475.20	488.80	482.65	465.81	469.07	462.97	474.67	460.23

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	4.19	0.06	1.53	3.98	0.04	1.10	3.84	0.10	2.62
d50	195.84	4.71	2.41	186.62	4.25	2.28	180.78	6.66	3.68
d90	483.21	7.12	1.47	472.51	8.94	1.89	465.96	7.67	1.65

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2913 LASER DATA - n/p

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	-	-	-	-	-	-	-	-	-
500	-	-	-	-	-	-	-	-	-
353.6	-	-	-	-	-	-	-	-	-
250	-	-	-	-	-	-	-	-	-
176.8	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-
88.39	-	-	-	-	-	-	-	-	-
62.5	-	-	-	-	-	-	-	-	-
44.19	-	-	-	-	-	-	-	-	-
31.25	-	-	-	-	-	-	-	-	-
22.097	-	-	-	-	-	-	-	-	-
15.625	-	-	-	-	-	-	-	-	-
11.049	-	-	-	-	-	-	-	-	-
7.813	-	-	-	-	-	-	-	-	-
5.524	-	-	-	-	-	-	-	-	-
3.906	-	-	-	-	-	-	-	-	-
2.762	-	-	-	-	-	-	-	-	-
1.953	-	-	-	-	-	-	-	-	-
1.381	-	-	-	-	-	-	-	-	-
0.977	-	-	-	-	-	-	-	-	-
0.691	-	-	-	-	-	-	-	-	-
0.488	-	-	-	-	-	-	-	-	-
0.345	-	-	-	-	-	-	-	-	-
0.244	-	-	-	-	-	-	-	-	-
0.173	-	-	-	-	-	-	-	-	-
0.122	-	-	-	-	-	-	-	-	-
0.086	-	-	-	-	-	-	-	-	-
0.061	-	-	-	-	-	-	-	-	-
0.043	-	-	-	-	-	-	-	-	-
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Run 1 - a	Run 1 - b	Run 1 - c	Run 2 - a	Run 2 - b	Run 2 - c	Run 3 - a	Run 3 - b	Run 3 - c
d10	-	-	-	-	-	-	-	-	-
d50	-	-	-	-	-	-	-	-	-
d90	-	-	-	-	-	-	-	-	-

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	-	-	-	-	-	-	-	-	-
d50	-	-	-	-	-	-	-	-	-
d90	-	-	-	-	-	-	-	-	-

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2914 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	0.60	-	-	-	-	-	-	-	-
500	7.96	-	-	-	-	-	-	-	-
353.6	16.00	-	-	-	-	-	-	-	-
250	17.32	-	-	-	-	-	-	-	-
176.8	11.49	-	-	-	-	-	-	-	-
125	5.09	-	-	-	-	-	-	-	-
88.39	2.45	-	-	-	-	-	-	-	-
62.5	2.59	-	-	-	-	-	-	-	-
44.19	3.35	-	-	-	-	-	-	-	-
31.25	3.94	-	-	-	-	-	-	-	-
22.097	4.29	-	-	-	-	-	-	-	-
15.625	4.32	-	-	-	-	-	-	-	-
11.049	4.02	-	-	-	-	-	-	-	-
7.813	3.58	-	-	-	-	-	-	-	-
5.524	3.14	-	-	-	-	-	-	-	-
3.906	2.73	-	-	-	-	-	-	-	-
2.762	2.26	-	-	-	-	-	-	-	-
1.953	1.71	-	-	-	-	-	-	-	-
1.381	1.17	-	-	-	-	-	-	-	-
0.977	0.81	-	-	-	-	-	-	-	-
0.691	0.63	-	-	-	-	-	-	-	-
0.488	0.44	-	-	-	-	-	-	-	-
0.345	0.09	-	-	-	-	-	-	-	-
0.244	0.00	-	-	-	-	-	-	-	-
0.173	0.00	-	-	-	-	-	-	-	-
0.122	0.00	-	-	-	-	-	-	-	-
0.086	0.00	-	-	-	-	-	-	-	-
0.061	0.00	-	-	-	-	-	-	-	-
0.043	0.00	-	-	-	-	-	-	-	-
Total	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	5.62	-	-	-	-	-	-	-	-
d50	195.75	-	-	-	-	-	-	-	-
d90	484.66	-	-	-	-	-	-	-	-

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	5.62	-	-	-	-	-	-	-	-
d50	195.75	-	-	-	-	-	-	-	-
d90	484.66	-	-	-	-	-	-	-	-

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2916 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	1.85	2.43	1.54	2.52	2.14	2.29	0.65	0.94	1.03
353.6	8.37	8.77	7.98	8.83	8.56	8.75	7.06	7.49	7.95
250	12.30	12.24	11.96	12.30	12.41	12.41	12.74	12.67	13.22
176.8	10.66	10.45	10.48	10.52	10.79	10.65	11.53	11.28	11.51
125	7.76	7.63	7.75	7.68	7.84	7.73	8.08	7.96	7.85
88.39	5.89	5.82	5.96	5.85	5.84	5.84	5.84	5.84	5.63
62.5	4.70	4.63	4.76	4.63	4.59	4.61	4.69	4.68	4.55
44.19	3.61	3.53	3.64	3.51	3.51	3.50	3.67	3.64	3.57
31.25	3.02	2.96	3.06	2.91	2.94	2.91	3.06	3.04	2.98
22.097	3.33	3.30	3.40	3.22	3.23	3.22	3.33	3.31	3.24
15.625	4.21	4.18	4.30	4.08	4.08	4.08	4.19	4.17	4.09
11.049	5.23	5.19	5.34	5.11	5.11	5.09	5.25	5.21	5.11
7.813	5.90	5.84	6.02	5.80	5.80	5.78	5.96	5.92	5.82
5.524	6.13	6.07	6.25	6.06	6.06	6.04	6.24	6.21	6.10
3.906	5.45	5.41	5.58	5.42	5.43	5.41	5.60	5.57	5.47
2.762	4.31	4.28	4.42	4.30	4.31	4.30	4.45	4.43	4.36
1.953	2.86	2.85	2.95	2.86	2.87	2.87	2.97	2.95	2.90
1.381	1.59	1.59	1.64	1.59	1.60	1.60	1.65	1.65	1.62
0.977	1.14	1.15	1.19	1.13	1.15	1.15	1.20	1.20	1.18
0.691	1.24	1.25	1.30	1.23	1.25	1.26	1.33	1.33	1.31
0.488	0.45	0.46	0.48	0.46	0.47	0.48	0.50	0.50	0.49
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	3.44	3.44	3.34	3.44	3.42	3.42	3.32	3.32	3.37
d50	69.96	72.35	64.49	74.38	73.68	74.27	65.31	66.63	71.41
d90	356.83	370.72	348.71	372.82	363.79	368.51	332.25	338.74	344.28

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	3.41	0.05	1.58	3.43	0.01	0.41	3.34	0.03	0.84
d50	68.93	4.03	5.85	74.11	0.38	0.51	67.79	3.21	4.74
d90	358.76	11.13	3.10	368.37	4.52	1.23	338.42	6.03	1.78

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2917 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	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01
500	2.35	2.39	2.16	2.41	2.33	2.27	2.14	2.30	2.28
353.6	15.41	15.58	15.61	15.61	15.59	15.58	14.52	15.02	14.91
250	19.42	19.29	19.27	19.36	19.62	19.62	18.97	19.20	18.80
176.8	8.91	8.74	8.60	8.54	8.53	8.34	9.17	8.83	8.65
125	6.12	6.09	5.93	5.77	5.63	5.53	6.18	5.74	5.72
88.39	5.87	5.82	5.82	5.81	5.75	5.75	5.94	5.84	5.86
62.5	3.29	3.25	3.18	3.09	3.02	2.94	3.29	3.11	3.08
44.19	2.23	2.23	2.23	2.22	2.21	2.22	2.27	2.20	2.27
31.25	2.44	2.43	2.44	2.42	2.41	2.43	2.59	2.60	2.69
22.097	2.31	2.33	2.34	2.33	2.31	2.33	2.42	2.39	2.51
15.625	2.61	2.63	2.70	2.71	2.74	2.79	2.76	2.84	2.97
11.049	3.65	3.67	3.72	3.71	3.72	3.76	3.79	3.81	3.92
7.813	4.08	4.09	4.14	4.12	4.12	4.16	4.21	4.19	4.22
5.524	4.19	4.20	4.26	4.25	4.25	4.29	4.30	4.29	4.33
3.906	3.83	3.85	3.91	3.90	3.90	3.95	3.92	3.92	3.99
2.762	2.93	2.95	3.00	2.99	3.01	3.04	3.00	3.01	3.07
1.953	2.06	2.08	2.12	2.12	2.12	2.15	2.11	2.13	2.16
1.381	1.52	1.54	1.57	1.58	1.59	1.61	1.56	1.59	1.60
0.977	1.21	1.23	1.26	1.26	1.27	1.29	1.24	1.27	1.27
0.691	1.04	1.06	1.08	1.09	1.09	1.11	1.06	1.08	1.07
0.488	0.97	0.99	1.01	1.01	1.02	1.04	0.98	1.01	1.00
0.345	0.93	0.95	0.97	0.97	0.99	1.00	0.94	0.96	0.96
0.244	0.86	0.87	0.89	0.89	0.91	0.91	0.86	0.88	0.88
0.173	0.70	0.71	0.73	0.73	0.75	0.75	0.71	0.72	0.72
0.122	0.54	0.55	0.56	0.57	0.58	0.58	0.55	0.56	0.55
0.086	0.35	0.35	0.36	0.36	0.37	0.37	0.35	0.36	0.35
0.061	0.14	0.14	0.14	0.15	0.15	0.15	0.14	0.14	0.14
0.043	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
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	2.60	2.56	2.46	2.44	2.40	2.36	2.54	2.46	2.46
d50	141.76	140.83	137.04	138.44	138.92	136.13	132.13	133.66	127.89
d90	421.06	422.21	420.16	422.57	421.76	421.14	414.61	418.73	417.96

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	2.54	0.07	2.83	2.40	0.04	1.65	2.49	0.04	1.78
d50	139.88	2.50	1.79	137.83	1.50	1.08	131.23	2.99	2.28
d90	421.14	1.03	0.24	421.82	0.72	0.17	417.10	2.19	0.53

APPENDIX 3. Participant laser replicate data for sediment distributed as PS84.

PSA_2918 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	0.16	0.00	0.00	0.00	0.00	0.00	0.00
500	2.83	3.59	4.87	3.27	4.02	3.48	3.43	3.69	3.35
353.6	12.19	12.92	12.91	11.19	12.03	11.56	11.68	12.05	12.33
250	17.17	17.34	16.44	15.23	15.57	15.45	15.91	16.19	16.52
176.8	13.30	13.07	12.59	12.06	11.92	11.91	12.77	12.84	12.73
125	7.70	7.43	7.50	7.46	7.20	7.14	8.20	8.11	7.87
88.39	4.78	4.63	4.75	4.91	4.69	4.70	5.53	5.44	5.36
62.5	3.79	3.69	3.65	3.83	3.67	3.77	4.14	4.11	4.14
44.19	2.90	2.80	2.73	2.90	2.80	2.89	2.93	2.91	2.93
31.25	2.34	2.25	2.23	2.44	2.35	2.41	2.29	2.24	2.23
22.097	2.60	2.53	2.53	2.84	2.74	2.80	2.56	2.49	2.49
15.625	3.34	3.27	3.25	3.67	3.57	3.66	3.28	3.19	3.21
11.049	4.08	3.99	3.96	4.52	4.40	4.51	4.04	3.95	3.97
7.813	4.97	4.86	4.83	5.55	5.40	5.54	4.99	4.89	4.90
5.524	5.10	4.99	4.97	5.73	5.58	5.72	5.18	5.07	5.08
3.906	4.52	4.42	4.41	5.07	4.94	5.07	4.60	4.50	4.52
2.762	3.62	3.54	3.54	4.04	3.94	4.05	3.67	3.60	3.61
1.953	2.08	2.04	2.04	2.31	2.26	2.33	2.10	2.07	2.08
1.381	1.19	1.18	1.18	1.33	1.30	1.34	1.20	1.19	1.19
0.977	0.75	0.74	0.74	0.83	0.82	0.85	0.75	0.75	0.75
0.691	0.62	0.61	0.61	0.68	0.67	0.70	0.62	0.61	0.62
0.488	0.12	0.11	0.12	0.13	0.12	0.13	0.11	0.11	0.11
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	4.42	4.49	4.49	4.09	4.16	4.07	4.39	4.44	4.43
d50	144.34	153.13	153.66	118.26	129.57	120.79	136.03	141.38	141.44
d90	407.84	421.04	437.56	405.97	420.91	411.24	411.49	417.04	414.80

	Subsample 1			Subsample 2			Subsample 3		
	Mean	StDev	COV	Mean	StDev	COV	Mean	StDev	COV
d10	4.47	0.04	0.88	4.11	0.05	1.11	4.42	0.03	0.62
d50	150.38	5.23	3.48	122.87	5.93	4.83	139.62	3.11	2.22
d90	422.14	14.89	3.53	412.71	7.58	1.84	414.44	2.79	0.67

APPENDIX 4. Final Merged Data as supplied by participating laboratories (in percentages) and the Benchmark Replicates for sediment distributed as PS84.

Phi interval	Microns	Benchmark Samples					Participant data							
		PSA 2936	PSA 2937	PSA 2938	PSA 2939	PSA 2940	PSA 2901	PSA 2902	PSA 2903	PSA 2904	PSA 2905	PSA 2906	PSA 2907	
-6.50 to -6.00	>63000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00
-6.00 to -5.50	45000 - 63000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00
-5.50 to -5.00	31500 - 45000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00
-5.00 to -4.50	22400 - 31500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00
-4.50 to -4.00	16000 - 22400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00
-4.00 to -3.50	11200 - 16000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00
-3.50 to -3.00	8000 - 11200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00
-3.00 to -2.50	5600 - 8000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00
-2.50 to -2.00	4000 - 5600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00
-2.00 to -1.50	2800 - 4000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00
-1.50 to -1.00	2000 - 2800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00
-1.00 to -0.50	1400 - 2000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00
-0.50 to 0.00	1000 - 1400	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.01	0.00	0.00	n/p	0.00
0.00 to 0.50	710 - 1000	0.01	0.08	0.01	0.03	0.02	0.08	0.00	0.35	0.10	0.14	0.14	n/p	0.07
0.50 to 1.00	500 - 710	2.38	3.04	2.41	2.40	2.60	0.32	3.85	6.41	4.20	2.20	2.20	n/p	5.87
1.00 to 1.50	355 - 500	16.16	17.17	14.93	14.39	14.21	11.43	10.46	13.66	11.67	7.68	7.68	n/p	19.49
1.50 to 2.00	250 - 355	19.47	20.24	18.75	18.45	17.79	20.00	11.91	15.65	15.23	10.69	10.69	n/p	17.46
2.00 to 2.50	180 - 250	9.01	8.22	8.80	8.52	8.60	10.28	8.85	11.56	12.43	9.27	9.27	n/p	6.45
2.50 to 3.00	125 - 180	6.21	5.30	5.81	5.75	5.56	8.48	5.77	6.56	8.62	7.02	7.02	n/p	1.05
3.00 to 3.50	90 - 125	6.03	5.78	5.97	6.01	6.00	5.12	4.79	4.55	6.26	5.73	5.73	n/p	1.24
3.50 to 4.00	63 - 90	3.30	3.04	3.08	3.12	3.00	2.51	4.69	4.74	4.62	4.70	4.70	n/p	2.64
4.00 to 4.50	44.19 - 63	2.17	2.11	2.20	2.26	2.21	3.13	4.14	5.03	3.12	3.68	3.68	n/p	3.27
4.50 to 5.00	31.25 - 44.19	2.54	2.54	2.62	2.67	2.69	2.53	3.38	4.70	2.32	3.18	3.18	n/p	3.16
5.00 to 5.50	22.097 - 31.25	2.32	2.26	2.33	2.45	2.43	3.03	3.14	4.15	2.36	3.33	3.33	n/p	2.86
5.50 to 6.00	15.625 - 22.097	2.63	2.71	2.94	2.93	3.01	3.09	3.59	3.76	2.74	3.88	3.88	n/p	3.07
6.00 to 6.50	11.049 - 15.625	3.55	3.40	3.90	3.94	3.96	3.18	4.40	3.52	3.20	4.71	4.71	n/p	2.66
6.50 to 7.00	7.813 - 11.049	3.79	3.55	4.12	4.28	4.44	4.09	5.11	3.26	3.51	5.61	5.61	n/p	4.17
7.00 to 7.50	5.524 - 7.813	3.94	3.76	4.25	4.38	4.61	4.64	5.43	2.89	3.77	6.20	6.20	n/p	4.64
7.50 to 8.00	3.906 - 5.524	3.69	3.59	3.96	4.03	4.22	4.29	5.27	2.46	3.77	6.16	6.16	n/p	4.75
8.00 to 8.50	2.762 - 3.906	2.83	2.80	3.04	3.13	3.22	3.09	4.63	2.01	3.58	5.36	5.36	n/p	4.37
8.50 to 9.00	1.953 - 2.762	2.01	2.03	2.15	2.23	2.27	2.01	3.60	1.54	2.80	3.85	3.85	n/p	3.58
9.00 to 9.50	1.381 - 1.953	1.52	1.57	1.63	1.66	1.70	1.53	2.48	1.08	1.70	2.20	2.20	n/p	2.63
9.50 to 10.00	0.977 - 1.381	1.19	1.25	1.28	1.32	1.36	1.34	1.71	0.79	1.36	1.57	1.57	n/p	1.81
10.00 to 10.50	0.691 - .0977	0.98	1.04	1.08	1.13	1.16	1.20	1.35	0.68	1.74	1.88	1.88	n/p	0.97
10.50 to 11.00	0.488 - 0.691	0.91	0.96	1.01	1.06	1.08	1.10	1.02	0.52	0.87	0.92	0.92	n/p	1.00
11.00 to 11.50	0.345 - 0.488	0.89	0.94	0.99	1.02	1.03	1.00	0.42	0.13	0.04	0.04	0.04	n/p	0.85
11.50 to 12.00	0.244 - 0.345	0.83	0.88	0.92	0.94	0.94	0.87	0.00	0.00	0.00	0.00	0.00	n/p	0.76
12.00 to 12.50	0.173 - 0.244	0.68	0.71	0.75	0.77	0.77	0.67	0.00	0.00	0.00	0.00	0.00	n/p	0.63
12.50 to 13.00	0.122 - 0.173	0.51	0.54	0.57	0.59	0.59	0.49	0.00	0.00	0.00	0.00	0.00	n/p	0.41
13.00 to 13.50	0.086 - 0.122	0.32	0.34	0.36	0.38	0.38	0.31	0.00	0.00	0.00	0.00	0.00	n/p	0.13
13.50 to 14.00	0.061 - 0.086	0.13	0.14	0.14	0.15	0.15	0.12	0.00	0.00	0.00	0.00	0.00	n/p	0.00
14.00 to 14.50	0.043 - 0.061	0.02	0.02	0.02	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00	n/p	0.00
> 14.50	0.01 - 0.043	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/p	0.00

APPENDIX 4. Final Merged Data as supplied by participating laboratories (in percentages) and the Benchmark Replicates for sediment distributed as PS84.

Phi interval	Microns	Participant Data									
		PSA 2908	PSA 2909	PSA 2910	PSA 2911	PSA 2912	PSA 2913	PSA 2914	PSA 2916	PSA 2917	PSA 2918
-6.50 to -6.00	>63000	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
-6.00 to -5.50	45000 - 63000	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
-5.50 to -5.00	31500 - 45000	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
-5.00 to -4.50	22400 - 31500	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
-4.50 to -4.00	16000 - 22400	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
-4.00 to -3.50	11200 - 16000	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
-3.50 to -3.00	8000 - 11200	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
-3.00 to -2.50	5600 - 8000	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
-2.50 to -2.00	4000 - 5600	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
-2.00 to -1.50	2800 - 4000	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
-1.50 to -1.00	2000 - 2800	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
-1.00 to -0.50	1400 - 2000	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00
-0.50 to 0.00	1000 - 1400	n/p*	0.00	0.00	0.01	0.01	n/p	0.00	0.00	0.00	0.00
0.00 to 0.50	710 - 1000	n/p*	0.31	0.38	1.50	0.76	n/p	0.60	0.00	0.01	0.00
0.50 to 1.00	500 - 710	n/p*	2.10	7.93	7.64	7.01	n/p	7.96	1.71	2.29	3.49
1.00 to 1.50	355 - 500	n/p*	12.60	16.90	14.81	14.60	n/p	16.00	8.20	15.32	12.02
1.50 to 2.00	250 - 355	n/p*	16.09	18.53	16.42	16.96	n/p	17.32	12.47	19.28	16.21
2.00 to 2.50	180 - 250	n/p*	8.30	12.96	11.45	12.88	n/p	11.49	10.88	8.70	12.78
2.50 to 3.00	125 - 180	n/p*	6.20	6.59	5.79	7.47	n/p	5.09	7.81	5.86	8.06
3.00 to 3.50	90 - 125	n/p*	6.30	3.54	3.41	4.52	n/p	2.45	5.83	5.83	5.44
3.50 to 4.00	63 - 90	n/p*	4.01	2.78	3.15	3.44	n/p	2.59	4.65	3.14	4.13
4.00 to 4.50	44.19 - 63	n/p*	3.01	2.40	2.92	2.75	n/p	3.35	3.58	2.23	2.92
4.50 to 5.00	31.25 - 44.19	n/p*	2.44	2.00	2.41	2.19	n/p	3.94	2.99	2.49	2.25
5.00 to 5.50	22.097 - 31.25	n/p*	3.31	1.95	2.25	2.05	n/p	4.29	3.29	2.36	2.51
5.50 to 6.00	15.625 - 22.097	n/p*	2.59	2.41	2.72	2.35	n/p	4.32	4.15	2.75	3.23
6.00 to 6.50	11.049 - 15.625	n/p*	3.07	3.17	3.52	2.86	n/p	4.02	5.18	3.75	3.99
6.50 to 7.00	7.813 - 11.049	n/p*	4.59	3.80	4.11	3.32	n/p	3.58	5.87	4.15	4.93
7.00 to 7.50	5.524 - 7.813	n/p*	4.90	3.93	4.19	3.57	n/p	3.14	6.13	4.26	5.11
7.50 to 8.00	3.906 - 5.524	n/p*	4.36	3.48	3.78	3.50	n/p	2.73	5.48	3.91	4.54
8.00 to 8.50	2.762 - 3.906	n/p*	3.43	2.64	3.05	3.03	n/p	2.26	4.35	3.00	3.63
8.50 to 9.00	1.953 - 2.762	n/p*	2.59	1.77	2.20	2.27	n/p	1.71	2.90	2.12	2.08
9.00 to 9.50	1.381 - 1.953	n/p*	1.91	1.09	1.46	1.54	n/p	1.17	1.61	1.57	1.19
9.50 to 10.00	0.977 - 1.381	n/p*	1.39	0.72	1.07	1.08	n/p	0.81	1.17	1.25	0.75
10.00 to 10.50	0.691 - .0977	n/p*	1.16	0.58	0.99	0.89	n/p	0.63	1.28	1.08	0.73
10.50 to 11.00	0.488 - 0.691	n/p*	1.16	0.40	0.82	0.67	n/p	0.44	0.48	1.00	0.00
11.00 to 11.50	0.345 - 0.488	n/p*	1.20	0.08	0.33	0.27	n/p	0.09	0.00	0.96	0.00
11.50 to 12.00	0.244 - 0.345	n/p*	1.11	0.00	0.00	0.00	n/p	0.00	0.00	0.88	0.00
12.00 to 12.50	0.173 - 0.244	n/p*	0.84	0.00	0.00	0.00	n/p	0.00	0.00	0.72	0.00
12.50 to 13.00	0.122 - 0.173	n/p*	0.58	0.00	0.00	0.00	n/p	0.00	0.00	0.56	0.00
13.00 to 13.50	0.086 - 0.122	n/p*	0.33	0.00	0.00	0.00	n/p	0.00	0.00	0.36	0.00
13.50 to 14.00	0.061 - 0.086	n/p*	0.12	0.00	0.00	0.00	n/p	0.00	0.00	0.14	0.00
14.00 to 14.50	0.043 - 0.061	n/p*	0.02	0.00	0.00	0.00	n/p	0.00	0.00	0.02	0.00
> 14.50	0.01 - 0.043	n/p*	0.00	0.00	0.00	0.00	n/p	0.00	0.00	0.00	0.00

Appendix 5. Investigation into replicates PSA_2905 and PSA_2902.

Participants PSA_2905 and PSA_2902 recorded lower percentages of sand compared to other participants and the Benchmark Data. After internal investigations and re-analysis they were still unable to achieve results close to the Benchmark analysis so samples were returned for the Benchmark lab to analyse for comparison.

Benchmark re-analysis agreed with the participant data and showed that the two replicates in question contained lower percentages of sand and higher percentages of mud.

These replicates were created using natural sediment from a single grab, the sediment was pre-sieved through a 1mm sieve to remove any larger particles and then homogenised and left to settle multiple times before coring to create replicates. Despite these measures, natural variation in the sediment appears to be the best explanation for the differences in data.

	BM REP 1 PSA_2936	BM REP 2 PSA_2937	BM REP 3 PSA_2938	BM REP 4 PSA_2939	BM REP 5 PSA_2940	PSA_2905	PSA_2905 _BM	PSA_2902 Original	PSA_2902 Re-run	PSA_2902 BM
% GRAVEL:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
% SAND:	62.57	62.86	59.76	58.67	57.78	47.44	53.56	45.31	50.33	51.16
% MUD:	37.43	37.14	40.24	41.33	42.22	52.56	46.44	54.69	49.67	48.84

