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Marine Sediment Monitoring Programme

2007 Results

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Marine Sediment Monitoring Programme

2007 Results

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Prepared for

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1 Executive Summary

The Auckland Regional Council (ARC) operates a long-term marine sediment monitoring programme in the Auckland Region. Surface sediment samples (0-20mm depth) are collected from each of 27 sites by the ARC and delivered to NIWA for analysis. There have been six surveys conducted, in 1998, 1999, 2000, 2003, 2005 and 2007. This report presents the results of the 2007 survey.

The concentrations of the metals zinc (Zn), copper (Cu) and lead (Pb) were measured by cold dilute 2M hydrochloric acid extraction on the silt <63 μm fraction and also by hot strong acid digestion on the <500 μm fraction. Total organic carbon (TOC) and particle size distributions were determined on the <500 μm fraction.

The results from the 2007 survey are compared with those from the five previous surveys for each parameter measured. There are several sites that exceed the Auckland Regional Council's environmental response criteria for trace metals.

A general trend of increasing trace metal concentration in Auckland estuarine sediments has occurred since monitoring began in 1998. However, four out of the ten most highly contaminated sites (Motions, Pakuranga Upper, Whau Upper and Whau Wairau have shown a reduction in either zinc or copper concentration (<500 μm) in the 2007 samples when compared with the 2005 survey results. Further surveys will continue to assess this trend.

Few organochlorine pesticides were detected by initial analyses with a detection limit of 0.01 mg kg^{-1}. In a subset of nine samples, reanalysed with lower detection limits, up to 15 compounds were detected in any sample. DDT and metabolites were the most frequently detected compounds, followed by dieldrin and HCB. DDT and dieldrin concentrations were lower than the 2003 monitoring results and were all below the ERC red guideline value.

2 Introduction

Since 1998, the Auckland Regional Council (ARC) has monitored the concentrations of urban-derived chemicals in surficial sediments at 27 sites in estuaries and the coastal zone of the Auckland region. There have been five previous surveys in 1998, 1999, 2001, 2003 and 2005 (Williamson et al. 1998; Mills et al., 2000; Hawken et al., 2002; Timperley and Mathieson, 2002; Reed and Webster, 2004; McHugh, 2006).

For the 2007 survey, as in the previous surveys, sediments were collected by the ARC and delivered to NIWA for analysis. Three replicates from each site (a total of 81 samples) were analysed for zinc (Zn), copper (Cu) and lead (Pb) in the <63 μm fraction[1]. The three replicates were also freeze dried and combined after seiving through a 500 μm mesh prior to analysis of total zinc, total copper and total lead (a total of 27 samples). Freeze dried samples were also analysed for total organic carbon (TOC), organochlorine pesticides and particle size distribution. A subset of nine samples were also analysed for organochlorine pesticides by AsureQuality Limited, using lower detection limits than those in the initial analyses. Polychlorinated biphenyl compounds and polycyclic aromatic hydrocarbons (PAHs) were not analysed in the 2007 survey.

This report presents the results for the samples collected in 2007 (Figure 1). A comparison of this data with those for the samples collected in 1998, 1999, 2001, 2003 and 2005 is also presented.

[1] Five replicates were collected from each site. Three of these were analysed with the remaining two retained for later analysis if required.

Figure 1.

Location of long term baseline monitoring sites for sediment chemistry

3 Analytical Procedures

3.1 Methodologies

The sample preparation and analytical procedures used for samples taken in 2007 were the same as those used for previous surveys (Reed & Webster, 2004; McHugh, 2006). Trace metals were analysed by inductively coupled plasma-mass spectroscopy (ICP-MS) after cold dilute 2M HCl extraction of <63 μm sediment fraction and hot acid digestion of <500 μm fraction. The concentrations of organochlorine (OC) pesticides were measured using sonication extraction, SPE cleanup and analysed by dual column gas chromatography-electron capture detector (dual column GC-ECD) in extracts of the total (<500 μm) freeze dried sediment fractions. Organochlorine pesticides were also analysed in the <500 μm fraction of nine samples using high resolution gas chromatography-high resolution mass spectrometry with isotope dilution quantitation. Particle size distributions were determined with a Galai WCIS I00 particle size analyser. TOC was measured by an Elemental Combustion Analyser. A detailed description of analytical methodologies used are presented in Appendix 1.

3.2 Detection Limits

The detection limits for the sediment metal concentrations determined by ICP-MS were Cu = 0.01 mg kg^{-1}, Zn = 0.02 mg kg^{-1} and Pb = 0.002 mg kg^{-1} when measured in cold dilute 2M HCl extracts, and Cu = 0.2 mg kg^{-1}, Zn = 0.4 mg $kg^{-1}$and Pb = 0.04 mg kg^{-1} when measured in hot acid digests. Detection limits were approximately 0.01 mg kg^{-1} dry weight for most OC compounds. The detection limits for OC compounds analysed by AsureQuality varied depending on compound and sample. Detection limits were in the range 0.00001 to 0.001 mg kg^{-1} for most compounds and samples. The limit of detection (LOD) for analysis of TOC is 0.05 g 100 g^{-1} dry weight. There is no detection limit in the analysis of particle size.

3.3 Concentration units

Total Organic Carbon concentrations (TOC) are given in g 100 g^{-1} dry weight (equivalent to %). Particle size data is expressed as a percentage. Metal and organic chemical concentrations are given in mg kg^{-1} dry weight (dw).

4 Results

4.1 2007 Trace Metal Concentrations

The results for zinc, copper, and lead from the 1998, 1999, 2001, 2003, 2005 and 2007 surveys are presented in Figures 2 to 7, respectively. The sites are ranked according to the 2007 concentrations. All metal results are given in tabulated form in Appendix 2. Samples from Vaughans, Awaruku, Cheltenham and Browns Bay were not analysesd for metal concentrations in the <63 µm fraction because of a lack of fine sediments at these sites.

4.1.1 Zinc

The Whau (U) estuary recorded the highest zinc concentration in the <63 µm fraction, followed by Whau Wairau, Tamaki (U), Meola, Pakuranga (U) and Motions. Whau (U) had the highest zinc concentrations in 2005. Seventeen sites measured higher zinc concentrations than in the previous year's monitoring. Only six sites sampled in 2007 showed a decrease in zinc concentrations. These sites included Lucas, Kaipatiki, Oakley, Anns, Motions and Pakuranga (U).

The highest zinc concentration in the total (<500 µm) sediment fraction was recorded at Whau Upper (U). This was followed by Meola and Whau Wairau sites. Both Motions and Pakaranga (U) sites showed a decrease from the 2005 concentration. There are eleven sites in 2007 that have total zinc concentrations that exceed the ARC Red environmental response criteria of >150 mg kg^{-1}.This is one more site than in 2005 monitoring programmme. A total of 15 sites have zinc concentrations that lie below the ARC Green environmental response criteria of <124 mg kg^{-1}, the same as in 2005. One site, Mangere Inlet, has total zinc concentrations at the ERC-Amber and this site has shown a decreasing trend in zinc concentration since 2001.

4.1.2 Copper

Increases in copper concentrations recorded in 2007 compared to 2005 were measured in the <63 µm fraction at nine sites. In general, however, most of the sites showed a decrease in copper concentration in the <63 µm sediment fraction with the exception of Henderson, Te Tokoroa and Weiti. A marked decrease in copper concentration was measured at Anns Creek, Mangere Inlet and Lucas.

The highest total copper concentrations in the <500 µm fraction were recorded at the same two sites as in 2003 and 2005, namely Whau Upper (U) and Whau Wairau. These two sites exceeded the ARC Red environmental response criteria of > 34 mg kg^{-1} for total copper concentration, although concentrations are lower than in 2003 and 2005. Total copper concentrations at Henderson and Meola have increased since 2005. The remaining samples showed either similar or slightly decreased total copper concentrations. Fourteen sites were below the ARC green ERC value (<19 mg kg^{-1}), one more than in 2005, and eleven were in the ARC amber ERC value range.

4.1.3 Lead

Highest lead concentrations in the <63µm sediment fraction were measured at Whau (U), Whau Wairau and Meola, this was either the same or a decrease from the 2005 concentrations. Nine sites showed a slight increase in lead concentration compared to the 2005 results, while lead concentrations measured at Te Tokoroa increased more markedly.

Highest lead concentrations in the <500µm sediment fraction were measured at Whau Upper (U), Whau Wairau and Meola, with the concentration at Meola higher than in 2005. These three sites have concentrations above the ERC red value (>50 mg kg^{-1}), this is the same as in 2005 (there were previously seven sites above the ERC red value in 2003). In general, total lead concentrations in sediments <500 µm are approximately the same as 2005 or are decreasing over time.

Figure 2.

Zinc concentrations (mg kg^{-1} dry wt) in the silt fractions (<63 μm) extracted with cold 2M HCl of samples from 1998, 1999, 2001, 2003 and 2005, 2007. Values are means ± standard error.

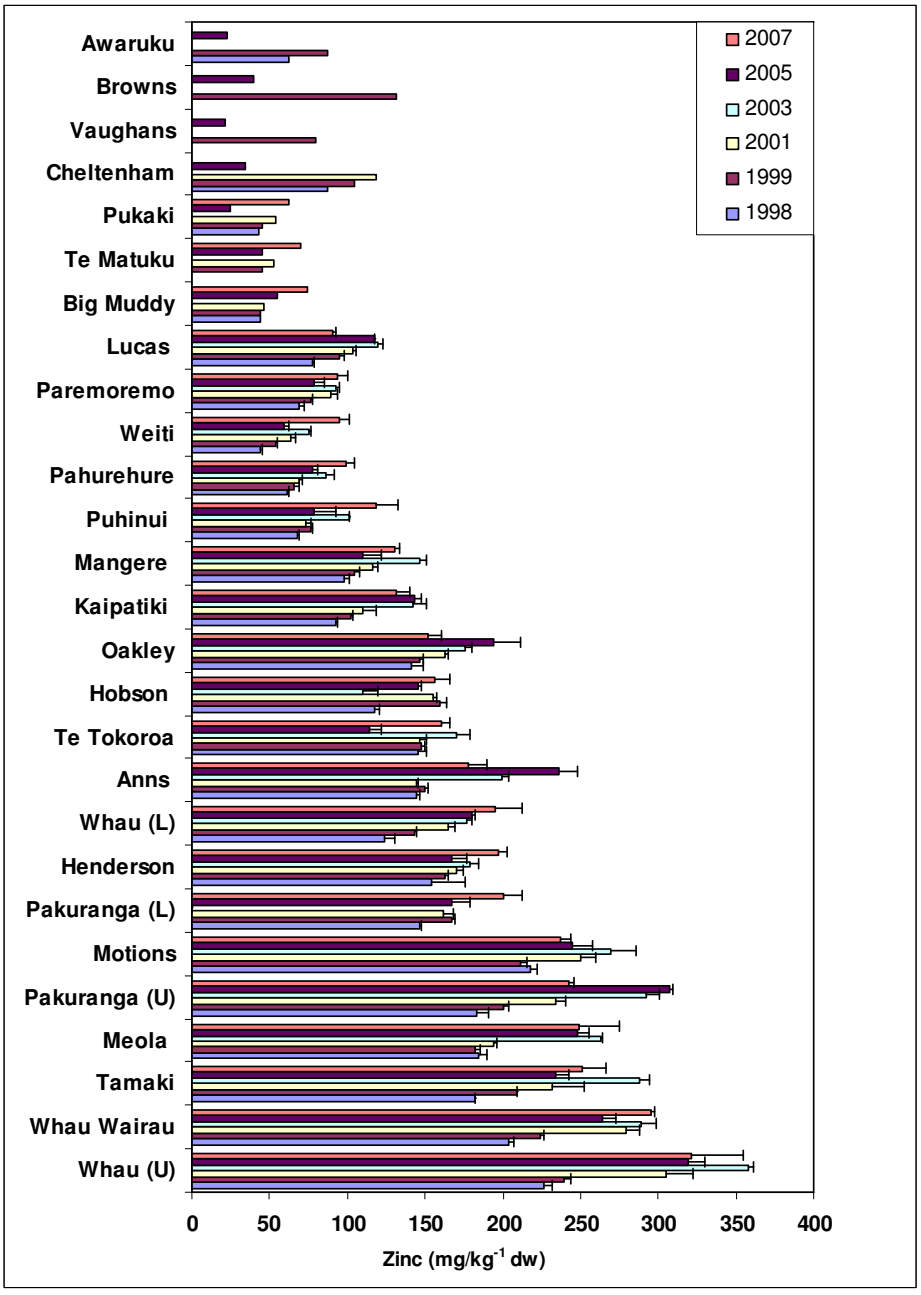
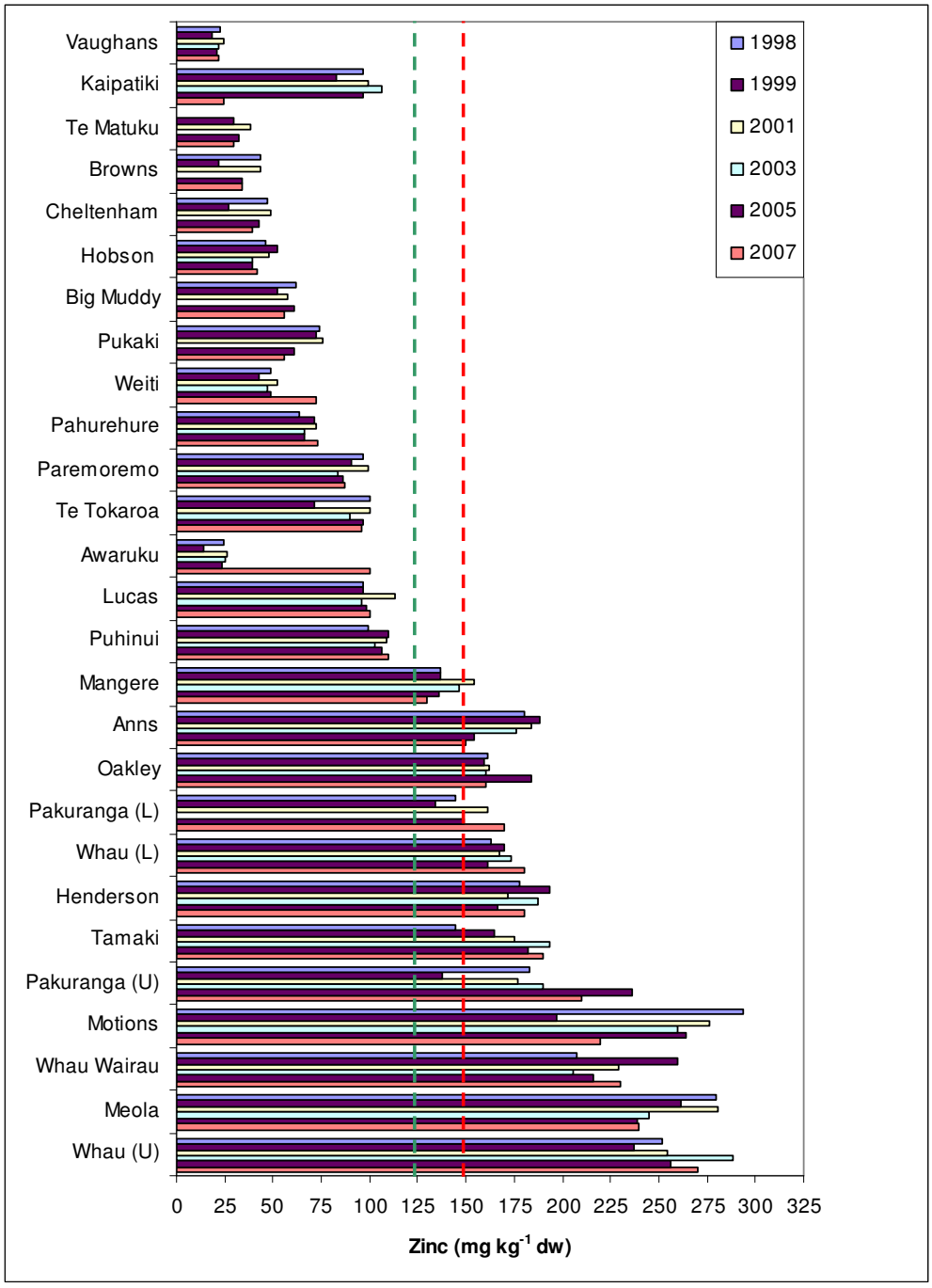


Figure 3.

Zinc concentrations (mg kg dry wt) in total sediment (<500 µm) digested with hot concentrated acid in samples from 1998, 1999, 2001, 2003, 2005 and 2007



ERC Green = <124 mg kg dry wt

ERC Red = >150 mg kg dry wt

Figure 4.
Copper concentrations (mg kg dry wt) in the silt fractions (<63 μm) extracted with cold 2M HCl of samples from 1998, 1999, 2001, 2003, 2005 and 2007. Values are means ± standard error.

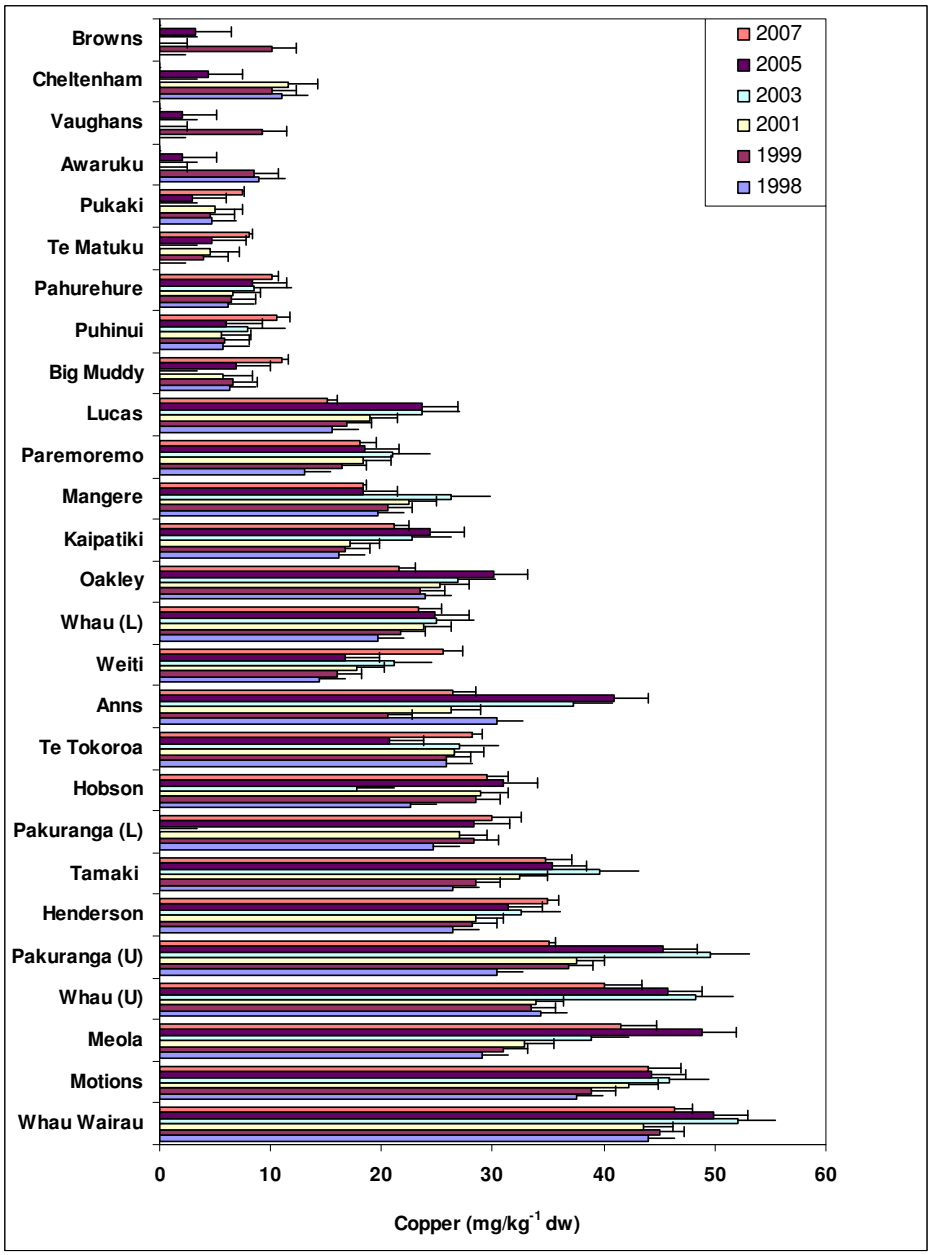
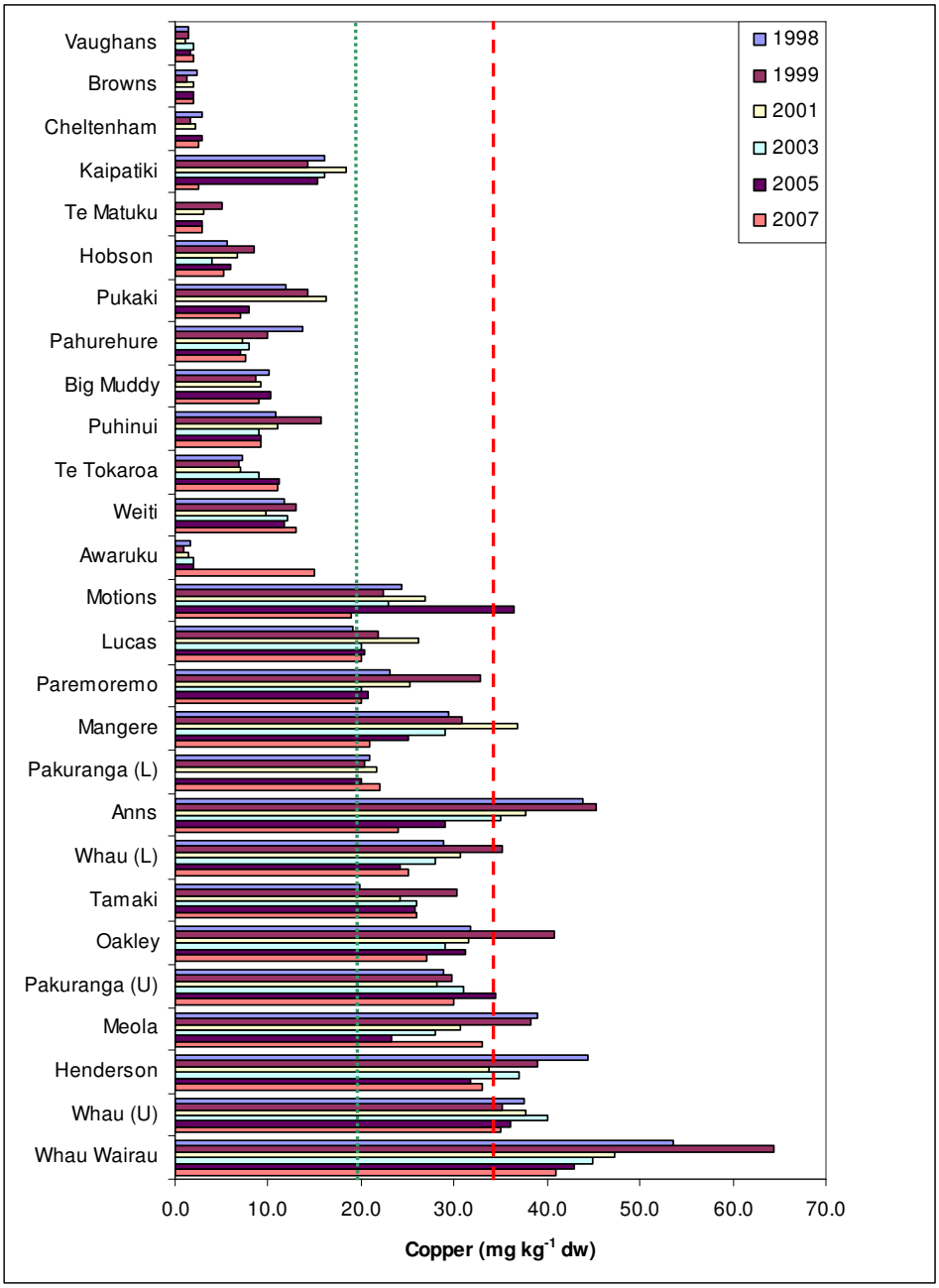


Figure 5.
Copper concentrations (mg kg dry wt) in total sediment (<500 μm) digested with hot concentrated acid in samples from 1998, 1999, 2001, 2003, 2005 and 2007 values.



ERC Green = <19 mg kg dry wt

ERC Red = >34 mg kg dry wt

Figure 6.

Lead concentrations (mg kg dry wt) in the silt fractions (<63 μm) extracted with cold 2M HCl of samples from 1998, 1999, 2001, 2003, 2005 and 2007. Values are means ± standard error.

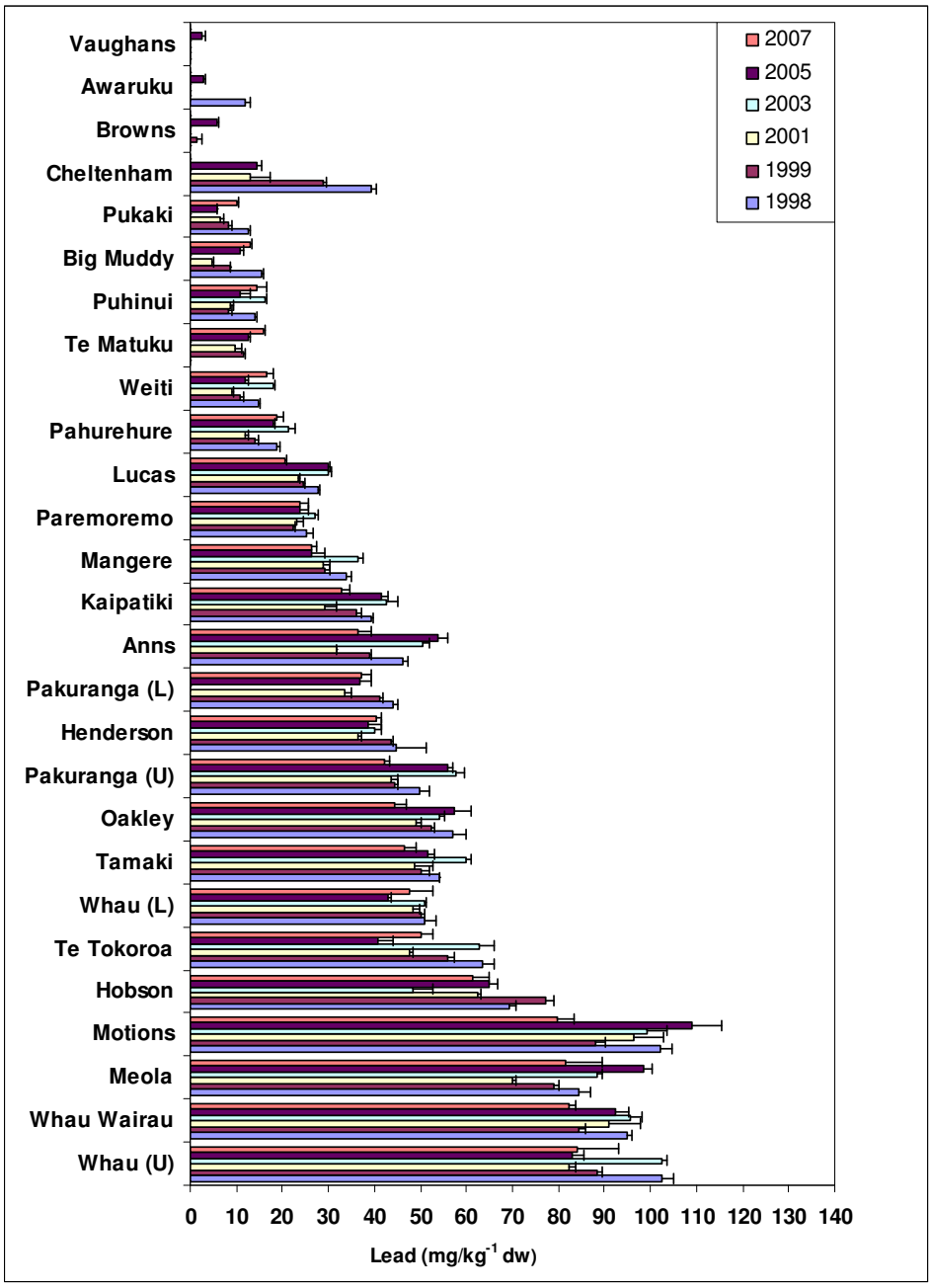
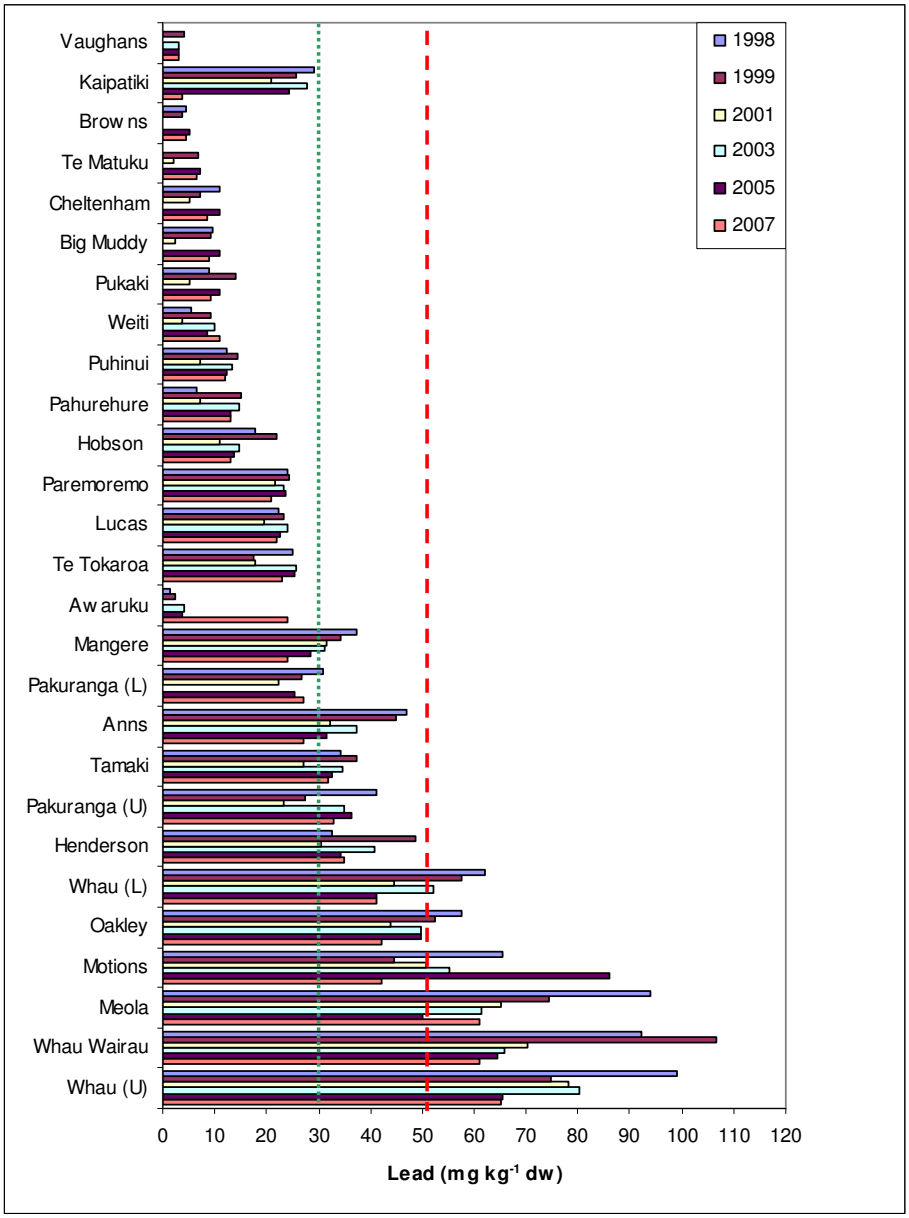


Figure 7.

Lead concentrations (mg kg^{-1} dry wt) in total sediment (<500 µm) digested with hot concentrated acid in samples from 1998, 1999, 2001, 2003, 2005 and 2007 values.



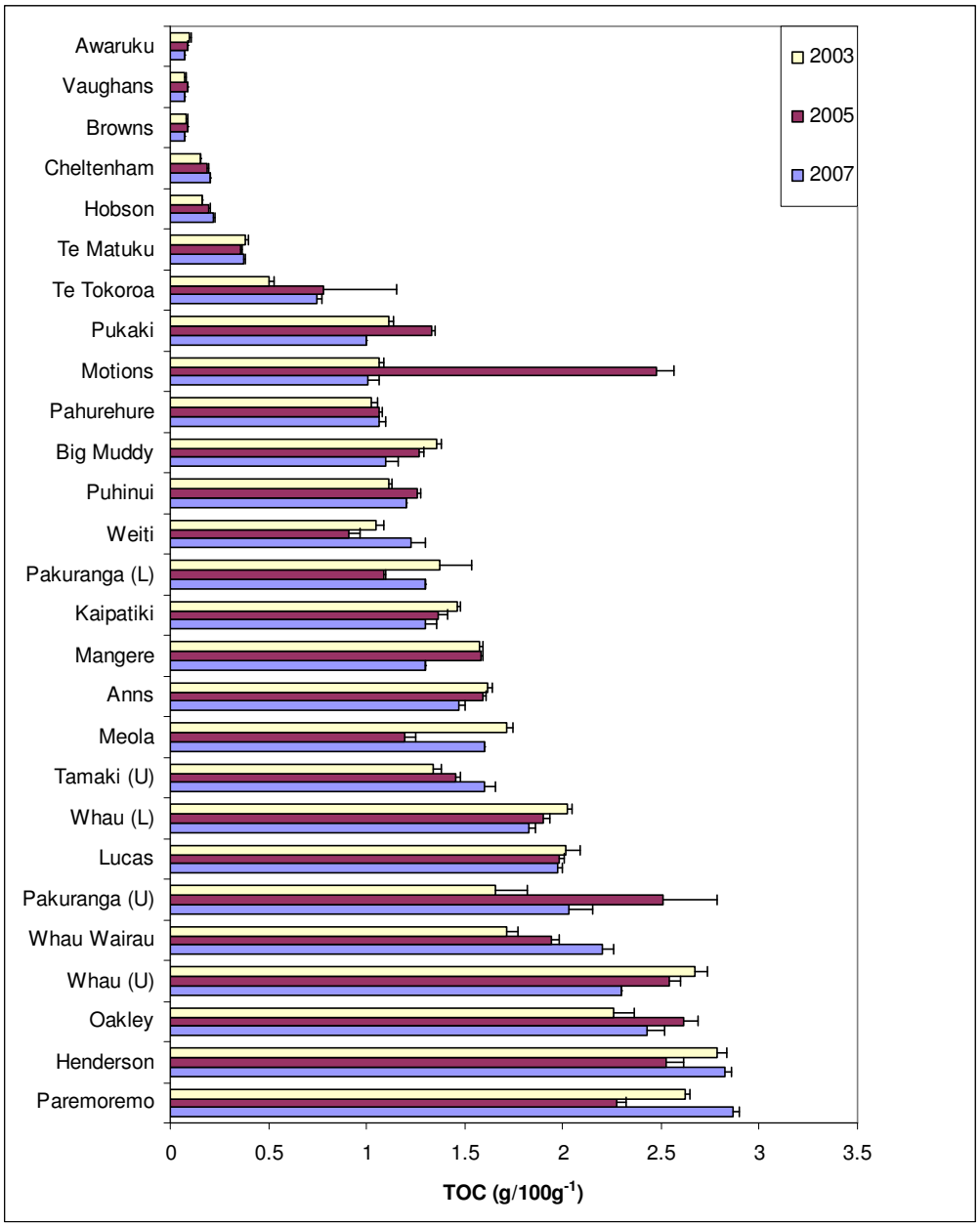
ERC Green = <30 mg kg^{-1} dry wt

ERC Red = >50 mg kg^{-1} dry wt

4.2 Total organic carbon

Figure 8 shows the results obtained for TOC in 2003, 2005 and 2007. Most sites had similar concentrations in each of these three surveys. There are a few exceptions, namely, Motions and Pakuranga (U) which had elevated concentrations in the 2005 survey. All TOC results are shown in Appendix 3.

Figure 8.
Total Organic Carbon in total sediment (<500 m) in 2003, 2005 and 2007 samples. Values are means ± standard error of means.



4.3 Organochlorine Pesticides

Organochlorine pesticides were analysed at a screening level detection limit (approximately 0.010 mg kg^{-1}) in all sediment samples. DDT and metabolites were the only compounds detected, at a maximum concentration of 0.012 mg kg^{-1}.

Nine samples were submitted for further analyses of 24 compounds, using a lower detection limit. Fifteen of the OC pesticides were detected in at least one sample: alpha-BHC, gamma-BHC (lindane), HCB, aldrin, dieldrin, alpha-endosulfan, endosulfan sulfate, alpha-chlordane and gamma-chlordane and DDT metabolites (o,p'-DDD, p,p'-DDD, o,p'-DDE, p,p'-DDE, o,p'-DDT, p,p'-DDT). Beta-BHC, delta-BHC, heptachlor, heptachlor epoxide, endrin and metabolites (endrin aldehyde, endrin ketone), methoxychlor and beta-endosulfan were not detected in any sample.

DDT and its metabolites were the most frequently detected compounds and were detected in all samples. Six other compounds were detected in two or more samples (Figure 9). Of the DDT compounds, p,p'-DDE was measured at highest concentrations, followed by p,p'-DDD and p,p'-DDT. Dieldrin and HCB were also detected in 8 out of 9 samples. The greatest number of OC pesticides were detected at the Anns Creek site (15), followed by the Upper Whau Creek (13) and Tamaki Estuary (11).

Figures 10 and 11 show the concentrations of total DDT and dieldrin normalised to Total Organic Carbon and compared to the 2003 results and the appropriate ERC red guideline value. At six of the 9 sites, total DDT concentrations were lower in 2007 than in 2003. Dieldrin concentrations were lower at all sites in 2007 than in 2003. In 2007, no samples exceeded the ERC red guideline value for either total DDT or dieldrin.

Organochlorine results are presented in full in Appendix 4.

Figure 9.

Concentrations of organochlorine pesticide found in two or more of the 2007 sediment (<500 µm) samples.

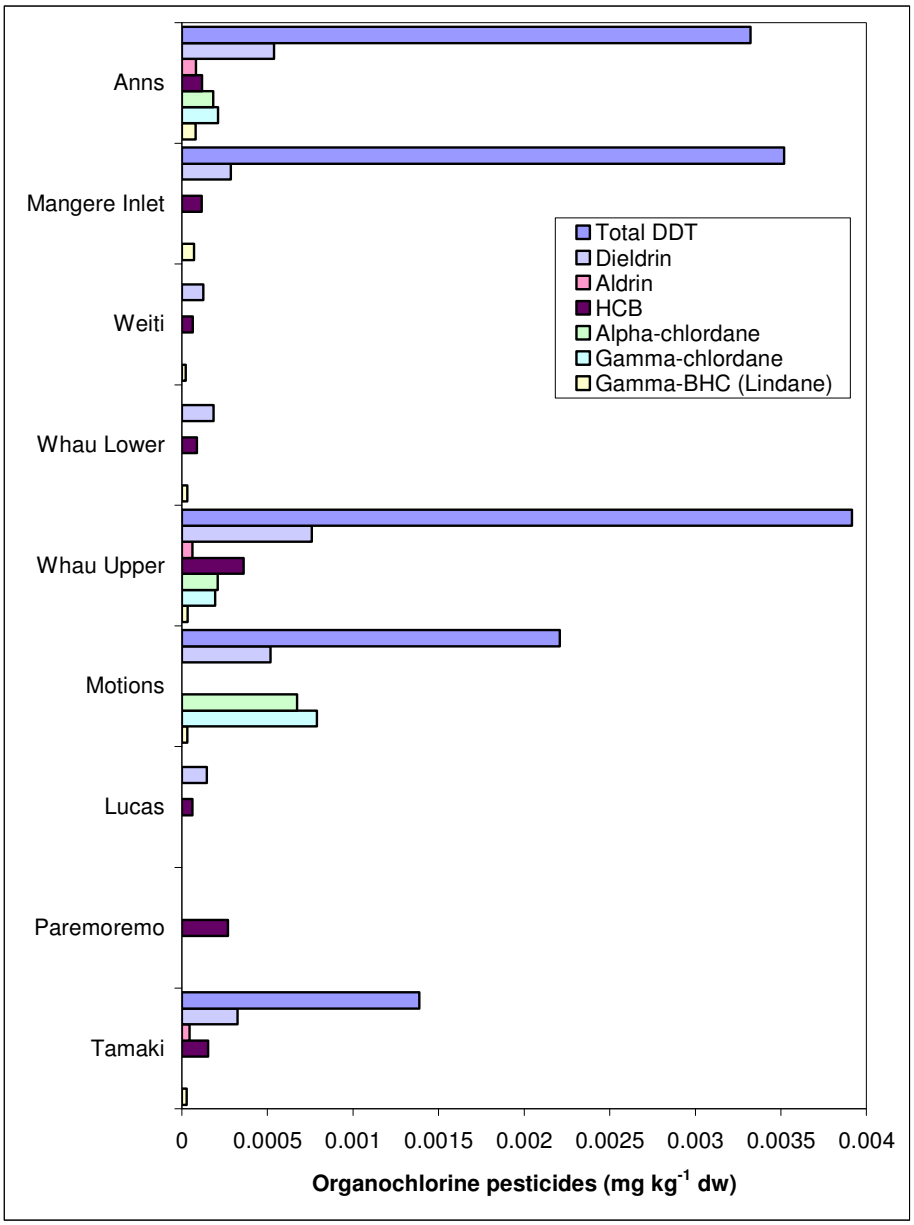
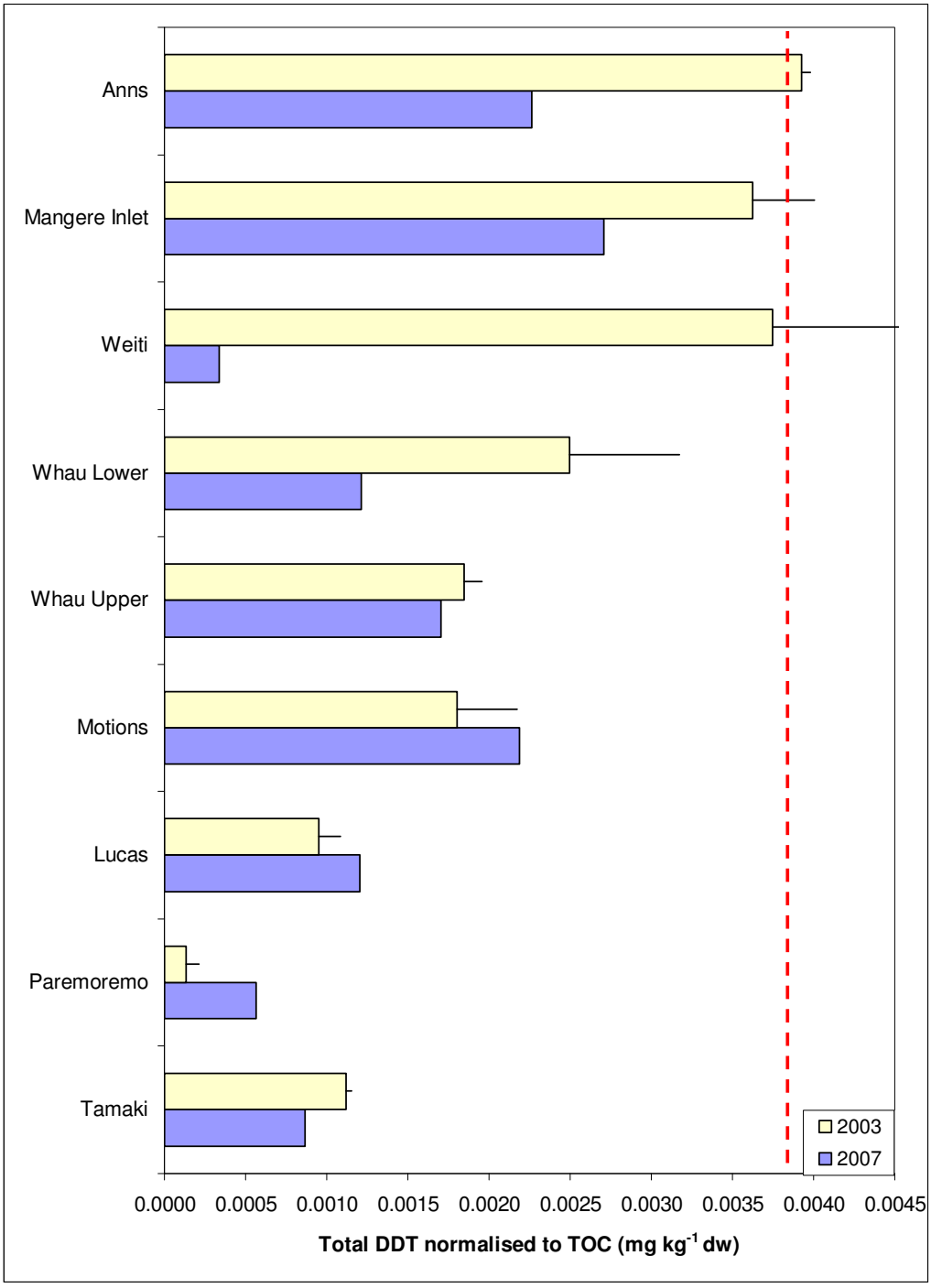


Figure 10.

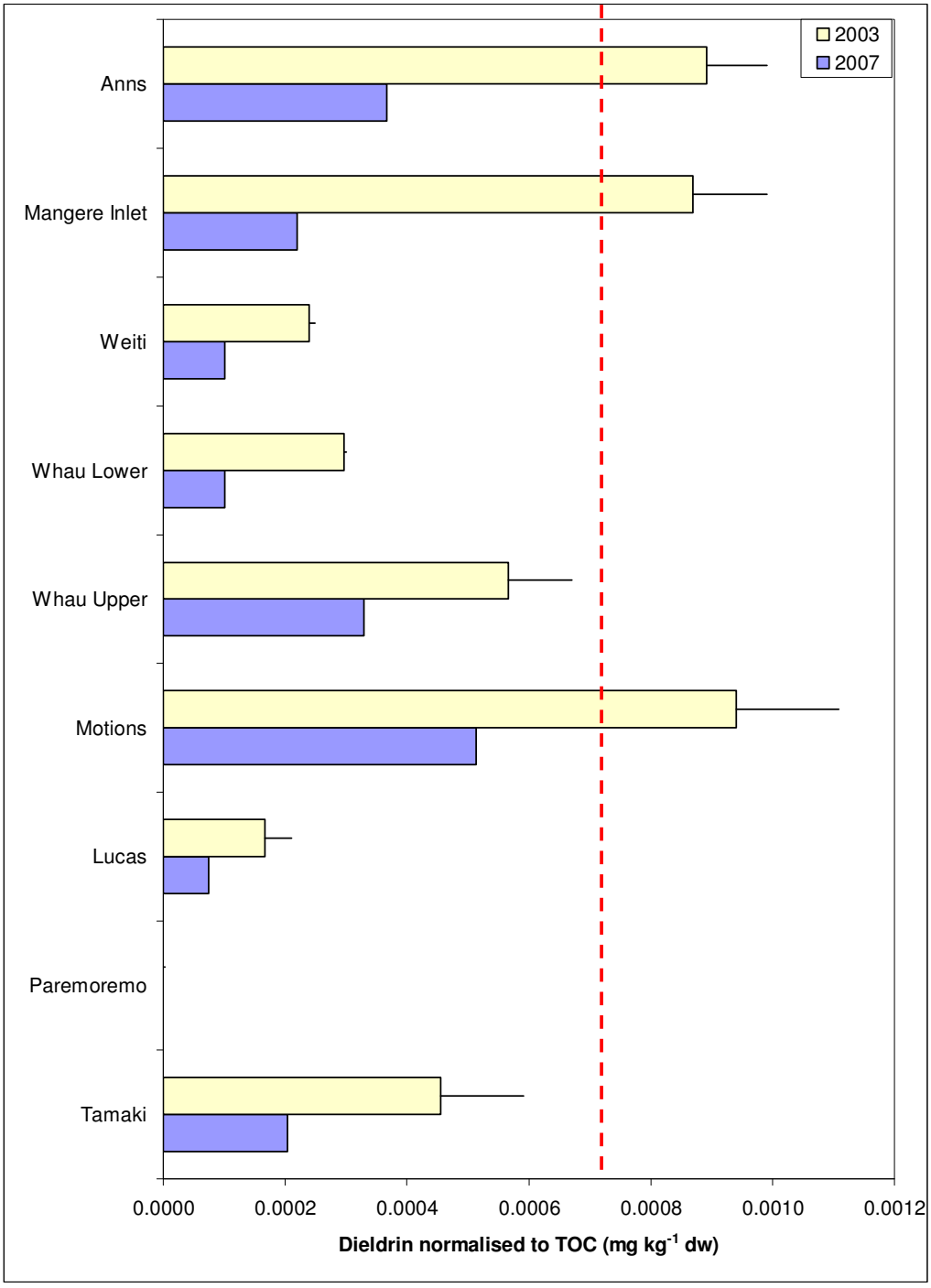
Total DDT (normalised to TOC) in total sediment (<500 μm) in 2007 and 2003 samples.



– – – ERC Red = >0.0039 mg kg dry wt

Figure 11.

Dieldrin (normalised to TOC) in total sediment (<500 µm) in 2007 and 2003 samples.



– – – ERC Red = >0.00072 mg kg⁻ dry wt

4.4 Particle size distributions

Particles size distributions in the sediment samples (<500 µm fraction) in terms of surface area and volume are presented in Tables 1 - 4. Sediment particle sizes were analysed initially in the 0-300 µm size range. For samples with a proportion of their particle size greater than 300µm, these were re-analysed for area and volume between 2-600 µm. Surface area is relevant to the surface adsorption capacity of the sediments for chemical contaminants whereas volume is proportional to the mass and weight of the sediment fractions. Particle size results for individual samples are presented in Appendix 5.

Table 1.

Percentage contributions to surface area based on Udden-Wentworth particle size fractions (in range 0 – 300 μm). Values (%) are means. Sites listed in order of decreasing fine sand contribution.

Low 0-300	clay	very fine silt	fine silt	medium silt	coarse silt	very fine sand	fine sand	medium sand
Site	0μm-	3.9-	7.8-	15.6-	31.3-	62.5-	125-	250-300
Browns Bay	1	1	1	0	2	18	71	5
Vaughan	1	1	1	1	3	25	66	3
Awaruku	2	1	1	1	3	29	60	3
Te Matuku	4	1	1	1	6	30	55	1
Te Tokaroa	8	3	3	2	7	33	43	1
Cheltenham	2	1	1	1	6	50	37	1
Hobson Bay	3	1	1	1	10	46	37	1
Motions	6	2	2	3	10	40	36	0
Pahurehure	19	6	6	6	7	26	29	0
Tamaki	20	7	6	4	10	26	27	0
Meola	18	7	6	5	8	29	27	0
Kaipatiki	19	5	5	6	12	27	25	0
Weiti	19	7	7	6	11	28	21	0
Pakuranga (U)	28	8	7	6	10	20	21	0
Pakuranga (L)	18	5	4	4	13	36	20	0
Whau (U)	25	9	6	5	10	26	18	0
Lucas	14	6	6	7	20	34	14	0
Whau Wairau	37	10	9	8	11	16	9	0
Big Muddy	30	10	9	8	14	21	8	0
Henderson	33	11	9	7	11	22	7	0
Puhinui	32	11	11	12	17	11	6	0
Whau (L)	40	14	11	8	9	14	4	0
Pukaki	33	12	12	13	20	9	1	0
Anns	28	11	12	12	23	13	1	0
Oakley	31	11	10	12	18	18	1	0
Paremoremo	47	15	13	10	10	5	0	0
Mangere Inlet	32	19	16	16	15	2	0	0

Table 2.

Percentage contributions to surface area based on Udden-Wentworth particle size fractions (in range 2 – 600 μm). Re-analysed samples for inclusion of particle size greater than 300μm. Values (%) are means. Sites listed in order of decreasing fine sand contribution.

Medium 0-600	clay	very fine silt	fine silt	medium silt	coarse silt	very fine sand	fine sand	medium sand	coarse sand
Site	2μm-	3.9-	7.8-	15.6-	31.3-	62.5-	125-	250-500	500-600
Vaughan	0	1	1	1	2	21	67	7	0
Browns Bay	0	1	1	1	2	17	65	14	0
Awaruku	0	1	1	1	3	27	59	9	0
Te Matuku	0	1	2	2	6	29	55	4	0
Te Tokaroa	1	2	3	4	8	35	43	3	0
Cheltenham	0	1	1	1	6	45	42	3	0
Pahurehure	2	6	10	7	9	28	37	1	0
Kaipatiki	2	5	7	8	11	27	34	5	0
Meola	3	7	9	7	10	29	32	2	0
Anns	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Whau (U)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Henderson	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Hobson Bay	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Motions	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Lucas	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Mangere Inlet	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pakuranga (U)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Big Muddy	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Tamaki	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Oakley	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Puhinui	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pukaki	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Weiti	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Whau (L)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pakuranga (L)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Paremoremo	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Whau Wairau	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

n/a = Sample not analysed for particle size 2-600 μm as no proportion of their particle size greater than 300 μm.

Table 3.

Percentage contributions to sediment volume based on Udden-Wentworth particle size fractions (in range 0 – 300 μm). Values (%) are means. Sites listed in order of decreasing fine sand contribution.

Low 0-300	clay	fine very silt	silt fine	silt medium	silt coarse	fine very sand	sand fine	sand medium
Site	0μm-	3.9-	7.8-	15.6-	31.3-	62.5-	125-	250-300
Browns Bay	0	0	0	0	1	12	79	9
Vaughan	0	0	0	0	1	17	77	5
Te Matuku	0	0	0	0	2	23	72	3
Awaruku	0	0	0	0	1	21	71	6
Te Tokaroa	0	0	0	0	3	30	64	2
Pahurehure	0	0	1	2	5	33	59	0
Tamaki	1	1	1	1	7	34	56	0
Pakuranga (U)	1	1	1	2	8	31	56	0
Motions	0	0	0	1	5	37	56	1
Meola	0	0	1	1	5	36	55	0
Kaipatiki	0	0	1	2	8	33	54	2
Hobson Bay	0	0	0	0	5	40	54	1
Cheltenham	0	0	0	0	3	43	53	1
Weiti	0	1	1	2	8	39	49	0
Whau (U)	1	1	1	2	9	40	46	0
Pakuranga (L)	0	0	1	1	9	45	43	0
Whau Wairau	2	1	3	5	15	38	37	0
Lucas	0	0	1	3	15	46	35	0
Big Muddy	1	1	2	4	17	45	29	0
Puhinui	2	2	4	8	26	30	28	0
Henderson	1	1	3	4	14	50	26	0
Whau (L)	3	3	5	6	15	45	24	0
Pukaki	2	3	6	12	38	30	8	0
Anns	2	3	6	12	40	32	4	0
Oakley	2	2	4	9	29	52	3	0
Paremoremo	6	6	10	16	33	26	3	0
Mangere Inlet	4	7	12	23	44	11	0	0

Table 4.

Percentage contributions to sediment volume based on Udden-Wentworth particle size fractions (in range 2 – 600 μm). Re-analysed samples for inclusion of particle size greater than 300μm. Values (%) are means. Sites listed in order of decreasing fine sand contribution.

Medium 0-600	clay	very fine silt	fine silt	medium silt	coarse silt	very fine sand	fine sand	medium sand	coarse sand
Site	2μm-	3.9-	7.8-	15.6-	31.3-	62.5-	125-	250-500	500-600
Vaughan	0	0	0	0	1	13	72	14	0
Te Matuku	0	0	0	0	2	20	68	9	0
Browns Bay	0	0	0	0	1	10	66	24	0
Awaruku	0	0	0	0	1	17	64	17	0
Pahurehure	0	0	1	2	5	28	61	2	0
Te Tokaroa	0	0	0	1	3	28	59	7	0
Meola	0	0	1	2	5	29	56	6	0
Cheltenham	0	0	0	0	2	35	56	7	0
Kaipatiki	0	0	1	2	5	24	53	15	0
Anns	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Whau (U)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Henderson	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Hobson Bay	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Motions	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Lucas	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Mangere Inlet	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pakuranga (U)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Big Muddy	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Tamaki	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Oakley	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Puhinui	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pukaki	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Weiti	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Whau (L)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pakuranga (L)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Paremoremo	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Whau Wairau	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

n/a = Sample not analysed for particle size 2-600 μm as no proportion of their particle size greater than 300 μm.

4.5 Trends over time for metal concentrations

Trends in metal concentrations (<63 µm fraction) at the 27 sites in the programme over the period 1998 to 2005 have been described previously (McHugh, 2006; Timperley and Mathieson, 2002; Reed & Webster, 2004). These trends have been revised to include the 2007 results and are presented in Figures 12 - 14 for zinc, copper and lead, respectively. The metal concentrations in each of the three replicates analysed in each year are plotted. The fourth and fifth replicates collected from the Puhinui site were also analysed to investigate scatter in the results from the original three samples and these are plotted in red.

Zinc

In 2007, zinc concentrations in the <63 µm sediment fraction at three sites were lower than previously measured in 2005. These sites were Oakley, Lucas and Pakuranga (U). Eight sites, including Anns, Hobson, Mangere Inlet, Paremoremo, Motions, Meola, Tamaki and Kaipatiki measured similar concentrations in 2007 compared to those measured in 2005. Despite these lower or similar concentrations than those measured in 2005, the trend since 1998 is one of increasing zinc concentrations at each of these sites. This is consistent with the direction of trend at all other sites, excluding Awaruku, Browns Bay, Vaughans and Cheltenham, for which the trend between 1998 and 2005 was of reduced zinc concentrations. Zinc concentrations in the <63 µm sediment fraction at these four sites was not measured in 2007 due to the small quanitity of fines in the samples.

Copper

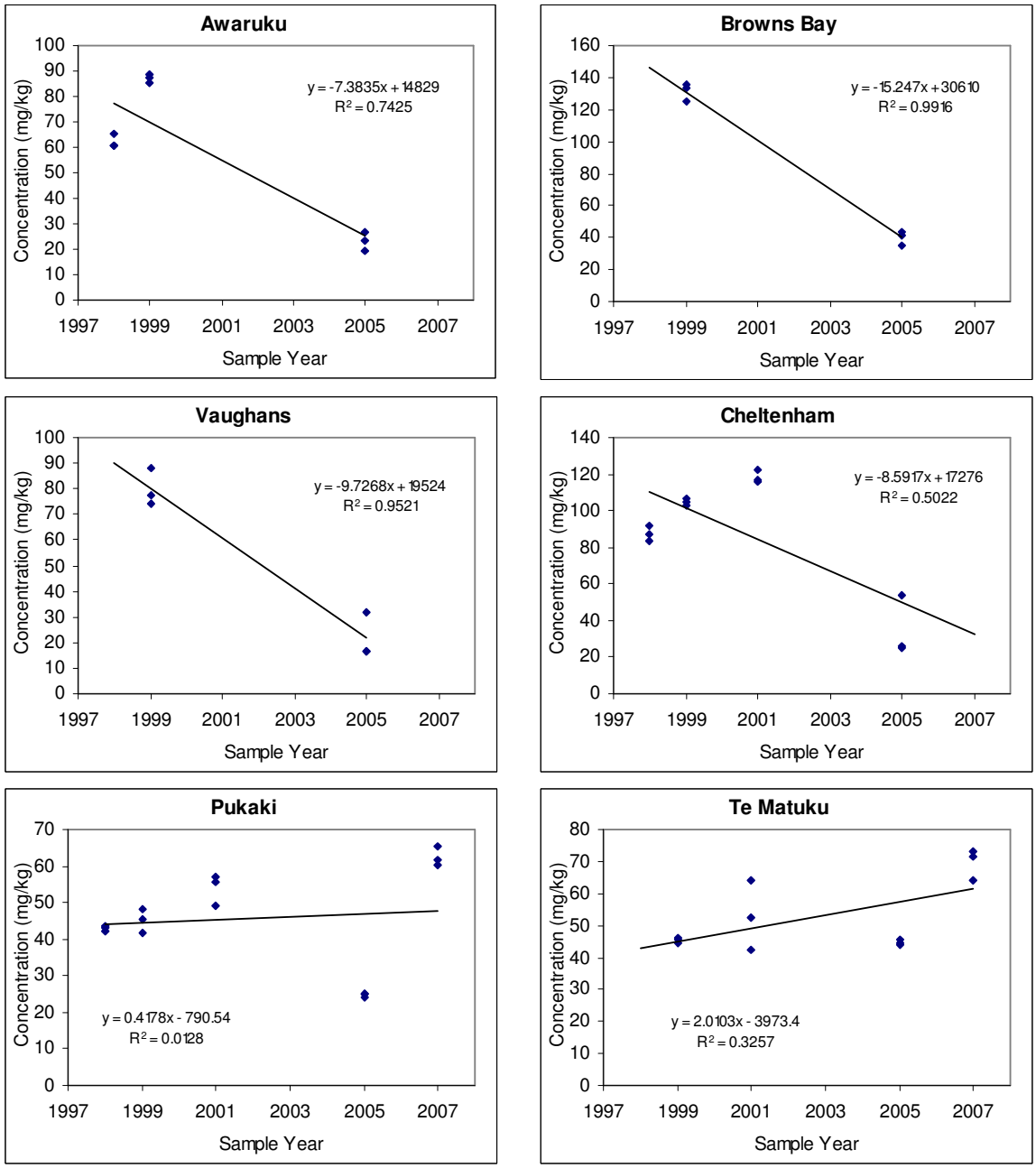
Similar to zinc, the overall trend in copper in the <63 µm fraction is one of increasing concentrations since 1998. Nine sites showed increasing concentrations of copper compared to the 2005 results: Whau (U), Weiti, Puhinui, Pahurehure, Henderson, Big Muddy, Te Matuku, Te Tokaroa and Pukaki. At Pukaki and Te Matuku copper concentrations showed a marked increase on the 2005 results. Seven sites showed decreasing concentration of copper compared to 2005: Whau (L), Anns, Oakley, Lucas, Kaipatiki, Meola and Pakuranga (U). Copper concentrations were similar to 2005 at the remaining seven sites. Copper concentrations in the <63 µm sediment fraction were not measured at the Awaruku, Vaughans, Browns Bay and Cheltenham sites due to the small quanitity of fines in the samples. Similarly to zinc, the trend at these four sites is of a reduction in copper concentrations between 1998 and 2005.

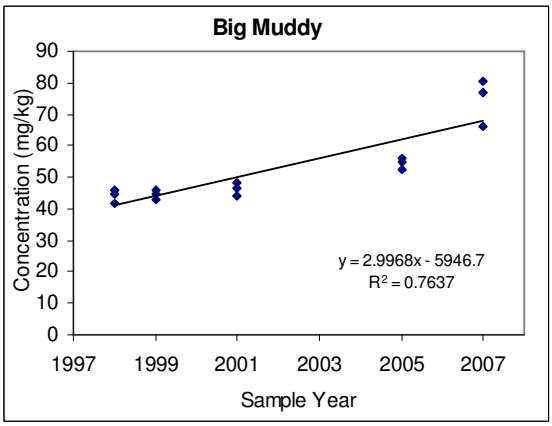
Lead

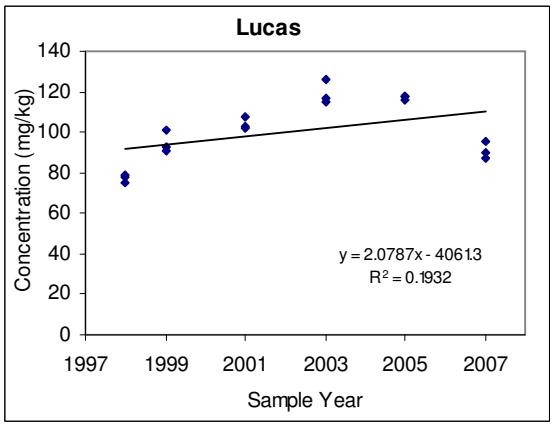
In contrast to zinc and copper, at the majority of sites there has been a trend of reduced lead concentrations in the <63 µm fraction since 1998. The exceptions are Weiti, Big Muddy and Te Matuku (which had higher lead concetrations in 2007 than 2005), and Puhinui, Pahurehure and Meola (even though these sites had lower lead concetrations in 2007 than 2005). As with zinc and copper, lead concentrations in the <63 µm sediment fraction were not measured at the Awaruku, Vaughans, Browns Bay and Cheltenham sites due to the small quanitity of fines in samples from these sites.

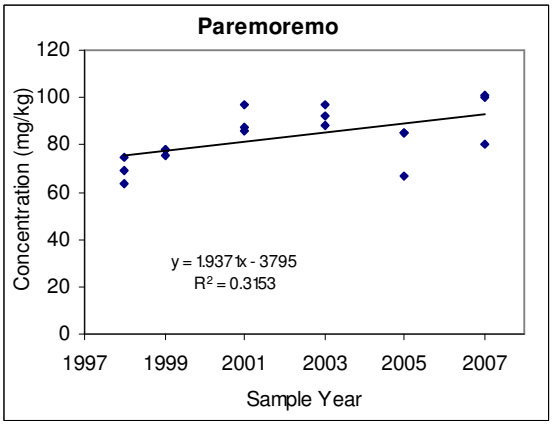
Figure 12

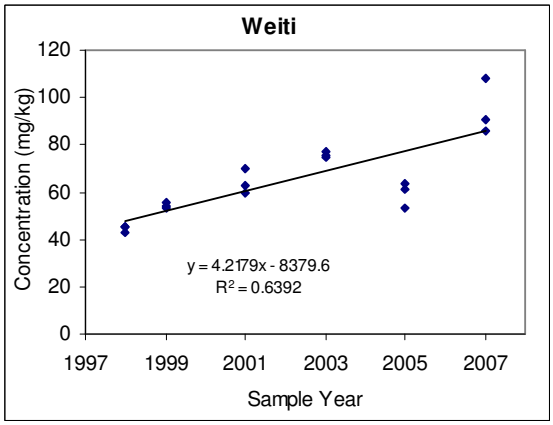
Zinc concentrations (mg kg^{-1}) in the <63 µm sediment fractions at individual sites since monitoring began in 1998. Regression line, equation and R^2 values are displayed for each site.

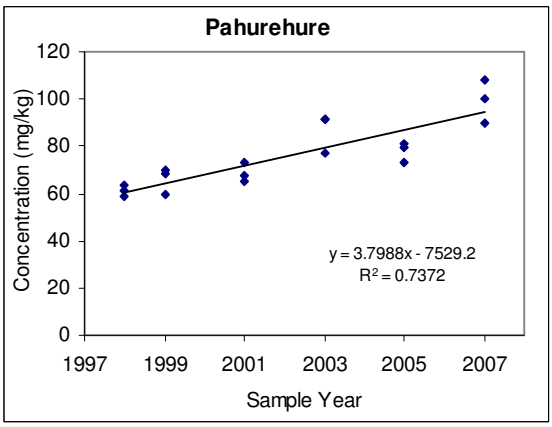


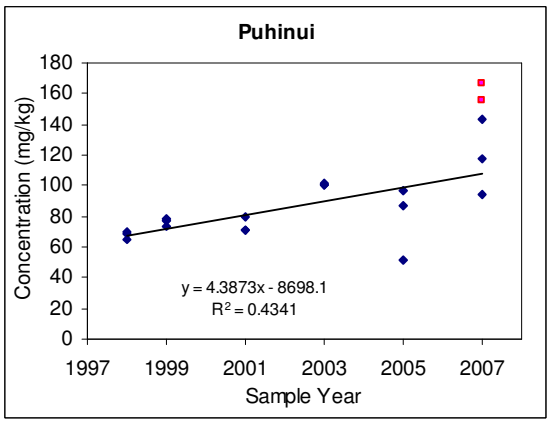

Big Muddy
Concentration (mg/kg)
Sample Year
y = 2.9968x - 5946.7
R² = 0.7637

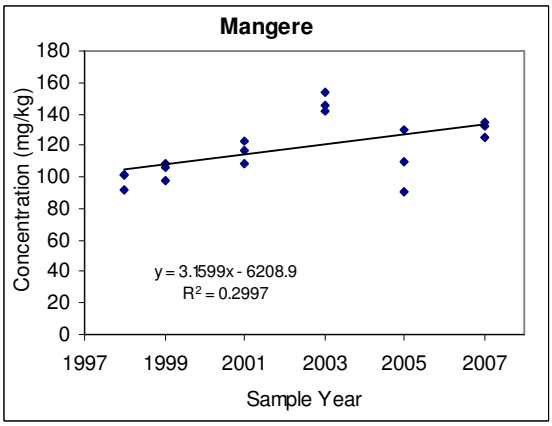

Lucas
Concentration (mg/kg)
Sample Year
y = 2.0787x - 4061.3
R² = 0.1932

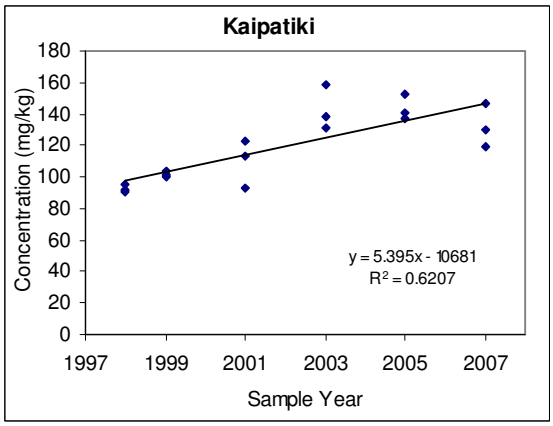

Paremoremo
Concentration (mg/kg)
Sample Year
y = 1.9371x - 3795
R² = 0.3153

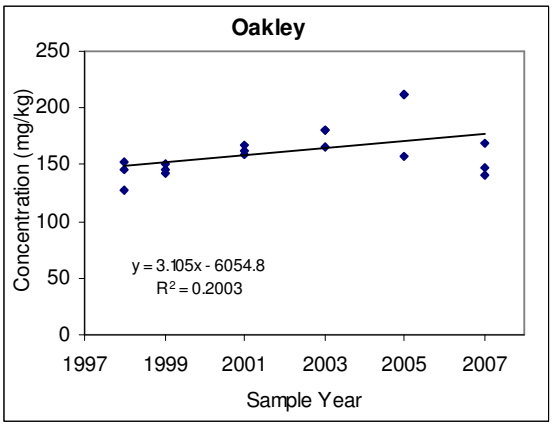

Weiti
Concentration (mg/kg)
Sample Year
y = 4.2179x - 8379.6
R² = 0.6392

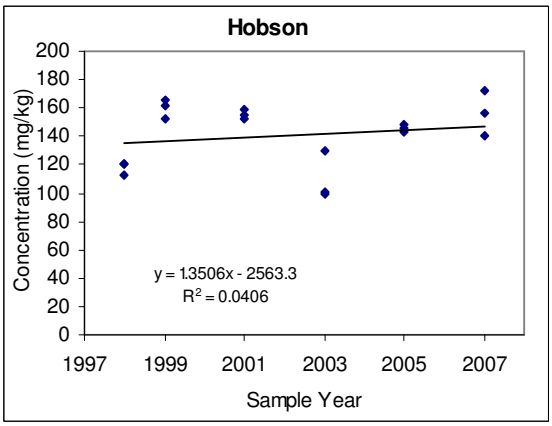

Pahurehure
Concentration (mg/kg)
Sample Year
y = 3.7988x - 7529.2
R² = 0.7372

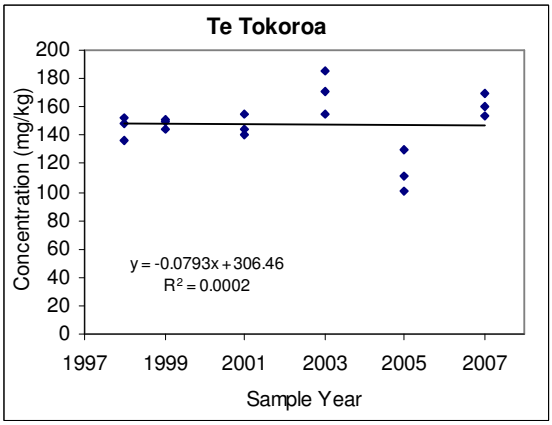

Puhinui
Concentration (mg/kg)
Sample Year
y = 4.3873x - 8698.1
R² = 0.4341

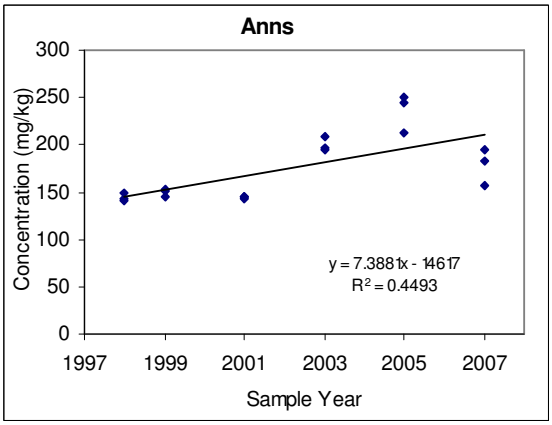

Mangere
Concentration (mg/kg)
Sample Year
y = 3.1599x - 6208.9
R² = 0.2997

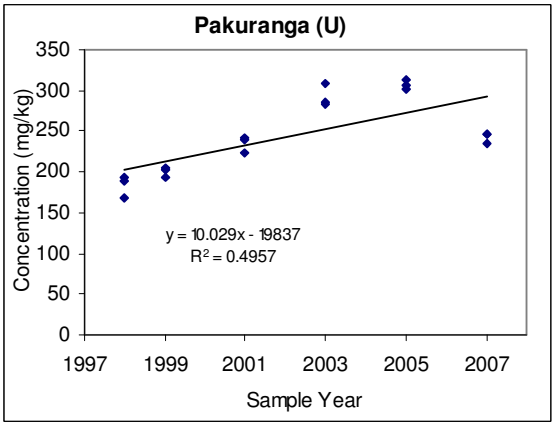

Kaipatiki
Concentration (mg/kg)
Sample Year
y = 5.395x - 10681
R² = 0.6207

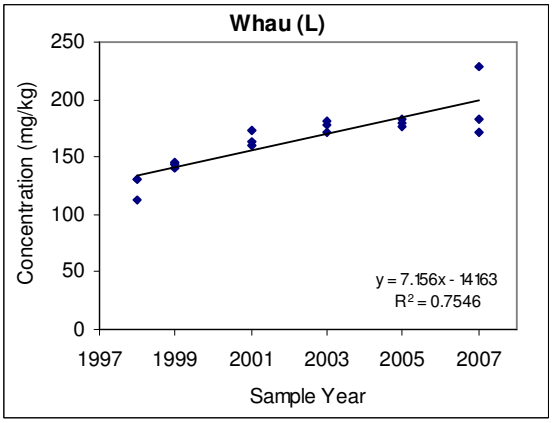

Oakley
Concentration (mg/kg)
Sample Year
y = 3.105x - 6054.8
R² = 0.2003

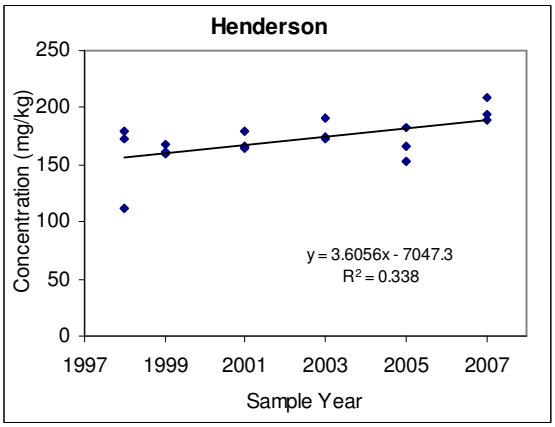

Hobson
Concentration (mg/kg)
Sample Year
y = 1.3506x - 2563.3
R² = 0.0406

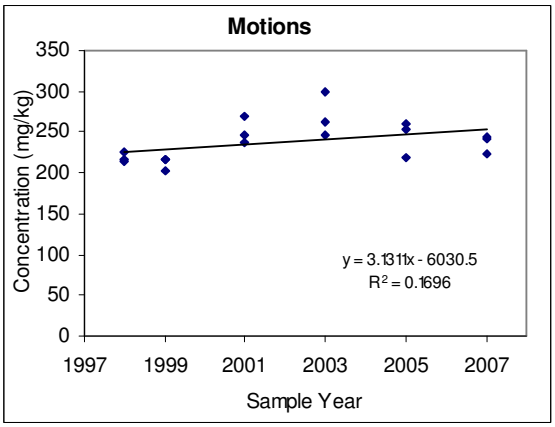

Te Tokoroa
Concentration (mg/kg)
Sample Year
y = -0.0793x + 306.46
R² = 0.0002

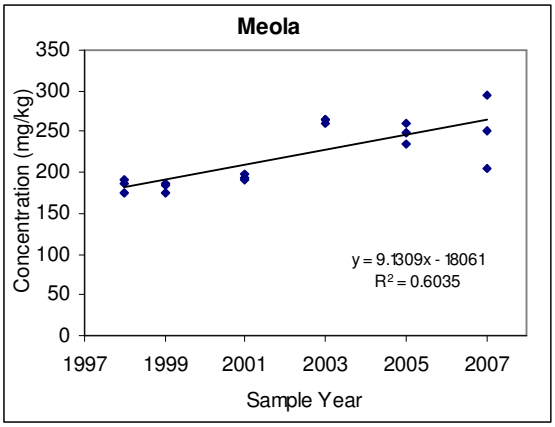

Anns
Concentration (mg/kg)
Sample Year
y = 7.3881x - 14617
R² = 0.4493

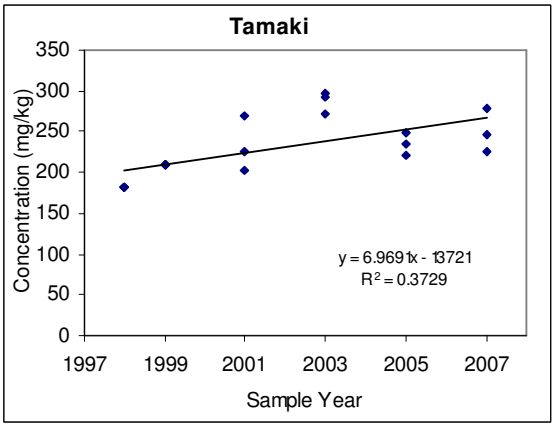

Pakuranga (U)
Concentration (mg/kg)
Sample Year
y = 10.029x - 19837
R² = 0.4957

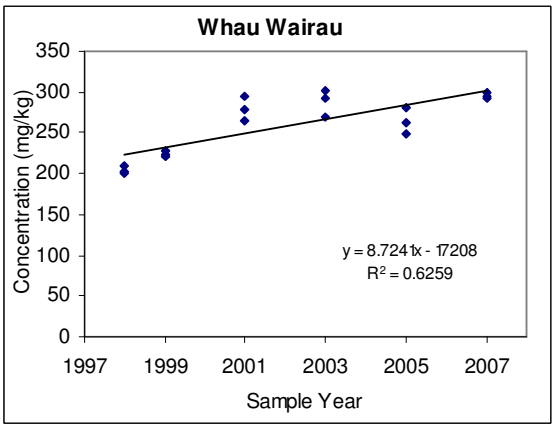

Whau (L)
Concentration (mg/kg)
Sample Year
y = 7.156x - 14163
R² = 0.7546


Henderson
Concentration (mg/kg)
Sample Year
y = 3.6056x - 7047.3
R² = 0.338


Motions
Concentration (mg/kg)
Sample Year
y = 3.1311x - 6030.5
R² = 0.1696


Meola
Concentration (mg/kg)
Sample Year
y = 9.1309x - 18061
R² = 0.6035


Tamaki
Concentration (mg/kg)
Sample Year
y = 6.9691x - 13721
R² = 0.3729


Whau Wairau
Concentration (mg/kg)
Sample Year
y = 8.7241x - 17208
R² = 0.6259

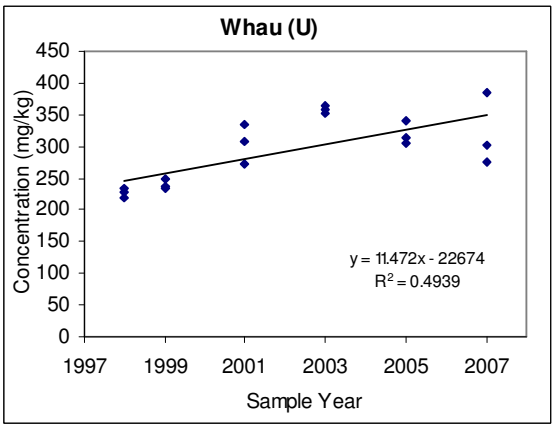
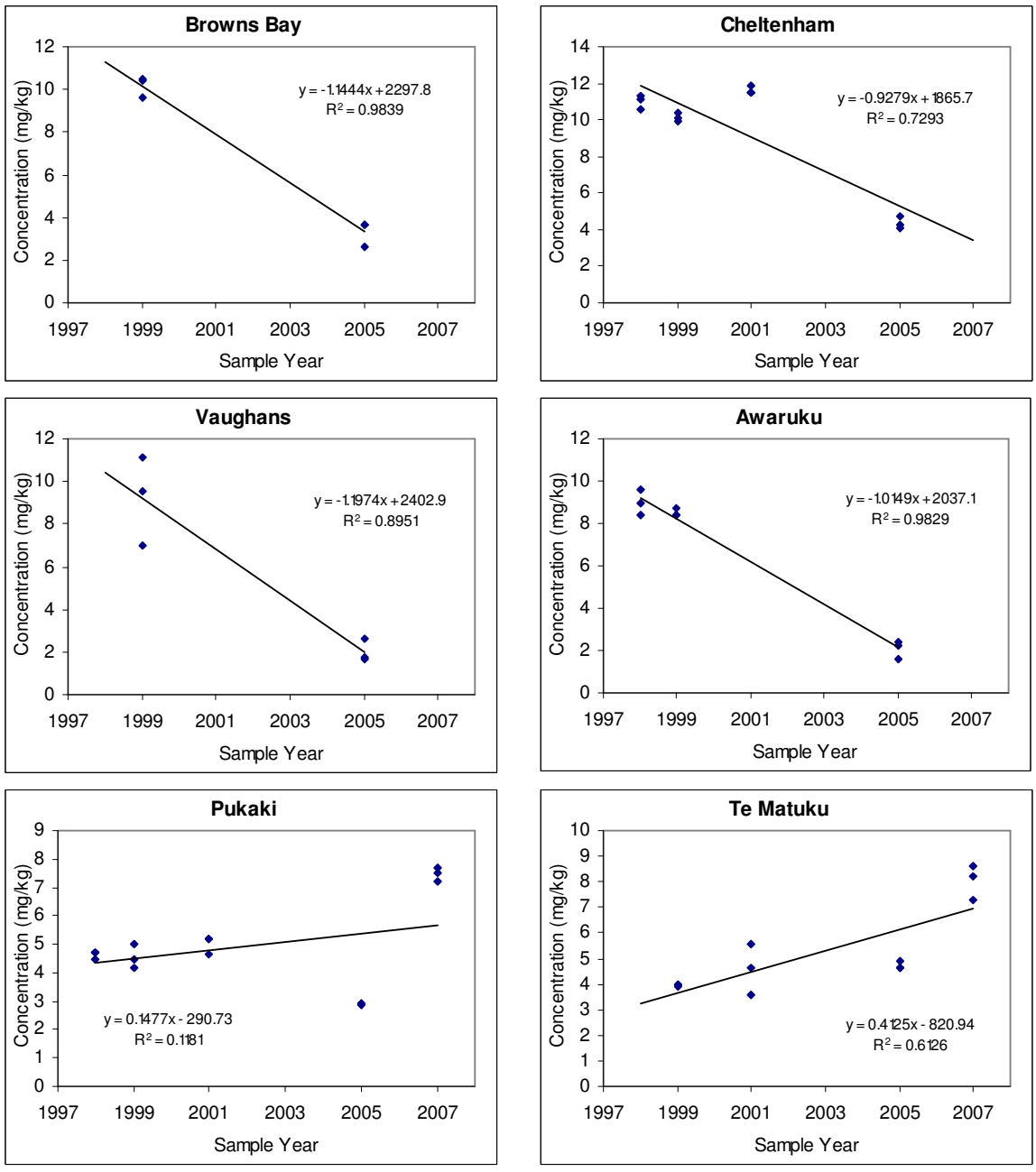
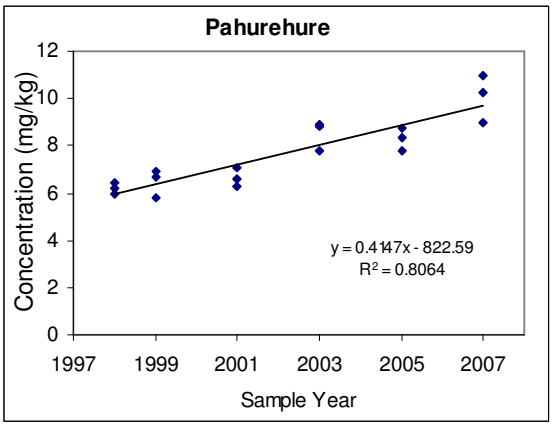
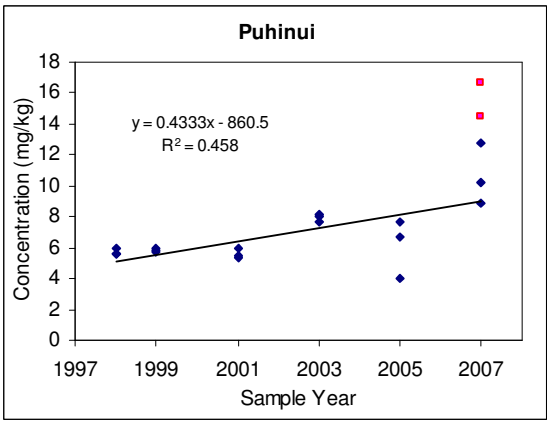

Whau (U)
Concentration (mg/kg)
Sample Year
y = 11.472x - 22674
R² = 0.4939

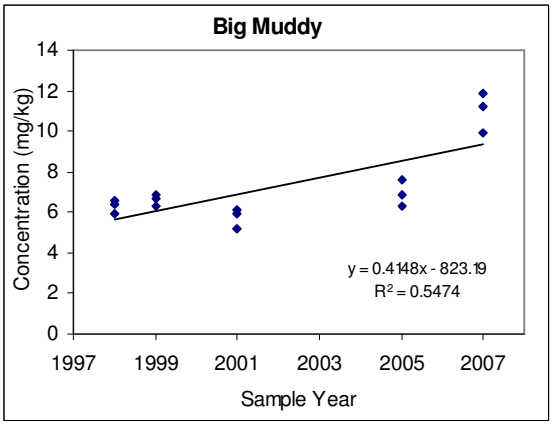
Figure 13

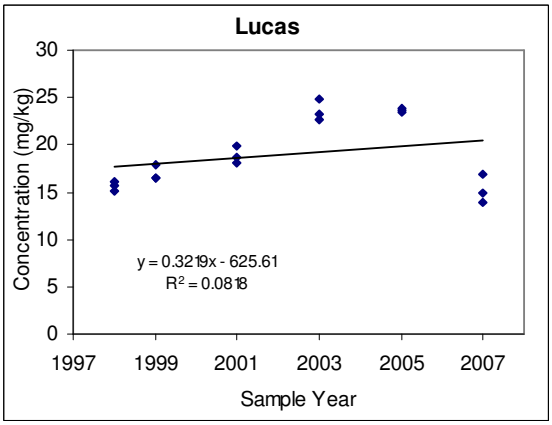
Copper concentrations (mg kg^{-1}) in the <63 µm sediment fractions at individual sites since monitoring began in 1998. Regression line, equation and R^2 values are displayed for each site.

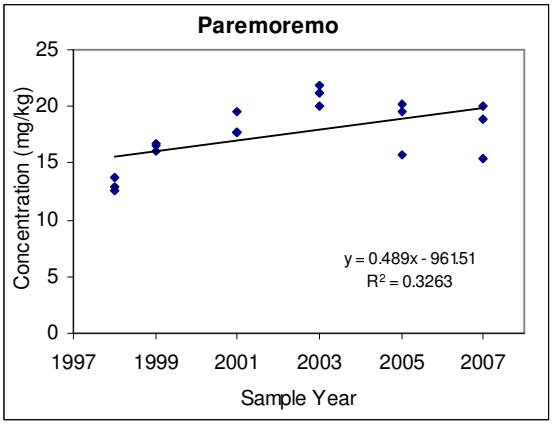


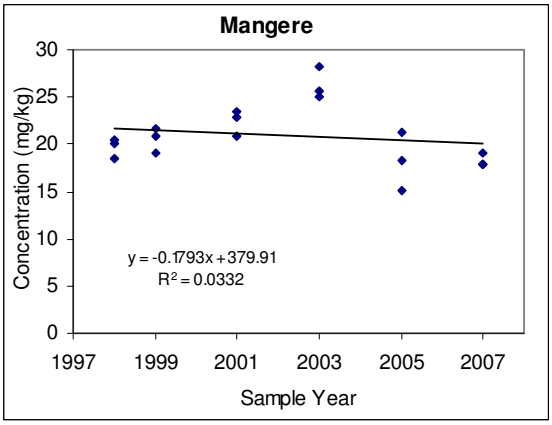

Pahurehure
Concentration (mg/kg)
Sample Year
y = 0.4147x - 822.59
R² = 0.8064

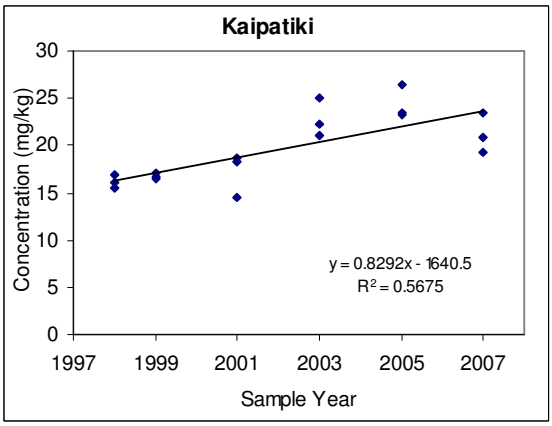

Puhinui
Concentration (mg/kg)
Sample Year
y = 0.4333x - 860.5
R² = 0.458

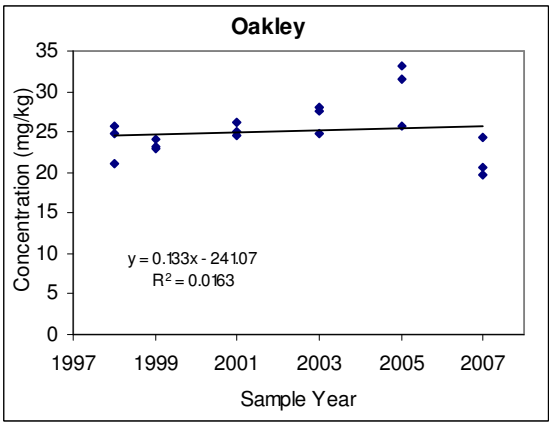

Big Muddy
Concentration (mg/kg)
Sample Year
y = 0.4148x - 823.19
R² = 0.5474

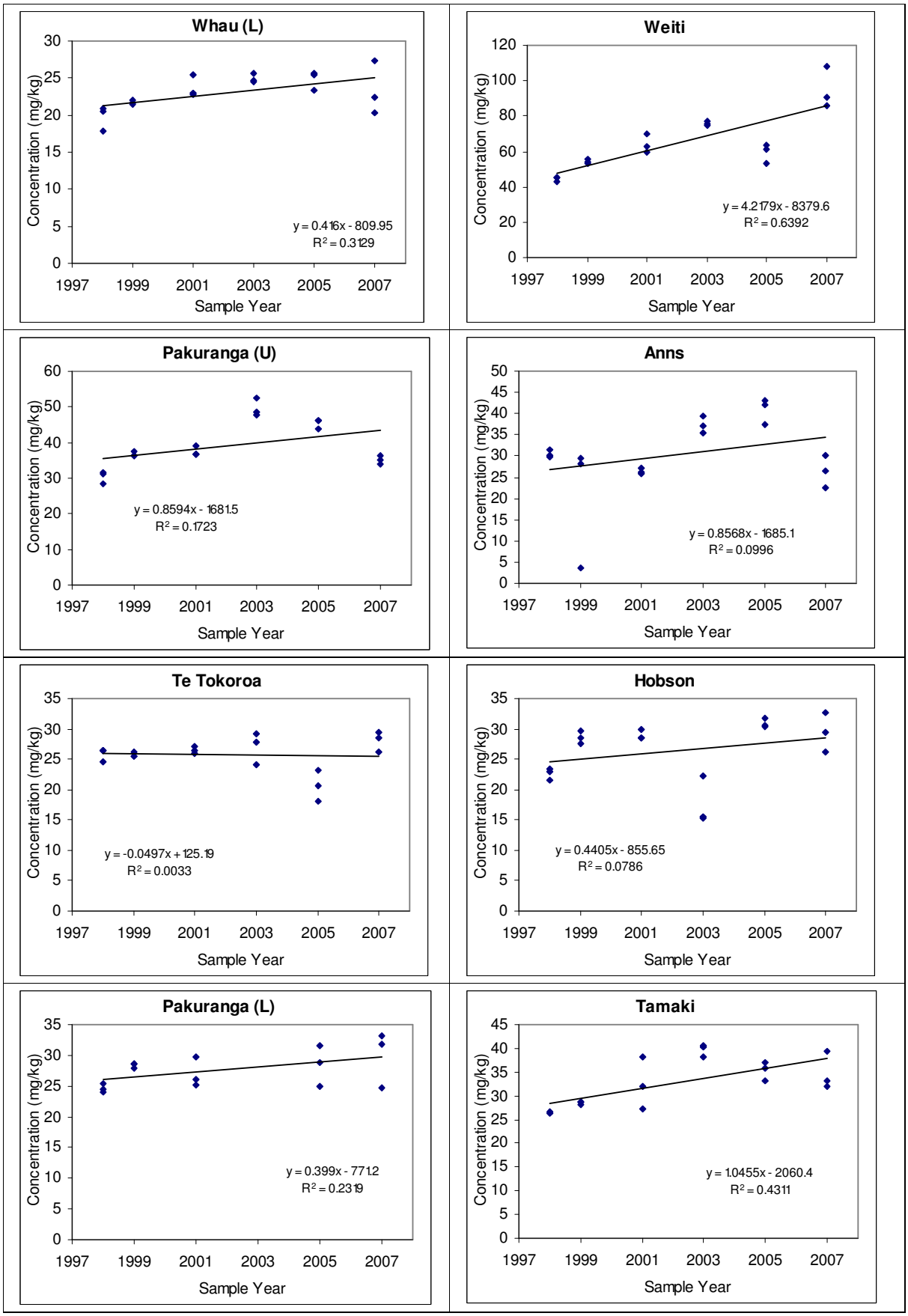

Lucas
Concentration (mg/kg)
Sample Year
y = 0.3219x - 625.61
R² = 0.0818

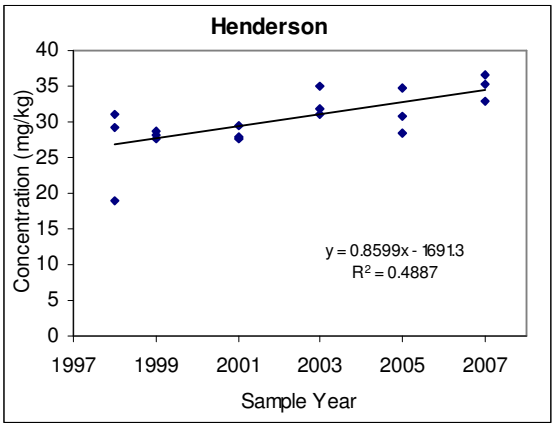

Paremoremo
Concentration (mg/kg)
Sample Year
y = 0.489x - 961.51
R² = 0.3263

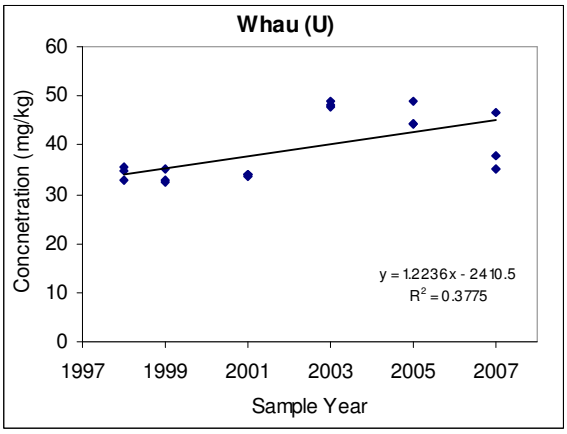

Mangere
Concentration (mg/kg)
Sample Year
y = -0.1793x + 379.91
R² = 0.0332

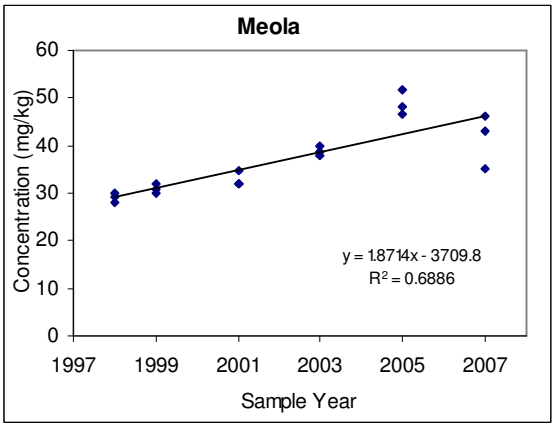

Kaipatiki
Concentration (mg/kg)
Sample Year
y = 0.8292x - 1640.5
R² = 0.5675

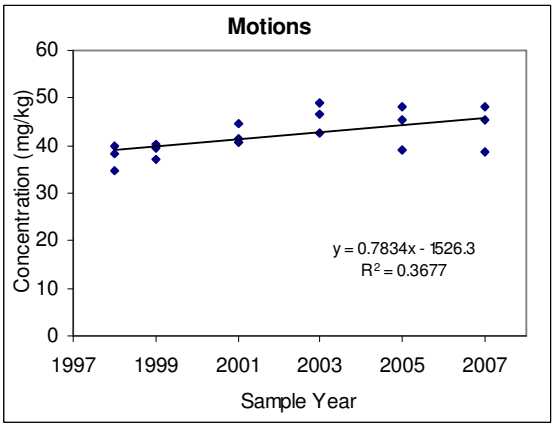

Oakley
Concentration (mg/kg)
Sample Year
y = 0.133x - 241.07
R² = 0.0163


Whau (L)
Concentration (mg/kg)
Sample Year
y = 0.416x - 809.95
R² = 0.3129
Weiti
Concentration (mg/kg)
Sample Year
y = 4.2179x - 8379.6
R² = 0.6392
Pakuranga (U)
Concentration (mg/kg)
Sample Year
y = 0.8594x - 1681.5
R² = 0.1723
Anns
Concentration (mg/kg)
Sample Year
y = 0.8568x - 1685.1
R² = 0.0996
Te Tokoroa
Concentration (mg/kg)
Sample Year
y = -0.0497x + 125.19
R² = 0.0033
Hobson
Concentration (mg/kg)
Sample Year
y = 0.4405x - 855.65
R² = 0.0786
Pakuranga (L)
Concentration (mg/kg)
Sample Year
y = 0.399x - 771.2
R² = 0.2319
Tamaki
Concentration (mg/kg)
Sample Year
y = 1.0455x - 2060.4
R² = 0.4311


Henderson
Concentration (mg/kg)
Sample Year
y = 0.8599x - 1691.3
R² = 0.4887


Whau (U)
Concnetration (mg/kg)
Sample Year
y = 1.2236x - 2410.5
R² = 0.3775


Meola
Concentration (mg/kg)
Sample Year
y = 1.8714x - 3709.8
R² = 0.6886


Motions
Concentration (mg/kg)
Sample Year
y = 0.7834x - 1526.3
R² = 0.3677

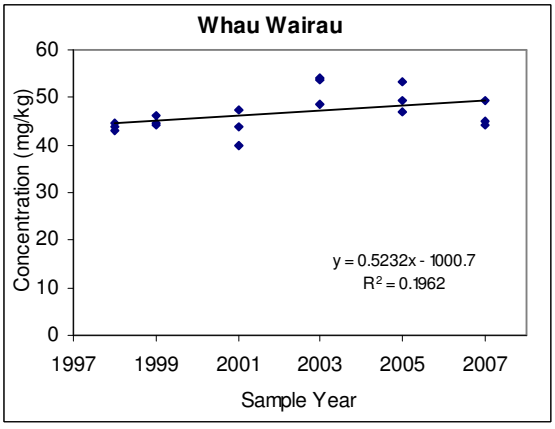
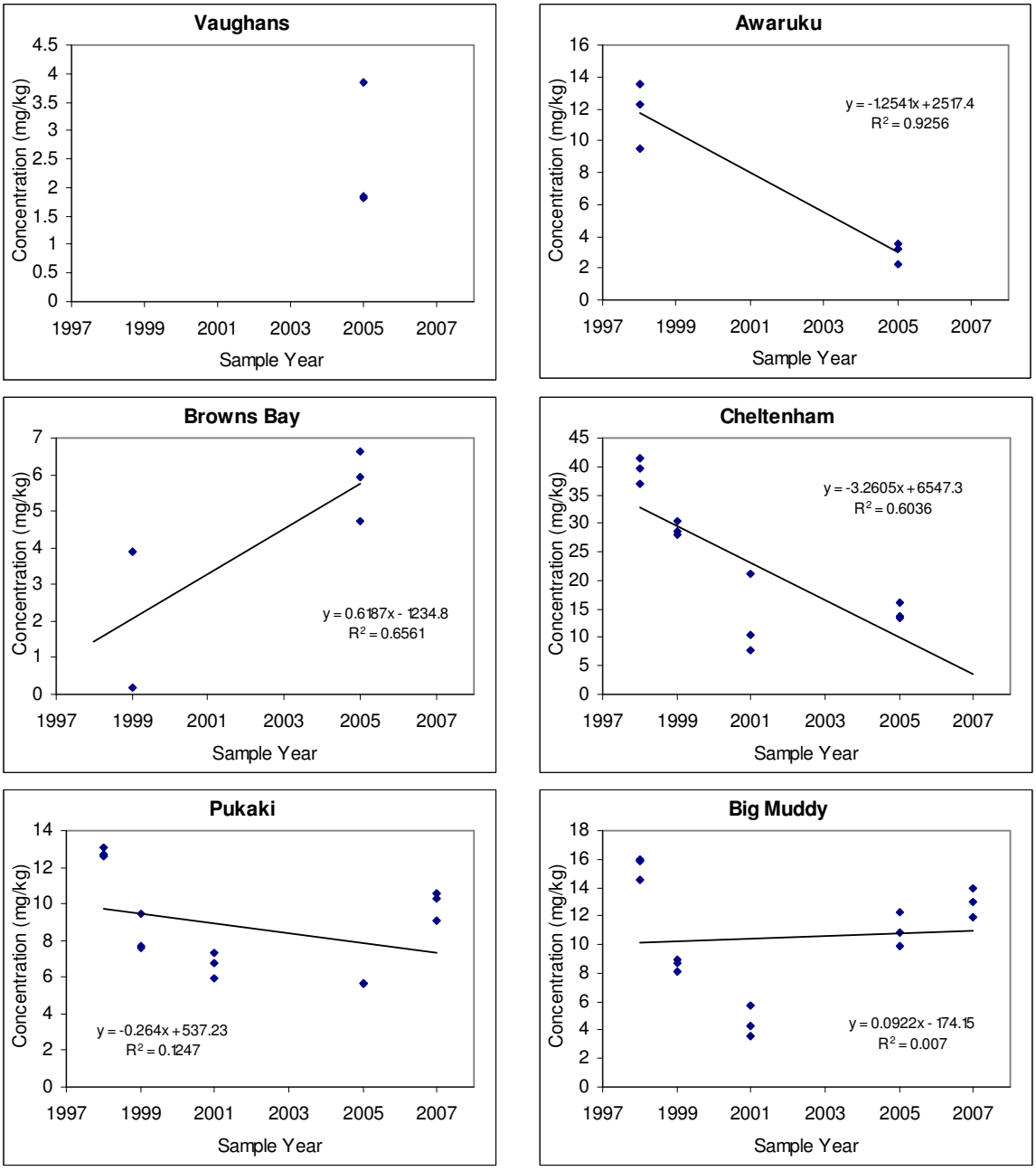
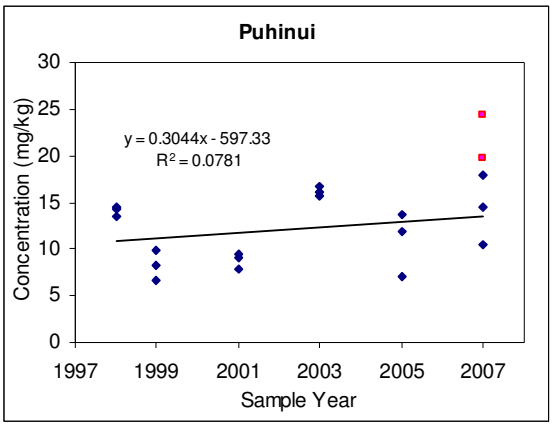
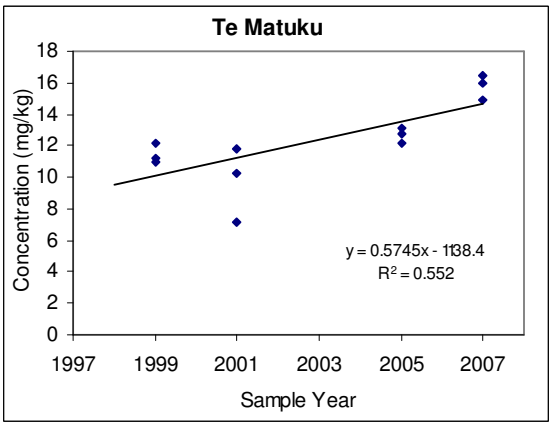

Whau Wairau
Concentration (mg/kg)
Sample Year
y = 0.5232x - 1000.7
R² = 0.1962

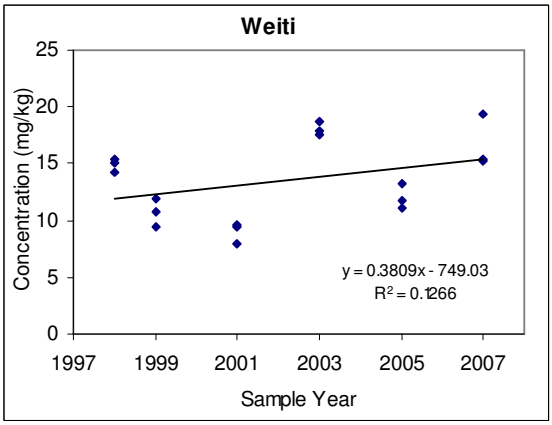
Figure 14

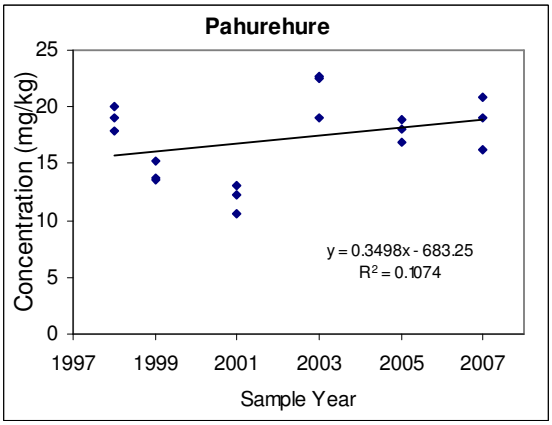
Lead concentrations (mg kg^{-1}) in the <63 µm sediment fractions at individual sites since monitoring began in 1998. Regression line, equation and R^2 values are displayed for each site.

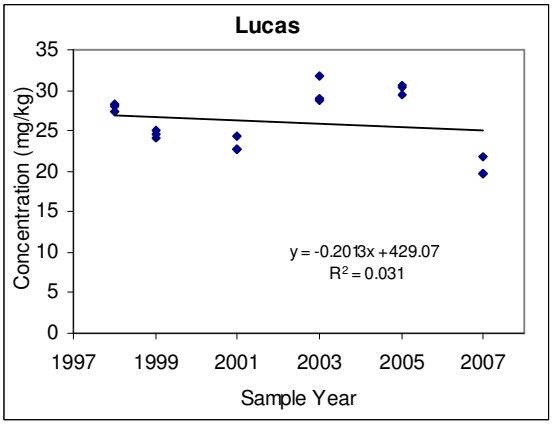


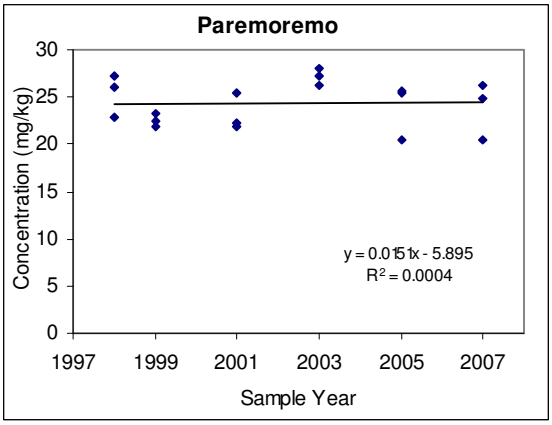

Puhinui
y = 0.3044x - 597.33
R² = 0.0781
Concentration (mg/kg)
Sample Year

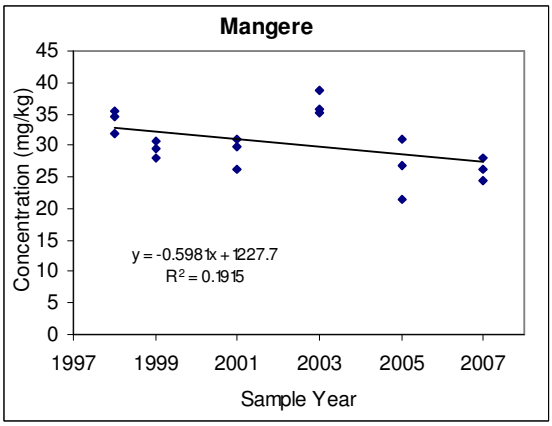

Te Matuku
y = 0.5745x - 1138.4
R² = 0.552
Concentration (mg/kg)
Sample Year

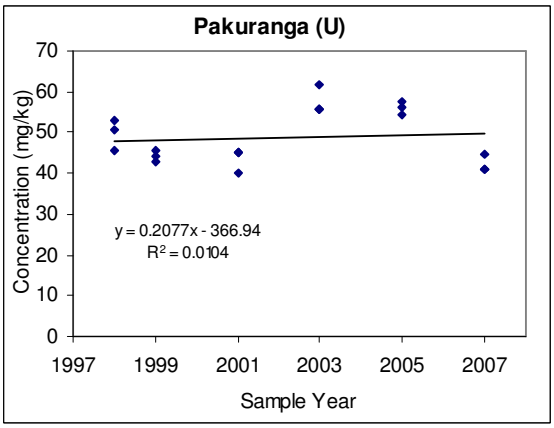

Weiti
y = 0.3809x - 749.03
R² = 0.1266
Concentration (mg/kg)
Sample Year

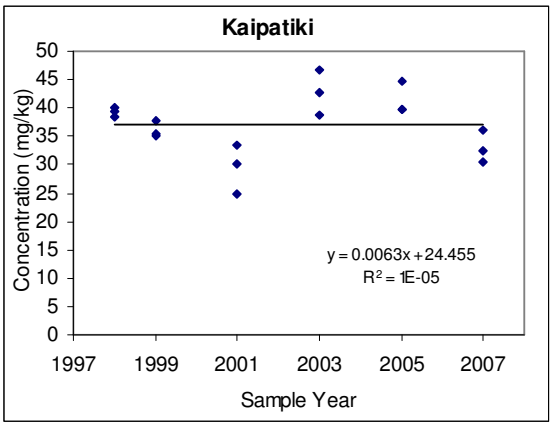

Pahurehure
y = 0.3498x - 683.25
R² = 0.1074
Concentration (mg/kg)
Sample Year

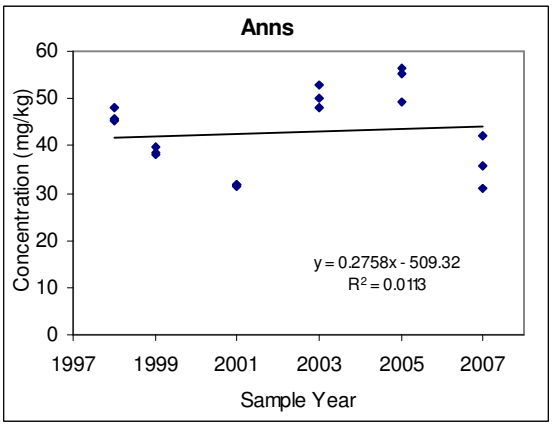

Lucas
y = -0.2013x + 429.07
R² = 0.031
Concentration (mg/kg)
Sample Year

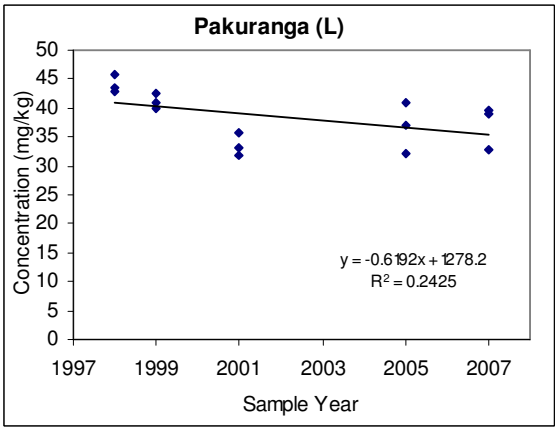

Paremoremo
y = 0.0151x - 5.895
R² = 0.0004
Concentration (mg/kg)
Sample Year

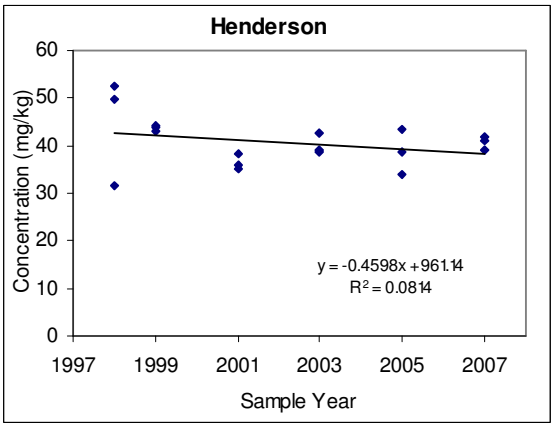

Mangere
y = -0.5981x + 1227.7
R² = 0.1915
Concentration (mg/kg)
Sample Year

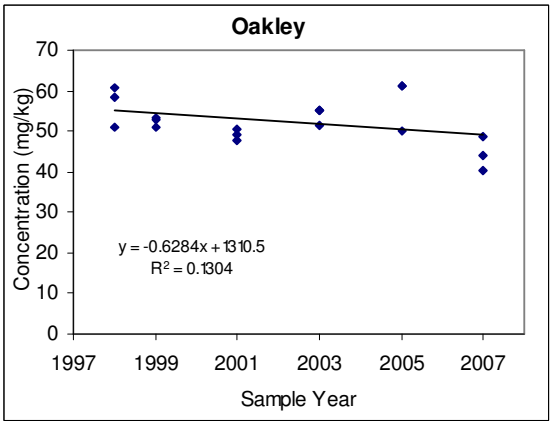

Pakuranga (U)
y = 0.2077x - 366.94
R² = 0.0104
Concentration (mg/kg)
Sample Year

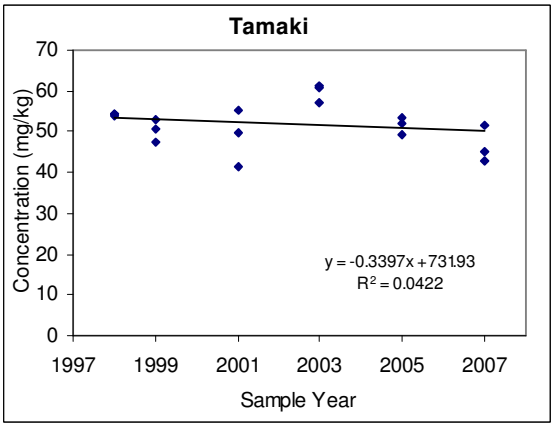

Kaipatiki
Concentration (mg/kg)
Sample Year
y = 0.0063x + 24.455
R² = 1E-05

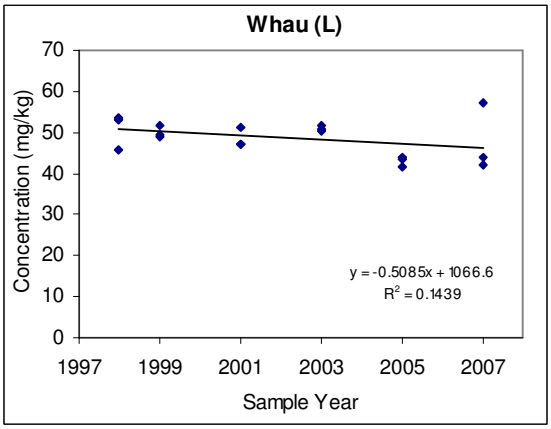

Anns
Concentration (mg/kg)
Sample Year
y = 0.2758x - 509.32
R² = 0.0113

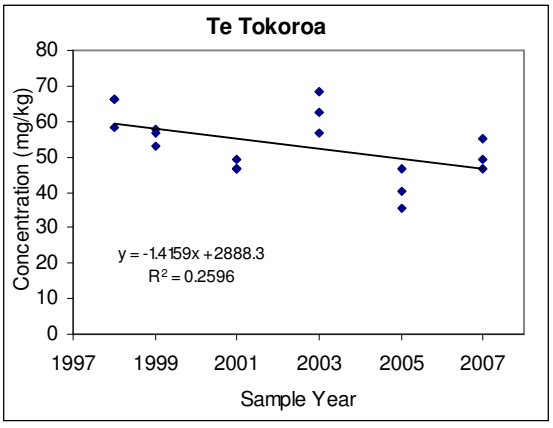

Pakuranga (L)
Concentration (mg/kg)
Sample Year
y = -0.6192x + 1278.2
R² = 0.2425

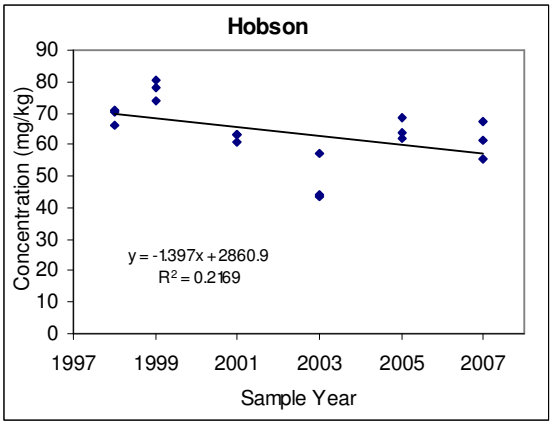

Henderson
Concentration (mg/kg)
Sample Year
y = -0.4598x + 961.14
R² = 0.0814

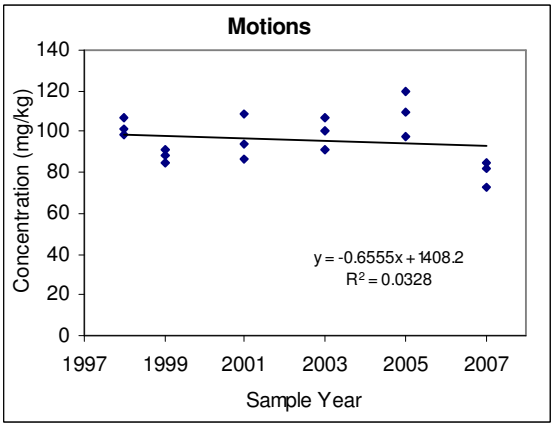

Oakley
Concentration (mg/kg)
Sample Year
y = -0.6284x + 1310.5
R² = 0.1304

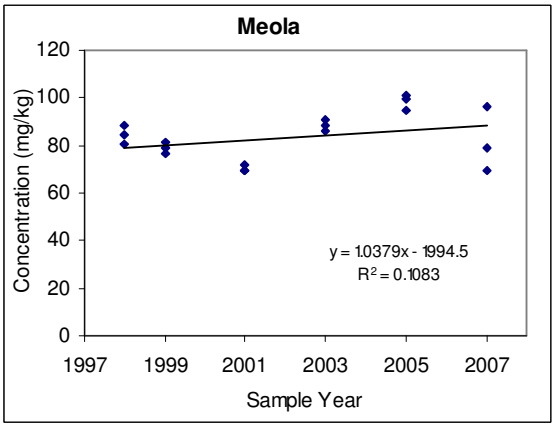

Tamaki
Concentration (mg/kg)
Sample Year
y = -0.3397x + 731.93
R² = 0.0422

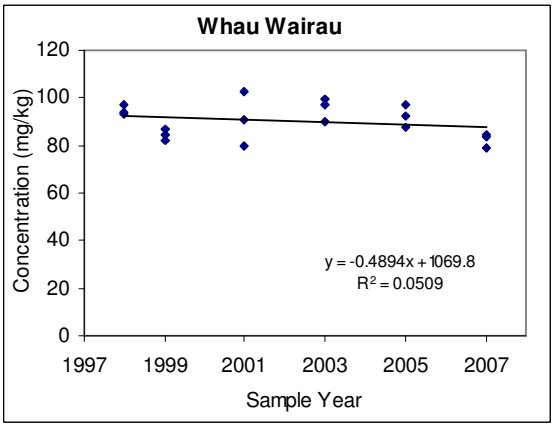

Whau (L)
Concentration (mg/kg)
Sample Year
y = -0.5085x + 1066.6
R² = 0.1439

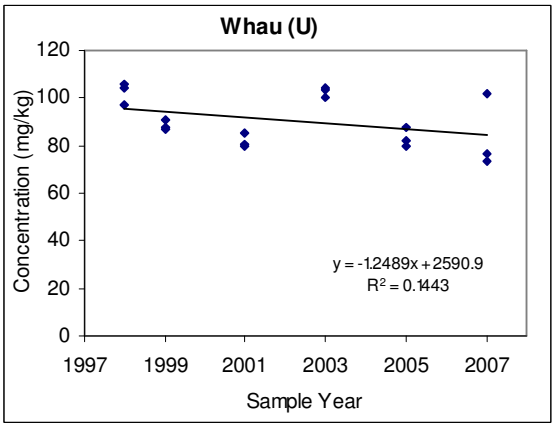

Te Tokoroa
Concentration (mg/kg)
Sample Year
y = -1.4159x + 2888.3
R² = 0.2596


Hobson
Concentration (mg/kg)
Sample Year
y = -1.397x + 2860.9
R² = 0.2169


Motions
Concentration (mg/kg)
Sample Year
y = -0.6555x + 1408.2
R² = 0.0328


Meola
Concentration (mg/kg)
Sample Year
y = 1.0379x - 1994.5
R² = 0.1083


Whau Wairau
Concentration (mg/kg)
Sample Year
y = -0.4894x + 1069.8
R² = 0.0509


Whau (U)
Concentration (mg/kg)
Sample Year
y = -1.2489x + 2590.9
R² = 0.1443

5 References

Hawken, J.L.; Mathieson, T.J. & Olsen, G.M. (2002). Marine Sediment Monitoring Programme – 2001 Results. Report to the Auckland Regional Council, NIWA Contract Report No. ARC02282.

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Appendix 1

Analytical Procedures and Quality Assurance

Metals

Sediment samples for weak-acid extraction were prepared by wet-sieving approximately 60 mL of sample through a 63 μm plastic mesh with 300 mL of deionised water. The filtrate was centrifuged at 3000 rpm for 20 minutes before the supernatant liquid was decanted. Approximately 2.5 g of sediment residue was placed in 50 mL polypropylene centrifuge tubes. Separate samples were dried at 60 °C overnight for moisture-content determination. To each tube 40 mL of 2M HCl was added to extract the reactive fraction of metals. The tubes were placed on their sides on a shaking table at 100 rpm for 24 hours. Samples were then centrifuged at 3000 rpm for 15 minutes and the supernatant was decanted into new tubes for analysis. The extracts were analysed for zinc, copper and lead by Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS). Concentrations of metals were corrected for moisture content and expressed as metal content μg g^{-1} dry wt.

Sediment samples for hot acid digestion were freeze-dried and sieved through 500 μm mesh. Composite samples of approximately 1g were prepared from the 3 replicates of each site. These were digested for 3 hours at 100 °C in 10 mL of 3:1 HCl:HNO_3. A further 5 mL of concentrated HNO_3 was added to each tube and the digestions continued for another hour (or until the digests cleared and the remaining grains appeared clean). The samples were then cooled, diluted to 50 mL and centrifuged at 2500 rpm for 10 minutes to remove the remaining debris. The extracts were decanted into clean tubes and analysed for zinc, copper and lead by Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS) as described above.

Calculations were based on standard calibrations with acidic working standards prepared from commercially-available stock solutions. QA assessment of the calibrations was carried out by analysing QC standards made up from appropriate metal salts.

To assess analytical performance, the <500 μm fraction of 5 samples collected and analysed in 2005 were re-analysed in 2007. The results are shown in Table A1, along with the results of the previous re-analysis of samples collected in 1999 and 2001 (Reed and Webster, 2004; McHugh, 2006).

Table A1

Zinc, copper and lead concentrations (mg kg $^{-1}$) resulting from repeat analysis of <500 µm fraction of 5 samples collected in 1999, 2001 and 2005.

	Year collected	1999		2001			2005	
	Year analysed	1999	2001	2001	2003	2005	2005	2007
zinc	Tamaki	164.7	148.1	175.0	179.0	188.0	182.0	220.7
	Te Matuku	29.3	31	38.5	35	33.4	32.1	58.6
	Whau (U)	237.2	238.1	254.2	247.0	273.0	256.0	234.1
	Motions	197.1	212.8	276.1	259.0	253.0	264.0	240.8
	Meola	261.0	306.4	280.9	280.0	240.0	239.0	210.5
copper	Tamaki	30.3	33.2	24.1	30.0	27.1	25.8	30.2
	Te Matuku	5.1	7.1	3.0	5.0	3.1	2.8	6.0
	Whau (U)	35.1	37.6	37.6	41.0	39.8	36	32.3
	Motions	22.3	25.8	26.9	26.0	24.9	36.4	43.7
	Meola	38.3	35.6	30.6	38.0	29.3	23.2	34.9
lead	Tamaki	37.4	41.0	27.1	34.9	34.8	32.6	37.2
	Te Matuku	6.7	8.5	1.9	2.9	7.5	7.22	10.2
	Whau (U)	74.7	80.4	78.3	78.4	82.6	65.6	73.5
	Motions	44.5	55.3	50.7	54.5	51.9	86.1	84
	Meola	74.4	80.2	65.3	75.8	60.2	49.9	53.6

Total Organic Carbon

Samples were prepared for analysis by freeze-drying and sieving through a 500 µm plastic mesh. TOC was determined using an Elementor Combustion Analyser.

Organochlorine Pesticide Analysis

Sediments were homogenised, freeze-dried and sieved (<500 µm). Sub-samples were extracted by sonication and solid phase extraction (SPE). Analysis of OCs was carried out by dual column gas chromatography electron capture detection (GC-ECD). Concentrations were calculated on a freeze-dry weight basis. Detection limits were approximately 0.01 mg kg^{-1} dry wt.

Organochlorine pesticides were also analysed in the <500 µm fraction of nine samples by AsureQuality, based on USEPA Method 1699. Sub-samples were extracted with toluene overnight using soxhlet apparatus. Extracts were cleaned up using gel permeation chromatography and florisil column chromatography. Twenty-four organochlorine pesticides were analysed by high resolution gas chromatography-high resolution mass spectrometry with isotope dilution quantitation. Concentrations were corrected for recovery based on the recovery of internal standards. Detection limits varied for each compound and sample, depending on recovery and the mass of sediment used. Analytes were flagged as an Estimated Possible Maximum

Concentration (EMPC) when the required ion ratio criteria was not met, due to the presence of interfering compounds.

Particle Size Analysis

Sediments were freeze-dried, sieved (<500 μm), dispersed in hydrogen peroxide solution to destroy organic matter and analysed on a Galai laser analyser in the 0-300 μm mode. Samples were also analysed in the 2-600 μm mode if they contained a significant volume of particles greater than 300 μm.

Appendix 2

Concentrations of metals in samples from 2007 survey.

Extractable metal concentrations (mg kg^{-1}, <63 µm) of zinc, copper and lead in 2007

Site	Rep Number	Zinc (mg kg^{-1} dw)	Copper (mg kg^{-1} dw)	Lead (mg kg^{-1} dw)
Kaipatiki	1	130.38	20.94	32.40
Kaipatiki	2	119.48	19.18	30.50
Kaipatiki	3	146.10	23.45	36.14
Whau Upper	1	275.53	35.27	73.48
Whau Upper	2	386.25	46.69	101.87
Whau Upper	3	303.18	38.00	76.81
Te Tokoroa	1	153.37	26.29	46.56
Te Tokoroa	2	160.84	28.59	49.14
Te Tokoroa	3	169.02	29.48	55.03
Te Matuku	1	73.14	8.61	15.92
Te Matuku	2	63.94	7.31	14.92
Te Matuku	3	71.79	8.20	16.41
Tamaki	1	247.21	33.08	45.26
Tamaki	2	279.55	39.50	51.66
Tamaki	3	225.46	31.88	42.76
Pakaranga Upper	1	234.06	33.76	40.96
Pakaranga Upper	2	246.86	36.28	41.14
Pakaranga Upper	3	245.34	35.05	44.61
Big Muddy	1	76.93	11.83	13.02
Big Muddy	2	80.41	11.21	13.89
Big Muddy	3	66.24	9.94	11.87
Whau Wairau	1	295.55	44.33	78.81
Whau Wairau	2	293.05	49.45	84.25
Whau Wairau	3	298.80	45.17	83.39
Lucas	1	87.45	13.85	19.68
Lucas	2	95.35	16.80	21.80
Lucas	3	89.87	14.83	19.77
Pukaki	1	60.31	7.24	10.25
Pukaki	2	61.55	7.52	9.12
Pukaki	3	65.48	7.69	10.53
Weiti	1	90.48	23.95	15.43
Weiti	2	108.00	29.16	19.44
Weiti	3	85.74	23.38	15.20
Motions	1	244.94	48.18	84.32
Motions	2	222.73	38.55	72.81
Motions	3	242.64	45.50	81.89
Meola	1	204.32	35.21	69.55
Meola	2	293.63	46.36	96.59
Meola	3	250.46	42.94	78.72
Pakaranga Lower	1	213.47	33.27	38.81
Pakaranga Lower	2	212.07	31.81	39.76
Pakaranga Lower	3	176.63	24.65	32.86
Puhinui	1	142.79	12.76	17.92

Site (Contin)	Rep Number	Zinc (mg kg^{-1} dw)	Copper (mg kg^{-1} dw)	Lead (mg kg^{-1} dw)
Puhinui	2	93.87	8.83	10.49
Puhinui	3	117.81	10.21	14.40
Henderson	1	188.47	32.91	38.89
Henderson	2	208.97	36.57	41.79
Henderson	3	193.26	35.14	41.00
Anns	1	183.10	26.57	35.90
Anns	2	194.85	29.98	41.97
Anns	3	156.67	22.68	30.92
Pahurehure	1	89.97	9.00	16.31
Pahurehure	2	107.98	10.99	20.84
Pahurehure	3	100.15	10.22	18.99
Hobson	1	140.44	26.26	55.56
Hobson	2	172.24	32.73	67.17
Hobson	3	156.34	29.51	61.45
Whau Lower	1	183.38	22.41	43.81
Whau Lower	2	172.21	20.24	42.19
Whau Lower	3	229.49	27.36	57.37
Paremoremo	1	80.46	15.34	20.37
Paremoremo	2	100.24	20.05	26.17
Paremoremo	3	100.67	18.95	24.87
Oakley	1	168.78	24.38	48.76
Oakley	2	140.94	20.54	40.27
Oakley	3	146.91	19.59	44.07
Mangere	1	131.86	17.93	26.11
Mangere	2	124.80	17.83	24.31
Mangere	3	135.18	19.06	28.08

Total concentrations (mg kg⁻, <500 µm) of zinc, copper and lead in 2007

Sites	Zinc (mg kg^{-1})	Copper (mg kg^{-1})	Lead (mg kg^{-1})
Whau (U)	270	35.0	65.0
Meola	240	33.0	61.0
Whau Wairau	230	41.0	61.0
Motions	220	19.0	42.0
Pakuranga (U)	210	30.0	33.0
Tamaki	190	26.0	32.0
Whau (L)	180	25.0	41.0
Henderson	180	33.0	35.0
Pakuranga (L)	170	22.0	27.0
Oakley	160	27.0	42.0
Anns	150	24.0	27.0
Mangere	130	21.0	24.0
Puhinui	110	9.2	12.0
Lucas	100	20.0	22.0
Kaipatiki	100	15	24
Te Tokaroa	96	11.0	23.0
Paremoremo	87	20.0	21.0
Pahurehure	73	7.6	13.0
Weiti	72	13.0	11.0
Pukaki	56	7.1	9.3
Big Muddy	56	9.1	9.0
Hobson	42	5.2	13.0
Cheltenham	39	2.5	8.6
Browns	34	2.0	4.5
Te Matuku	30	2.8	6.6
Awaruku	24	2.5	3.6
Vaughans	22	1.9	3.2

Appendix 3

Total organic carbon concentrations in 2007.

Table A3.

Total Organic Carbon concentrations (g 100 g^{-1} dw) for samples collected in 2007. Listed in order of decreasing TOC (2007) concentrations.

Site	TOC g/100g dw
Paremoremo	2.87
Henderson	2.83
Oakley	2.43
Whau (U)	2.3
Whau Wairau	2.2
Meola	2.2
Pakuranga (U)	2.03
Lucas	1.97
Whau (L)	1.83
Tamaki (U)	1.6
Anns	1.47
Mangere	1.3
Kaipatiki	1.3
Pakuranga (L)	1.3
Weiti	1.23
Puhinui	1.2
Big Muddy	1.1
Pahurehure	1.06
Motions	1.01
Pukaki	1
Te Tokoroa	0.75
Te Matuku	0.37
Hobson	0.22
Cheltenham	0.2
Browns	0.07
Vaughans	0.07
Awaruku	0.07

Appendix 4

Individual sample results: Organochlorine pesticides

site name	Aldrin	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC (Lindane)	cis-chlordane	trans-chlordane	All DDT	4,4'-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin Ketone	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Total Chlordane [(cis+trans)*100/42]
Motions	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
Pakuranga Lower	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
Weiti	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
Pukaki	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
Puhinui	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
Lucas	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
Awaruku	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020

site name	Aldrin	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC (Lindane)	cis-chlordane	trans-chlordane	All DDT	4,4'-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin Ketone	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Total Chlordane [(cis+trans)*100/42]
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
Kaipatiki	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
Big Muddy	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
Browns Bay	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
Cheltenham	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
Vaughan	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
Te Tokoroa	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
Te Matuku	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
Whau Lower	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
Henderson	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	0.012	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020

site name	Aldrin	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC (Lindane)	cis-chlordane	trans-chlordane	All DDT	4,4'-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin Ketone	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Total Chlordane [(cis+trans)*100/42]
	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
Anns	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.020
	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.020
Pakuranga Upper	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
Hobson	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
Oakley	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
Tamaki	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
Mangere	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
Meola	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	0.012	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
Whau Upper	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
Paremoremo	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020
	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.020

site name	Aldrin	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC (Lindane)	cis-chlordane	trans-chlordane	All DDT	4,4'-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin Ketone	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Total Chlordane [(cis+trans)*100/42]
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
Pahurehure	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.0099	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
Whau Wairau	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020
	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.020

Table A3.

Organochlorine pesticide concentrations (µg kg⁻ dw) for samples collected in 2007.

	Tamaki	Paremoremo	Lucas	Motions	Whau (U)	Whau (L)	Weiti	Mangere Inlet	Anns
Alpha-BHC	<0.0105	<0.0858	<0.0180	<0.0121	<0.126	<0.0116	<0.0173	<0.0119	0.0121
Beta-BHC	<0.0133	<0.109	<0.0228	<0.0154	<0.0159	<0.0147	<0.0219	<0.0151	<0.0110
Gamma-BHC (Lindane)	0.0278	<0.0980	<0.0206	0.0318	0.034	0.0324	0.0228	0.0706	0.0813
Delta-BHC	<0.0134	<0.110	<0.0230	<0.0155	<0.0161	<L0.0148	<0.0222	<0.0152	<0.0111
HCB	0.153	0.269	0.0622	<0.108	0.362	0.0885	0.0626	0.116	0.118
Aldrin	0.0434 *	<0.481	<0.0562	NQ †	0.0615 *	<0.0484	<0.0375	<0.129	0.0817 *
Heptachlor	<0.0069	<0.133	<0.0188	<0.0182	<0.0156	<0.0209	<0.0136	<0.0191	<0.0123
Dieldrin	0.325	<0.514	0.145	0.518	0.759	0.185	0.124	0.286	0.539
Endrin aldehyde	<0.121	<1.23	<0.215	<0.207	<0.232	<0.177	<0.162	<0.159	<0.0949
Endrin ketone	<0.176	<1.80	<0.312	<0.302	<0.338	<0.257	<0.236	<0.231	<0.138
Endrin	<0.0515	<0.645	<0.0863	<0.0936	<0.114	<0.0915	<0.0761	<0.103	<0.0690
Heptachlor epoxide	<0.0452	<0.560	<0.0792	<0.0684	<0.0542	<0.0848	<0.0583	<0.0796	<0.0361
Alpha-endosulfan	<0.133	<1.56	<0.226	<0.247	<0.196	<0.297	<0.197	<0.208	0.139
Beta-endosulfan	<0.415	<4.45	<0.732	<0.853	<0.901	<0.719	<0.644	<0.875	<0.617
Endosulfan sulfate	0.935 *	<3.36	0.601 *	<0.645	2.73 *	<0.543	<0.487	<0.661	0.515 *
Gamma-chlordane	<0.0771	<0.909	<0.132	0.789	0.195	<0.173	<0.115	<0.121	0.21
Alpha-chlordane	<0.0717	<0.842	<0.122	0.673	0.208	<0.161	<0.106	<0.112	0.182
o,p-DDE	0.0149 *	<0.0892	<0.0179	0.0223	0.0321 *	<0.0188	<0.0269	0.0446 *	0.0521 *
p,p-DDE	0.537	0.85	1.02	0.572	1.65	0.917	0.123	1.59	1.71
o,p-DDD	0.116	0.105	0.148	0.184	0.287	0.181	0.0532	0.0974	0.166
p,p-DDD	0.542	0.439	0.655	0.989	1.33	0.847	0.152	0.509	0.712
o,p-DDT	0.0341 *	<0.0541	0.0389	0.0419	0.099	0.0461	<0.0161	0.796	0.114
p,p-DDT	0.143	0.148	0.502	0.399	0.517	0.216	0.0666	0.482	0.569
Methoxychlor	<0.0389	<0.174	<0.0514	<0.0661	<0.0661	<0.0783	<0.0794	<0.0319	<0.0539

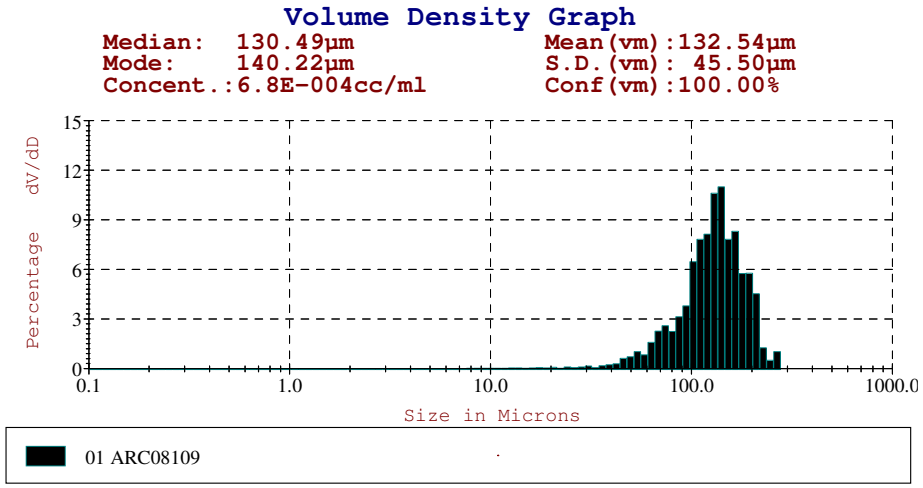
* Estimated possible maximum concentration. † Not quantified by laboratory.

Appendix 5

Individual sample results: Particle Size Analysis

Particle Size

Volume Distribution: Sample **14/12/2007 Kaipatiki** low (0-300um).



Area Ranges Table: **14/12/2007 Kaipatiki**

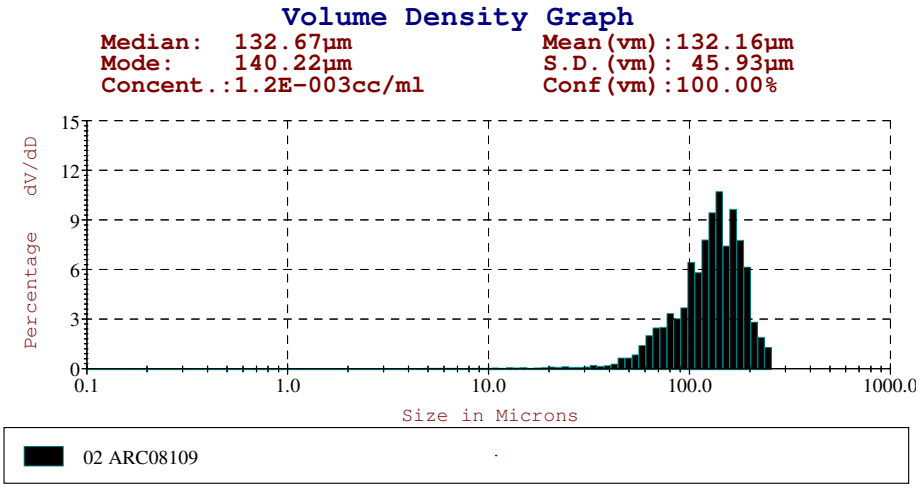
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	5.53	5.53	94.47
3.9-7.8	1.96	7.49	92.51
7.8-15.6	2.36	9.84	90.16
15.6-31.3	2.91	12.75	87.25
31.3-62.5	9.63	22.38	77.62
62.5-125.0	41.29	63.67	36.33
125.0-250.0	35.82	99.49	0.51
250.0-300.0	0.51	100.00	0.00

Volume Ranges Table: **14/12/2007 Kaipatiki**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.09	0.09	99.91
3.9-7.8	0.10	0.20	99.80
7.8-15.6	0.26	0.45	99.55
15.6-31.3	0.65	1.10	98.90
31.3-62.5	4.62	5.72	94.28
62.5-125.0	38.53	44.25	55.75
125.0-250.0	54.47	98.72	1.28
250.0-300.0	1.28	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Kaipatiki** low (0-300um).



Area Ranges Table: **14/12/2007 Kaipatiki**

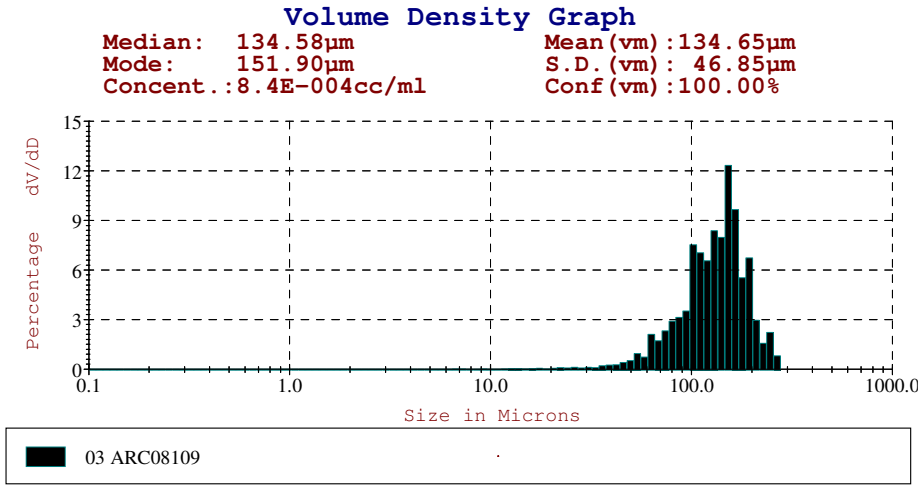
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	6.94	6.94	93.06
3.9-7.8	2.57	9.51	90.49
7.8-15.6	2.93	12.44	87.56
15.6-31.3	3.05	15.48	84.52
31.3-62.5	10.51	26.00	74.00
62.5-125.0	38.21	64.20	35.80
125.0-250.0	35.80	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Kaipatiki**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.12	0.12	99.88
3.9-7.8	0.14	0.26	99.74
7.8-15.6	0.34	0.60	99.40
15.6-31.3	0.70	1.30	98.70
31.3-62.5	5.39	6.69	93.31
62.5-125.0	36.08	42.77	57.23
125.0-250.0	57.23	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Kaipatiki** low (0-300um).



Area Ranges Table: **14/12/2007 Kaipatiki**

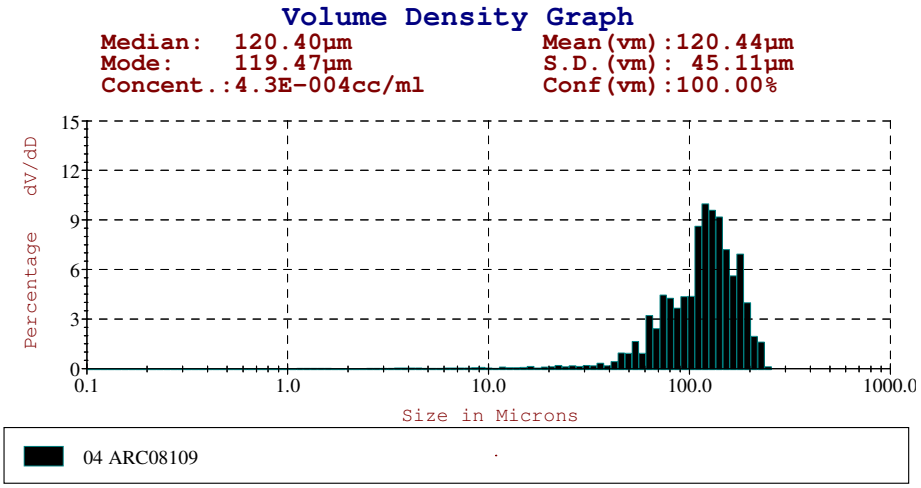
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	6.16	6.16	93.85
3.9-7.8	2.23	8.38	91.62
7.8-15.6	1.89	10.27	89.73
15.6-31.3	3.11	13.38	86.62
31.3-62.5	8.99	22.37	77.63
62.5-125.0	40.81	63.18	36.82
125.0-250.0	36.39	99.57	0.43
250.0-300.0	0.43	100.00	0.00

Volume Ranges Table: **14/12/2007 Kaipatiki**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.10	0.10	99.90
3.9-7.8	0.12	0.22	99.78
7.8-15.6	0.21	0.43	99.57
15.6-31.3	0.69	1.12	98.88
31.3-62.5	4.29	5.41	94.59
62.5-125.0	37.42	42.83	57.17
125.0-250.0	56.10	98.93	1.07
250.0-300.0	1.07	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Whau U** low (0-300um).



Area Ranges Table: **14/12/2007 Whau U**

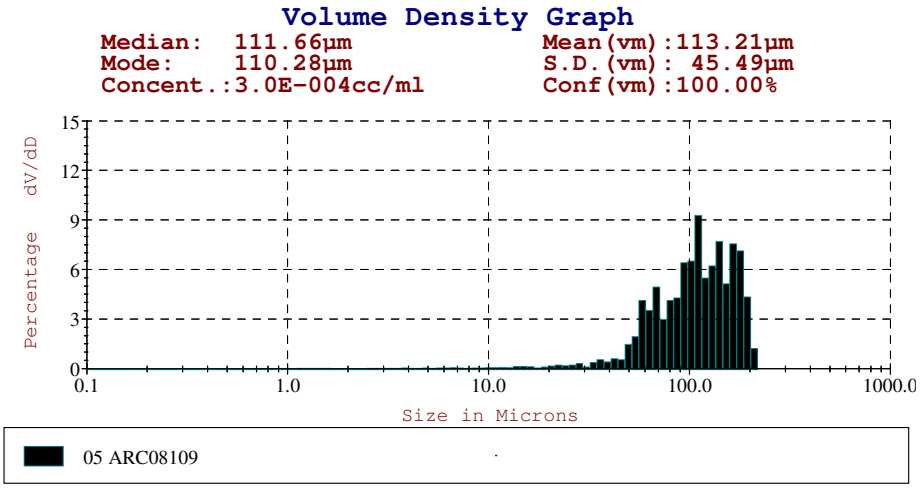
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	16.05	16.05	83.95
3.9-7.8	4.73	20.78	79.22
7.8-15.6	4.07	24.85	75.15
15.6-31.3	4.16	29.00	71.00
31.3-62.5	11.19	40.19	59.81
62.5-125.0	37.30	77.50	22.50
125.0-250.0	22.51	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Whau U**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.36	0.36	99.64
3.9-7.8	0.33	0.69	99.31
7.8-15.6	0.58	1.26	98.74
15.6-31.3	1.20	2.46	97.54
31.3-62.5	7.21	9.68	90.32
62.5-125.0	45.08	54.76	45.24
125.0-250.0	45.25	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Whau U** low (0-300um).



Area Ranges Table: **14/12/2007 Whau U**

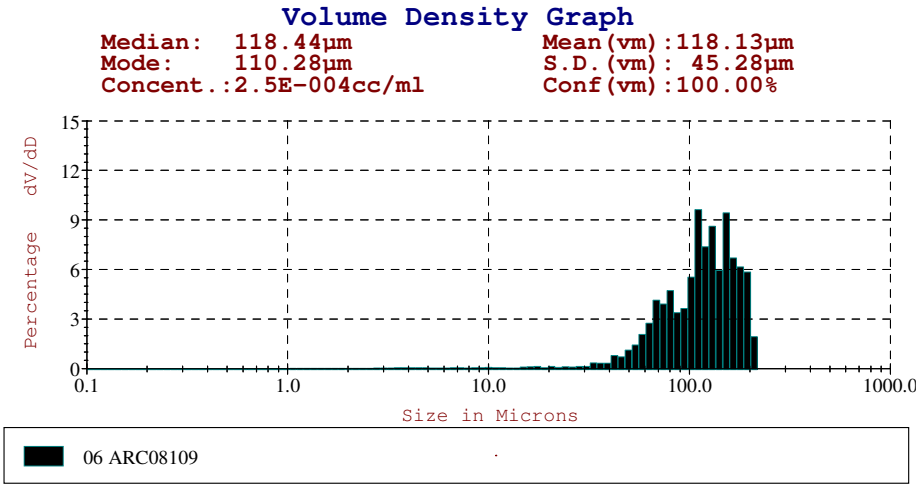
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	14.82	14.82	85.18
3.9-7.8	4.66	19.48	80.52
7.8-15.6	4.29	23.76	76.24
15.6-31.3	4.58	28.35	71.65
31.3-62.5	16.24	44.59	55.41
62.5-125.0	37.12	81.70	18.30
125.0-250.0	18.30	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Whau U**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.34	0.34	99.66
3.9-7.8	0.35	0.70	99.30
7.8-15.6	0.69	1.39	98.61
15.6-31.3	1.44	2.83	97.17
31.3-62.5	11.47	14.29	85.71
62.5-125.0	46.25	60.54	39.46
125.0-250.0	39.46	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Whau U** low (0-300um).



Area Ranges Table: **14/12/2007 Whau U**

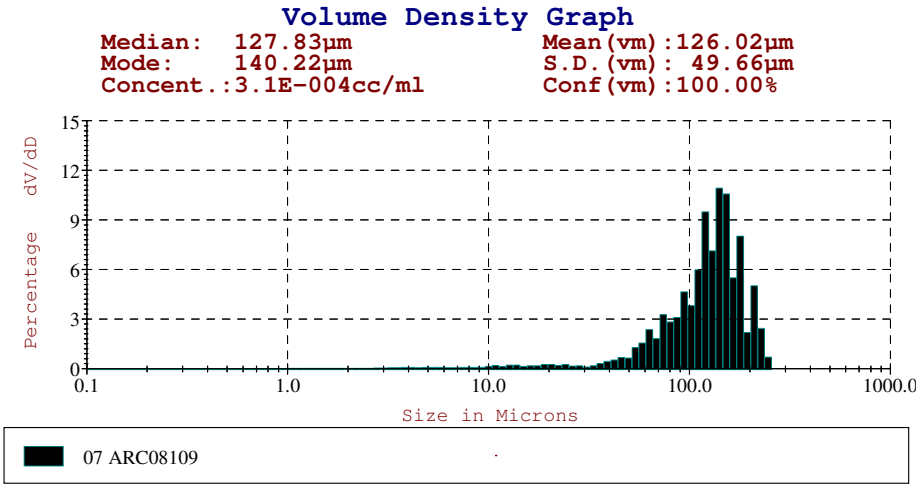
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	22.61	22.61	77.39
3.9-7.8	5.79	28.40	71.60
7.8-15.6	3.75	32.15	67.85
15.6-31.3	3.26	35.41	64.59
31.3-62.5	12.09	47.50	52.50
62.5-125.0	33.01	80.51	19.49
125.0-250.0	19.50	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Whau U**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.55	0.55	99.45
3.9-7.8	0.45	1.01	98.99
7.8-15.6	0.60	1.60	98.40
15.6-31.3	1.04	2.64	97.36
31.3-62.5	8.80	11.43	88.57
62.5-125.0	44.24	55.67	44.33
125.0-250.0	44.33	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Te Tokoroa** low (0-300um).



Area Ranges Table: **14/12/2007 Te Tokoroa**

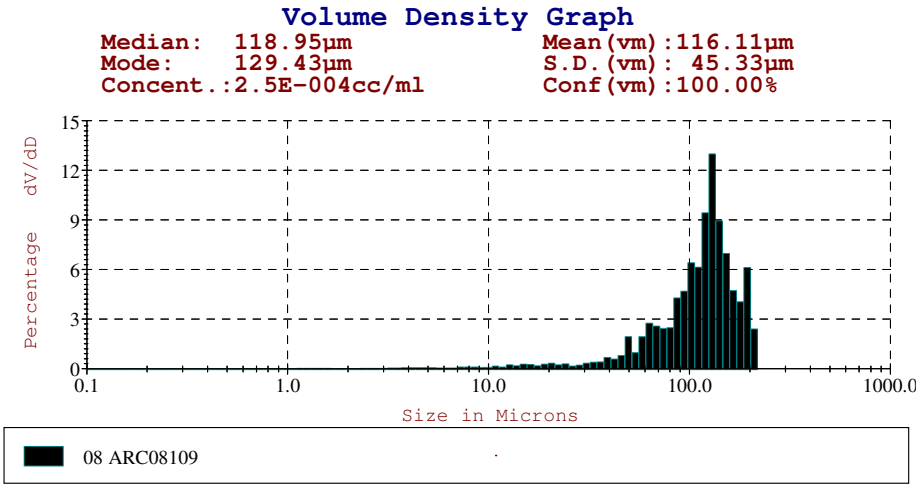
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	21.57	21.57	78.43
3.9-7.8	7.95	29.51	70.49
7.8-15.6	7.42	36.93	63.07
15.6-31.3	5.54	42.47	57.53
31.3-62.5	8.87	51.33	48.67
62.5-125.0	26.70	78.03	21.97
125.0-250.0	21.97	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Te Tokoroa**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.57	0.57	99.43
3.9-7.8	0.64	1.21	98.79
7.8-15.6	1.25	2.46	97.54
15.6-31.3	1.74	4.20	95.80
31.3-62.5	6.49	10.69	89.31
62.5-125.0	37.51	48.19	51.81
125.0-250.0	51.81	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Te Tokoroa** low (0-300um).



Area Ranges Table: **14/12/2007 Te Tokoroa**

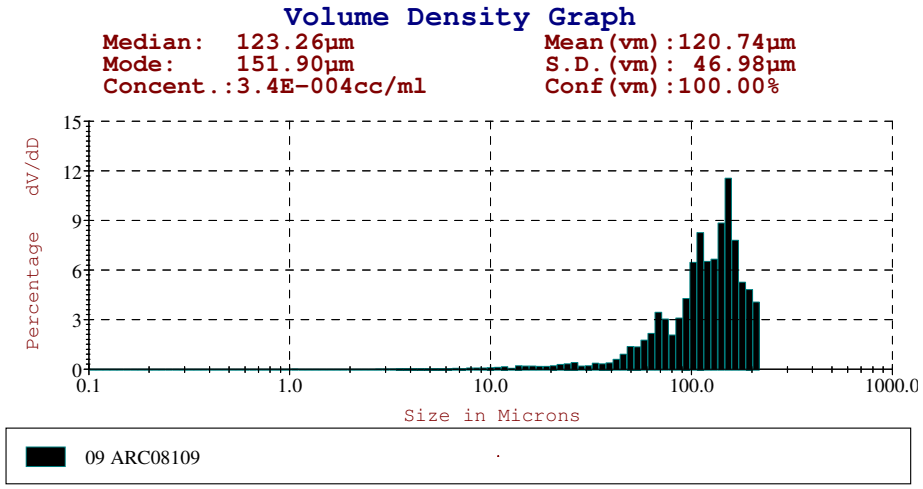
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	16.83	16.83	83.17
3.9-7.8	6.41	23.24	76.76
7.8-15.6	7.57	30.81	69.19
15.6-31.3	6.76	37.57	62.43
31.3-62.5	13.04	50.61	49.39
62.5-125.0	28.81	79.42	20.58
125.0-250.0	20.58	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Te Tokoroa**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.43	0.43	99.57
3.9-7.8	0.53	0.96	99.04
7.8-15.6	1.30	2.25	97.75
15.6-31.3	2.16	4.41	95.59
31.3-62.5	9.39	13.81	86.19
62.5-125.0	40.42	54.23	45.77
125.0-250.0	45.77	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Te Tokoroa** low (0-300um).



Area Ranges Table: **14/12/2007 Te Tokoroa**

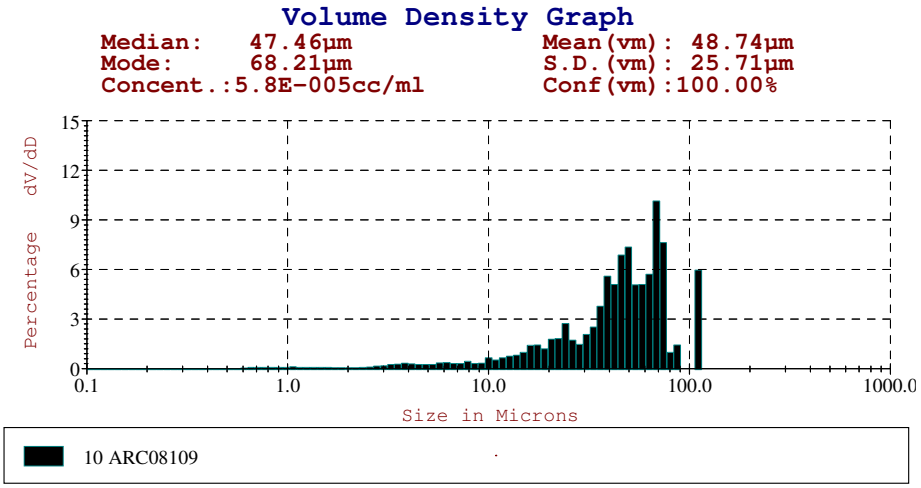
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	17.47	17.47	82.53
3.9-7.8	5.46	22.92	77.08
7.8-15.6	6.72	29.64	70.36
15.6-31.3	6.90	36.53	63.47
31.3-62.5	11.89	48.42	51.58
62.5-125.0	29.97	78.39	21.61
125.0-250.0	21.61	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Te Tokoroa**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.37	0.37	99.63
3.9-7.8	0.43	0.79	99.21
7.8-15.6	1.10	1.89	98.11
15.6-31.3	2.17	4.06	95.94
31.3-62.5	8.24	12.30	87.70
62.5-125.0	39.73	52.03	47.97
125.0-250.0	47.97	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Te Matuku** low (0-300um).



Area Ranges Table: **14/12/2007 Te Matuku**

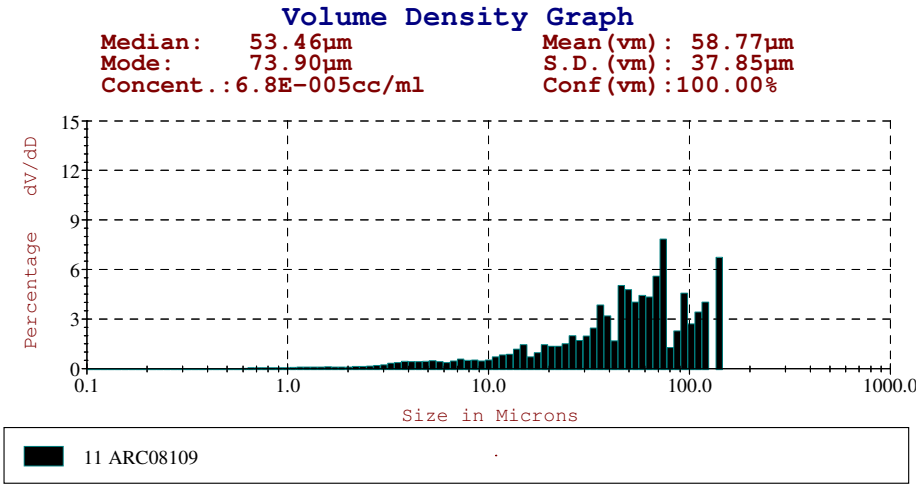
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	33.87	33.87	66.13
3.9-7.8	10.27	44.14	55.86
7.8-15.6	10.48	54.62	45.38
15.6-31.3	14.92	69.54	30.46
31.3-62.5	22.14	91.67	8.33
62.5-125.0	8.33	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Te Matuku**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	2.40	2.40	97.60
3.9-7.8	2.58	4.98	95.02
7.8-15.6	5.52	10.50	89.50
15.6-31.3	15.00	25.50	74.50
31.3-62.5	45.63	71.13	28.87
62.5-125.0	28.87	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Te Matuku** low (0-300um).



Area Ranges Table: **14/12/2007 Te Matuku**

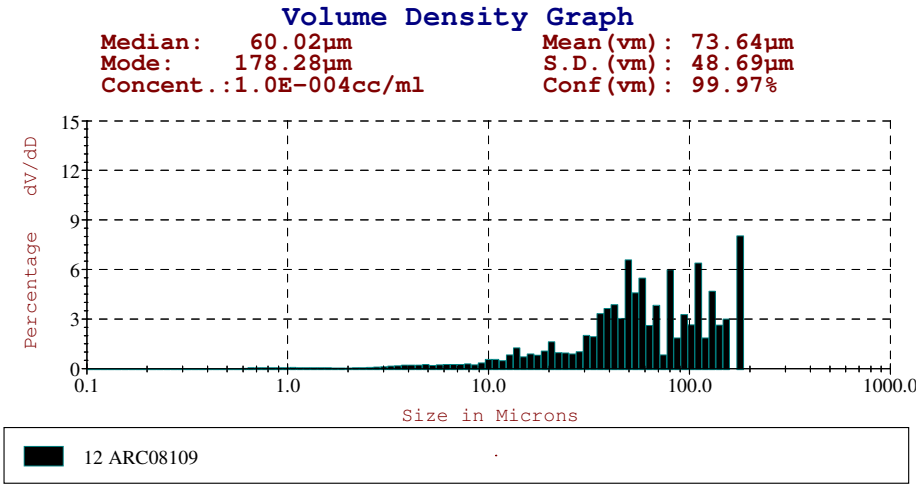
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	35.99	35.99	64.01
3.9-7.8	14.67	50.66	49.34
7.8-15.6	12.64	63.30	36.70
15.6-31.3	11.67	74.97	25.03
31.3-62.5	15.24	90.21	9.79
62.5-125.0	8.76	98.97	1.03
125.0-250.0	1.03	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Te Matuku**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	3.07	3.07	96.93
3.9-7.8	3.79	6.86	93.14
7.8-15.6	6.96	13.82	86.18
15.6-31.3	12.54	26.36	73.64
31.3-62.5	32.38	58.74	41.26
62.5-125.0	34.42	93.16	6.84
125.0-250.0	6.84	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Te Matuku** low (0-300um).



Area Ranges Table: **14/12/2007 Te Matuku**

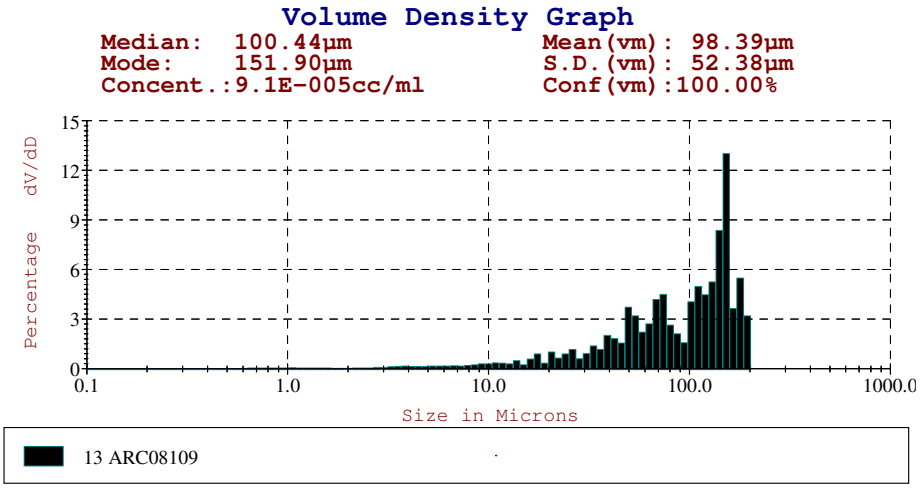
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	30.27	30.27	69.73
3.9-7.8	10.37	40.65	59.35
7.8-15.6	12.69	53.33	46.67
15.6-31.3	12.44	65.77	34.23
31.3-62.5	21.81	87.58	12.42
62.5-125.0	8.97	96.55	3.45
125.0-250.0	3.46	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Te Matuku**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.69	1.69	98.31
3.9-7.8	2.01	3.70	96.30
7.8-15.6	5.24	8.94	91.06
15.6-31.3	9.72	18.66	81.34
31.3-62.5	35.05	53.71	46.29
62.5-125.0	27.72	81.43	18.57
125.0-250.0	18.57	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Tamaki** low (0-300um).



Area Ranges Table: **14/12/2007 Tamaki**

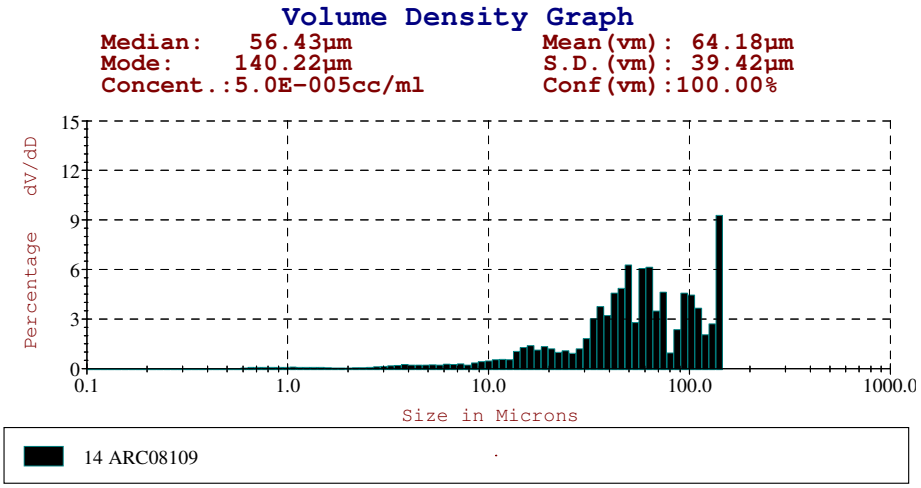
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	29.82	29.82	70.18
3.9-7.8	9.21	39.03	60.97
7.8-15.6	9.43	48.46	51.54
15.6-31.3	12.14	60.60	39.40
31.3-62.5	15.59	76.19	23.81
62.5-125.0	14.23	90.42	9.58
125.0-250.0	9.58	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Tamaki**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.20	1.20	98.80
3.9-7.8	1.30	2.50	97.50
7.8-15.6	2.68	5.18	94.82
15.6-31.3	6.89	12.07	87.93
31.3-62.5	18.27	30.34	69.66
62.5-125.0	32.08	62.42	37.58
125.0-250.0	37.58	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Tamaki** low (0-300um).



Area Ranges Table: **14/12/2007 Tamaki**

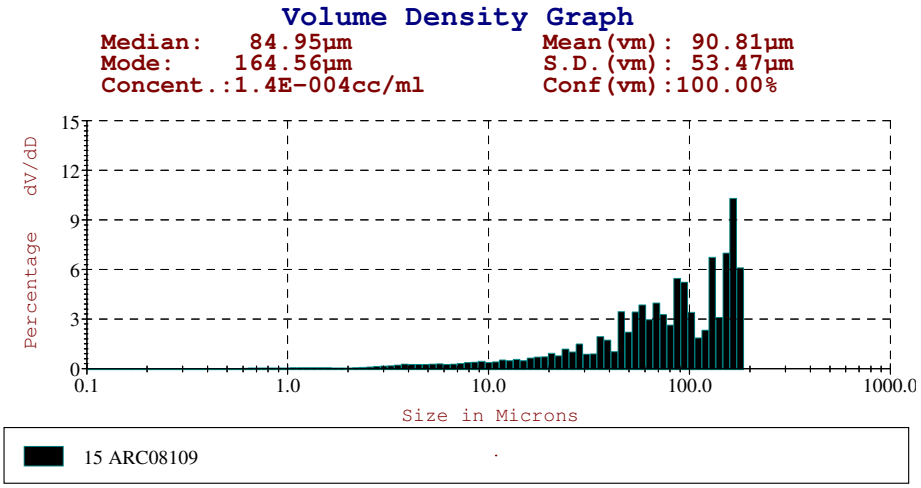
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	33.28	33.28	66.72
3.9-7.8	9.37	42.65	57.35
7.8-15.6	11.95	54.60	45.40
15.6-31.3	12.33	66.93	33.07
31.3-62.5	22.14	89.07	10.93
62.5-125.0	8.68	97.75	2.25
125.0-250.0	2.25	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Tamaki**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.94	1.94	98.06
3.9-7.8	2.01	3.95	96.05
7.8-15.6	5.52	9.46	90.54
15.6-31.3	10.35	19.82	80.18
31.3-62.5	39.17	58.98	41.02
62.5-125.0	28.88	87.86	12.14
125.0-250.0	12.14	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Tamaki** low (0-300um).



Area Ranges Table: **14/12/2007 Tamaki**

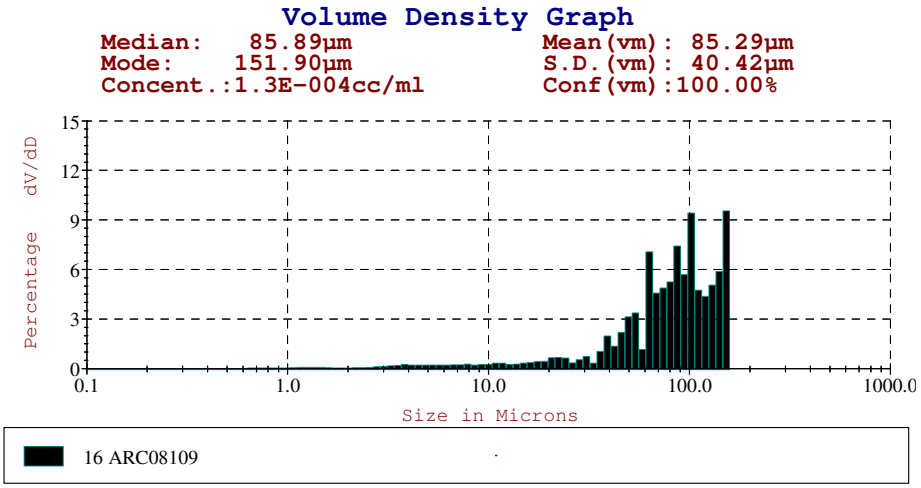
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	32.60	32.60	67.40
3.9-7.8	13.27	45.87	54.13
7.8-15.6	11.14	57.00	43.00
15.6-31.3	11.50	68.51	31.49
31.3-62.5	13.23	81.73	18.27
62.5-125.0	11.36	93.09	6.91
125.0-250.0	6.91	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Tamaki**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.83	1.83	98.17
3.9-7.8	2.31	4.15	95.85
7.8-15.6	3.91	8.06	91.94
15.6-31.3	8.24	16.30	83.70
31.3-62.5	19.68	35.98	64.02
62.5-125.0	30.47	66.45	33.55
125.0-250.0	33.55	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Pakaranga U** low (0-300um).



Area Ranges Table: **14/12/2007 Pakaranga U**

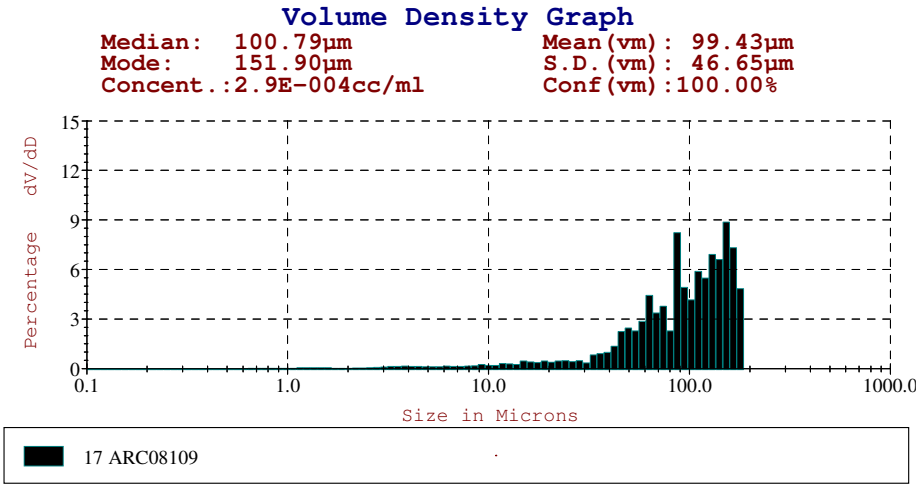
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	35.37	35.37	64.63
3.9-7.8	11.85	47.22	52.78
7.8-15.6	7.40	54.62	45.38
15.6-31.3	7.34	61.96	38.04
31.3-62.5	13.07	75.03	24.97
62.5-125.0	19.94	94.97	5.03
125.0-250.0	5.03	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Pakaranga U**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.77	1.77	98.23
3.9-7.8	1.88	3.65	96.36
7.8-15.6	2.36	6.01	93.99
15.6-31.3	4.74	10.75	89.25
31.3-62.5	18.24	28.99	71.01
62.5-125.0	50.35	79.34	20.66
125.0-250.0	20.66	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Pakaranga U** low (0-300um).



Area Ranges Table: **14/12/2007 Pakaranga U**

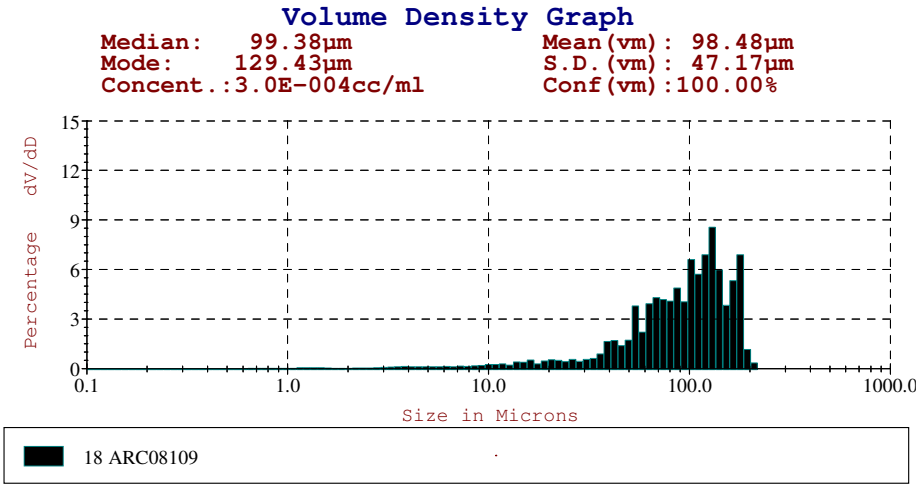
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	28.78	28.78	71.22
3.9-7.8	9.43	38.20	61.80
7.8-15.6	9.00	47.21	52.79
15.6-31.3	7.45	54.66	45.34
31.3-62.5	14.88	69.54	30.46
62.5-125.0	20.19	89.73	10.27
125.0-250.0	10.27	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Pakaranga U**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.20	1.20	98.80
3.9-7.8	1.17	2.36	97.64
7.8-15.6	2.33	4.69	95.31
15.6-31.3	3.66	8.36	91.64
31.3-62.5	16.12	24.48	75.52
62.5-125.0	40.76	65.24	34.76
125.0-250.0	34.76	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Pakaranga U** low (0-300um).



Area Ranges Table: **14/12/2007 Pakaranga U**

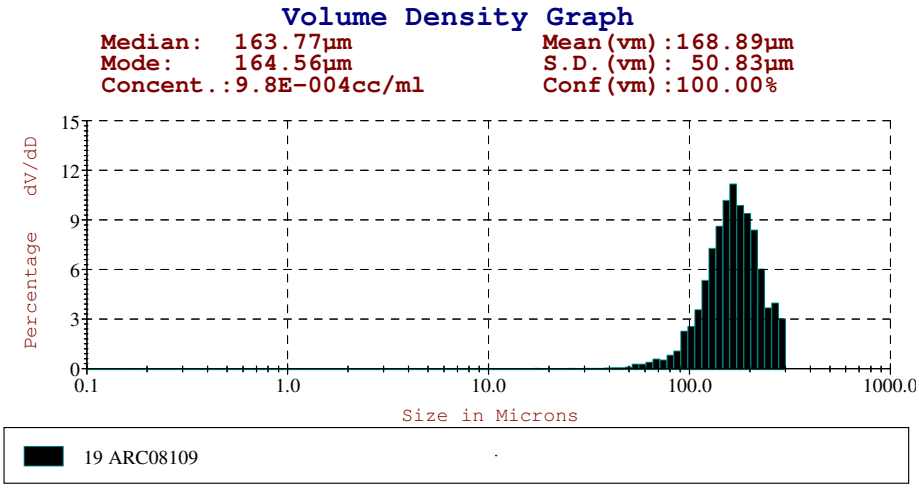
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	26.70	26.70	73.30
3.9-7.8	8.91	35.61	64.39
7.8-15.6	9.18	44.78	55.22
15.6-31.3	8.49	53.27	46.73
31.3-62.5	15.19	68.47	31.53
62.5-125.0	22.18	90.65	9.35
125.0-250.0	9.35	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Pakaranga U**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.06	1.06	98.94
3.9-7.8	1.08	2.14	97.86
7.8-15.6	2.32	4.46	95.54
15.6-31.3	4.11	8.57	91.43
31.3-62.5	15.98	24.55	75.45
62.5-125.0	44.27	68.82	31.18
125.0-250.0	31.18	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Cheltenham** low (0-300um).



Area Ranges Table: **14/12/2007 Cheltenham**

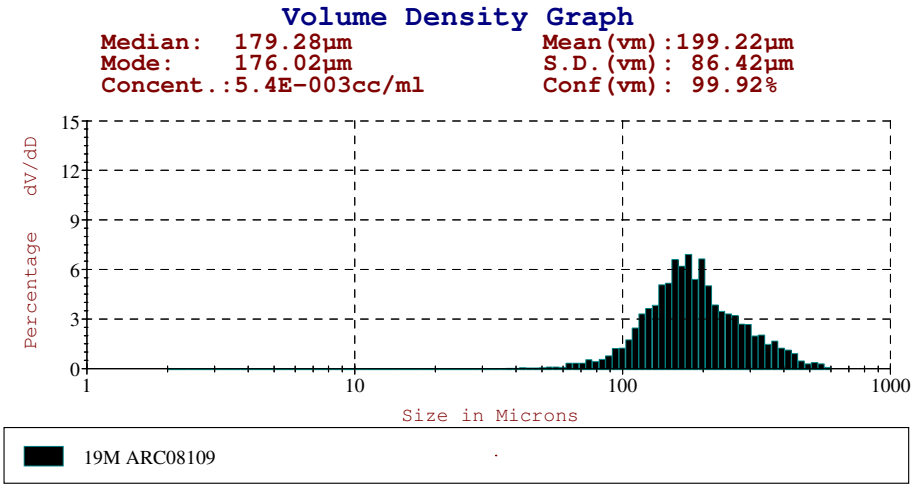
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.27	1.27	98.74
3.9-7.8	0.56	1.83	98.17
7.8-15.6	0.46	2.29	97.71
15.6-31.3	0.69	2.98	97.02
31.3-62.5	2.86	5.84	94.16
62.5-125.0	25.89	31.73	68.27
125.0-250.0	63.95	95.68	4.32
250.0-300.0	4.32	100.00	0.00

Volume Ranges Table: **14/12/2007 Cheltenham**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.02	0.02	99.98
3.9-7.8	0.02	0.04	99.96
7.8-15.6	0.04	0.07	99.93
15.6-31.3	0.10	0.18	99.82
31.3-62.5	0.99	1.17	98.83
62.5-125.0	17.71	18.88	81.13
125.0-250.0	73.22	92.09	7.91
250.0-300.0	7.91	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Cheltenham** medium (2-600um).



Area Ranges Table: **14/12/2007 Cheltenham**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.23	0.23	99.77
3.9-7.8	0.67	0.90	99.10
7.8-15.6	0.93	1.83	98.17
15.6-31.3	0.70	2.53	97.47
31.3-62.5	2.22	4.74	95.26
62.5-125.0	24.43	29.17	70.83
125.0-250.0	59.50	88.67	11.33
250.0-500.0	11.09	99.77	0.23
500.0-600.0	0.23	100.00	0.00

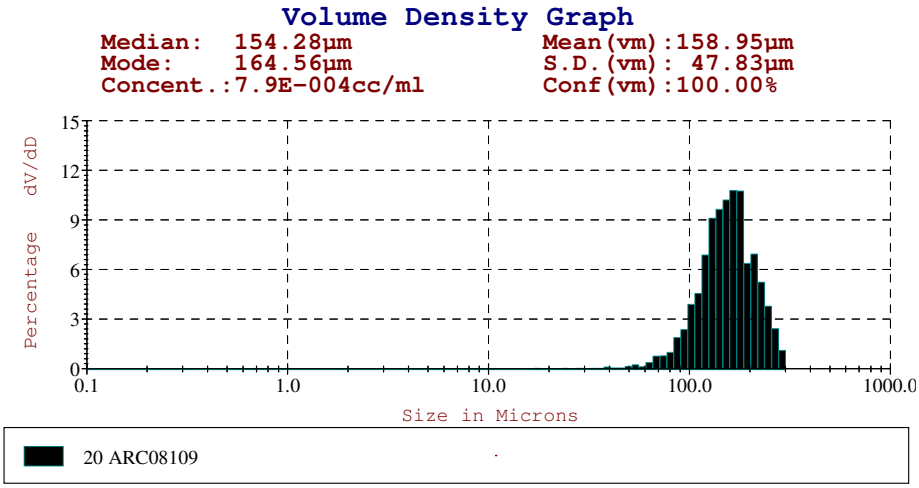
Volume Ranges Table: **14/12/2007 Cheltenham**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.00	0.00	100.00
3.9-7.8	0.02	0.03	99.97
7.8-15.6	0.06	0.09	99.91
15.6-31.3	0.09	0.18	99.82
31.3-62.5	0.67	0.85	99.15
62.5-125.0	14.98	15.83	84.17
125.0-250.0	62.21	78.04	21.96
250.0-500.0	21.19	99.24	0.76
500.0-600.0	0.76	100.00	0.00

250.0-300.0	9.64	87.68	12.32

Particle Size

Volume Distribution: Sample **14/12/2007 Cheltenham** low (0-300um).



Area Ranges Table: **14/12/2007 Cheltenham**

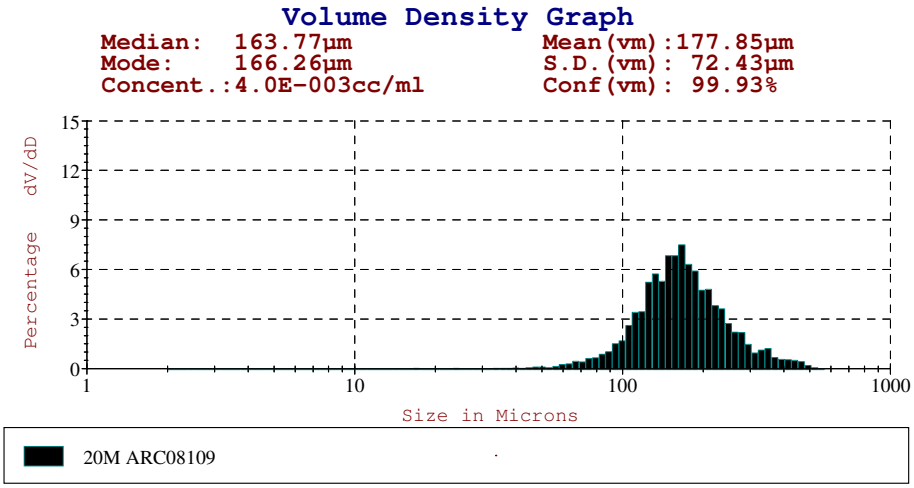
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.72	1.72	98.28
3.9-7.8	0.79	2.50	97.50
7.8-15.6	0.86	3.37	96.64
15.6-31.3	0.70	4.06	95.94
31.3-62.5	2.49	6.55	93.45
62.5-125.0	31.20	37.75	62.25
125.0-250.0	59.62	97.37	2.63
250.0-300.0	2.64	100.00	0.00

Volume Ranges Table: **14/12/2007 Cheltenham**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.03	0.03	99.97
3.9-7.8	0.03	0.06	99.94
7.8-15.6	0.07	0.13	99.87
15.6-31.3	0.11	0.24	99.76
31.3-62.5	0.88	1.12	98.88
62.5-125.0	22.72	23.84	76.16
125.0-250.0	71.12	94.96	5.04
250.0-300.0	5.04	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Cheltenham** medium (2-600um).



Area Ranges Table: **14/12/2007 Cheltenham**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.37	0.37	99.63
3.9-7.8	0.91	1.28	98.72
7.8-15.6	1.17	2.45	97.55
15.6-31.3	1.10	3.55	96.45
31.3-62.5	2.93	6.48	93.53
62.5-125.0	28.91	35.38	64.62
125.0-250.0	58.25	93.63	6.37
250.0-500.0	6.35	99.97	0.03
500.0-600.0	0.03	100.00	0.00

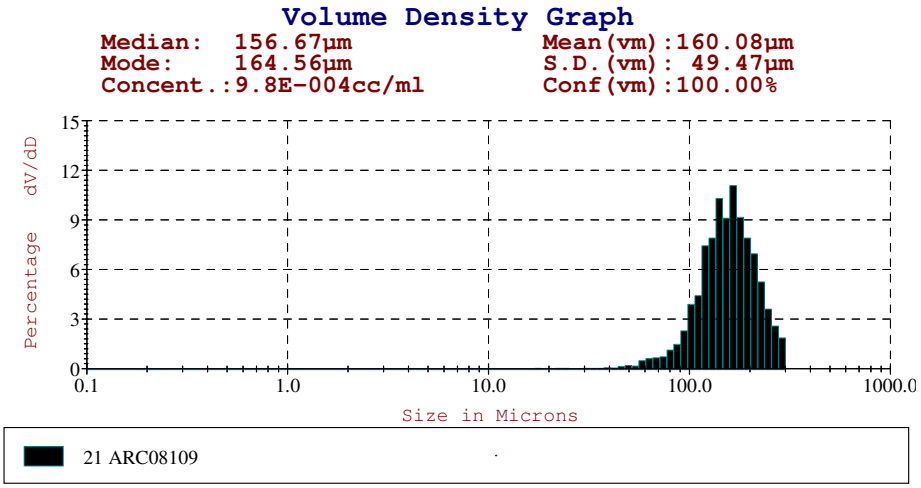
Volume Ranges Table: **14/12/2007 Cheltenham**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.01	0.01	99.99
3.9-7.8	0.03	0.04	99.96
7.8-15.6	0.09	0.13	99.87
15.6-31.3	0.16	0.29	99.71
31.3-62.5	1.00	1.28	98.72
62.5-125.0	19.62	20.90	79.10
125.0-250.0	65.85	86.75	13.25
250.0-500.0	13.16	99.91	0.09
500.0-600.0	0.09	100.00	0.00

250.0-300.0	6.61	93.36	6.64

Particle Size

Volume Distribution: Sample **14/12/2007 Cheltenham** low (0-300um).



Area Ranges Table: **14/12/2007 Cheltenham**

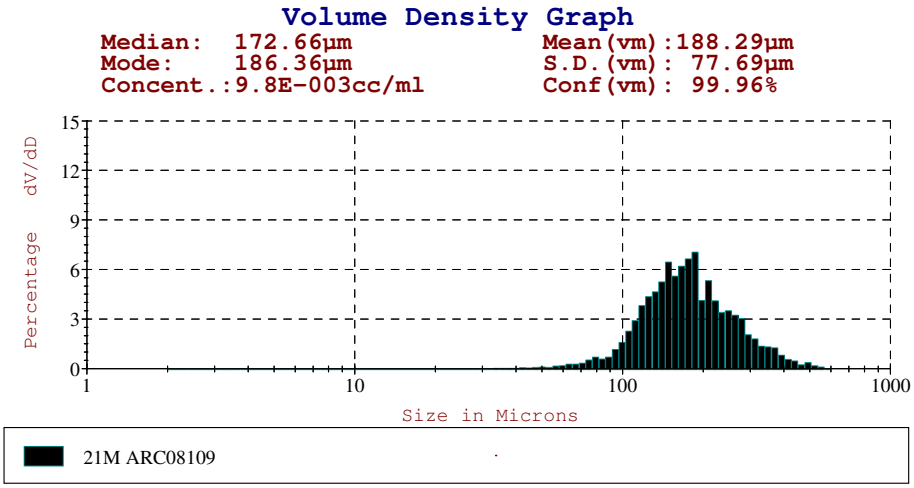
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	2.35	2.35	97.65
3.9-7.8	0.93	3.28	96.72
7.8-15.6	0.88	4.16	95.84
15.6-31.3	0.95	5.11	94.89
31.3-62.5	3.84	8.95	91.05
62.5-125.0	30.65	39.60	60.40
125.0-250.0	57.62	97.23	2.77
250.0-300.0	2.77	100.00	0.00

Volume Ranges Table: **14/12/2007 Cheltenham**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.03	0.03	99.97
3.9-7.8	0.04	0.07	99.93
7.8-15.6	0.07	0.14	99.86
15.6-31.3	0.15	0.29	99.71
31.3-62.5	1.47	1.76	98.24
62.5-125.0	22.72	24.48	75.52
125.0-250.0	70.08	94.57	5.43
250.0-300.0	5.43	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Cheltenham** medium (2-600um).



Area Ranges Table: **14/12/2007 Cheltenham**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.24	0.24	99.76
3.9-7.8	0.69	0.93	99.07
7.8-15.6	1.15	2.07	97.93
15.6-31.3	0.81	2.89	97.11
31.3-62.5	2.88	5.76	94.24
62.5-125.0	26.61	32.37	67.63
125.0-250.0	58.26	90.63	9.37
250.0-500.0	9.26	99.89	0.11
500.0-600.0	0.11	100.00	0.00

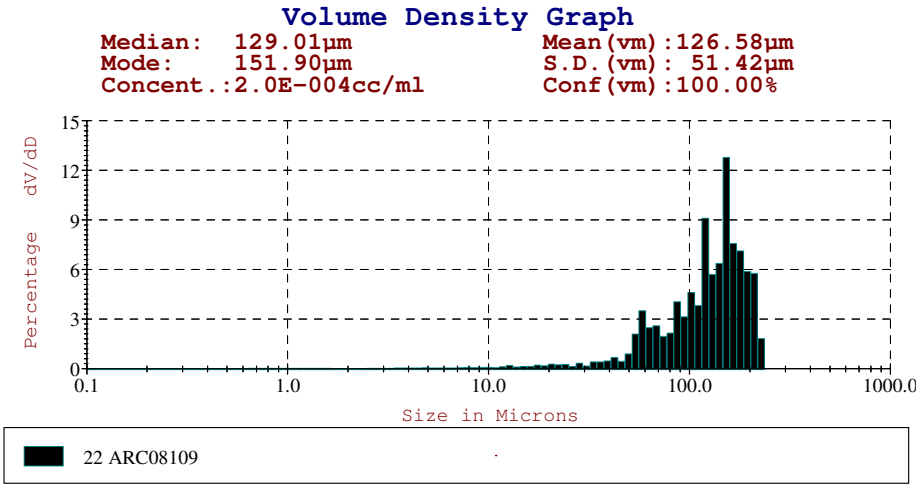
Volume Ranges Table: **14/12/2007 Cheltenham**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.01	0.01	100.00
3.9-7.8	0.03	0.03	99.97
7.8-15.6	0.08	0.11	99.89
15.6-31.3	0.11	0.22	99.78
31.3-62.5	0.92	1.15	98.86
62.5-125.0	17.33	18.47	81.53
125.0-250.0	63.21	81.68	18.32
250.0-500.0	17.96	99.64	0.36
500.0-600.0	0.36	100.00	0.00

250.0-300.0	9.37	91.05	8.95

Particle Size

Volume Distribution: Sample **14/12/2007 Whau Wairau** low (0-300um).



Area Ranges Table: **14/12/2007 Whau Wairau**

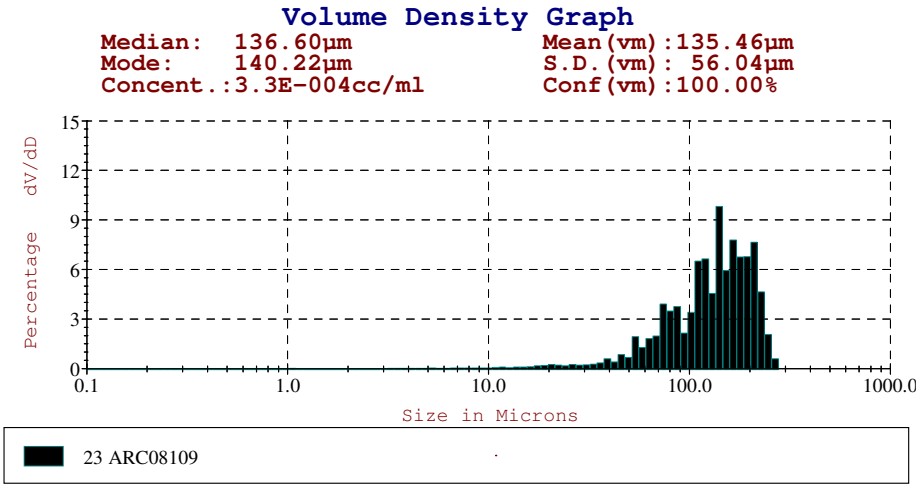
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	21.00	21.00	79.00
3.9-7.8	5.76	26.75	73.25
7.8-15.6	5.79	32.55	67.45
15.6-31.3	6.09	38.64	61.36
31.3-62.5	12.98	51.62	48.38
62.5-125.0	26.09	77.71	22.29
125.0-250.0	22.29	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Whau Wairau**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.44	0.44	99.57
3.9-7.8	0.46	0.89	99.11
7.8-15.6	0.94	1.83	98.18
15.6-31.3	1.92	3.75	96.25
31.3-62.5	9.28	13.03	86.97
62.5-125.0	34.94	47.97	52.03
125.0-250.0	52.03	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Whau Wairau** low (0-300um).



Area Ranges Table: **14/12/2007 Whau Wairau**

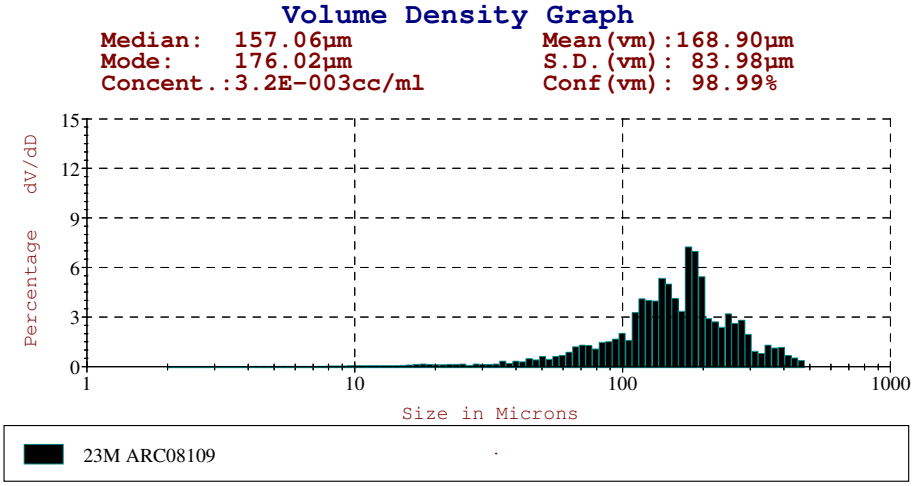
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	16.74	16.74	83.26
3.9-7.8	4.19	20.92	79.08
7.8-15.6	4.43	25.35	74.65
15.6-31.3	6.49	31.85	68.15
31.3-62.5	11.68	43.53	56.47
62.5-125.0	29.42	72.95	27.05
125.0-250.0	26.86	99.81	0.19
250.0-300.0	0.19	100.00	0.00

Volume Ranges Table: **14/12/2007 Whau Wairau**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.28	0.28	99.72
3.9-7.8	0.29	0.57	99.43
7.8-15.6	0.63	1.20	98.80
15.6-31.3	1.78	2.98	97.02
31.3-62.5	6.96	9.95	90.06
62.5-125.0	33.47	43.41	56.59
125.0-250.0	55.98	99.39	0.61
250.0-300.0	0.61	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Whau Wairau** medium (2-600um).



Area Ranges Table: **14/12/2007 Whau Wairau**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	1.85	1.85	98.15
3.9-7.8	4.81	6.66	93.34
7.8-15.6	7.24	13.90	86.10
15.6-31.3	8.19	22.09	77.91
31.3-62.5	11.45	33.54	66.46
62.5-125.0	27.00	60.54	39.46
125.0-250.0	34.04	94.58	5.42
250.0-500.0	5.42	100.00	0.00
500.0-600.0	0.00	100.00	0.00

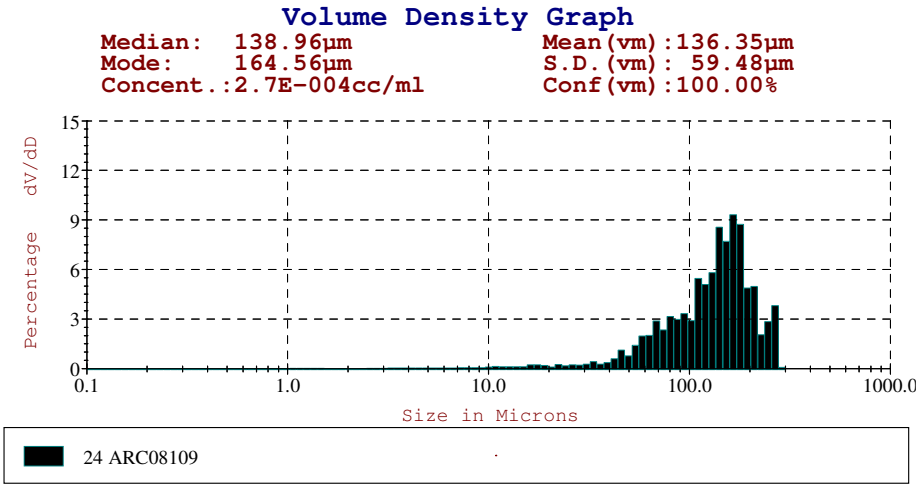
Volume Ranges Table: **14/12/2007 Whau Wairau**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.05	0.05	99.95
3.9-7.8	0.25	0.31	99.69
7.8-15.6	0.75	1.06	98.94
15.6-31.3	1.64	2.69	97.31
31.3-62.5	4.98	7.67	92.33
62.5-125.0	23.57	31.24	68.76
125.0-250.0	53.38	84.62	15.38
250.0-500.0	15.39	100.00	0.00
500.0-600.0	0.00	100.00	0.00

250.0-300.0	8.35	92.96	7.04

Particle Size

Volume Distribution: Sample **14/12/2007 Whau Wairau** low (0-300um).



Area Ranges Table: **14/12/2007 Whau Wairau**

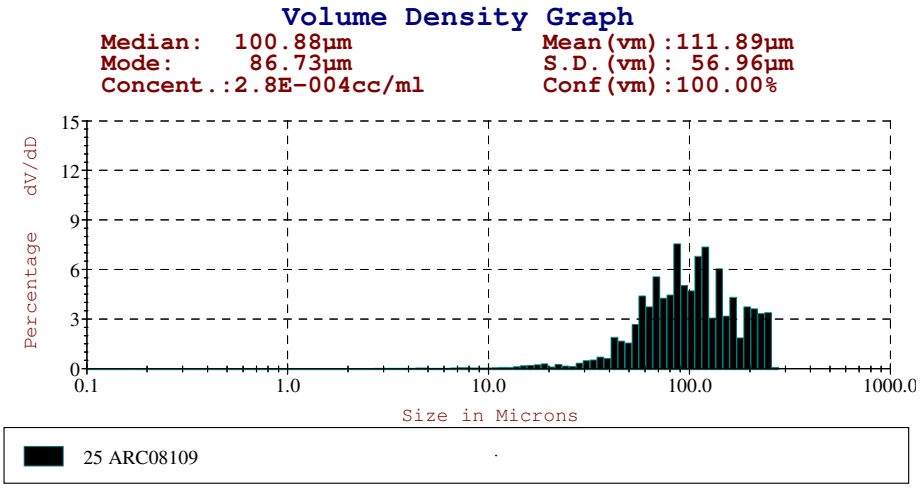
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	19.53	19.53	80.47
3.9-7.8	5.62	25.15	74.85
7.8-15.6	5.94	31.09	68.91
15.6-31.3	6.52	37.62	62.38
31.3-62.5	12.19	49.81	50.19
62.5-125.0	24.25	74.05	25.95
125.0-250.0	24.70	98.76	1.24
250.0-300.0	1.24	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP24**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.41	0.41	99.59
3.9-7.8	0.42	0.82	99.18
7.8-15.6	0.90	1.73	98.28
15.6-31.3	1.90	3.62	96.38
31.3-62.5	8.01	11.64	88.36
62.5-125.0	29.55	41.19	58.81
125.0-250.0	54.41	95.60	4.40
250.0-300.0	4.40	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Lucas** low (0-300um).



Area Ranges Table: **14/12/2007 Lucas**

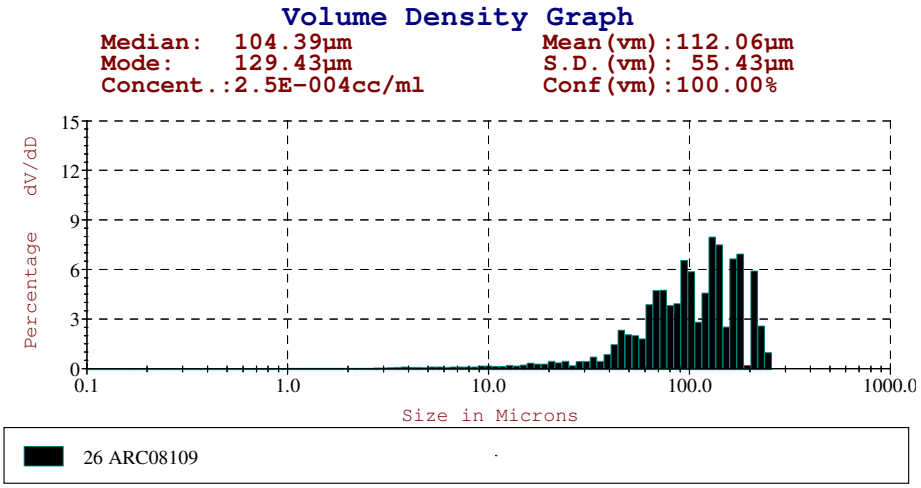
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	13.02	13.02	86.98
3.9-7.8	4.29	17.30	82.70
7.8-15.6	4.20	21.50	78.50
15.6-31.3	6.36	27.86	72.14
31.3-62.5	21.95	49.81	50.19
62.5-125.0	37.38	87.19	12.81
125.0-250.0	12.61	99.80	0.20
250.0-300.0	0.20	100.00	0.00

Volume Ranges Table: **14/12/2007 Lucas**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.29	0.29	99.71
3.9-7.8	0.35	0.64	99.36
7.8-15.6	0.73	1.36	98.64
15.6-31.3	2.08	3.45	96.55
31.3-62.5	15.76	19.20	80.80
62.5-125.0	48.57	67.77	32.23
125.0-250.0	31.50	99.26	0.74
250.0-300.0	0.74	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Lucas** low (0-300um).



Area Ranges Table: **14/12/2007 Lucas**

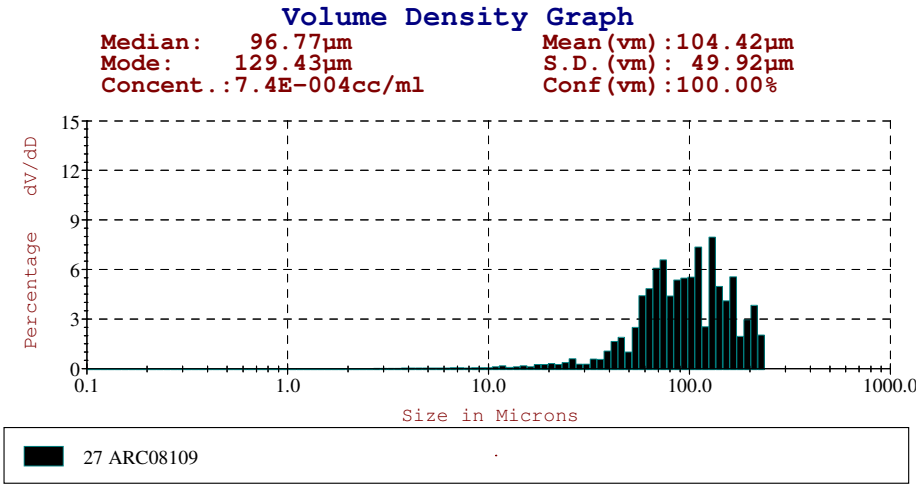
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	20.58	20.58	79.42
3.9-7.8	7.79	28.37	71.63
7.8-15.6	6.90	35.27	64.73
15.6-31.3	7.87	43.14	56.86
31.3-62.5	16.56	59.70	40.30
62.5-125.0	26.12	85.82	14.18
125.0-250.0	14.19	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Lucas**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.66	0.66	99.34
3.9-7.8	0.75	1.41	98.59
7.8-15.6	1.36	2.77	97.23
15.6-31.3	3.02	5.79	94.21
31.3-62.5	13.94	19.73	80.27
62.5-125.0	40.08	59.81	40.19
125.0-250.0	40.19	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Lucas** low (0-300um).



Area Ranges Table: **14/12/2007 Lucas**

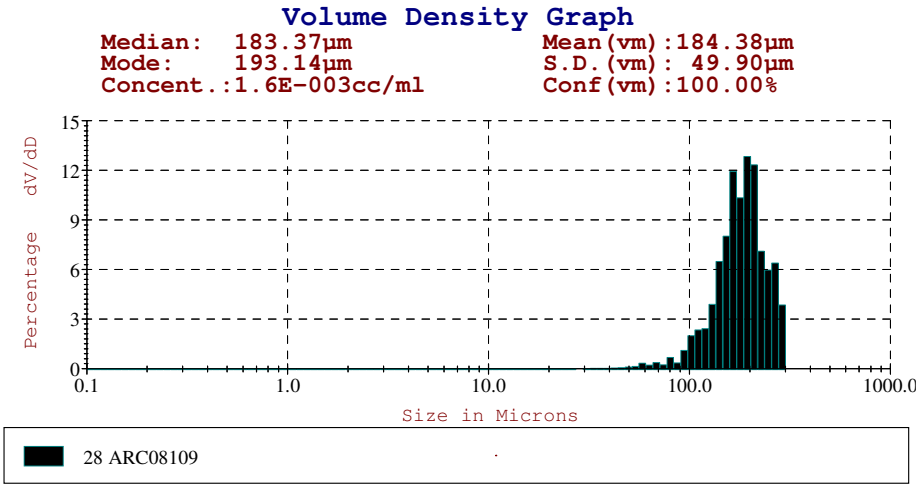
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	9.78	9.78	90.22
3.9-7.8	4.64	14.42	85.58
7.8-15.6	5.53	19.94	80.06
15.6-31.3	7.95	27.90	72.10
31.3-62.5	20.38	48.28	51.72
62.5-125.0	37.87	86.15	13.85
125.0-250.0	13.86	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Lucas**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.28	0.28	99.72
3.9-7.8	0.38	0.66	99.34
7.8-15.6	0.95	1.62	98.38
15.6-31.3	2.68	4.29	95.71
31.3-62.5	14.85	19.14	80.86
62.5-125.0	48.10	67.24	32.76
125.0-250.0	32.76	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Pukaki** low (0-300um).



Area Ranges Table: **14/12/2007 Pukaki**

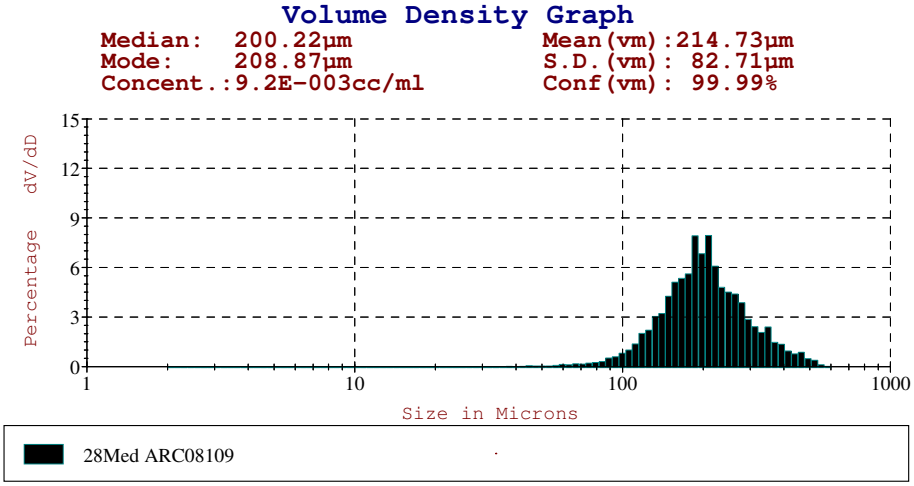
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.54	1.54	98.46
3.9-7.8	0.64	2.18	97.82
7.8-15.6	0.52	2.70	97.31
15.6-31.3	0.58	3.27	96.73
31.3-62.5	2.75	6.02	93.98
62.5-125.0	16.18	22.20	77.80
125.0-250.0	70.88	93.08	6.92
250.0-300.0	6.92	100.00	0.00

Volume Ranges Table: **14/12/2007 Pukaki**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.02	0.02	99.98
3.9-7.8	0.02	0.04	99.96
7.8-15.6	0.04	0.08	99.92
15.6-31.3	0.08	0.15	99.85
31.3-62.5	0.87	1.03	98.97
62.5-125.0	10.02	11.05	88.95
125.0-250.0	77.51	88.56	11.44
250.0-300.0	11.44	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Pukaki** medium (2-600um).



Area Ranges Table: **14/12/2007 Pukaki**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.22	0.22	99.78
3.9-7.8	0.55	0.77	99.23
7.8-15.6	0.75	1.51	98.49
15.6-31.3	0.67	2.18	97.82
31.3-62.5	2.06	4.24	95.76
62.5-125.0	15.55	19.79	80.21
125.0-250.0	65.04	84.83	15.17
250.0-500.0	14.97	99.80	0.20
500.0-600.0	0.21	100.00	0.00

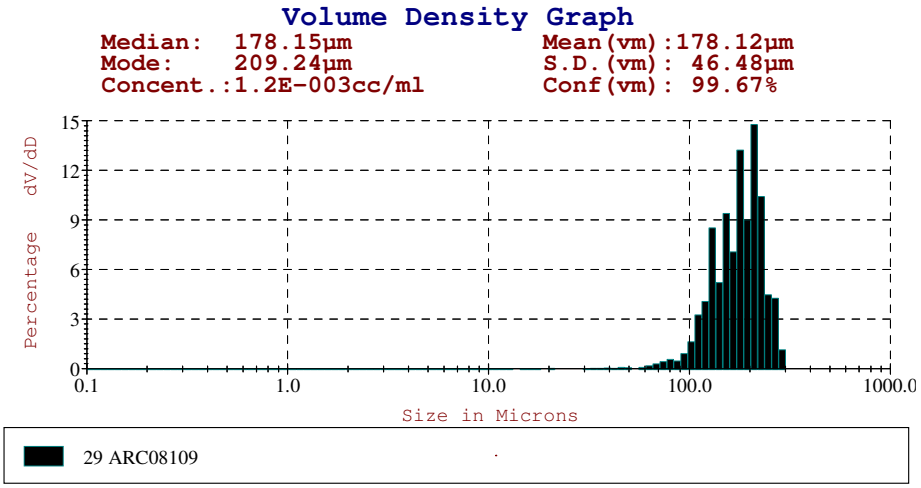
Volume Ranges Table: **14/12/2007 Pukaki**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.00	0.00	100.00
3.9-7.8	0.02	0.02	99.98
7.8-15.6	0.05	0.07	99.93
15.6-31.3	0.08	0.14	99.86
31.3-62.5	0.57	0.71	99.29
62.5-125.0	8.69	9.40	90.60
125.0-250.0	64.50	73.90	26.10
250.0-500.0	25.51	99.41	0.59
500.0-600.0	0.59	100.00	0.00

250.0-300.0	12.26	86.16	

Particle Size

Volume Distribution: Sample **14/12/2007 Pukaki** low (0-300um).



Area Ranges Table: **14/12/2007 Pukaki**

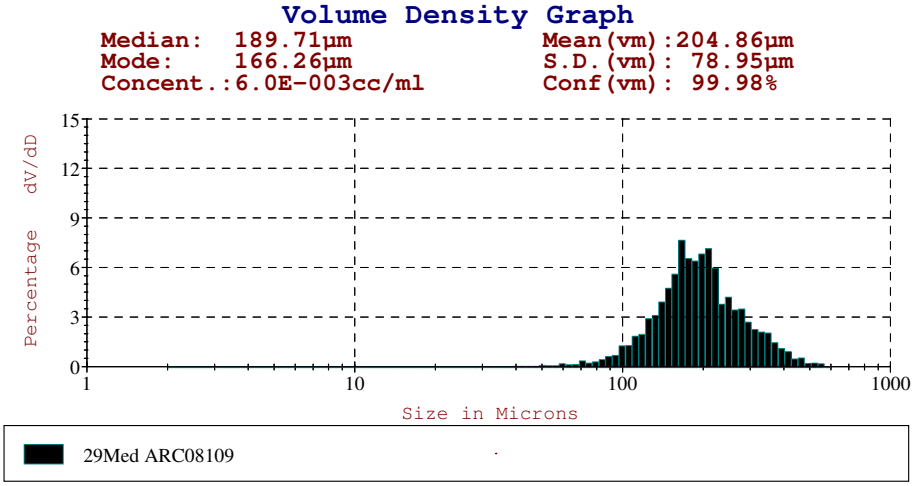
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.36	1.36	98.64
3.9-7.8	0.45	1.81	98.19
7.8-15.6	0.69	2.50	97.50
15.6-31.3	0.32	2.82	97.18
31.3-62.5	1.78	4.60	95.40
62.5-125.0	18.88	23.49	76.51
125.0-250.0	72.44	95.93	4.07
250.0-300.0	4.07	100.00	0.00

Volume Ranges Table: **14/12/2007 Pukaki**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.02	0.02	99.98
3.9-7.8	0.02	0.03	99.97
7.8-15.6	0.05	0.08	99.92
15.6-31.3	0.04	0.13	99.87
31.3-62.5	0.55	0.68	99.32
62.5-125.0	12.40	13.07	86.93
125.0-250.0	80.19	93.26	6.74
250.0-300.0	6.74	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Pukaki** medium (2-600um).



Area Ranges Table: **14/12/2007 Pukaki**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.23	0.23	99.77
3.9-7.8	0.72	0.95	99.05
7.8-15.6	1.07	2.02	97.98
15.6-31.3	0.78	2.80	97.20
31.3-62.5	1.98	4.78	95.22
62.5-125.0	17.91	22.68	77.32
125.0-250.0	64.53	87.21	12.79
250.0-500.0	12.66	99.87	0.13
500.0-600.0	0.13	100.00	0.00

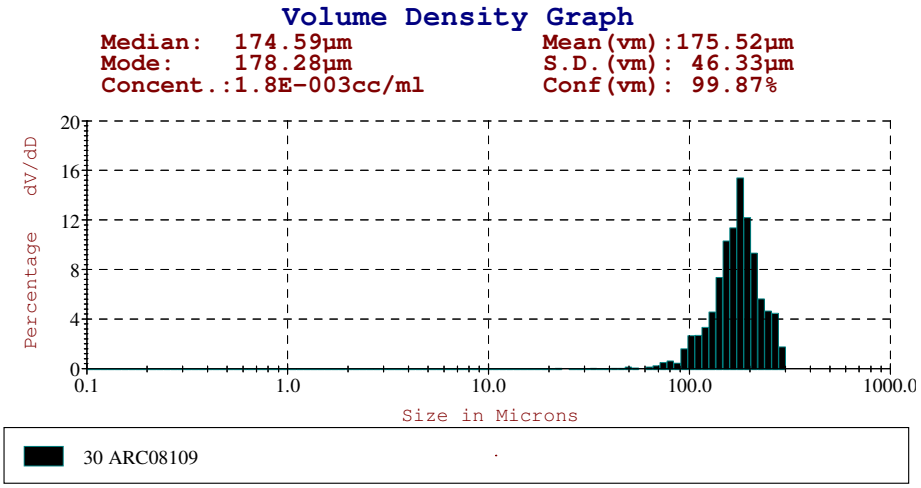
Volume Ranges Table: **14/12/2007 Pukaki**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.00	0.00	100.00
3.9-7.8	0.02	0.03	99.97
7.8-15.6	0.07	0.10	99.90
15.6-31.3	0.10	0.20	99.80
31.3-62.5	0.58	0.78	99.22
62.5-125.0	10.50	11.28	88.72
125.0-250.0	65.84	77.12	22.88
250.0-500.0	22.49	99.61	0.39
500.0-600.0	0.39	100.00	0.00

250.0-300.0	10.92	88.04	

Particle Size

Volume Distribution: Sample **14/12/2007 Pukaki** low (0-300um).



Area Ranges Table: **14/12/2007 Pukaki**

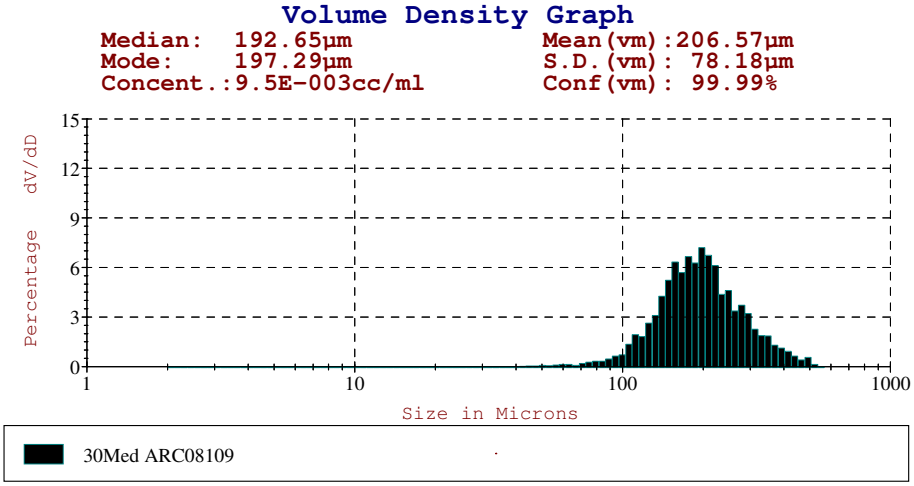
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.32	1.32	98.68
3.9-7.8	0.53	1.84	98.16
7.8-15.6	0.58	2.43	97.57
15.6-31.3	0.57	3.00	97.00
31.3-62.5	1.37	4.37	95.63
62.5-125.0	19.57	23.94	76.07
125.0-250.0	70.98	94.91	5.09
250.0-300.0	5.09	100.00	0.00

Volume Ranges Table: **14/12/2007 Pukaki**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.02	0.02	99.98
3.9-7.8	0.02	0.04	99.96
7.8-15.6	0.04	0.08	99.92
15.6-31.3	0.08	0.16	99.84
31.3-62.5	0.41	0.57	99.43
62.5-125.0	12.73	13.30	86.70
125.0-250.0	78.17	91.46	8.54
250.0-300.0	8.54	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Pukaki** medium (2-600um).



Area Ranges Table: **14/12/2007 Pukaki**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.19	0.19	99.81
3.9-7.8	0.56	0.75	99.25
7.8-15.6	0.71	1.46	98.54
15.6-31.3	0.59	2.05	97.95
31.3-62.5	2.24	4.29	95.71
62.5-125.0	16.42	20.70	79.30
125.0-250.0	65.89	86.59	13.41
250.0-500.0	13.36	99.94	0.06
500.0-600.0	0.06	100.00	0.00

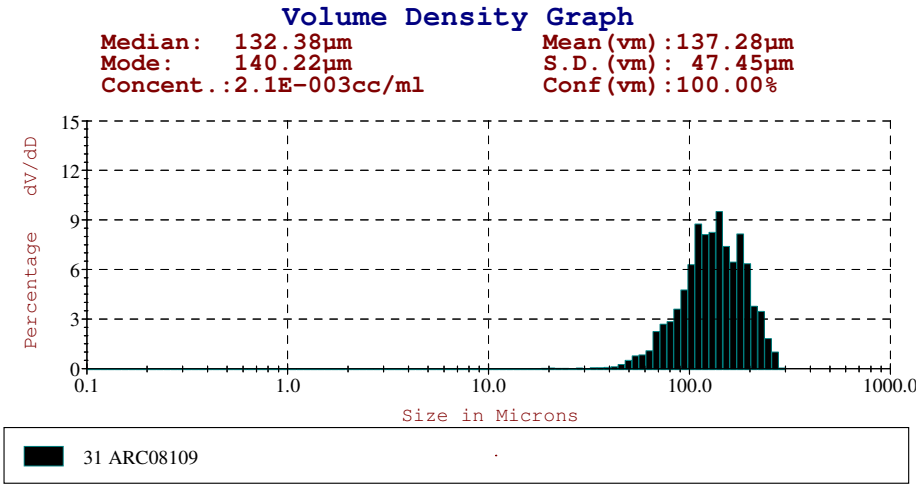
Volume Ranges Table: **14/12/2007 Pukaki**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.00	0.00	100.00
3.9-7.8	0.02	0.02	99.98
7.8-15.6	0.04	0.07	99.93
15.6-31.3	0.08	0.14	99.86
31.3-62.5	0.65	0.79	99.21
62.5-125.0	9.55	10.34	89.66
125.0-250.0	66.19	76.54	23.46
250.0-500.0	23.30	99.84	0.16
500.0-600.0	0.17	100.00	0.00

250.0-300.0	11.58	88.12	

Particle Size

Volume Distribution: Sample **14/12/2007 Weiti** low (0-300um).



Area Ranges Table: **14/12/2007 Weiti**

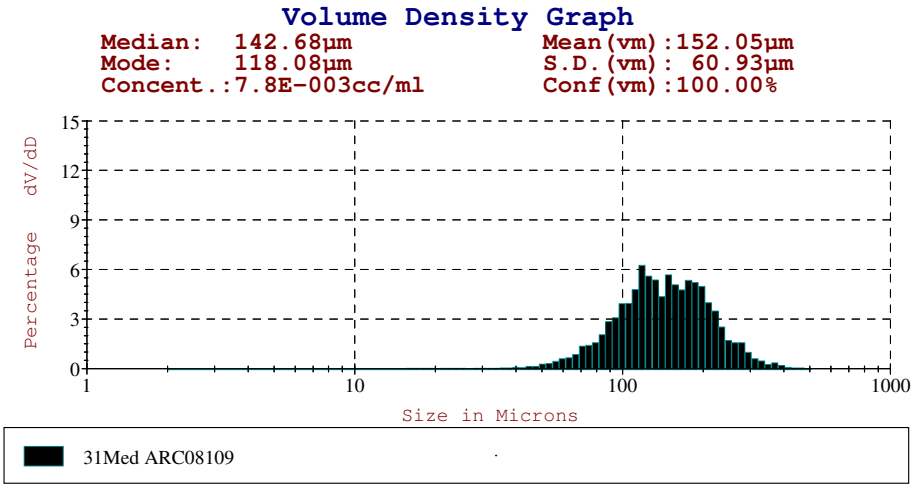
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	2.76	2.76	97.24
3.9-7.8	1.18	3.94	96.06
7.8-15.6	0.78	4.72	95.28
15.6-31.3	1.14	5.86	94.14
31.3-62.5	6.82	12.68	87.32
62.5-125.0	48.35	61.03	38.97
125.0-250.0	38.35	99.38	0.62
250.0-300.0	0.62	100.00	0.00

Volume Ranges Table: **14/12/2007 Weiti**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.05	0.05	99.96
3.9-7.8	0.06	0.10	99.90
7.8-15.6	0.07	0.17	99.83
15.6-31.3	0.22	0.40	99.61
31.3-62.5	3.07	3.47	96.53
62.5-125.0	40.52	43.99	56.01
125.0-250.0	54.60	98.59	1.41
250.0-300.0	1.41	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Weiti** medium (2-600um).



Area Ranges Table: **14/12/2007 Weiti**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.42	0.42	99.58
3.9-7.8	1.12	1.54	98.46
7.8-15.6	1.46	3.00	97.00
15.6-31.3	1.44	4.44	95.56
31.3-62.5	6.07	10.51	89.49
62.5-125.0	45.41	55.92	44.08
125.0-250.0	41.07	96.98	3.02
250.0-500.0	3.02	100.00	0.00
500.0-600.0	0.00	100.00	0.00

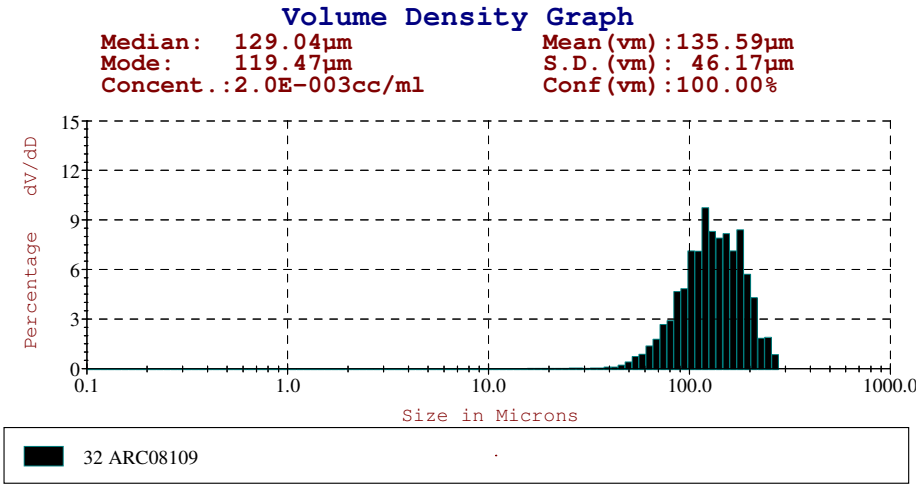
Volume Ranges Table: **14/12/2007 Weiti**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.01	0.01	99.99
3.9-7.8	0.05	0.06	99.94
7.8-15.6	0.13	0.19	99.81
15.6-31.3	0.25	0.45	99.56
31.3-62.5	2.52	2.96	97.04
62.5-125.0	35.30	38.26	61.74
125.0-250.0	54.76	93.02	6.98
250.0-500.0	6.98	100.00	0.00
500.0-600.0	0.00	100.00	0.00

250.0-300.0	4.87	97.89	2.11

Particle Size

Volume Distribution: Sample **14/12/2007 Weiti** low (0-300um).



Area Ranges Table: **14/12/2007 Weiti**

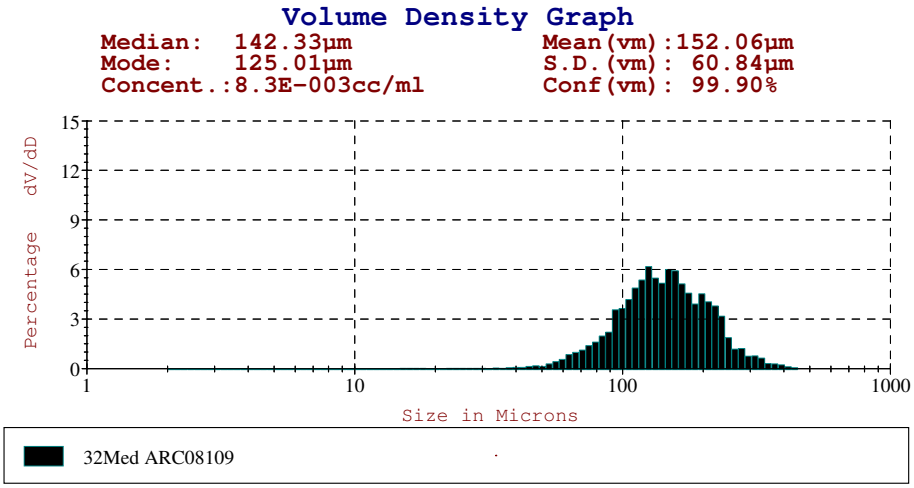
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	2.47	2.47	97.53
3.9-7.8	1.04	3.51	96.49
7.8-15.6	1.08	4.59	95.41
15.6-31.3	1.45	6.04	93.96
31.3-62.5	6.50	12.54	87.46
62.5-125.0	50.19	62.73	37.27
125.0-250.0	36.65	99.39	0.61
250.0-300.0	0.61	100.00	0.00

Volume Ranges Table: **14/12/2007 Weiti**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.04	0.04	99.96
3.9-7.8	0.05	0.09	99.91
7.8-15.6	0.11	0.20	99.80
15.6-31.3	0.28	0.48	99.52
31.3-62.5	3.00	3.48	96.52
62.5-125.0	42.78	46.26	53.74
125.0-250.0	52.34	98.60	1.40
250.0-300.0	1.40	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Weiti** medium (2-600um).



Area Ranges Table: **14/12/2007 Weiti**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.39	0.39	99.61
3.9-7.8	1.02	1.41	98.59
7.8-15.6	1.39	2.79	97.21
15.6-31.3	1.40	4.20	95.81
31.3-62.5	5.62	9.81	90.19
62.5-125.0	45.10	54.91	45.09
125.0-250.0	42.52	97.43	2.57
250.0-500.0	2.57	100.00	0.00
500.0-600.0	0.00	100.00	0.00

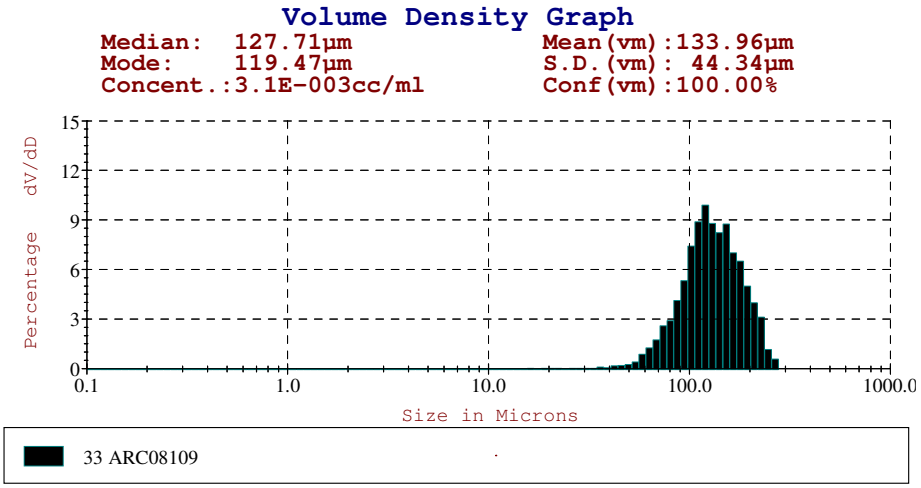
Volume Ranges Table: **14/12/2007 Weiti**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.01	0.01	99.99
3.9-7.8	0.05	0.06	99.94
7.8-15.6	0.13	0.18	99.82
15.6-31.3	0.25	0.43	99.57
31.3-62.5	2.31	2.73	97.27
62.5-125.0	34.85	37.59	62.41
125.0-250.0	56.35	93.93	6.07
250.0-500.0	6.07	100.00	0.00
500.0-600.0	0.00	100.00	0.00

250.0-300.0	3.52	97.45	2.55

Particle Size

Volume Distribution: Sample **14/12/2007 Weiti** low (0-300um).



Area Ranges Table: **14/12/2007 Weiti**

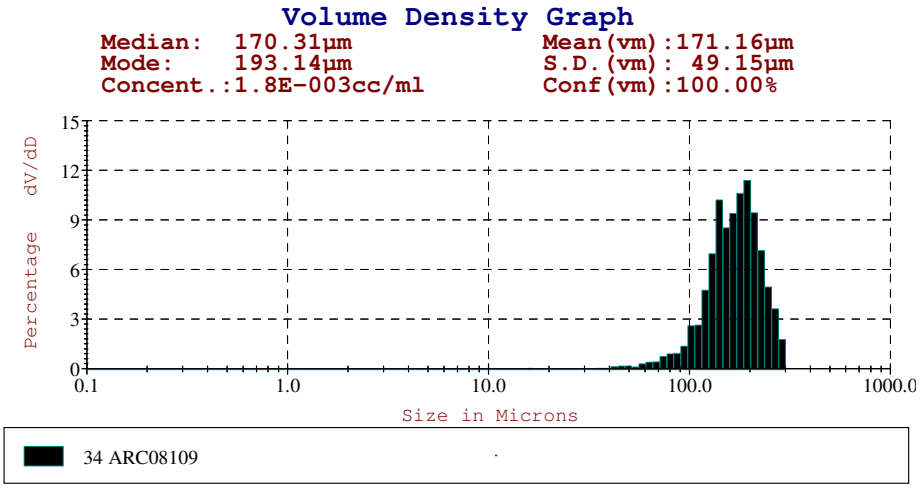
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.99	1.99	98.01
3.9-7.8	0.81	2.80	97.20
7.8-15.6	0.82	3.62	96.38
15.6-31.3	0.96	4.58	95.42
31.3-62.5	5.94	10.52	89.48
62.5-125.0	52.29	62.81	37.19
125.0-250.0	36.74	99.55	0.45
250.0-300.0	0.45	100.00	0.00

Volume Ranges Table: **14/12/2007 Weiti**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.03	0.03	99.97
3.9-7.8	0.04	0.07	99.93
7.8-15.6	0.08	0.15	99.85
15.6-31.3	0.19	0.34	99.66
31.3-62.5	2.71	3.05	96.95
62.5-125.0	44.49	47.54	52.46
125.0-250.0	51.45	98.99	1.01
250.0-300.0	1.01	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Motions** low (0-300um).



Area Ranges Table: **14/12/2007 Motions**

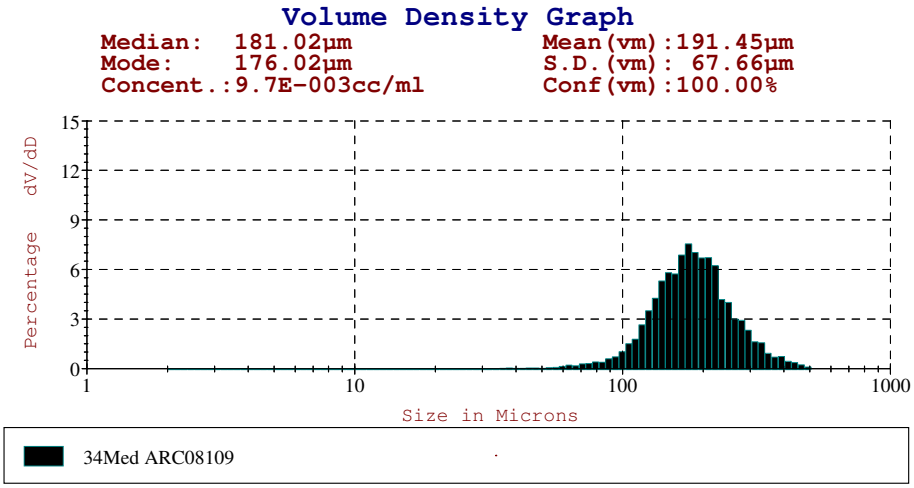
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.54	1.54	98.46
3.9-7.8	0.60	2.13	97.87
7.8-15.6	0.53	2.66	97.34
15.6-31.3	0.83	3.49	96.51
31.3-62.5	3.09	6.58	93.42
62.5-125.0	22.84	29.42	70.58
125.0-250.0	67.02	96.44	3.56
250.0-300.0	3.56	100.00	0.00

Volume Ranges Table: **14/12/2007 Motions**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.02	0.02	99.98
3.9-7.8	0.02	0.04	99.96
7.8-15.6	0.04	0.08	99.92
15.6-31.3	0.12	0.20	99.80
31.3-62.5	1.04	1.24	98.76
62.5-125.0	15.38	16.62	83.38
125.0-250.0	77.02	93.64	6.36
250.0-300.0	6.36	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Motions** medium (2-600um).



Area Ranges Table: **14/12/2007 Motions**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.27	0.27	99.73
3.9-7.8	0.74	1.00	99.00
7.8-15.6	0.89	1.89	98.11
15.6-31.3	0.71	2.60	97.40
31.3-62.5	2.22	4.82	95.18
62.5-125.0	18.58	23.40	76.60
125.0-250.0	67.69	91.09	8.91
250.0-500.0	8.91	100.00	0.00
500.0-600.0	0.00	100.00	0.00

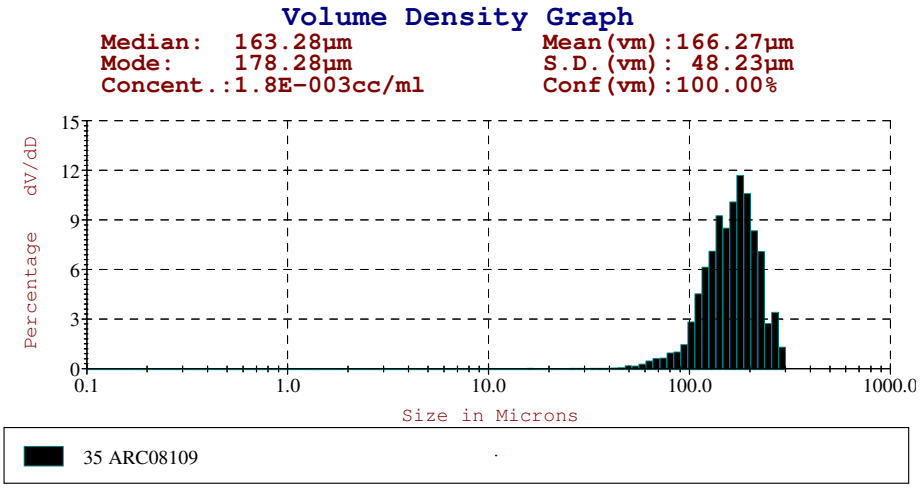
Volume Ranges Table: **14/12/2007 Motions**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.01	0.01	100.00
3.9-7.8	0.03	0.03	99.97
7.8-15.6	0.06	0.09	99.91
15.6-31.3	0.09	0.19	99.82
31.3-62.5	0.68	0.86	99.14
62.5-125.0	11.47	12.33	87.67
125.0-250.0	71.47	83.80	16.20
250.0-500.0	16.20	100.00	0.00
500.0-600.0	0.00	100.00	0.00

250.0-300.0	9.27	93.07	6.93

Particle Size

Volume Distribution: Sample **14/12/2007 Motions** low (0-300um).



Area Ranges Table: **14/12/2007 Motions**

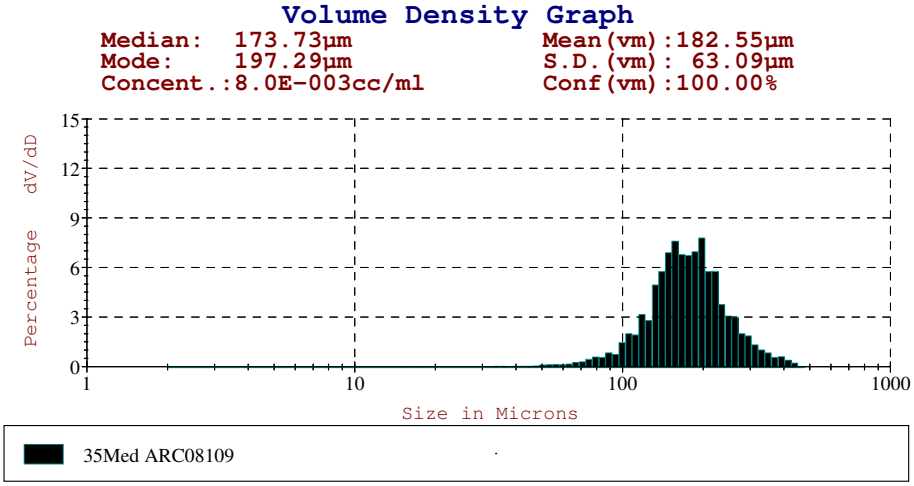
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.47	1.47	98.53
3.9-7.8	0.62	2.09	97.91
7.8-15.6	0.74	2.83	97.17
15.6-31.3	0.89	3.72	96.28
31.3-62.5	2.64	6.35	93.65
62.5-125.0	27.41	33.77	66.24
125.0-250.0	63.21	96.98	3.02
250.0-300.0	3.02	100.00	0.00

Volume Ranges Table: **14/12/2007 Motions**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.02	0.02	99.98
3.9-7.8	0.02	0.04	99.96
7.8-15.6	0.06	0.10	99.90
15.6-31.3	0.13	0.23	99.77
31.3-62.5	0.94	1.17	98.83
62.5-125.0	19.22	20.39	79.61
125.0-250.0	74.05	94.45	5.55
250.0-300.0	5.56	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Motions** medium (2-600um).



Area Ranges Table: **14/12/2007 Motions**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.27	0.27	99.73
3.9-7.8	0.71	0.98	99.02
7.8-15.6	1.02	2.00	98.00
15.6-31.3	0.94	2.94	97.06
31.3-62.5	2.46	5.39	94.61
62.5-125.0	20.98	26.37	73.63
125.0-250.0	66.71	93.08	6.92
250.0-500.0	6.92	100.00	0.00
500.0-600.0	0.00	100.00	0.00

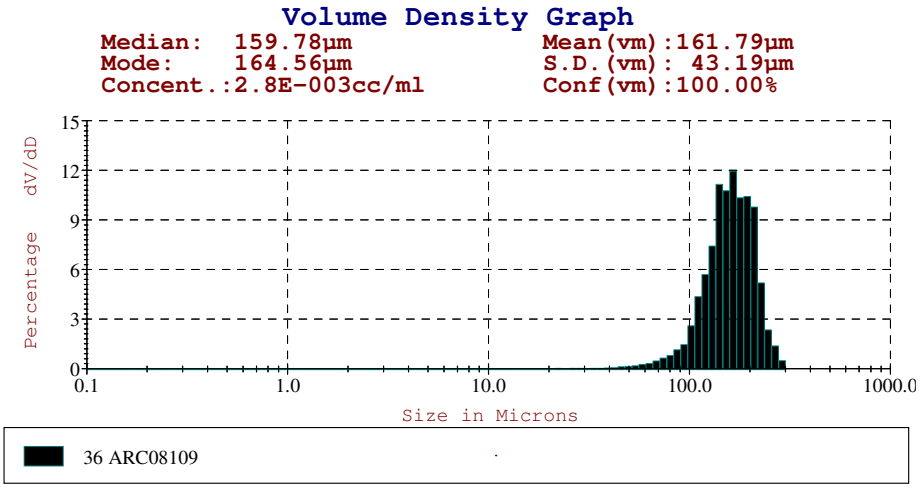
Volume Ranges Table: **14/12/2007 Motions**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.01	0.01	100.00
3.9-7.8	0.03	0.03	99.97
7.8-15.6	0.07	0.11	99.89
15.6-31.3	0.13	0.24	99.76
31.3-62.5	0.78	1.02	98.98
62.5-125.0	13.35	14.37	85.63
125.0-250.0	72.65	87.03	12.97
250.0-500.0	12.98	100.00	0.00
500.0-600.0	0.00	100.00	0.00

250.0-300.0	7.84	94.86	5.14

Particle Size

Volume Distribution: Sample **14/12/2007 Motions** low (0-300um).



Area Ranges Table: **14/12/2007 Motions**

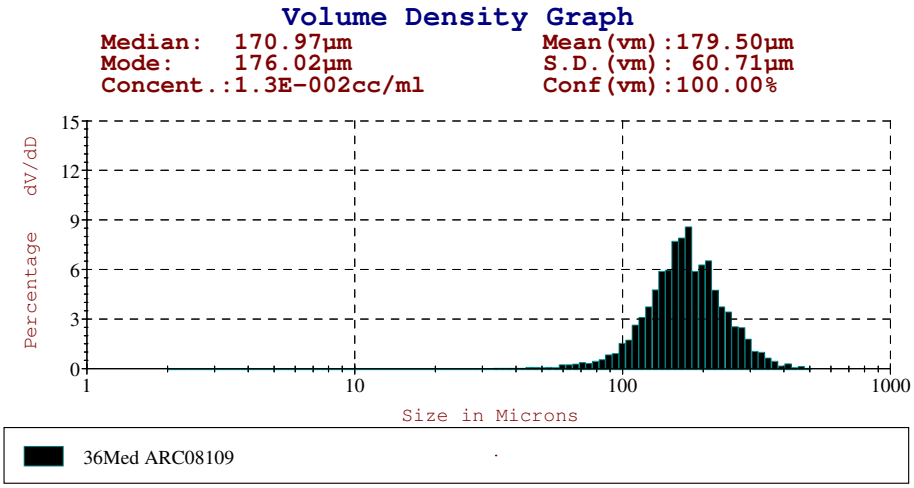
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.42	1.42	98.58
3.9-7.8	0.67	2.10	97.90
7.8-15.6	0.79	2.89	97.11
15.6-31.3	0.76	3.64	96.36
31.3-62.5	2.76	6.40	93.60
62.5-125.0	25.08	31.48	68.52
125.0-250.0	67.21	98.69	1.31
250.0-300.0	1.31	100.00	0.00

Volume Ranges Table: **14/12/2007 Motions**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.02	0.02	99.98
3.9-7.8	0.03	0.05	99.96
7.8-15.6	0.07	0.11	99.89
15.6-31.3	0.12	0.23	99.77
31.3-62.5	0.96	1.19	98.81
62.5-125.0	17.89	19.08	80.92
125.0-250.0	78.51	97.58	2.42
250.0-300.0	2.42	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Motions** medium (2-600um).



Area Ranges Table: **14/12/2007 Motions**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.18	0.18	99.82
3.9-7.8	0.52	0.70	99.30
7.8-15.6	0.87	1.56	98.44
15.6-31.3	0.76	2.33	97.68
31.3-62.5	2.66	4.99	95.01
62.5-125.0	22.76	27.74	72.26
125.0-250.0	65.94	93.69	6.31
250.0-500.0	6.32	100.00	0.00
500.0-600.0	0.00	100.00	0.00

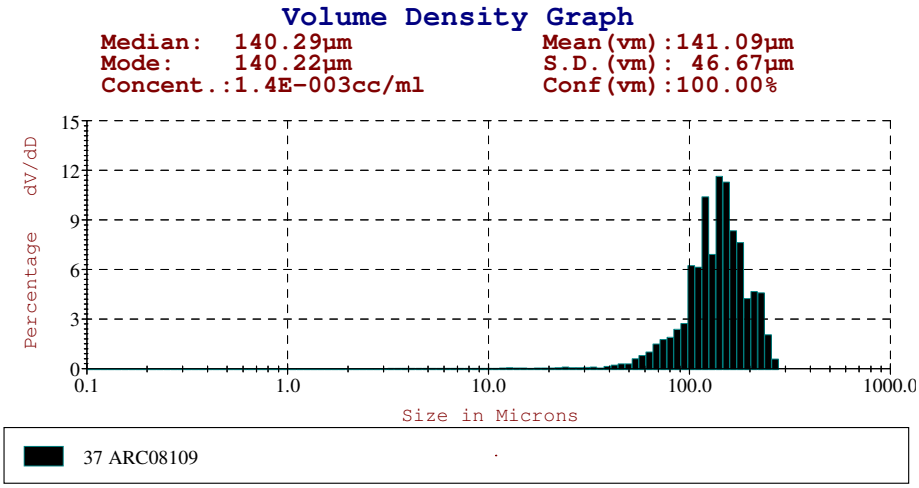
Volume Ranges Table: **14/12/2007 Motions**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.00	0.00	100.00
3.9-7.8	0.02	0.02	99.98
7.8-15.6	0.06	0.08	99.92
15.6-31.3	0.11	0.19	99.81
31.3-62.5	0.86	1.05	98.95
62.5-125.0	14.83	15.88	84.12
125.0-250.0	72.33	88.21	11.79
250.0-500.0	11.79	100.00	0.00
500.0-600.0	0.00	100.00	0.00

250.0-300.0	7.62	95.84	4.16

Particle Size

Volume Distribution: Sample **14/12/2007 Meola** low (0-300um).



Area Ranges Table: **14/12/2007 Meola**

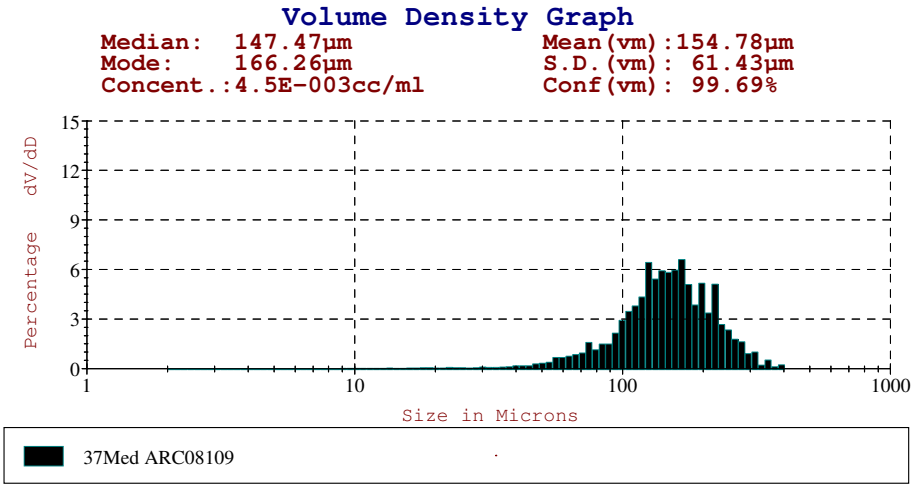
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	9.23	9.23	90.77
3.9-7.8	3.51	12.74	87.26
7.8-15.6	3.07	15.81	84.19
15.6-31.3	2.36	18.17	81.83
31.3-62.5	6.15	24.32	75.68
62.5-125.0	36.09	60.41	39.59
125.0-250.0	39.24	99.65	0.35
250.0-300.0	0.35	100.00	0.00

Volume Ranges Table: **14/12/2007 Meola**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.17	0.17	99.83
3.9-7.8	0.18	0.35	99.65
7.8-15.6	0.33	0.68	99.32
15.6-31.3	0.52	1.20	98.80
31.3-62.5	2.96	4.17	95.83
62.5-125.0	34.25	38.41	61.59
125.0-250.0	60.74	99.15	0.85
250.0-300.0	0.85	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Meola** medium (2-600um).



Area Ranges Table: **14/12/2007 Meola**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	1.02	1.02	98.98
3.9-7.8	2.46	3.48	96.52
7.8-15.6	3.25	6.73	93.27
15.6-31.3	4.12	10.85	89.15
31.3-62.5	8.40	19.25	80.75
62.5-125.0	34.93	54.17	45.83
125.0-250.0	42.72	96.89	3.11
250.0-500.0	3.11	100.00	0.00
500.0-600.0	0.00	100.00	0.00

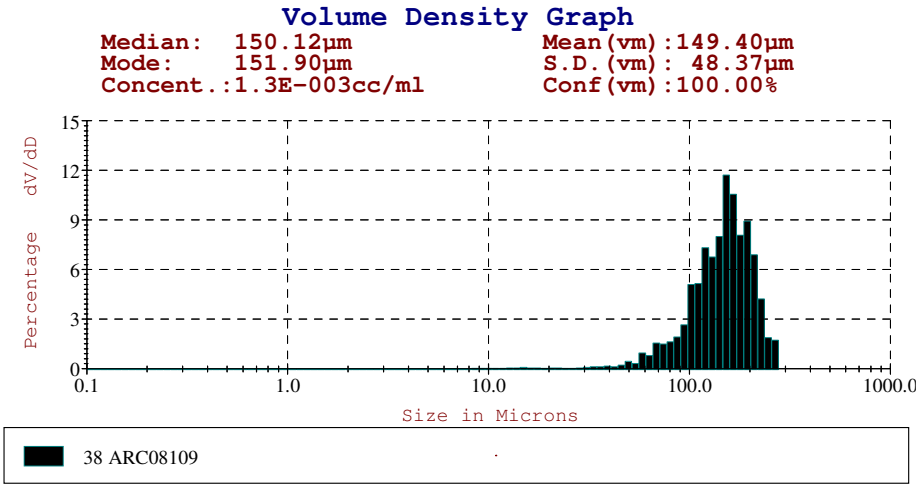
Volume Ranges Table: **14/12/2007 Meola**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.03	0.03	99.97
3.9-7.8	0.12	0.14	99.86
7.8-15.6	0.31	0.45	99.55
15.6-31.3	0.77	1.22	98.78
31.3-62.5	3.48	4.70	95.31
62.5-125.0	28.48	33.17	66.83
125.0-250.0	59.42	92.59	7.41
250.0-500.0	7.41	100.00	0.00
500.0-600.0	0.00	100.00	0.00

250.0-300.0	5.19	97.78	2.22

Particle Size

Volume Distribution: Sample **14/12/2007 Meola** low (0-300um).



Area Ranges Table: **14/12/2007 Meola**

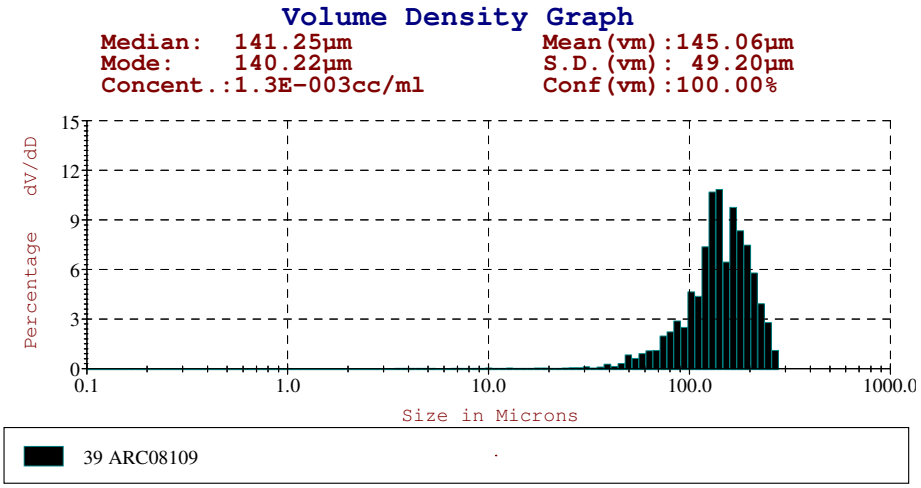
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	6.75	6.75	93.25
3.9-7.8	2.01	8.76	91.24
7.8-15.6	3.07	11.83	88.17
15.6-31.3	2.01	13.84	86.16
31.3-62.5	6.79	20.63	79.37
62.5-125.0	32.24	52.87	47.13
125.0-250.0	45.92	98.79	1.21
250.0-300.0	1.21	100.00	0.00

Volume Ranges Table: **14/12/2007 Meola**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.11	0.11	99.89
3.9-7.8	0.09	0.20	99.80
7.8-15.6	0.31	0.51	99.49
15.6-31.3	0.38	0.89	99.11
31.3-62.5	2.96	3.85	96.15
62.5-125.0	27.42	31.27	68.73
125.0-250.0	66.04	97.31	2.69
250.0-300.0	2.69	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Meola** low (0-300um).



Area Ranges Table: **14/12/2007 Meola**

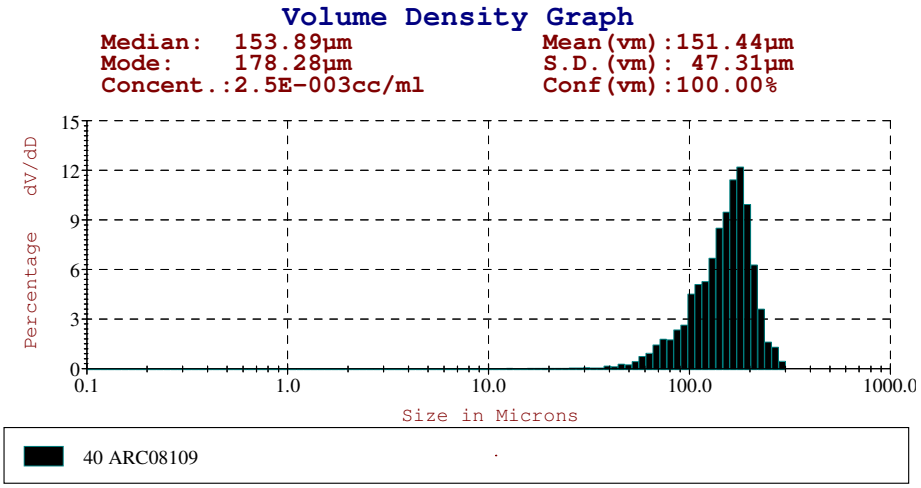
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	9.18	9.18	90.82
3.9-7.8	3.07	12.25	87.75
7.8-15.6	2.76	15.02	84.98
15.6-31.3	2.20	17.22	82.79
31.3-62.5	7.88	25.09	74.91
62.5-125.0	31.43	56.52	43.48
125.0-250.0	42.69	99.21	0.79
250.0-300.0	0.79	100.00	0.00

Volume Ranges Table: **14/12/2007 Meola**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.16	0.16	99.84
3.9-7.8	0.16	0.32	99.68
7.8-15.6	0.28	0.59	99.41
15.6-31.3	0.48	1.07	98.93
31.3-62.5	3.71	4.78	95.22
62.5-125.0	28.35	33.14	66.86
125.0-250.0	64.97	98.10	1.90
250.0-300.0	1.90	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Pakaranga L** low (0-300um).



Area Ranges Table: **14/12/2007 Pakaranga L**

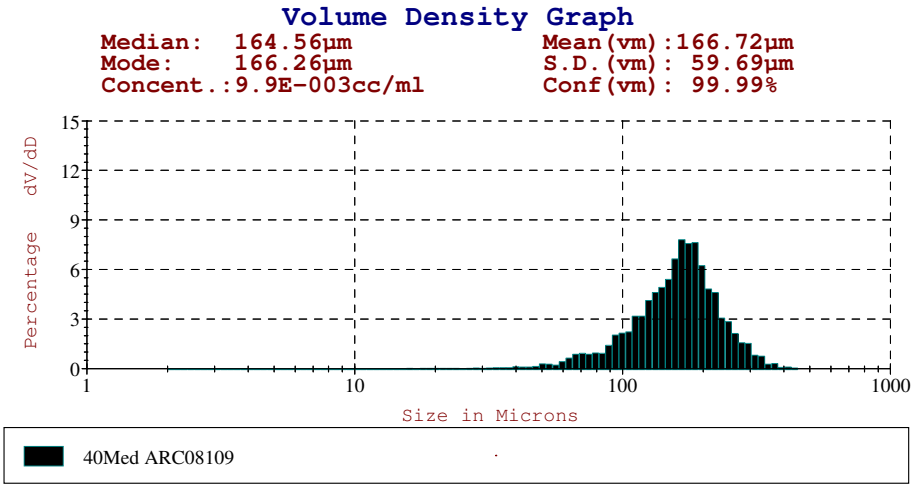
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	3.60	3.60	96.40
3.9-7.8	1.35	4.95	95.05
7.8-15.6	1.13	6.08	93.92
15.6-31.3	1.45	7.53	92.47
31.3-62.5	5.94	13.46	86.54
62.5-125.0	33.90	47.37	52.63
125.0-250.0	51.61	98.98	1.02
250.0-300.0	1.02	100.00	0.00

Volume Ranges Table: **14/12/2007 Pakaranga L**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.06	0.06	99.94
3.9-7.8	0.06	0.11	99.89
7.8-15.6	0.10	0.21	99.79
15.6-31.3	0.27	0.48	99.52
31.3-62.5	2.42	2.91	97.09
62.5-125.0	25.95	28.86	71.14
125.0-250.0	68.98	97.84	2.16
250.0-300.0	2.16	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Pakaranga L** medium (2-600um).



Area Ranges Table: **14/12/2007 Pakaranga L**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.36	0.36	99.64
3.9-7.8	0.94	1.31	98.69
7.8-15.6	1.43	2.74	97.26
15.6-31.3	1.68	4.41	95.59
31.3-62.5	6.15	10.57	89.43
62.5-125.0	30.40	40.97	59.03
125.0-250.0	54.97	95.93	4.07
250.0-500.0	4.07	100.00	0.00
500.0-600.0	0.00	100.00	0.00

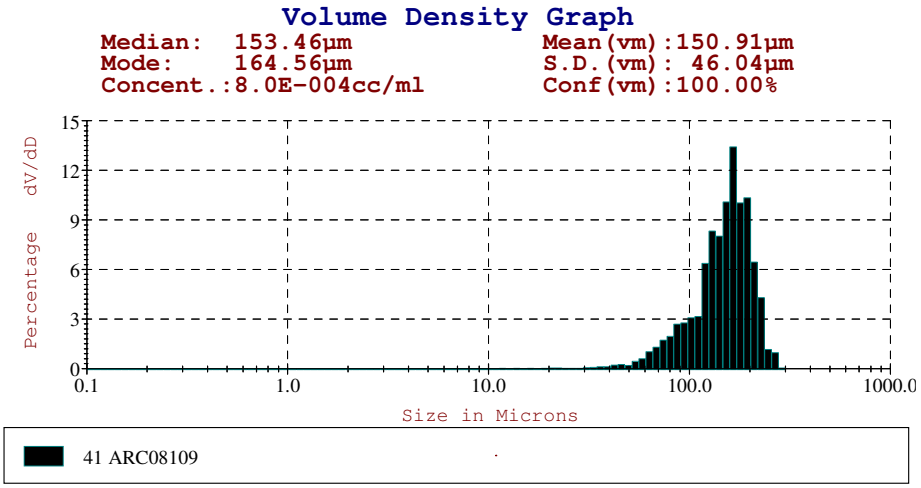
Volume Ranges Table: **14/12/2007 Pakaranga L**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.01	0.01	99.99
3.9-7.8	0.04	0.05	99.95
7.8-15.6	0.12	0.17	99.83
15.6-31.3	0.27	0.44	99.57
31.3-62.5	2.21	2.64	97.36
62.5-125.0	21.08	23.73	76.27
125.0-250.0	67.85	91.58	8.42
250.0-500.0	8.42	100.00	0.00
500.0-600.0	0.00	100.00	0.00

250.0-300.0	5.80	97.38	2.62

Particle Size

Volume Distribution: Sample **Pakaranga L** low (0-300um).



Area Ranges Table: **14/12/2007 Pakaranga L**

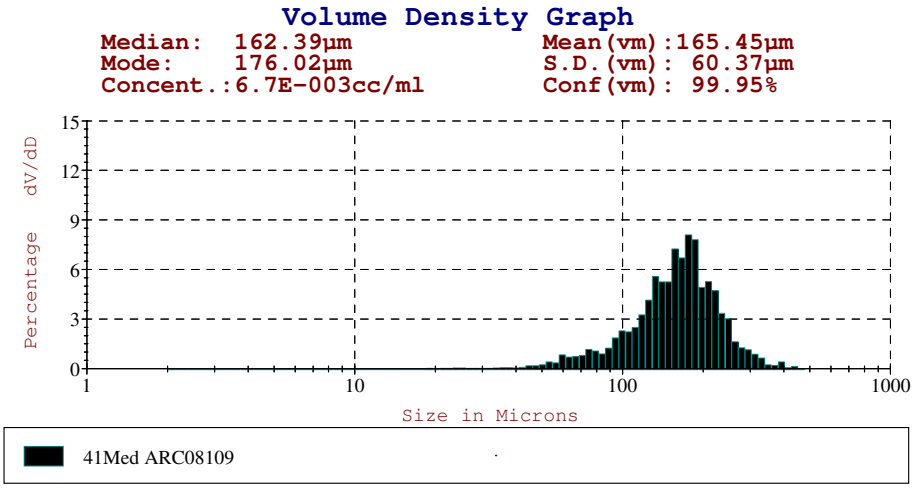
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	6.10	6.10	93.90
3.9-7.8	1.31	7.41	92.59
7.8-15.6	1.23	8.65	91.35
15.6-31.3	1.53	10.18	89.82
31.3-62.5	6.22	16.41	83.59
62.5-125.0	30.63	47.04	52.96
125.0-250.0	52.33	99.37	0.63
250.0-300.0	0.63	100.00	0.00

Volume Ranges Table: **14/12/2007 Pakaranga L**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.07	0.07	99.93
3.9-7.8	0.06	0.13	99.87
7.8-15.6	0.12	0.25	99.75
15.6-31.3	0.29	0.54	99.46
31.3-62.5	2.56	3.10	96.90
62.5-125.0	24.03	27.14	72.86
125.0-250.0	71.52	98.65	1.35
250.0-300.0	1.35	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Pakaranga L** medium (2-600um).



Area Ranges Table: **14/12/2007 Pakaranga L**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.61	0.61	99.39
3.9-7.8	1.40	2.01	98.00
7.8-15.6	1.76	3.77	96.23
15.6-31.3	1.76	5.53	94.47
31.3-62.5	7.36	12.89	87.11
62.5-125.0	29.02	41.91	58.09
125.0-250.0	54.46	96.38	3.62
250.0-500.0	3.63	100.00	0.00
500.0-600.0	0.00	100.00	0.00

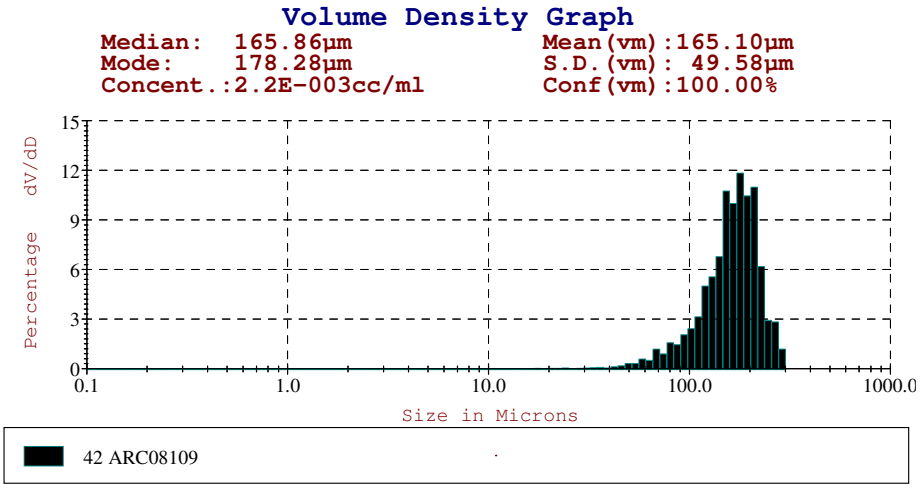
Volume Ranges Table: **14/12/2007 Pakaranga L**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.01	0.01	99.99
3.9-7.8	0.06	0.07	99.93
7.8-15.6	0.15	0.22	99.78
15.6-31.3	0.30	0.52	99.48
31.3-62.5	2.82	3.34	96.66
62.5-125.0	20.51	23.85	76.15
125.0-250.0	68.41	92.26	7.74
250.0-500.0	7.74	100.00	0.00
500.0-600.0	0.00	100.00	0.00

250.0-300.0	4.91	97.18	2.82

Particle Size

Volume Distribution: Sample **14/12/2007 Pakaranga L** low (0-300um).



Area Ranges Table: **14/12/2007 Pakaranga L**

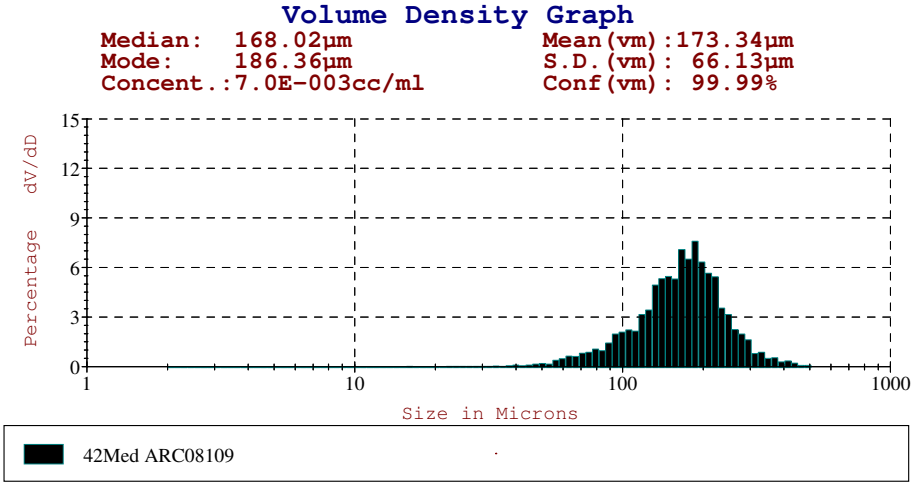
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	2.97	2.97	97.03
3.9-7.8	0.87	3.84	96.16
7.8-15.6	0.81	4.65	95.35
15.6-31.3	1.24	5.89	94.11
31.3-62.5	5.22	11.10	88.90
62.5-125.0	26.54	37.64	62.36
125.0-250.0	59.80	97.44	2.56
250.0-300.0	2.56	100.00	0.00

Volume Ranges Table: **14/12/2007 Pakaranga L**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.04	0.04	99.96
3.9-7.8	0.03	0.07	99.93
7.8-15.6	0.07	0.14	99.86
15.6-31.3	0.21	0.34	99.66
31.3-62.5	1.89	2.23	97.77
62.5-125.0	18.53	20.76	79.24
125.0-250.0	74.34	95.10	4.90
250.0-300.0	4.91	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Pakaranga L** medium (2-600um).



Area Ranges Table: **14/12/2007 Pakaranga L**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.49	0.49	99.51
3.9-7.8	1.22	1.72	98.28
7.8-15.6	1.76	3.47	96.53
15.6-31.3	1.38	4.85	95.15
31.3-62.5	5.72	10.57	89.43
62.5-125.0	28.96	39.53	60.47
125.0-250.0	55.40	94.93	5.07
250.0-500.0	5.07	100.00	0.00
500.0-600.0	0.00	100.00	0.00

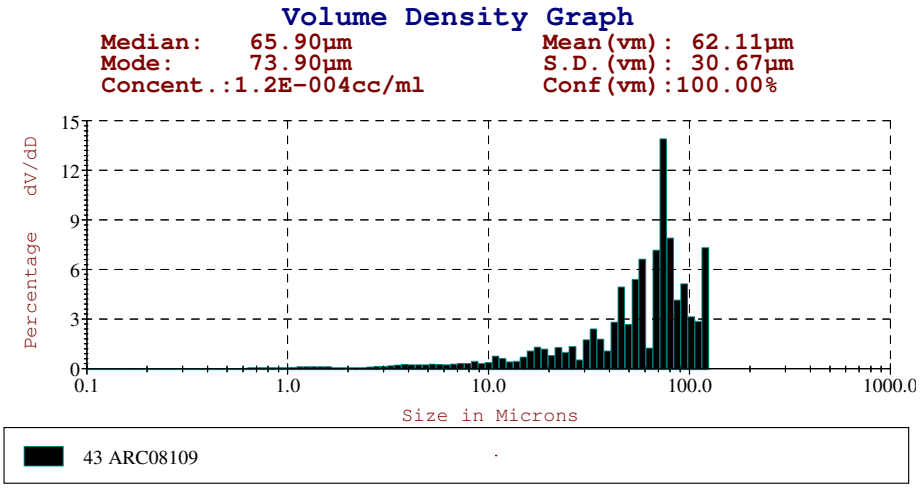
Volume Ranges Table: **14/12/2007 Pakaranga L**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.01	0.01	99.99
3.9-7.8	0.05	0.06	99.94
7.8-15.6	0.14	0.20	99.80
15.6-31.3	0.22	0.42	99.58
31.3-62.5	2.05	2.48	97.53
62.5-125.0	19.51	21.99	78.01
125.0-250.0	67.41	89.40	10.60
250.0-500.0	10.60	100.00	0.00
500.0-600.0	0.00	100.00	0.00

250.0-300.0	6.63	96.03	3.97

Particle Size

Volume Distribution: Sample **14/12/2007 Puhinui** low (0-300um).



Area Ranges Table: **14/12/2007 Puhinui**

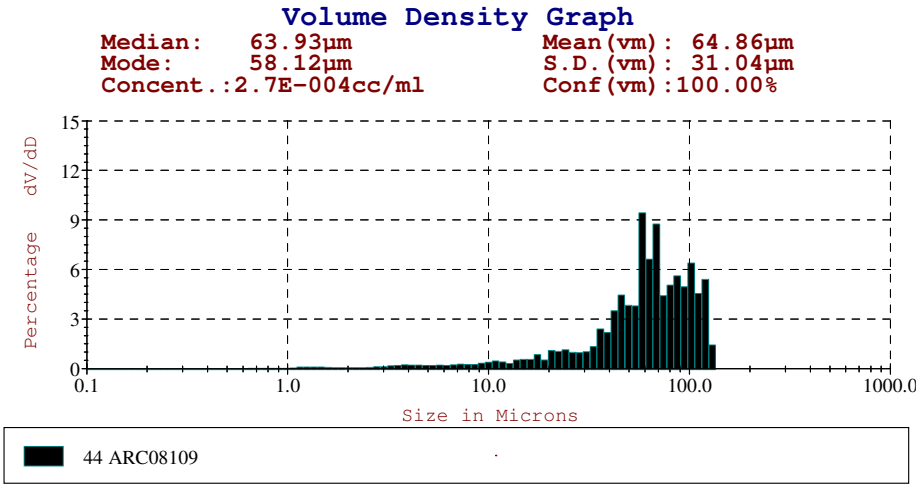
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	34.52	34.52	65.48
3.9-7.8	10.36	44.88	55.12
7.8-15.6	10.12	55.01	44.99
15.6-31.3	11.88	66.89	33.11
31.3-62.5	16.71	83.59	16.41
62.5-125.0	16.41	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Puhinui**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	2.11	2.11	97.89
3.9-7.8	2.17	4.28	95.72
7.8-15.6	4.31	8.58	91.42
15.6-31.3	9.76	18.34	81.66
31.3-62.5	29.60	47.94	52.06
62.5-125.0	52.06	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Puhinui** low (0-300um).



Area Ranges Table: **14/12/2007 Puhinui**

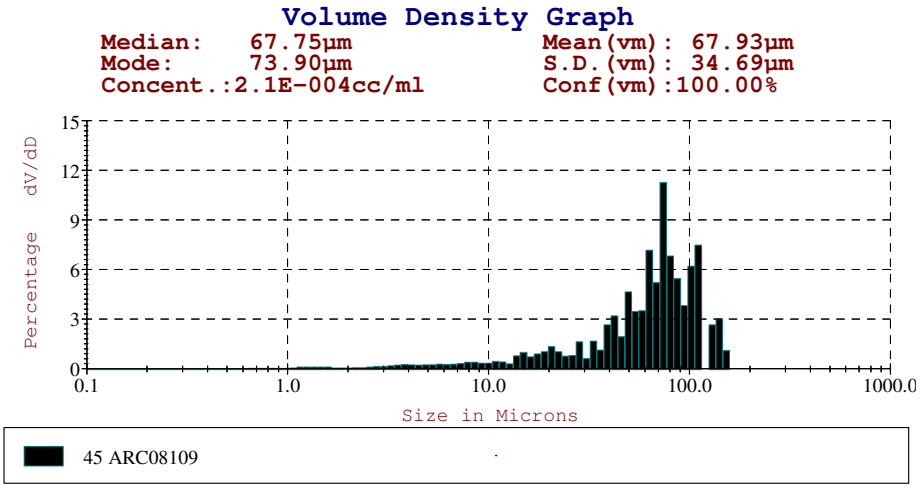
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	29.16	29.16	70.84
3.9-7.8	10.28	39.44	60.56
7.8-15.6	9.39	48.83	51.17
15.6-31.3	11.06	59.88	40.12
31.3-62.5	21.31	81.19	18.81
62.5-125.0	18.50	99.69	0.31
125.0-250.0	0.31	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Puhinui**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.71	1.71	98.29
3.9-7.8	1.84	3.55	96.45
7.8-15.6	3.44	6.99	93.01
15.6-31.3	8.04	15.03	84.97
31.3-62.5	33.07	48.10	51.90
62.5-125.0	50.58	98.67	1.33
125.0-250.0	1.33	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Puhinui** low (0-300um).



Area Ranges Table: **14/12/2007 Puhinui**

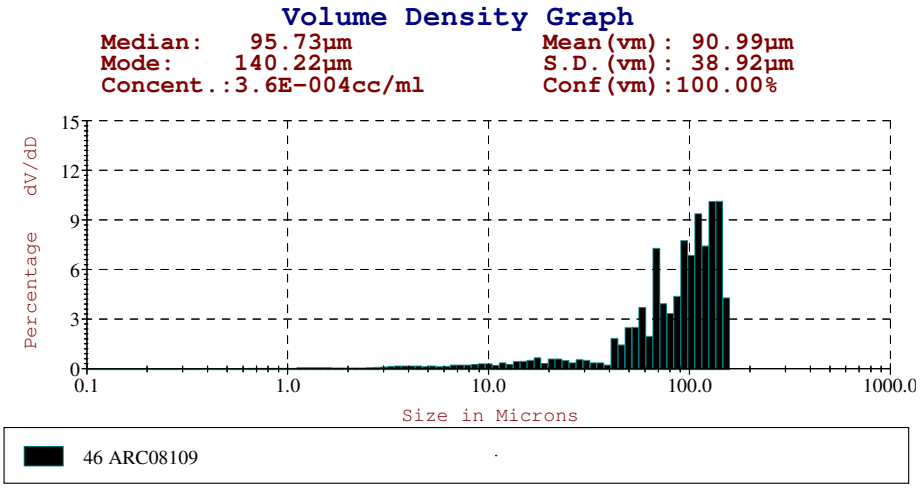
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	29.33	29.33	70.67
3.9-7.8	11.66	40.99	59.01
7.8-15.6	10.97	51.96	48.04
15.6-31.3	11.90	63.87	36.13
31.3-62.5	15.55	79.42	20.58
62.5-125.0	19.09	98.51	1.49
125.0-250.0	1.49	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Puhinui**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.81	1.81	98.19
3.9-7.8	2.16	3.97	96.03
7.8-15.6	4.20	8.17	91.83
15.6-31.3	8.67	16.84	83.16
31.3-62.5	24.00	40.84	59.16
62.5-125.0	52.31	93.15	6.85
125.0-250.0	6.85	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Henderson** low (0-300um).



Area Ranges Table: **14/12/2007 Henderson**

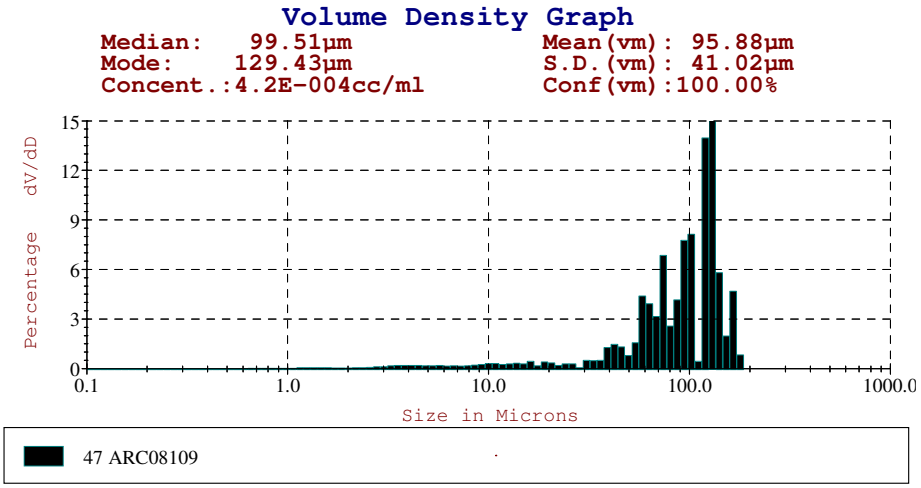
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	28.62	28.62	71.38
3.9-7.8	10.19	38.81	61.19
7.8-15.6	9.93	48.74	51.26
15.6-31.3	8.42	57.16	42.84
31.3-62.5	11.78	68.94	31.06
62.5-125.0	23.56	92.50	7.50
125.0-250.0	7.50	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Henderson**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.27	1.27	98.73
3.9-7.8	1.36	2.63	97.37
7.8-15.6	2.69	5.33	94.67
15.6-31.3	4.38	9.70	90.30
31.3-62.5	14.09	23.79	76.21
62.5-125.0	51.53	75.33	24.67
125.0-250.0	24.68	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Henderson** low (0-300um).



Area Ranges Table: **14/12/2007 Henderson**

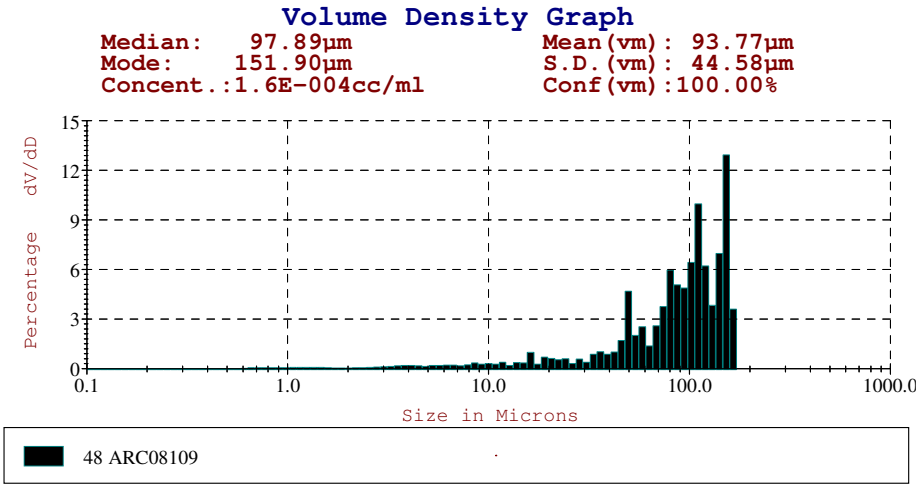
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	32.19	32.19	67.81
3.9-7.8	11.58	43.76	56.24
7.8-15.6	8.95	52.71	47.29
15.6-31.3	5.09	57.80	42.20
31.3-62.5	10.95	68.76	31.24
62.5-125.0	22.99	91.74	8.26
125.0-250.0	8.26	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Henderson**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.50	1.50	98.50
3.9-7.8	1.50	3.01	96.99
7.8-15.6	2.41	5.41	94.59
15.6-31.3	2.64	8.05	91.95
31.3-62.5	12.90	20.95	79.05
62.5-125.0	51.01	71.95	28.05
125.0-250.0	28.05	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Henderson** low (0-300um).



Area Ranges Table: **14/12/2007 Henderson**

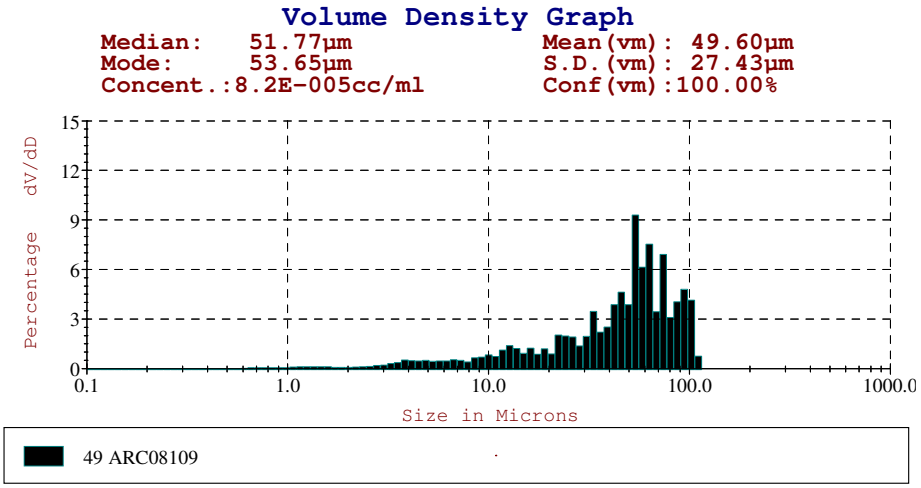
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	37.35	37.35	62.65
3.9-7.8	10.17	47.52	52.48
7.8-15.6	8.77	56.30	43.70
15.6-31.3	8.13	64.43	35.57
31.3-62.5	11.37	75.79	24.21
62.5-125.0	18.13	93.92	6.08
125.0-250.0	6.08	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Henderson**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.67	1.67	98.33
3.9-7.8	1.59	3.26	96.74
7.8-15.6	2.74	6.00	94.00
15.6-31.3	4.87	10.87	89.14
31.3-62.5	15.13	25.99	74.01
62.5-125.0	48.24	74.23	25.77
125.0-250.0	25.77	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Anns** low (0-300um).



Area Ranges Table: **14/12/2007 Anns**

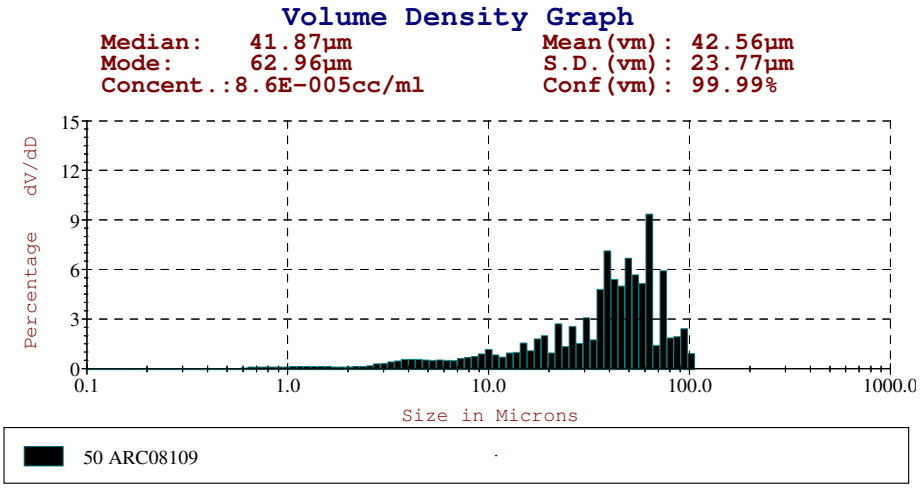
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	34.16	34.16	65.84
3.9-7.8	14.77	48.92	51.08
7.8-15.6	14.09	63.01	36.99
15.6-31.3	11.55	74.56	25.44
31.3-62.5	17.23	91.79	8.21
62.5-125.0	8.21	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Anns**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	3.06	3.06	96.94
3.9-7.8	3.97	7.03	92.97
7.8-15.6	7.94	14.97	85.03
15.6-31.3	12.91	27.88	72.12
31.3-62.5	39.89	67.77	32.23
62.5-125.0	32.23	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Anns** low (0-300um).



Area Ranges Table: **14/12/2007 Anns**

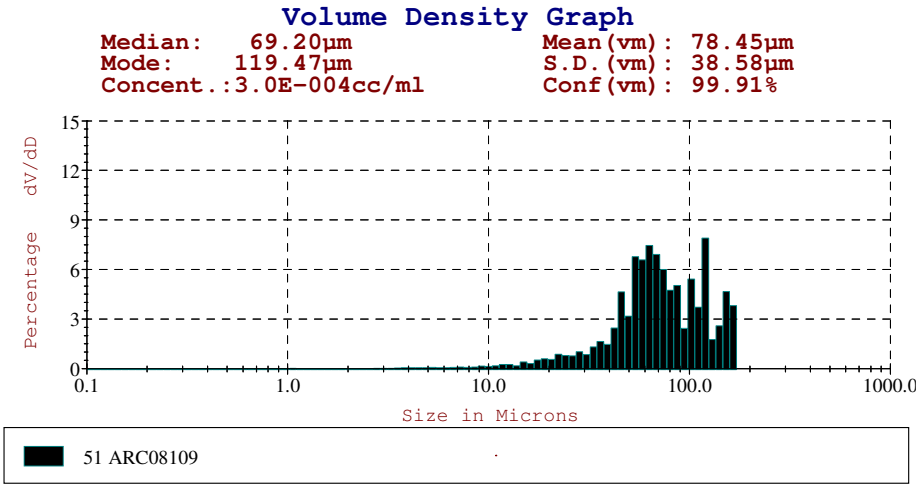
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	37.32	37.32	62.68
3.9-7.8	14.41	51.73	48.27
7.8-15.6	12.96	64.69	35.31
15.6-31.3	12.76	77.45	22.55
31.3-62.5	18.49	95.94	4.06
62.5-125.0	4.06	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Anns**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	3.78	3.78	96.22
3.9-7.8	4.51	8.29	91.71
7.8-15.6	8.32	16.61	83.39
15.6-31.3	16.50	33.11	66.89
31.3-62.5	48.95	82.07	17.93
62.5-125.0	17.94	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Anns** low (0-300um).



Area Ranges Table: **14/12/2007 Anns**

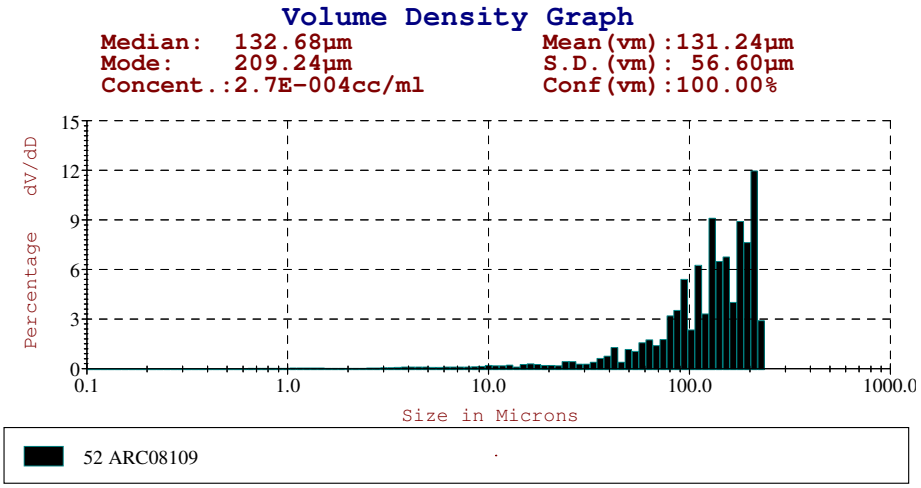
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	11.20	11.20	88.80
3.9-7.8	5.27	16.47	83.53
7.8-15.6	7.51	23.98	76.02
15.6-31.3	13.02	36.99	63.01
31.3-62.5	31.80	68.79	31.21
62.5-125.0	27.13	95.91	4.09
125.0-250.0	4.09	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Anns**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.37	0.37	99.63
3.9-7.8	0.60	0.97	99.03
7.8-15.6	1.80	2.77	97.23
15.6-31.3	6.07	8.84	91.17
31.3-62.5	31.57	40.41	59.59
62.5-125.0	47.22	87.63	12.37
125.0-250.0	12.37	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Pahurehure** low (0-300um).



Area Ranges Table: **14/12/2007 Pahurehure**

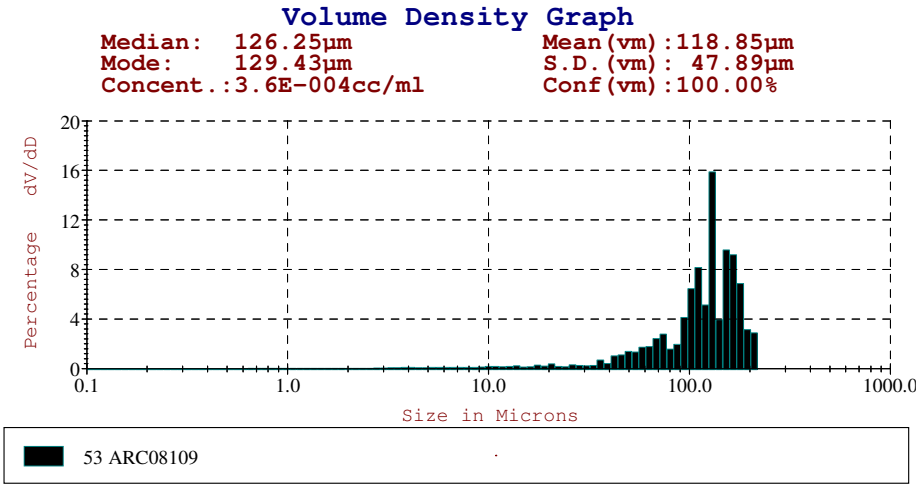
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	30.38	30.38	69.62
3.9-7.8	8.19	38.56	61.44
7.8-15.6	7.49	46.05	53.95
15.6-31.3	6.39	52.44	47.56
31.3-62.5	9.91	62.35	37.65
62.5-125.0	17.59	79.94	20.06
125.0-250.0	20.06	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Pahurehure**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.83	0.83	99.17
3.9-7.8	0.77	1.60	98.40
7.8-15.6	1.47	3.07	96.93
15.6-31.3	2.46	5.53	94.47
31.3-62.5	8.07	13.60	86.40
62.5-125.0	28.32	41.92	58.08
125.0-250.0	58.08	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Pahurehure** low (0-300um).



Area Ranges Table: **14/12/2007 Pahurehure**

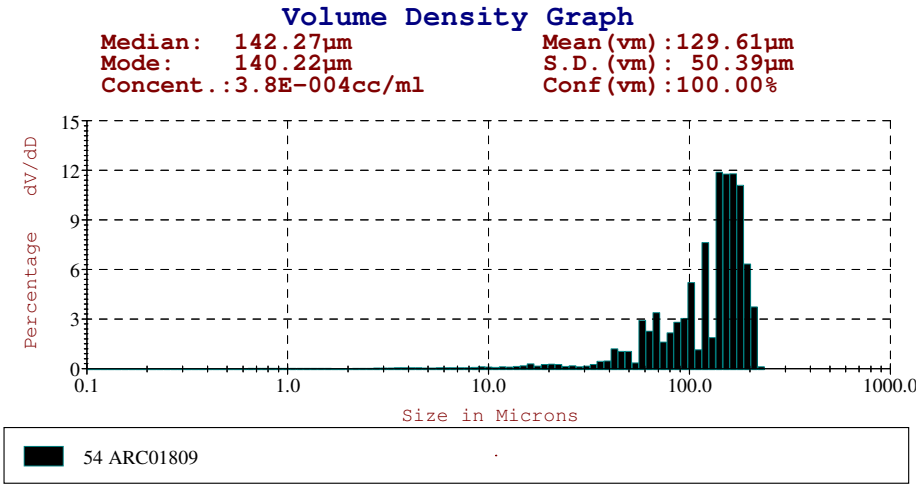
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	28.88	28.88	71.13
3.9-7.8	8.90	37.78	62.22
7.8-15.6	7.30	45.08	54.92
15.6-31.3	5.63	50.70	49.30
31.3-62.5	9.98	60.69	39.31
62.5-125.0	20.74	81.42	18.58
125.0-250.0	18.58	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Pahurehure**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.88	0.88	99.12
3.9-7.8	0.87	1.76	98.24
7.8-15.6	1.45	3.21	96.79
15.6-31.3	2.21	5.42	94.58
31.3-62.5	8.45	13.87	86.13
62.5-125.0	35.00	48.87	51.13
125.0-250.0	51.13	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Pahurehure** low (0-300um).



Area Ranges Table: **14/12/2007 Pahurehure**

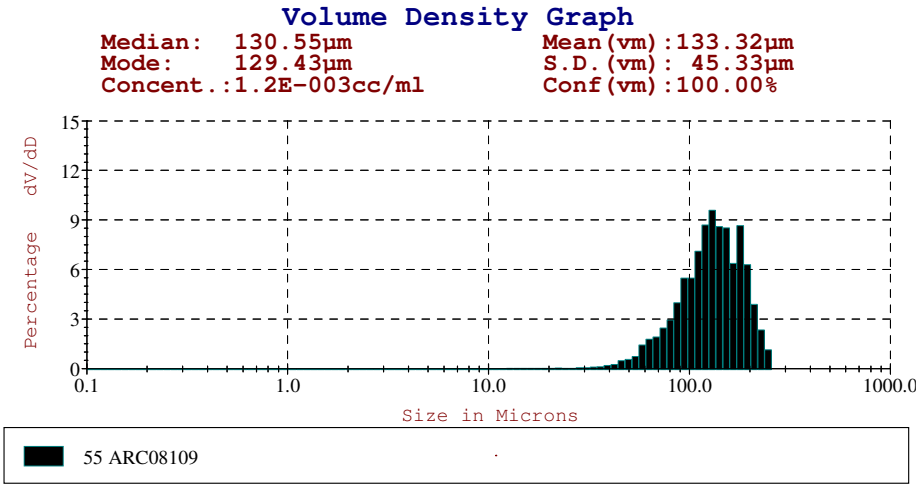
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	26.18	26.18	73.82
3.9-7.8	6.41	32.59	67.41
7.8-15.6	5.82	38.41	61.59
15.6-31.3	5.64	44.05	55.95
31.3-62.5	11.30	55.35	44.65
62.5-125.0	20.91	76.27	23.73
125.0-250.0	23.73	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Pahurehure**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.61	0.61	99.39
3.9-7.8	0.53	1.14	98.86
7.8-15.6	1.00	2.13	97.87
15.6-31.3	1.80	3.93	96.07
31.3-62.5	8.36	12.29	87.71
62.5-125.0	28.90	41.19	58.81
125.0-250.0	58.81	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Hobson** low (0-300um).



Area Ranges Table: **14/12/2007 Hobson**

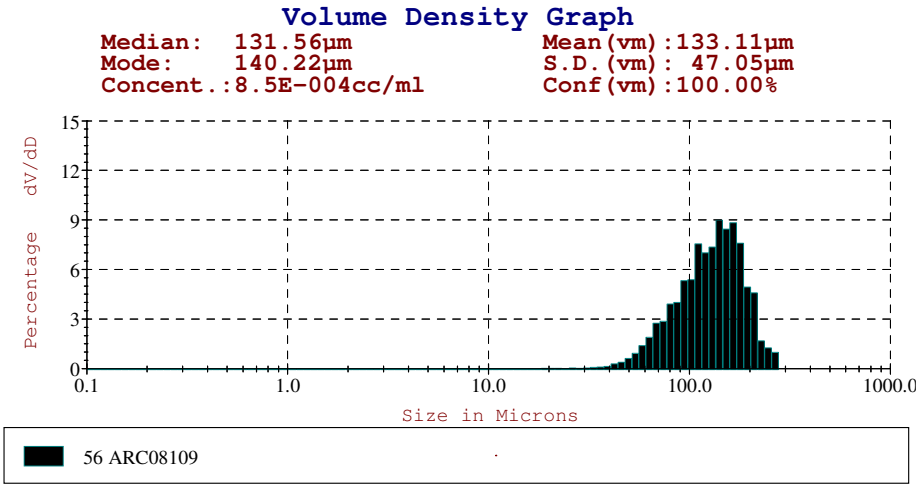
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	2.62	2.62	97.38
3.9-7.8	0.93	3.55	96.45
7.8-15.6	1.30	4.85	95.15
15.6-31.3	1.65	6.50	93.50
31.3-62.5	9.96	16.46	83.54
62.5-125.0	45.89	62.35	37.65
125.0-250.0	37.50	99.86	0.14
250.0-300.0	0.14	100.00	0.00

Volume Ranges Table: **14/12/2007 Hobson**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.04	0.04	99.96
3.9-7.8	0.05	0.09	99.91
7.8-15.6	0.14	0.23	99.77
15.6-31.3	0.34	0.57	99.43
31.3-62.5	4.62	5.19	94.81
62.5-125.0	39.81	45.00	55.00
125.0-250.0	54.67	99.67	0.33
250.0-300.0	0.33	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Hobson** low (0-300um).



Area Ranges Table: **14/12/2007 Hobson**

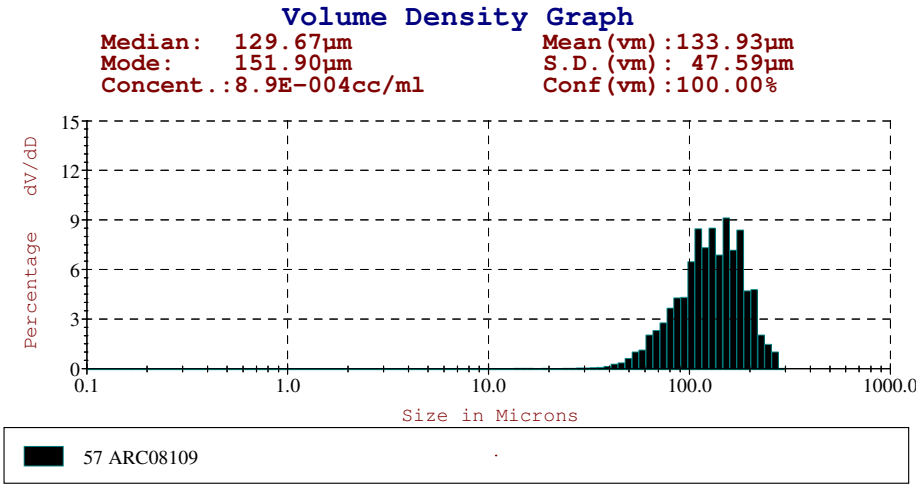
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	3.05	3.05	96.95
3.9-7.8	1.04	4.09	95.91
7.8-15.6	0.88	4.97	95.03
15.6-31.3	1.28	6.25	93.75
31.3-62.5	11.21	17.46	82.54
62.5-125.0	44.40	61.86	38.14
125.0-250.0	37.27	99.13	0.87
250.0-300.0	0.87	100.00	0.00

Volume Ranges Table: **14/12/2007 Hobson**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.05	0.05	99.95
3.9-7.8	0.05	0.10	99.90
7.8-15.6	0.09	0.19	99.81
15.6-31.3	0.28	0.47	99.53
31.3-62.5	5.24	5.71	94.29
62.5-125.0	37.41	43.11	56.89
125.0-250.0	54.82	97.93	2.07
250.0-300.0	2.07	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Hobson** low (0-300um).



Area Ranges Table: **14/12/2007 Hobson**

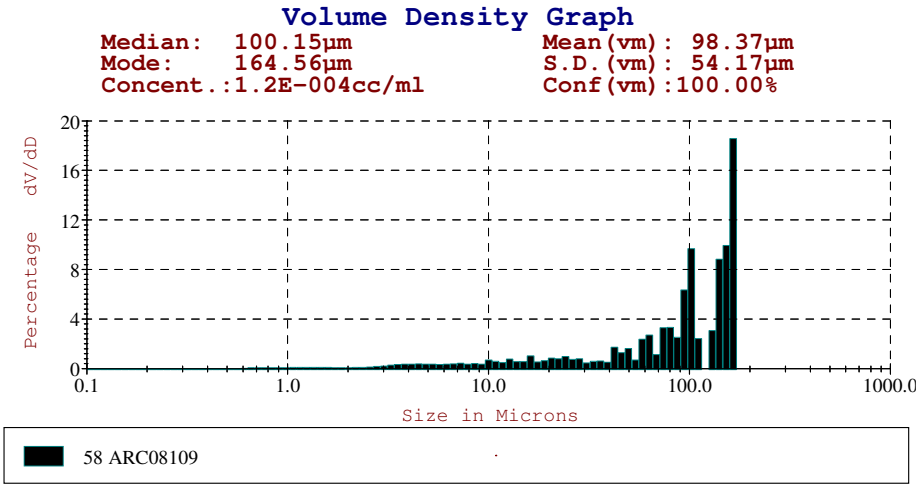
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	2.59	2.59	97.41
3.9-7.8	0.68	3.27	96.73
7.8-15.6	0.74	4.02	95.98
15.6-31.3	1.03	5.04	94.96
31.3-62.5	9.73	14.77	85.23
62.5-125.0	48.64	63.42	36.58
125.0-250.0	36.06	99.47	0.53
250.0-300.0	0.53	100.00	0.00

Volume Ranges Table: **14/12/2007 Hobson**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.04	0.04	99.96
3.9-7.8	0.03	0.07	99.93
7.8-15.6	0.08	0.15	99.85
15.6-31.3	0.22	0.37	99.63
31.3-62.5	4.54	4.91	95.09
62.5-125.0	41.34	46.25	53.75
125.0-250.0	52.51	98.75	1.25
250.0-300.0	1.25	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Whau L** low (0-300um).



Area Ranges Table: **14/12/2007 Whau L**

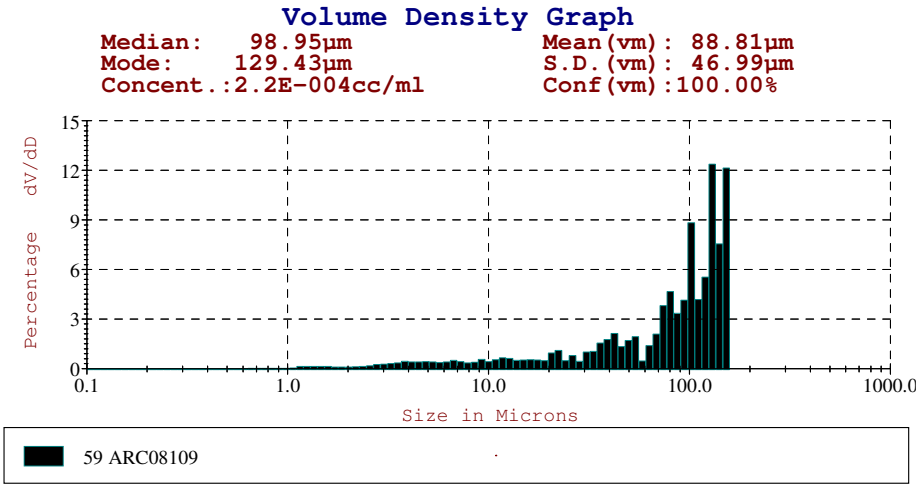
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	45.21	45.21	54.79
3.9-7.8	14.69	59.89	40.11
7.8-15.6	10.81	70.70	29.30
15.6-31.3	7.95	78.65	21.35
31.3-62.5	5.38	84.03	15.97
62.5-125.0	9.20	93.22	6.78
125.0-250.0	6.78	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Whau L**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	2.92	2.92	97.08
3.9-7.8	3.16	6.08	93.92
7.8-15.6	4.75	10.83	89.17
15.6-31.3	6.69	17.51	82.49
31.3-62.5	9.77	27.28	72.72
62.5-125.0	31.85	59.13	40.87
125.0-250.0	40.87	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Whau L** low (0-300um).



Area Ranges Table: **14/12/2007 Whau L**

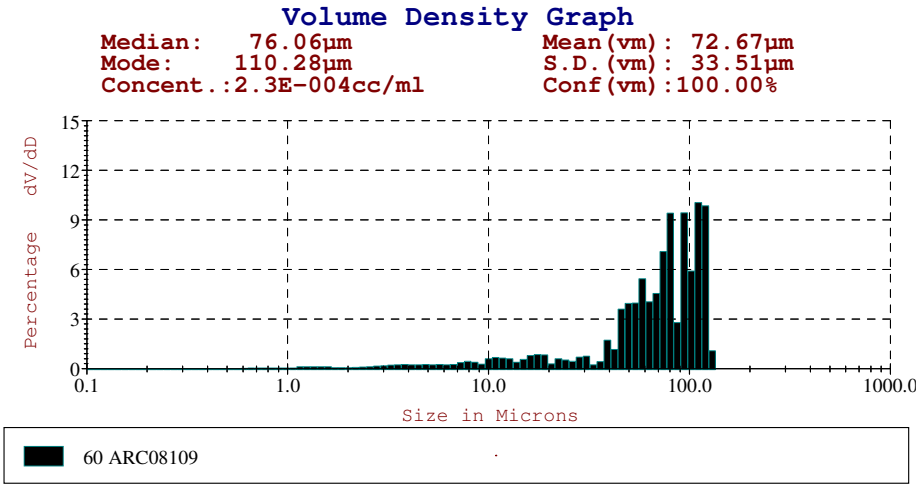
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	39.53	39.53	60.47
3.9-7.8	16.93	56.46	43.54
7.8-15.6	10.85	67.32	32.68
15.6-31.3	7.12	74.44	25.56
31.3-62.5	8.26	82.70	17.30
62.5-125.0	11.44	94.14	5.86
125.0-250.0	5.86	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Whau L**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	2.94	2.94	97.06
3.9-7.8	3.42	6.36	93.64
7.8-15.6	4.48	10.84	89.16
15.6-31.3	5.82	16.67	83.33
31.3-62.5	13.26	29.93	70.07
62.5-125.0	39.67	69.59	30.41
125.0-250.0	30.41	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Whau L** low (0-300um).



Area Ranges Table: **14/12/2007 Whau L**

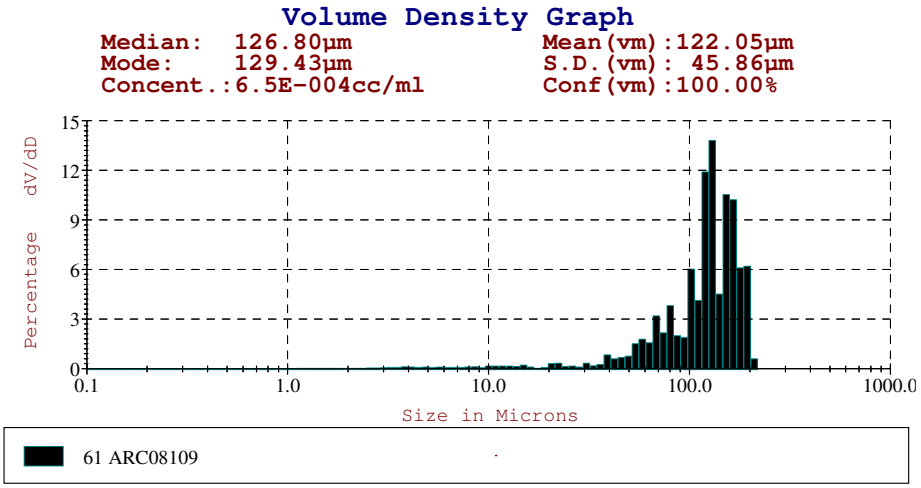
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	35.55	35.55	64.45
3.9-7.8	11.82	47.37	52.63
7.8-15.6	11.66	59.02	40.98
15.6-31.3	7.52	66.54	33.46
31.3-62.5	13.06	79.60	20.40
62.5-125.0	20.15	99.75	0.25
125.0-250.0	0.25	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Whau L**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	2.18	2.18	97.82
3.9-7.8	2.27	4.45	95.55
7.8-15.6	4.44	8.89	91.11
15.6-31.3	5.47	14.37	85.64
31.3-62.5	22.24	36.61	63.39
62.5-125.0	62.30	98.90	1.10
125.0-250.0	1.10	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Paremoremo** low (0-300um).



Area Ranges Table: **14/12/2007 Paremoremo**

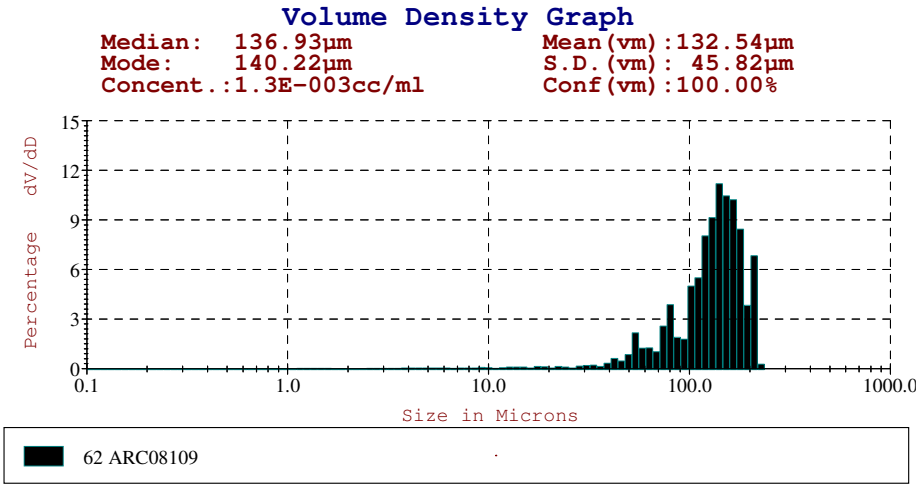
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	24.72	24.72	75.28
3.9-7.8	8.85	33.57	66.43
7.8-15.6	7.03	40.60	59.40
15.6-31.3	4.31	44.91	55.09
31.3-62.5	9.44	54.36	45.64
62.5-125.0	24.44	78.80	21.20
125.0-250.0	21.20	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Paremoremo**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.74	0.74	99.26
3.9-7.8	0.75	1.49	98.51
7.8-15.6	1.25	2.74	97.26
15.6-31.3	1.56	4.29	95.71
31.3-62.5	7.32	11.62	88.38
62.5-125.0	36.83	48.45	51.55
125.0-250.0	51.55	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Paremoremo** low (0-300um).



Area Ranges Table: **14/12/2007 Paremoremo**

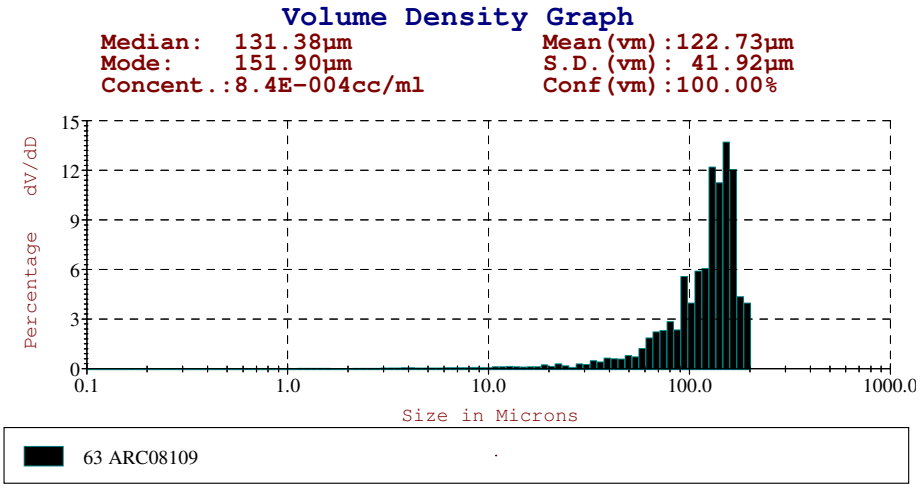
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	15.10	15.10	84.90
3.9-7.8	5.28	20.38	79.62
7.8-15.6	4.66	25.03	74.97
15.6-31.3	3.65	28.68	71.32
31.3-62.5	12.06	40.74	59.26
62.5-125.0	26.78	67.52	32.48
125.0-250.0	32.48	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Paremoremo**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.33	0.33	99.68
3.9-7.8	0.33	0.66	99.34
7.8-15.6	0.61	1.27	98.73
15.6-31.3	0.96	2.23	97.77
31.3-62.5	7.08	9.31	90.69
62.5-125.0	30.44	39.75	60.25
125.0-250.0	60.25	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Paremoremo** low (0-300um).



Area Ranges Table: **14/12/2007 Paremoremo**

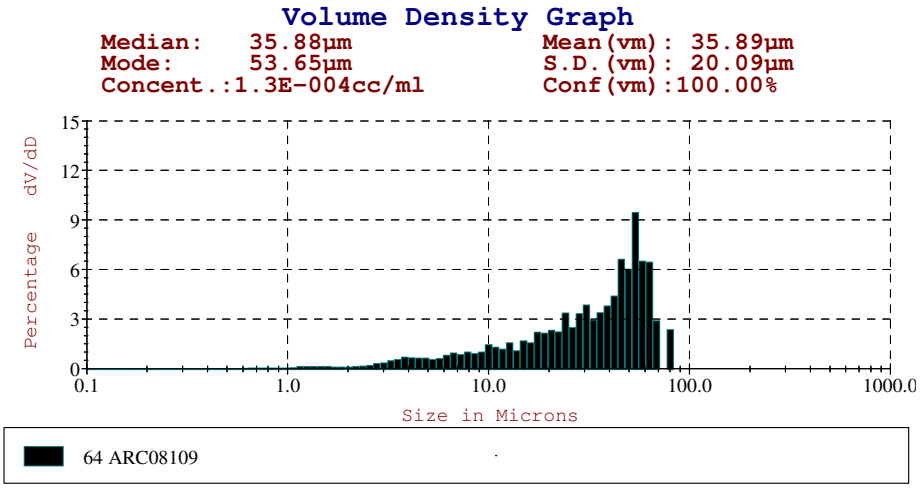
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	19.94	19.94	80.06
3.9-7.8	6.21	26.15	73.85
7.8-15.6	5.74	31.89	68.11
15.6-31.3	5.36	37.25	62.75
31.3-62.5	9.63	46.87	53.13
62.5-125.0	25.73	72.60	27.40
125.0-250.0	27.40	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Paremoremo**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.49	0.49	99.51
3.9-7.8	0.47	0.96	99.04
7.8-15.6	0.90	1.85	98.15
15.6-31.3	1.66	3.52	96.48
31.3-62.5	6.21	9.73	90.28
62.5-125.0	33.24	42.96	57.04
125.0-250.0	57.04	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Oakley** low (0-300um).



Area Ranges Table: **14/12/2007 Oakley**

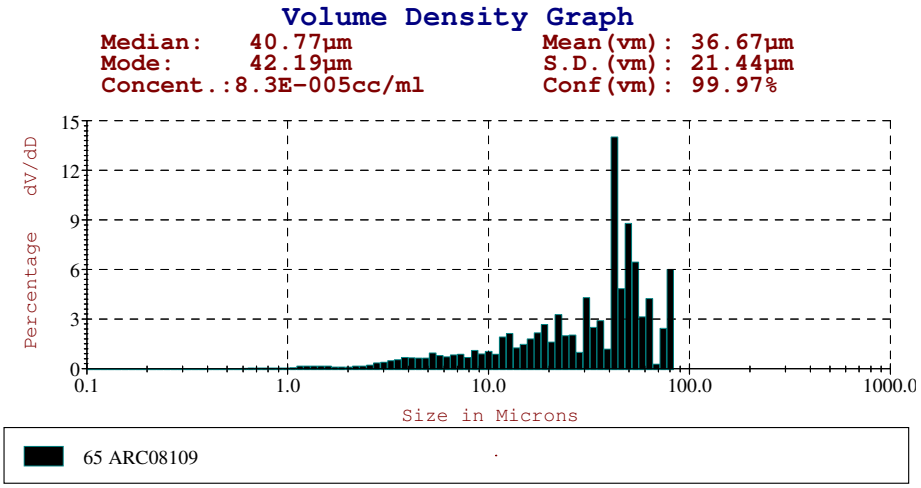
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	30.34	30.34	69.66
3.9-7.8	18.03	48.37	51.63
7.8-15.6	16.03	64.40	35.60
15.6-31.3	16.75	81.15	18.85
31.3-62.5	16.93	98.08	1.92
62.5-125.0	1.92	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Oakley**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	3.88	3.88	96.12
3.9-7.8	6.12	10.00	90.00
7.8-15.6	10.85	20.85	79.15
15.6-31.3	23.17	44.02	55.98
31.3-62.5	47.95	91.96	8.04
62.5-125.0	8.04	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Oakley** low (0-300um).



Area Ranges Table: **14/12/2007 Oakley**

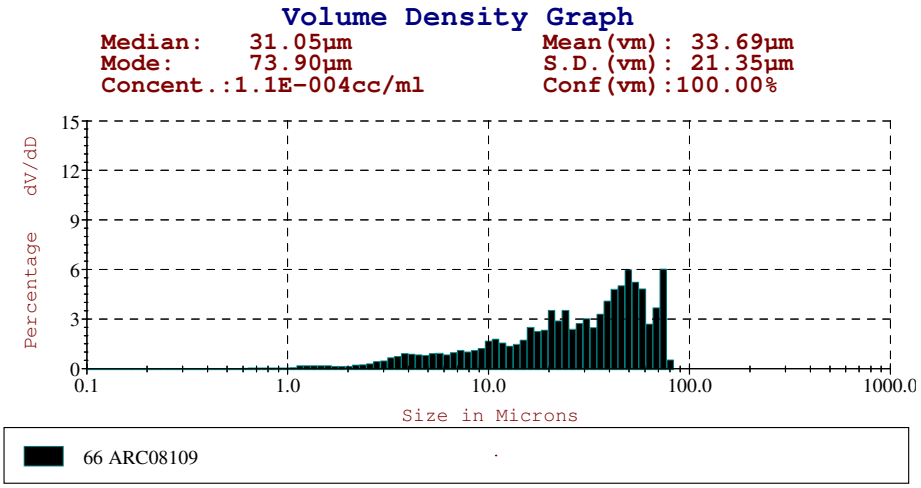
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	31.57	31.57	68.43
3.9-7.8	18.36	49.93	50.07
7.8-15.6	16.04	65.97	34.03
15.6-31.3	14.66	80.63	19.37
31.3-62.5	16.54	97.17	2.83
62.5-125.0	2.83	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Oakley**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	4.03	4.03	95.97
3.9-7.8	6.25	10.27	89.73
7.8-15.6	11.23	21.50	78.50
15.6-31.3	19.96	41.45	58.55
31.3-62.5	45.75	87.20	12.80
62.5-125.0	12.80	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Oakley** low (0-300um).



Area Ranges Table: **14/12/2007 Oakley**

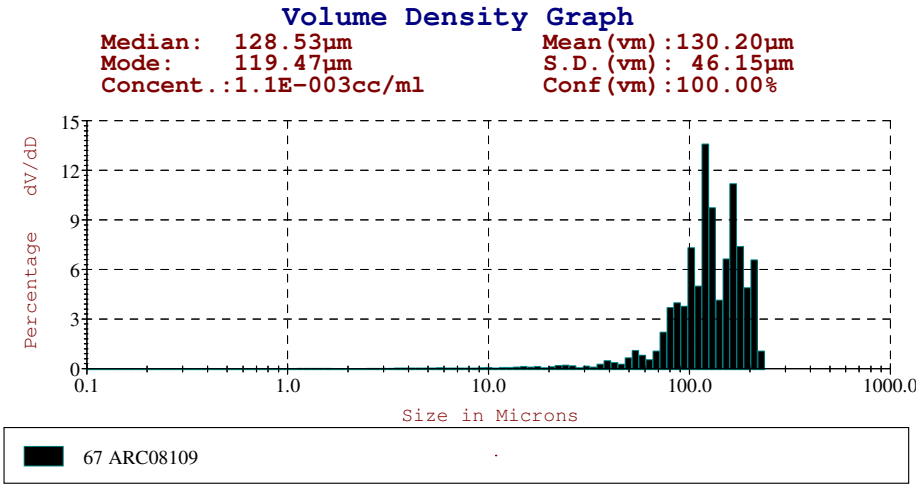
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	34.13	34.13	65.87
3.9-7.8	19.50	53.63	46.37
7.8-15.6	16.13	69.76	30.24
15.6-31.3	15.90	85.66	14.34
31.3-62.5	11.88	97.54	2.46
62.5-125.0	2.46	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Oakley**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	5.17	5.17	94.83
3.9-7.8	7.58	12.75	87.25
7.8-15.6	12.64	25.39	74.61
15.6-31.3	24.71	50.10	49.90
31.3-62.5	37.71	87.80	12.20
62.5-125.0	12.20	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Mangere** low (0-300um).



Area Ranges Table: **14/12/2007 Mangere**

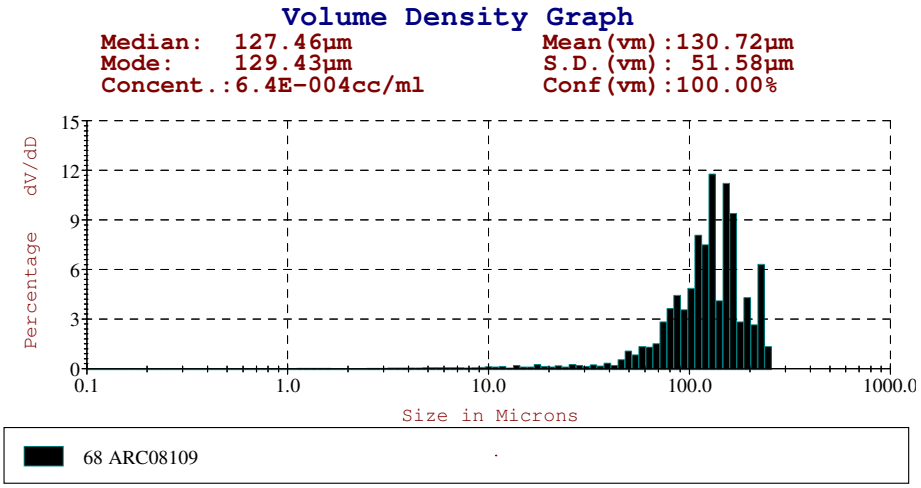
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	16.04	16.04	83.96
3.9-7.8	6.10	22.14	77.86
7.8-15.6	5.18	27.32	72.68
15.6-31.3	4.57	31.89	68.11
31.3-62.5	7.94	39.83	60.17
62.5-125.0	34.12	73.95	26.05
125.0-250.0	26.05	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Mangere**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.35	0.35	99.65
3.9-7.8	0.40	0.75	99.25
7.8-15.6	0.72	1.47	98.53
15.6-31.3	1.22	2.69	97.31
31.3-62.5	4.71	7.40	92.60
62.5-125.0	41.33	48.73	51.27
125.0-250.0	51.27	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Mangere** low (0-300um).



Area Ranges Table: **14/12/2007 Mangere**

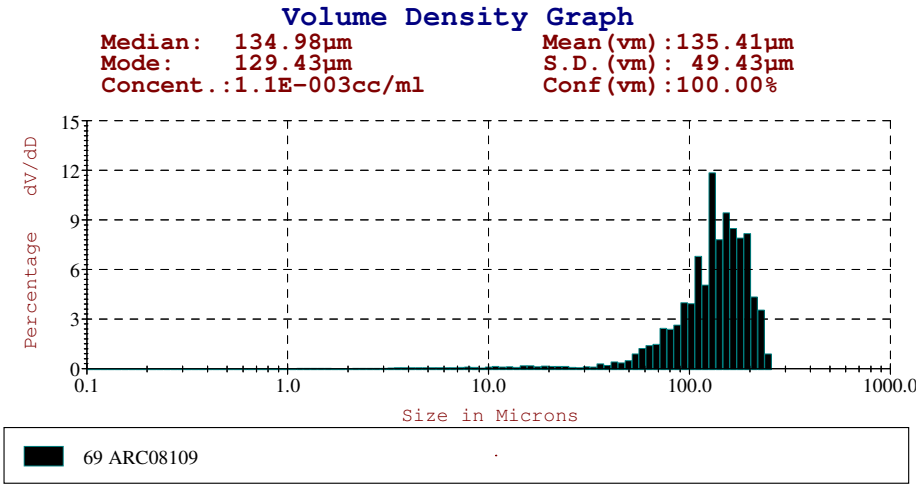
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	19.01	19.01	80.99
3.9-7.8	6.55	25.56	74.44
7.8-15.6	6.14	31.70	68.30
15.6-31.3	4.96	36.67	63.33
31.3-62.5	8.36	45.03	54.97
62.5-125.0	29.88	74.91	25.09
125.0-250.0	25.09	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Mangere**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.43	0.43	99.57
3.9-7.8	0.47	0.90	99.10
7.8-15.6	0.91	1.81	98.19
15.6-31.3	1.43	3.24	96.76
31.3-62.5	5.52	8.75	91.25
62.5-125.0	37.77	46.52	53.48
125.0-250.0	53.48	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Mangere** low (0-300um).



Area Ranges Table: **14/12/2007 Mangere**

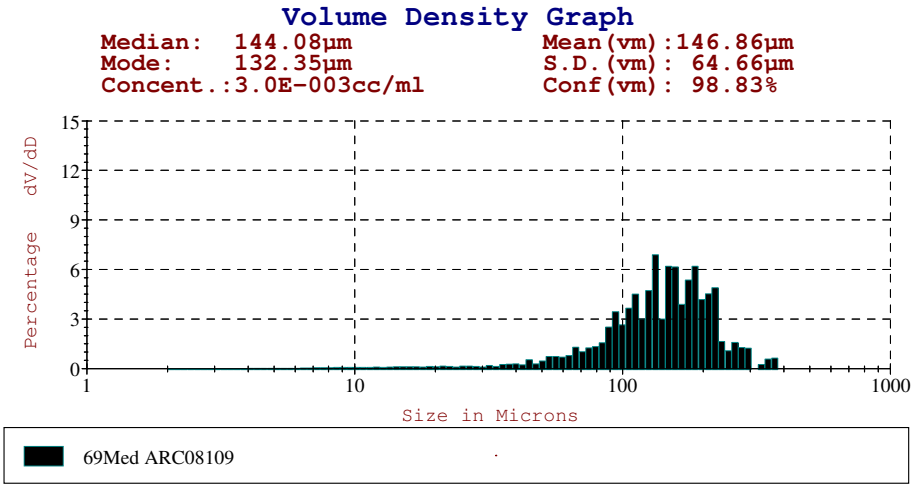
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	20.21	20.21	79.79
3.9-7.8	7.90	28.11	71.89
7.8-15.6	6.50	34.61	65.39
15.6-31.3	4.13	38.75	61.25
31.3-62.5	7.55	46.29	53.71
62.5-125.0	24.24	70.53	29.47
125.0-250.0	29.47	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Mangere**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.49	0.49	99.51
3.9-7.8	0.56	1.06	98.94
7.8-15.6	0.96	2.01	97.99
15.6-31.3	1.13	3.14	96.86
31.3-62.5	4.98	8.12	91.89
62.5-125.0	30.15	38.27	61.73
125.0-250.0	61.73	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Mangere** medium (2-600um).



Area Ranges Table: **14/12/2007 Mangere**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	2.66	2.66	97.34
3.9-7.8	7.27	9.93	90.07
7.8-15.6	9.46	19.39	80.61
15.6-31.3	7.14	26.53	73.47
31.3-62.5	10.33	36.87	63.13
62.5-125.0	28.77	65.64	34.36
125.0-250.0	32.26	97.90	2.10
250.0-500.0	2.10	100.00	0.00
500.0-600.0	0.00	100.00	0.00

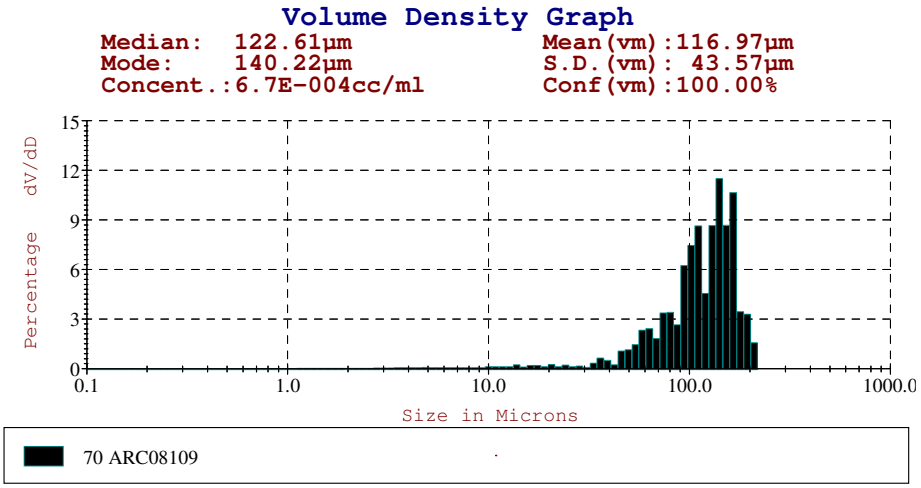
Volume Ranges Table: **14/12/2007 Mangere**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.09	0.09	99.91
3.9-7.8	0.44	0.53	99.47
7.8-15.6	1.11	1.64	98.36
15.6-31.3	1.64	3.28	96.72
31.3-62.5	5.18	8.45	91.55
62.5-125.0	28.71	37.16	62.84
125.0-250.0	56.46	93.62	6.38
250.0-500.0	6.38	100.00	0.00
500.0-600.0	0.00	100.00	0.00

250.0-300.0	4.87	98.50	1.50

Particle Size

Volume Distribution: Sample **14/12/2007 Big Muddy** low (0-300um).



Area Ranges Table: **14/12/2007 Big Muddy**

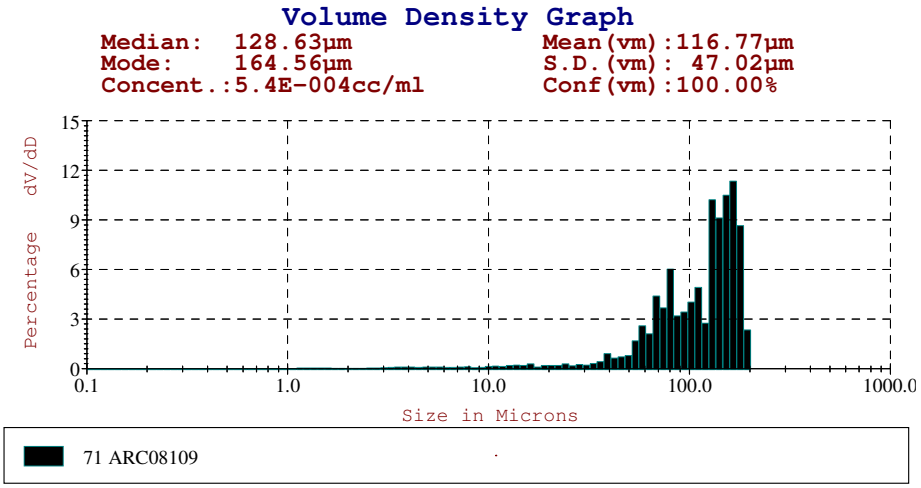
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	21.01	21.01	78.99
3.9-7.8	6.85	27.87	72.13
7.8-15.6	5.84	33.70	66.30
15.6-31.3	4.62	38.32	61.68
31.3-62.5	12.01	50.33	49.67
62.5-125.0	28.78	79.10	20.90
125.0-250.0	20.90	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Big Muddy**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.56	0.56	99.44
3.9-7.8	0.55	1.11	98.89
7.8-15.6	1.00	2.11	97.89
15.6-31.3	1.45	3.56	96.44
31.3-62.5	8.85	12.41	87.59
62.5-125.0	40.28	52.69	47.31
125.0-250.0	47.31	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Big Muddy** low (0-300um).



Area Ranges Table: **14/12/2007 Big Muddy**

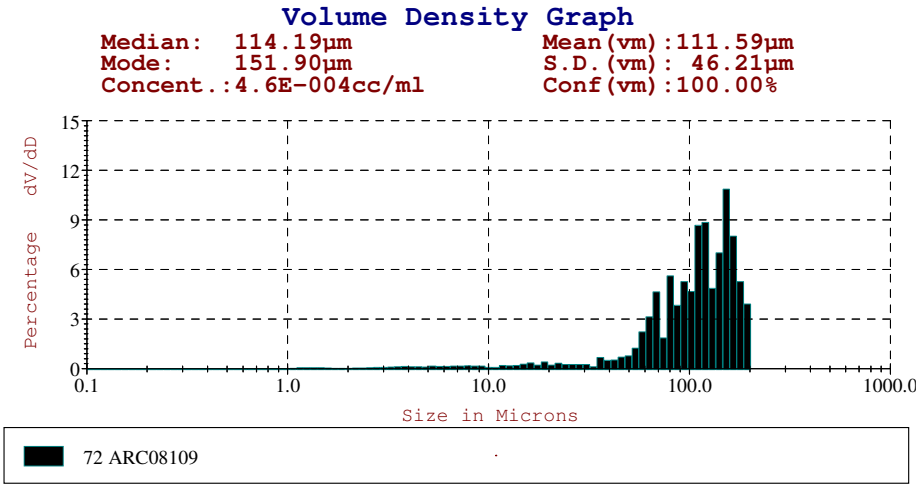
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	24.96	24.96	75.04
3.9-7.8	8.59	33.55	66.45
7.8-15.6	6.63	40.18	59.82
15.6-31.3	5.12	45.30	54.70
31.3-62.5	10.83	56.13	43.87
62.5-125.0	23.49	79.62	20.38
125.0-250.0	20.38	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Big Muddy**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.78	0.78	99.22
3.9-7.8	0.79	1.57	98.43
7.8-15.6	1.28	2.85	97.15
15.6-31.3	1.87	4.72	95.29
31.3-62.5	8.91	13.63	86.37
62.5-125.0	33.93	47.56	52.44
125.0-250.0	52.44	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 Big Muddy** low (0-300um).



Area Ranges Table: **14/12/2007 Big Muddy**

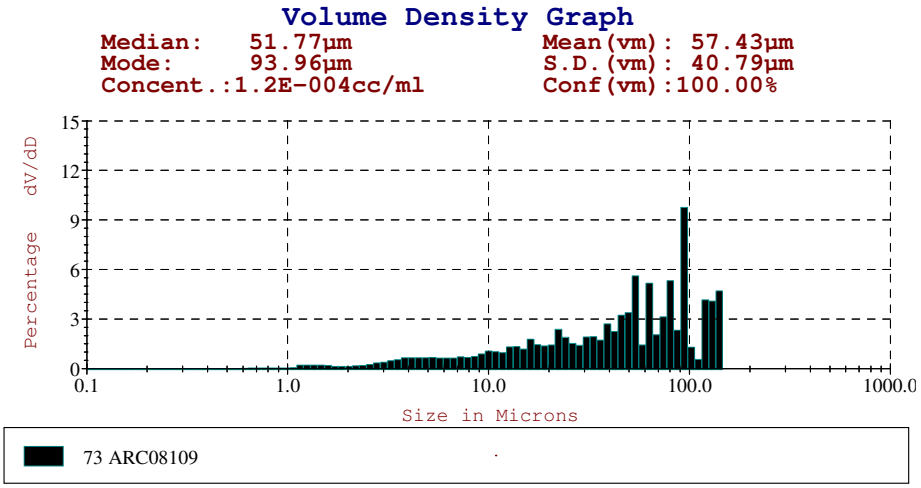
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	29.29	29.29	70.71
3.9-7.8	10.96	40.25	59.75
7.8-15.6	6.66	46.91	53.09
15.6-31.3	6.00	52.91	47.09
31.3-62.5	8.53	61.44	38.56
62.5-125.0	25.75	87.20	12.80
125.0-250.0	12.81	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 Big Muddy**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.05	1.05	98.95
3.9-7.8	1.19	2.23	97.77
7.8-15.6	1.47	3.71	96.29
15.6-31.3	2.50	6.20	93.80
31.3-62.5	8.26	14.46	85.54
62.5-125.0	46.50	60.96	39.04
125.0-250.0	39.04	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP73** low (0-300um).



Area Ranges Table: **14/12/2007 LTSP73**

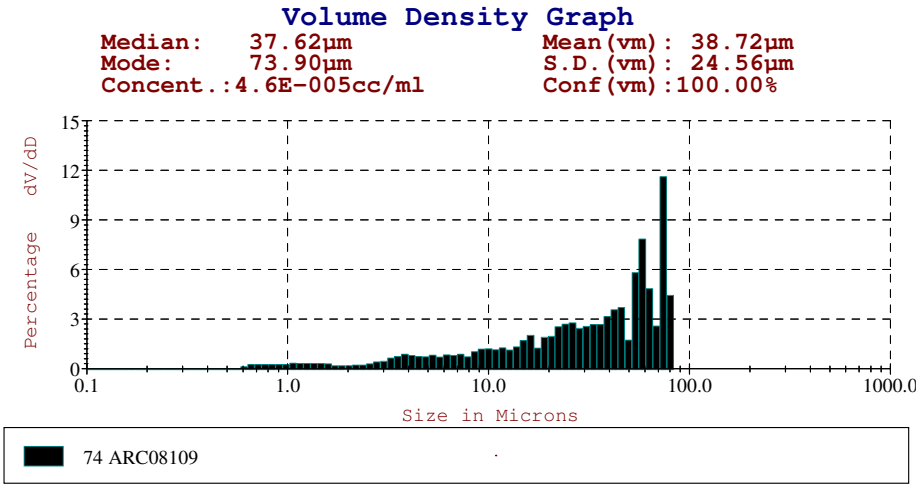
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	38.96	38.96	61.04
3.9-7.8	17.77	56.74	43.26
7.8-15.6	14.10	70.83	29.17
15.6-31.3	11.72	82.56	17.44
31.3-62.5	9.37	91.93	8.07
62.5-125.0	7.07	99.00	1.00
125.0-250.0	1.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP73**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	4.44	4.44	95.57
3.9-7.8	5.52	9.95	90.05
7.8-15.6	9.06	19.01	80.99
15.6-31.3	14.62	33.63	66.37
31.3-62.5	23.93	57.56	42.44
62.5-125.0	34.62	92.18	7.82
125.0-250.0	7.82	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP74** low (0-300um).



Area Ranges Table: **14/12/2007 LTSP74**

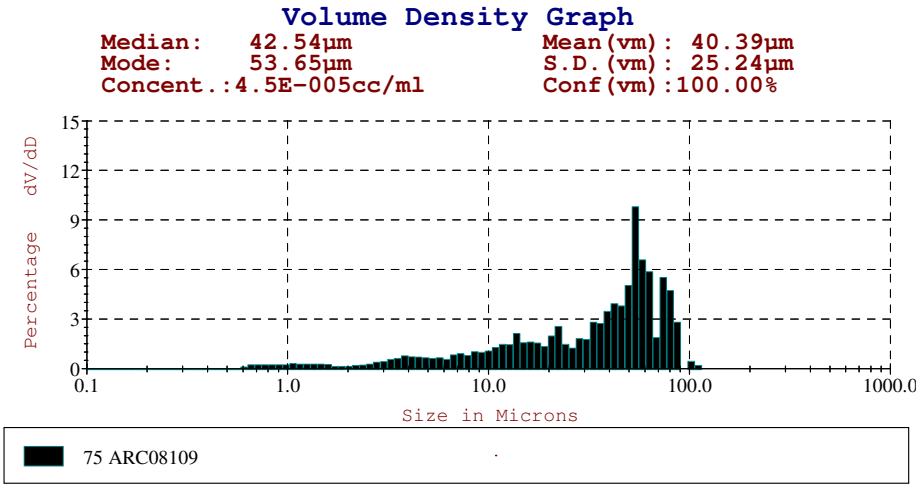
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	52.08	52.08	47.92
3.9-7.8	14.03	66.11	33.89
7.8-15.6	11.10	77.21	22.79
15.6-31.3	10.47	87.69	12.31
31.3-62.5	8.49	96.18	3.82
62.5-125.0	3.82	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP74**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	6.85	6.85	93.15
3.9-7.8	6.49	13.34	86.66
7.8-15.6	10.49	23.83	76.17
15.6-31.3	19.93	43.76	56.24
31.3-62.5	33.04	76.80	23.20
62.5-125.0	23.20	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP75** low (0-300um).



Area Ranges Table: **14/12/2007 LTSP75**

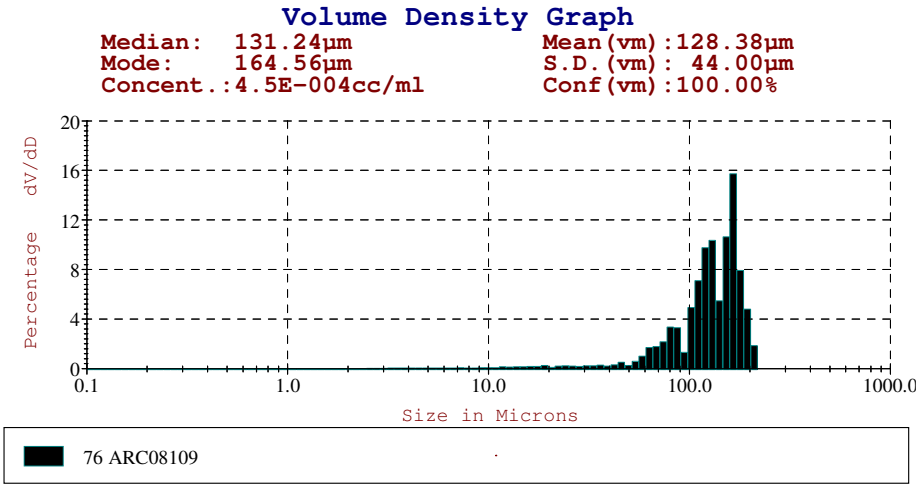
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	50.43	50.43	49.57
3.9-7.8	13.62	64.05	35.95
7.8-15.6	12.85	76.90	23.10
15.6-31.3	8.60	85.49	14.51
31.3-62.5	11.37	96.87	3.13
62.5-125.0	3.14	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP75**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	6.16	6.16	93.84
3.9-7.8	5.95	12.11	87.89
7.8-15.6	11.60	23.71	76.29
15.6-31.3	14.86	38.57	61.43
31.3-62.5	42.43	81.01	18.99
62.5-125.0	18.99	100.00	0.00
125.0-250.0	0.00	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP76** low (0-300um).



Area Ranges Table: **14/12/2007 LTSP76**

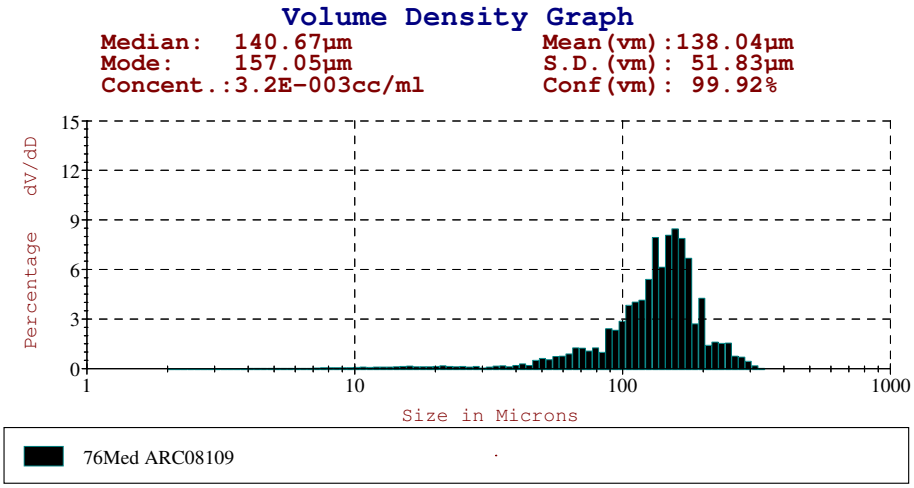
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	21.18	21.18	78.82
3.9-7.8	7.25	28.43	71.57
7.8-15.6	6.59	35.02	64.98
15.6-31.3	5.83	40.85	59.15
31.3-62.5	6.64	47.49	52.51
62.5-125.0	25.97	73.46	26.54
125.0-250.0	26.54	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP76**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.50	0.50	99.50
3.9-7.8	0.54	1.05	98.95
7.8-15.6	1.05	2.10	97.90
15.6-31.3	1.74	3.84	96.16
31.3-62.5	4.48	8.32	91.68
62.5-125.0	34.65	42.97	57.03
125.0-250.0	57.03	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP76M** medium (2-600um).



Area Ranges Table: **14/12/2007 LTSP76M**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	2.28	2.28	97.72
3.9-7.8	6.19	8.47	91.54
7.8-15.6	9.51	17.98	82.02
15.6-31.3	6.85	24.83	75.17
31.3-62.5	9.38	34.21	65.79
62.5-125.0	28.11	62.32	37.68
125.0-250.0	36.85	99.16	0.84
250.0-500.0	0.84	100.00	0.00
500.0-600.0	0.00	100.00	0.00

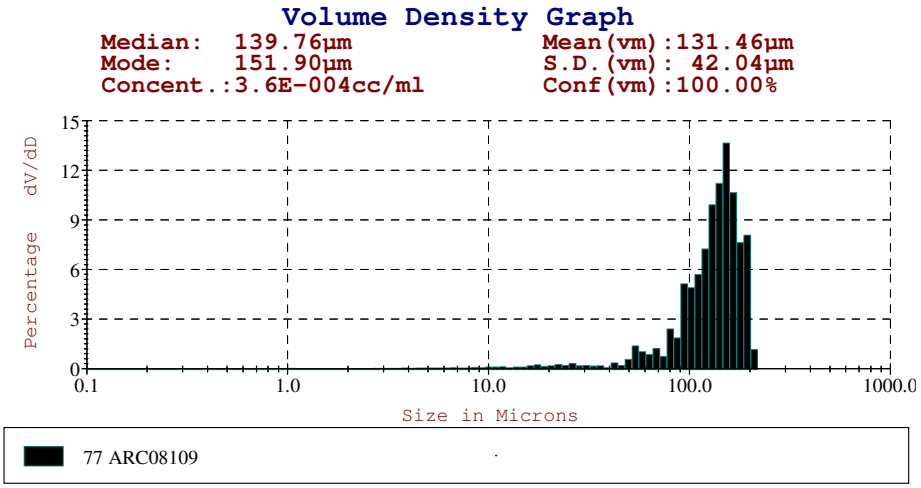
Volume Ranges Table: **14/12/2007 LTSP76M**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.08	0.08	99.92
3.9-7.8	0.37	0.45	99.55
7.8-15.6	1.13	1.58	98.42
15.6-31.3	1.52	3.10	96.90
31.3-62.5	4.83	7.93	92.07
62.5-125.0	28.33	36.26	63.74
125.0-250.0	61.35	97.60	2.40
250.0-500.0	2.40	100.00	0.00
500.0-600.0	0.00	100.00	0.00

250.0-300.0	2.20	99.80	0.20

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP77** low (0-300um).



Area Ranges Table: **14/12/2007 LTSP77**

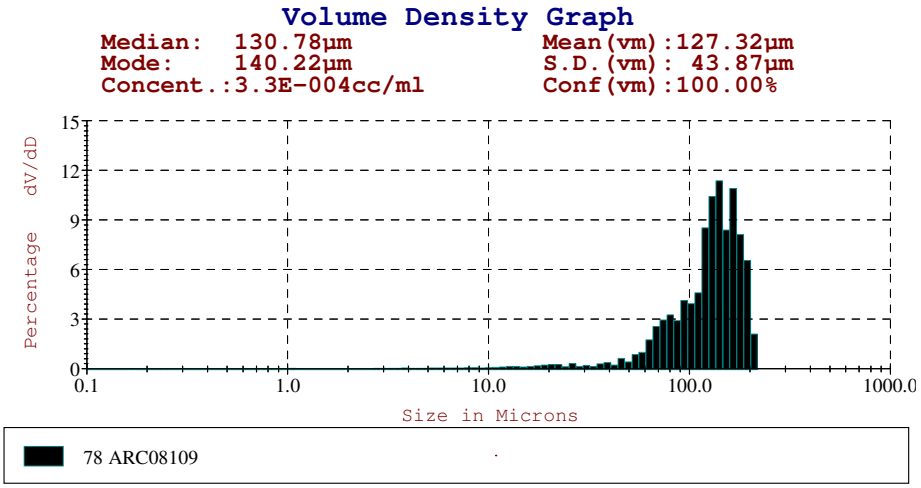
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	18.97	18.97	81.04
3.9-7.8	5.61	24.57	75.43
7.8-15.6	5.71	30.29	69.71
15.6-31.3	6.71	36.99	63.01
31.3-62.5	6.38	43.37	56.63
62.5-125.0	24.91	68.28	31.72
125.0-250.0	31.72	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP77**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.34	0.34	99.66
3.9-7.8	0.39	0.73	99.27
7.8-15.6	0.79	1.52	98.48
15.6-31.3	1.85	3.37	96.63
31.3-62.5	3.98	7.35	92.65
62.5-125.0	30.74	38.09	61.91
125.0-250.0	61.91	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP78** low (0-300um).



Area Ranges Table: **14/12/2007 LTSP78**

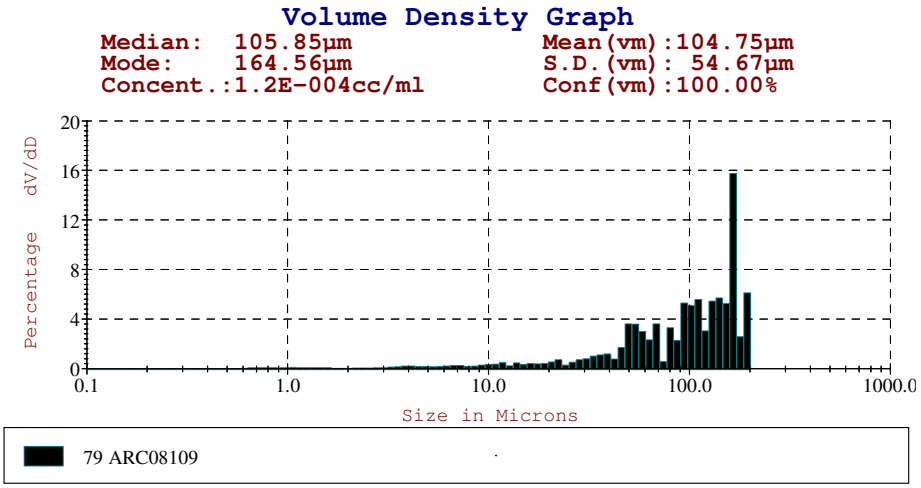
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	17.41	17.41	82.59
3.9-7.8	5.03	22.44	77.56
7.8-15.6	5.46	27.90	72.10
15.6-31.3	6.51	34.41	65.60
31.3-62.5	8.09	42.50	57.50
62.5-125.0	28.03	70.52	29.48
125.0-250.0	29.48	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP78**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.33	0.33	99.67
3.9-7.8	0.36	0.69	99.31
7.8-15.6	0.79	1.48	98.52
15.6-31.3	1.81	3.29	96.71
31.3-62.5	5.14	8.43	91.57
62.5-125.0	33.53	41.96	58.04
125.0-250.0	58.04	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP79** low (0-300um).



Area Ranges Table: **14/12/2007 LTSP79**

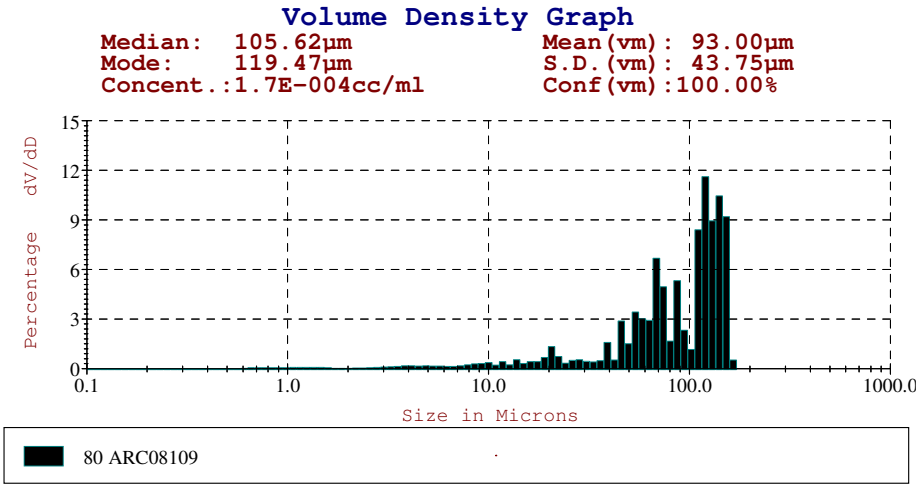
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	41.63	41.63	58.37
3.9-7.8	10.57	52.21	47.79
7.8-15.6	8.57	60.78	39.22
15.6-31.3	6.90	67.68	32.32
31.3-62.5	12.15	79.82	20.18
62.5-125.0	11.39	91.21	8.79
125.0-250.0	8.79	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP79**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.76	1.76	98.24
3.9-7.8	1.74	3.50	96.50
7.8-15.6	2.86	6.36	93.64
15.6-31.3	4.61	10.97	89.03
31.3-62.5	16.99	27.95	72.05
62.5-125.0	30.74	58.69	41.31
125.0-250.0	41.31	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP80** low (0-300um).



Area Ranges Table: **14/12/2007 LTSP80**

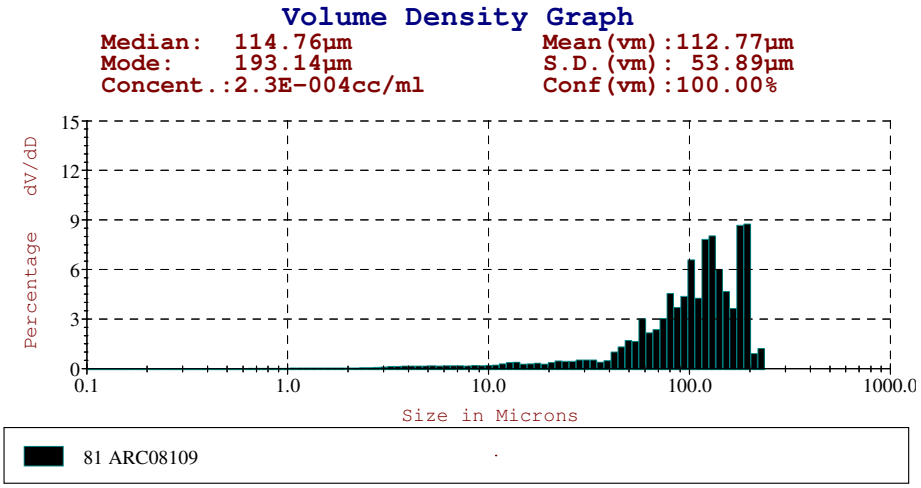
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	38.31	38.31	61.69
3.9-7.8	8.76	47.07	52.93
7.8-15.6	9.15	56.22	43.78
15.6-31.3	8.69	64.90	35.10
31.3-62.5	11.38	76.28	23.72
62.5-125.0	16.46	92.75	7.25
125.0-250.0	7.26	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP80**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.57	1.57	98.43
3.9-7.8	1.37	2.94	97.06
7.8-15.6	2.91	5.85	94.15
15.6-31.3	5.35	11.20	88.81
31.3-62.5	16.17	27.36	72.64
62.5-125.0	43.25	70.61	29.39
125.0-250.0	29.39	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP81** low (0-300um).



Area Ranges Table: **14/12/2007 LTSP81**

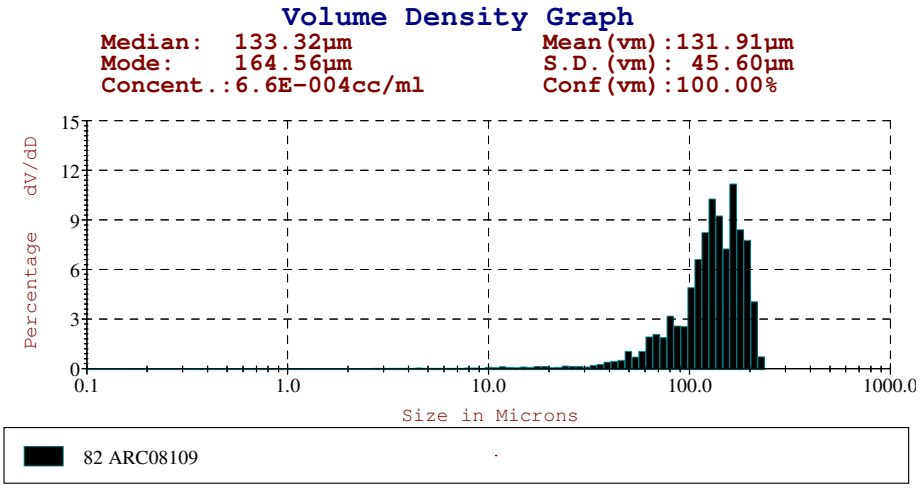
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	31.80	31.80	68.20
3.9-7.8	11.37	43.17	56.83
7.8-15.6	8.87	52.04	47.96
15.6-31.3	7.10	59.14	40.86
31.3-62.5	10.45	69.59	30.41
62.5-125.0	18.71	88.30	11.70
125.0-250.0	11.71	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP81**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.25	1.25	98.75
3.9-7.8	1.37	2.62	97.38
7.8-15.6	2.23	4.85	95.15
15.6-31.3	3.54	8.39	91.61
31.3-62.5	11.36	19.75	80.25
62.5-125.0	38.62	58.37	41.63
125.0-250.0	41.63	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP82** low (0-300um).



Area Ranges Table: **14/12/2007 LTSP82**

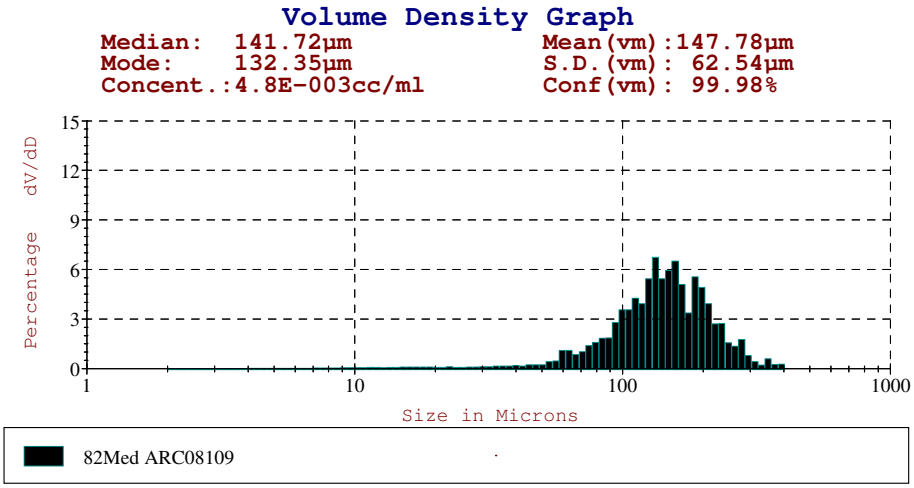
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	17.38	17.38	82.62
3.9-7.8	4.48	21.86	78.14
7.8-15.6	4.56	26.41	73.59
15.6-31.3	3.82	30.24	69.76
31.3-62.5	9.53	39.77	60.23
62.5-125.0	29.13	68.90	31.10
125.0-250.0	31.10	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP82**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.30	0.30	99.70
3.9-7.8	0.29	0.59	99.41
7.8-15.6	0.63	1.22	98.78
15.6-31.3	1.00	2.22	97.78
31.3-62.5	5.59	7.81	92.19
62.5-125.0	33.31	41.11	58.89
125.0-250.0	58.89	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP82M** medium (2-600um).



Area Ranges Table: **14/12/2007 LTSP82M**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	2.53	2.53	97.47
3.9-7.8	6.31	8.84	91.16
7.8-15.6	7.74	16.58	83.42
15.6-31.3	5.83	22.42	77.58
31.3-62.5	8.25	30.67	69.33
62.5-125.0	32.01	62.67	37.33
125.0-250.0	35.34	98.01	1.99
250.0-500.0	1.99	100.00	0.00
500.0-600.0	0.00	100.00	0.00

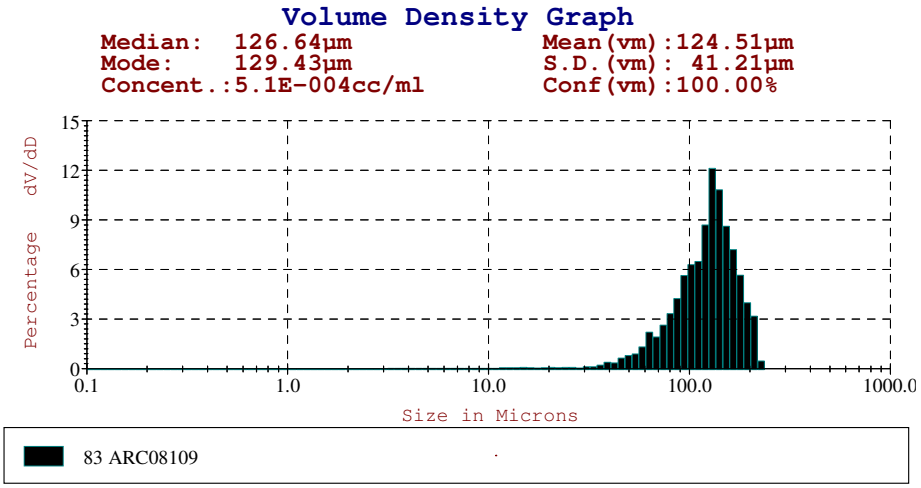
Volume Ranges Table: **14/12/2007 LTSP82M**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.08	0.08	99.92
3.9-7.8	0.35	0.43	99.57
7.8-15.6	0.86	1.29	98.71
15.6-31.3	1.24	2.53	97.47
31.3-62.5	4.03	6.56	93.44
62.5-125.0	30.25	36.81	63.19
125.0-250.0	57.45	94.26	5.74
250.0-500.0	5.74	100.00	0.00
500.0-600.0	0.00	100.00	0.00

250.0-300.0	3.95	98.21	1.79

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP83** low (0-300um).



Area Ranges Table: **14/12/2007 LTSP83**

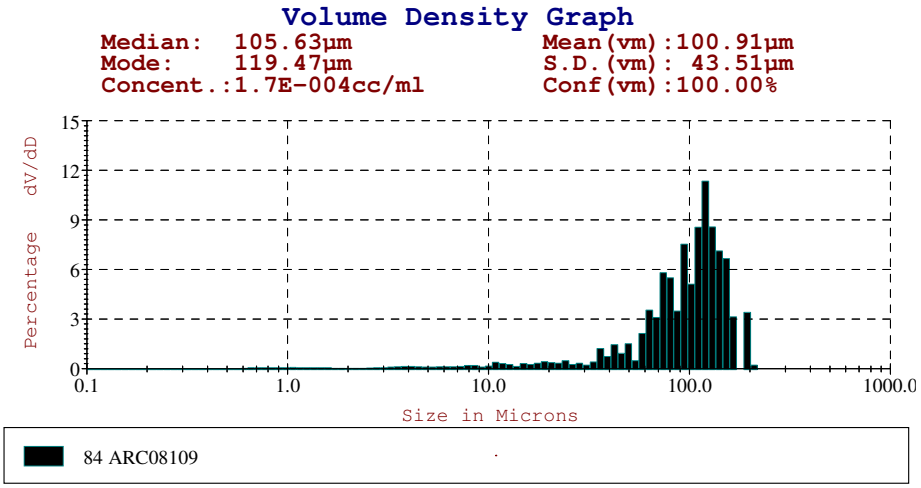
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	12.65	12.65	87.35
3.9-7.8	3.01	15.66	84.34
7.8-15.6	3.01	18.67	81.33
15.6-31.3	2.52	21.19	78.81
31.3-62.5	9.63	30.82	69.18
62.5-125.0	39.08	69.90	30.10
125.0-250.0	30.10	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP83**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.21	0.21	99.79
3.9-7.8	0.19	0.39	99.61
7.8-15.6	0.40	0.79	99.21
15.6-31.3	0.63	1.42	98.58
31.3-62.5	5.34	6.76	93.24
62.5-125.0	41.55	48.30	51.70
125.0-250.0	51.70	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP84** low (0-300um).



Area Ranges Table: **14/12/2007 LTSP84**

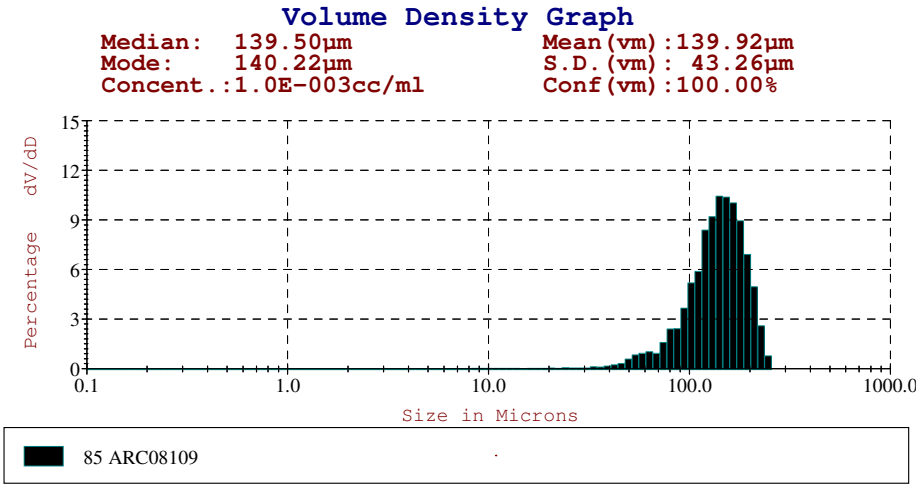
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	38.36	38.36	61.64
3.9-7.8	7.95	46.31	53.69
7.8-15.6	7.30	53.61	46.39
15.6-31.3	5.69	59.30	40.70
31.3-62.5	8.77	68.07	31.93
62.5-125.0	23.74	91.81	8.19
125.0-250.0	8.19	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP84**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	1.29	1.29	98.71
3.9-7.8	1.07	2.36	97.64
7.8-15.6	1.98	4.33	95.67
15.6-31.3	2.99	7.32	92.68
31.3-62.5	9.93	17.25	82.75
62.5-125.0	53.40	70.66	29.34
125.0-250.0	29.35	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP85** low (0-300um).



Area Ranges Table: **14/12/2007 LTSP85**

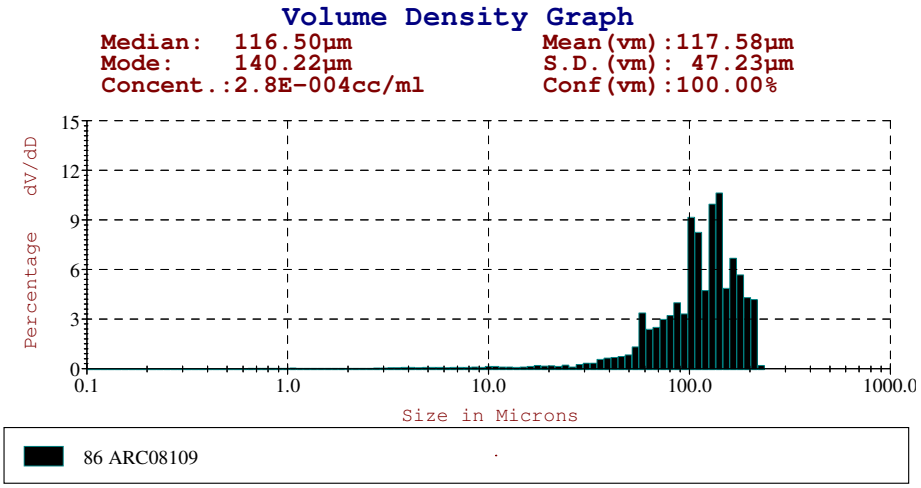
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	6.57	6.57	93.43
3.9-7.8	1.83	8.40	91.60
7.8-15.6	1.77	10.17	89.83
15.6-31.3	1.78	11.94	88.06
31.3-62.5	8.16	20.10	79.90
62.5-125.0	35.70	55.80	44.20
125.0-250.0	44.19	99.99	0.01
250.0-300.0	0.02	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP85**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.09	0.09	99.91
3.9-7.8	0.09	0.18	99.82
7.8-15.6	0.17	0.36	99.64
15.6-31.3	0.36	0.72	99.28
31.3-62.5	3.69	4.40	95.60
62.5-125.0	31.63	36.04	63.96
125.0-250.0	63.93	99.97	0.03
250.0-300.0	0.03	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP86** low (0-300um).



Area Ranges Table: **14/12/2007 LTSP86**

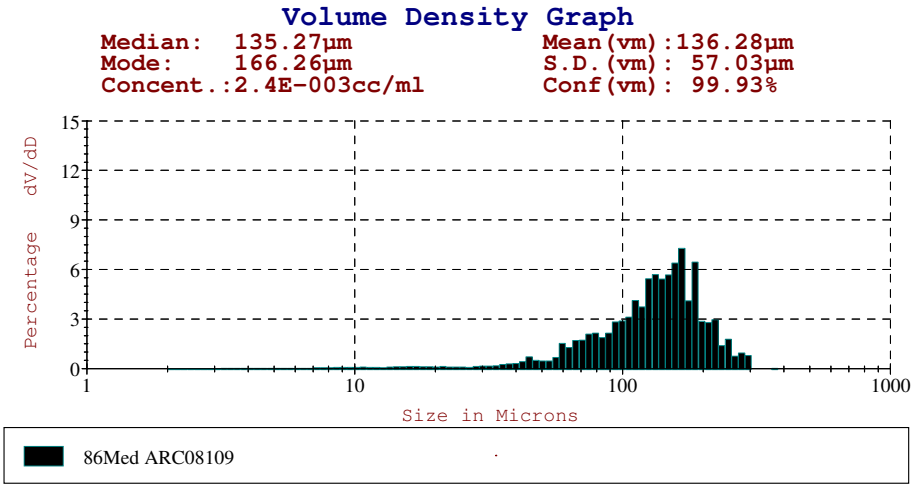
Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	29.62	29.62	70.38
3.9-7.8	7.08	36.70	63.30
7.8-15.6	4.91	41.61	58.39
15.6-31.3	4.41	46.01	53.99
31.3-62.5	11.76	57.77	42.23
62.5-125.0	24.85	82.62	17.38
125.0-250.0	17.38	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP86**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
0.0-3.9	0.74	0.74	99.26
3.9-7.8	0.66	1.40	98.60
7.8-15.6	0.91	2.30	97.70
15.6-31.3	1.68	3.98	96.02
31.3-62.5	10.10	14.08	85.92
62.5-125.0	39.98	54.06	45.94
125.0-250.0	45.94	100.00	0.00
250.0-300.0	0.00	100.00	0.00

Particle Size

Volume Distribution: Sample **14/12/2007 LTSP86M** medium (2-600um).



Area Ranges Table: **14/12/2007 LTSP86M**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	3.12	3.12	96.88
3.9-7.8	7.23	10.35	89.65
7.8-15.6	8.70	19.05	80.95
15.6-31.3	6.29	25.34	74.66
31.3-62.5	12.10	37.44	62.56
62.5-125.0	30.87	68.31	31.69
125.0-250.0	30.62	98.93	1.07
250.0-500.0	1.07	100.00	0.00
500.0-600.0	0.00	100.00	0.00

Volume Ranges Table: **14/12/2007 LTSP86M**

Size(microns)	Local(%)	Undersize(%)	Oversize(%)
2.0-3.9	0.11	0.11	99.89
3.9-7.8	0.45	0.56	99.44
7.8-15.6	1.07	1.64	98.36
15.6-31.3	1.51	3.15	96.85
31.3-62.5	6.52	9.67	90.33
62.5-125.0	31.72	41.39	58.61
125.0-250.0	55.37	96.76	3.24
250.0-500.0	3.25	100.00	0.00
500.0-600.0	0.00	100.00	0.00

250.0-300.0	2.90	99.65	0.35