brought to you by CORE

Idaho National Engineering and Environmental Laboratory

INEEL/EXT-2000-01097

August 2000



Tank Farm WM-182 and WM-183 Heel Slurry Samples PSD Results

T. A. Batcheller G. M. Huestis

BECHTEL BWXT IDAHO, LLC

Tank Farm WM-182 and WM-183 Heel Slurry Samples PSD Results

T. A. Batcheller G. M. Huestis

Published August 2000

Idaho National Engineering and Environmental Laboratory Idaho Falls, Idaho 83415

Prepared for the U.S. Department of Energy Assistant Secretary for Environmental Management Under DOE Idaho Operations Office Contract DE-AC07-99ID13727

SUMMARY

Particle size distribution (PSD) analysis of INTEC Tank Farm WM-182 and WM-183 heel slurry samples were performed using a modified Horiba LA-300 PSD analyzer at the RAL facility. There were two types of testing performed: typical PSD analysis, and *settling rate* testing.

Although the heel slurry samples were obtained from two separate vessels, the particle size distribution results were quite similar. The slurry solids were from approximately a minimum particle size of 0.5 μ m to a maximum of 230 μ m—with about 90 % of the material between 2-to-133 μ m, and the cumulative 50% value at approximately 20 μ m. This testing also revealed that high frequency sonication with an ultrasonic element may break-up larger particles in the WM-182 and WM-183 tank farm heel slurries. This finding represents useful information regarding ultimate tank heel waste processing.

Settling rate testing results were also fairly consistent with material from both vessels in that it appears that most of the mass of solids settle to an agglomerated, yet easily redispersed layer at the bottom. A dispersed and suspended material remained in the "clear" layer above the settled layer after about one-half an hour of settling time. This material had a statistical mode of approximately 5 μ m and a maximum particle size of 30 μ m.

SUM	MARY			iii				
1.	Introd	luction a	nd Background	1				
2.	PSD .	Analysis	Equipment & Methods	1				
	2.1	Remote	e PSD Analyzer and Equipment	1				
	2.2	Analyz	er Performance Check with Standards	2				
	2.3	Tank F	arm Samples, PSD Analysis Method and Testing	2				
3.	Resul	ts and D	iscussion	4				
	3.1	Particle	e Size Standards Results	4				
	3.2	Tank F	arm Heel Slurry Sample PSD Results	6				
		3.2.1 3.2.2 3.2.3 3.2.4 3.2.5 3.2.6 3.2.7 3.2.8 3.2.9 3.2.10	 WM-182#4 PSD Analysis WM-183#3 PSD Analysis WM-183 Composite A PSD Analysis WM-183 Composite B PSD Analysis Comparison of WM-183 PSD Analyses Comparison Between WM-182 and WM-183 PSD Analyses WM-182#4 Settling Rate Testing WM-183 Composite A Settling Rate Testing WM-183 Composite B Settling Rate Testing WM-183 Composite B Settling Rate Testing WM-183 Composite B Settling Rate Testing 	8 9 10 11 12 13 14 16 16				
4.	Conc	lusions a	nd Recommendations	18				
5.	Refer	ences		19				
Appe	ndix—	A-1	Particle Size Standards Results Data	A-2				
Appe	ndix—	A-2	Tank Farm Slurry Sample PSD Results Data	A-7				
Appe	ppendix—A-3 Settling Rate Testing Photographs A-32							

CONTENTS

FIGURES

1.	35µm garnet particle size standard PSD analyses results w/SEM photomicrograph	4
2.	Mixture of Coulter standards; 2.1 and 20.8µm microspheres	5
3.	Coulter 0.3µm latex size standard	6
4.	WM-182 #4 PSD Analyses; avg. PSD for non sonicated samples	8
5.	WM183#3 PSD Analyses	9
6.	WM-183 Composite A PSD Analyses	10
7.	WM-183 Composite B PSD Analyses	10
8.	Comparison of WM-183 PSD Analyses	11
9.	Comparison between WM-182 and WM-183 PSD results	12
10.	WM-182 Settling Rate vs. Time testing results	13
11.	Non-sonicated WM183 Composite A Settling Rate PSD's vs. Time	14
12.	WM-183 Composite A non-sonicated settling rate testing.	15
13.	WM-183 Composite B non-sonicated Settling Rate Testing	16
A-3a.	WM-183 Composite A settling rate testing photographs	32
A-3b.	WM-183 Composite B settling rate testing photographs	33

TABLES

1.	Description of 35µm garnet standard runs.	5
2.	WM-182 & 183 Heel Slurry PSD Data Sets.	7

Tank Farm WM-182 and WM-183 Heel Slurry Samples PSD Results

1. INTRODUCTION AND BACKGROUND

As part of a sampling and physical characterization task, a laser diffraction (*classical light scattering*) particle size analyzer was used to determine particle size distribution characteristics of a radioactive slurry. Spent nuclear fuel was previously reprocessed at the INTEC (formerly recognized as the Idaho Chemical Processing Plant) utilizing liquid-liquid extraction processes. The acidic, radioactive aqueous streams from these processes were transferred to 300,000 gallon stainless steel storage vessels in the INTEC Tank Farm area, where each vessel sits below grade, and is totally enclosed in a concrete vault. This radioactive liquid was subsequently transferred to a solidification process. Due to the liquid transfer piping configuration in the tank farm vessels, 100 percent of this liquid could not be retrieved. Consequently, a liquid "heel" remains at the bottom of the "emptied" vessel. It is the particle size distribution (PSD) analysis of the solids in this radioactive heel slurry that is addressed in this report.

Heel slurry samples from INTEC tank farm vessels WM-182 and WM-183 were taken utilizing the Light Duty Utility Arm (LDUA) from October 1999 to January 2000. A description of this LDUA technology is presented by Patterson [1]. Tank farm samples were transferred to the INTEC Remote Analytical Laboratory (RAL) facility. Particle size analyses on these samples were performed in the RAL using a Horiba PSD analyzer which was modified for remote application. This technology provides rapid and simple PSD analysis, especially down in the fine and microscopic particle size regime. Particle size analysis of these radioactive slurries down in this smaller range was previously not achievable—making this technology far superior than the traditional particle sizing methods used before. Remote deployment and utilization of this technology is in an exploratory stage. In light of development of closure strategies for the INTEC tank farm within the auspices of the Draft High-Level Waste and Facility Disposition Environmental Impact Statement, these PSD analyses, in conjunction with other characterization analyses, are tremendously useful fundamental engineering data.

2. PSD ANALYSIS EQUIPMENT & METHODS

2.1 Remote PSD Analyzer and Equipment

Particle size distribution analysis of INTEC Tank Farm WM-182 and -183 heel slurry samples were performed using the modified Horiba Instruments Inc. Model LA-300 laser scattering particle size distribution analyzer; it has a 0.1 to 600 micron (μ m) measurement range and weighs 55 lbs. This instrument was chosen for this PSD analysis task primarily because it satisfied a 12 inch wide RAL transfer tunnel dimension restriction—and because of its smaller "footprint". A description of this analyzer and some of the theory of this technology are presented in References 2 and 3.

The Horiba software generates the PSD as a discrete frequency distribution of particle volume percent versus the particle diameter. A frequency distribution is typically presented as a histogram. A differential frequency distribution, or in this case, a differential volume percent distribution curve can be approximated by drawing a smooth curve through the histogram[4]. In this way, the particle size distribution is easily grasped because the subtleties of the distribution are revealed (particularly when plotted on a logarithmic scale). Differential curves are better than histograms when comparing overlayed PSD's. The Horiba's 0.1 to 600µm particle size range is resolved into 64 logarithmically spaced channels. The channel volume percent value is matched with the channel center value. The particle size distribution and PSD statistics are calculated using the 64 {Vol. %, particle size} data pairs. For greater

flexibility of data handling and presentation purposes just described, all PSD analyses presented here were regenerated in EXCEL software by exporting the Horiba PSD data and generating a graph from this data. A cumulative volume percent plot can be obtained by summing the data (which necessarily sums to 100 %). An overlay of cumulative distributions is not as visually informative as an overlay of the differential distributions. Typically, solids-liquid-separation technologies use the cumulative 50 % particle size as the "nominal" particle size that is retained by the equipment; this is reported as the median in the data presented here.

A Jencons *PowerPette* battery-powered pipettor with a disposable 2.2 ml plastic pipette tip was used to draw small aliquots for remote PSD analyses of the tank farm slurry samples. A small aliquot is added to the Horiba sample dispersion/circulation tank. The circulating particles from this aliquot diffract/scatter some of the laser light. Typically a minimum of 5 % obscuration (or 95 % transmittance) of the light is required to ensure a diffraction/scatter pattern adequate for the analyzer to deconvolute the particle size distribution. Aliquots of slurry are added to the analyzer until satisfactory obscuration is achieved. Further technique details are presented in Reference 3. Prior to using the plastic pipettes in the RAL cell, the slurry-draw end of the tip was reamed out to approximately 2100µm. This opening is over three times the analyzer's 600µm upper detection limit but it is not so large that it allows the aliquot to dribble out.

2.2 Analyzer Performance Check with Standards

Standards were used to demonstrate and verify analyzer performance during testing. These accuracy checks were performed during the metamorphosis of the modified analyzer and then during this tank farm slurry sample PSD analyses testing. Several Coulter Corporation particle size standards were used. A $35\mu m$ nominal mode garnet LS Control G35D (Lot: 1014) was used predominately throughout this testing. A mixture of 2.1 μm modal polyvinyl toluene (Lot: 1630) and 20.8 μm modal polystyrene microspheres (Lot: 5740), and a 0.3 μm latex LS Size Control L300 (Lot: 1019) were also used. Typically the standards material was added directly to the Horiba sample dispersion/circulation tank.

2.3 Tank Farm Samples, PSD Analysis Method and Testing

The PSD analysis method sequence basically involved: 1) adding fresh water dispersant to the analyzer dispersion/circulation tank, 2) circulating and debubbling the water dispersant, 3) align the laser, 4) baseline (or "blank") the instrument, 5) add sample aliquots and perform analysis; the details of this procedure are presented in References 3 and 5.

Actual sample locations (mapped by sample number...as was done for WM-188 [1]) within the WM-182 and -183 tanks was not available at time of publication. Supposedly, sample locations are in a similar sampling pattern as to those of WM-188 [6]. A concern was raised because it was felt that a representative cross-section of the tank solids is not achievable with this sampling pattern. However, the limitations of the LDUA reach were reiterated.

In any event, there were two types of PSD analyses testing performed using the WM-182 and -183 samples: 1) typical PSD analysis testing, and 2) *settling rate* testing. As described earlier, small aliquots were drawn from a sample dispersion until the amount of particles circulating in the analyzer were satisfactory for an analysis by the instrument. For at least one of the tests performed, aliquots were drawn directly from an intact, non-fractionated sample dispersion. However, most testing was performed with a redispersion of solids from the original tank farm sample. And for some tests, the solids were from a composite of fractionated solids from several tank farm samples.

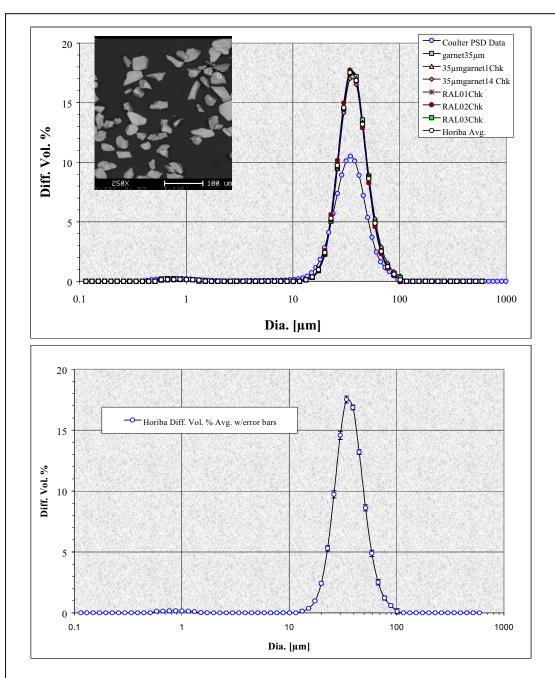
For the typical PSD analyses, aliquots were drawn from a just-agitated slurry sample dispersion container using the pipettor and an analysis run performed. Duplicate analysis runs for this sample dispersion were performed until reasonable repeatability and "trending" were observed between the runs. This qualitative judgement was made by noting the mode location and, the breadth and shape of the differential PSD profile curve from one run to the next. Often this may take only three runs to clearly establish the "true" sample PSD profile. The Horiba aliquot dispersion/circulation tank has a 13 W, 28 kHz ultrasonic element. It was observed that use of this high frequency ultrasonic element affected the PSD profile; this is discussed in the Results section.

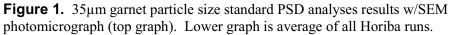
For the settling rate testing, a quantity of solids was fully agitated/dispersed in a 250 ml glass graduated cylinder and then allowed to settle. At a predetermined settling time, aliquots were drawn from a point about 4" below the surface and the analysis quickly executed. This testing basically looked at the transient particle size distribution for the solids in the "clarifying" layer above the settled solids layer (at the bottom). As testing proceeded, it became apparent that the ultrasonic element should not be used for the settling rate testing PSD analyses; this is also discussed later. In this format, a settling rate PSD versus time plot was generated. Due to limitations, duplicate settling rate test runs were not performed.

3. RESULTS AND DISCUSSION

3.1 Particle Size Standards Results

Results for the $35\mu m$ nominal mode garnet standard analyses performed over the duration of this testing are presented in Figure 1.





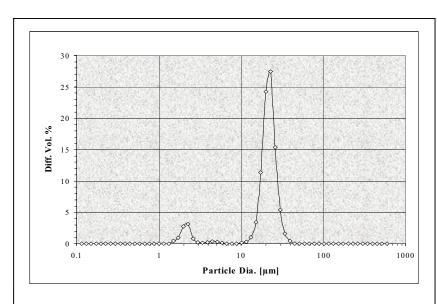
Run descriptions for these 35µm garnet runs are given in Table 1.

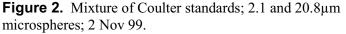
Filename	Description	Date
garnet35µm	performed upon receipt and setup of unit at INTEC.	26 Jul 99
35µmgarnet1Chk	after completion of major modifications to unit	2 Nov 99
35µmgarnet14Chk	upon final assembly of unit	29 Nov 99
RAL01Chk	first analysis performed with unit in RAL cell—just prior to first "hot" sample from WM-182	23 Dec 99
RAL02Chk	check instrument performance prior to continued analyses of tank farm samples	19 Jan 00
RAL03Chk	check instrument performance prior to continued analyses of tank farm samples	7 Feb 00

Table 1. Description of 35µm garnet standard runs.

It is clear from these results with the garnet standard that the modifications to the unit for remote application at the RAL did not affect the analyzer, and the instruments level of repeatability remained high. However, it was noted that the Horiba consistently yielded a mode down around 32 μ m for this standard (see Appendix A.1; analyzer PSD data in the EXCEL spreadsheet format and statistics for WM-182 and the rest of the standards are in Appendix A.1). Analysis of this standard performed with a Coulter LS230 laser diffraction particle size analyzer is also shown in Figure 1 (top graph); the Coulter consistently yielded the mode at around 35 μ m. This raised a concern regarding the calibration of the Horiba.

As a follow-on to this concern, a mixture of 2 and 21µm standards was analyzed in the Horiba before deployment of the analyzer in the RAL; the results for this are presented in Figure 2.

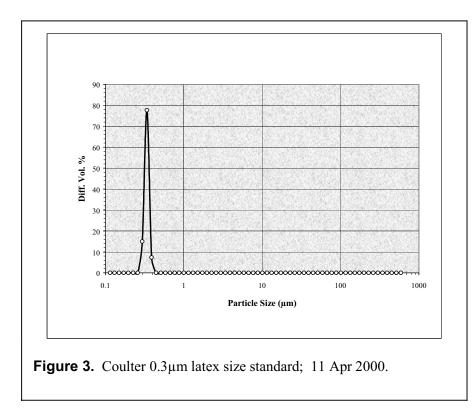




As can be seen, these results were quite satisfactory (see data table in Appendix A.1). It was decided at this juncture that the Horiba was operating within an acceptable reproducibility range, and that there was not a calibration discrepancy of such magnitude so as to preclude deployment of the Horiba in the RAL.

In the course of the tank farm testing, a curious observation was that the PSD's showed zero volume percent of material less than about $0.5 \mu m$. It was expected that some of the samples would show a non-zero volume percent down to the

instrument's $0.1 \mu m$ lower limit. An analysis of the Coulter $0.3 \mu m$ standard was performed to demonstrate that the instrument was detecting particles less than $0.5 \mu m$. The result for this test is presented in Figure 3. This result indicated that the Horiba was detecting particles less than $0.5 \mu m$.



The overall results for the standards testing were satisfactory and demonstrated that the Horiba was performing with excellent repeatability and acceptable accuracy during the actual tank farm PSD testing.

In order to decrease the abrasive wear on the Horiba's glass sample cell, a move to a glass bead standard instead of the garnet is recommended. Continued use of the engineered monosize spheres is satisfactory for checking analyzer performance at specific sizes. Standard Reference Material such as glass bead standards are available

from the National Institute of Standards and Technology (NIST) for checking performance over a range of sizes; a range of from 34-to-120µm is recommended.

3.2 Tank Farm Heel Slurry Sample PSD Results

For the tank farm heel slurry sample typical PSD analysis testing, and the settling rate testing, there were seven sets of PSD data. These data sets are shown in Table 2.

	LDUA Sample	Description	Date
	WM-182#4	 Non-fractionated slurry from sample LN 9911082 Aliquot dispersion in Horiba was <u>not</u> sonicated. 	23 Dec 99
		Aliquot dispersion in Horiba was sonicated.	11 Apr 00
Sa	WM-183#3	 Solids redispersed from suspended solids fraction of sample LN 0001125. Dispersion in Horiba was not sonicated Dispersion in Horiba was sonicated. 	19 Jan 00
Sample PSD Analysis	WM-183	Solids composited and redispersed from <i>settled solids</i> fraction from sample	
e PS	Composite of	LN's 0001056, 0001123 and 0001125. In this report, this composite is	
Ð	Sample #'s 1,2,	designated as Composite A.	19 Jan 00
Inal	and 3	Dispersion in Horiba was <u>not</u> sonicated.	
ysis	(Composite A)	• Dispersion in Horiba was sonicated.	
	WM-183	• Similarly, solids composited and redispersed from <i>settled solids</i> fraction	
	Composite of	from sample LN's 0001175, 0001176, 0001191 and 0001192; this	
	Sample #'s 4,5,6,	composite is designated as Composite B.	7 Feb 00
	and 7	Dispersion in Horiba was <u>not</u> sonicated.	
	(Composite B)	• Dispersion in Horiba was sonicated.	
	WM-182#4	Non-segregated slurry from sample LN 9911082.	8 Feb 00
Settling Ra Testing		Aliquot dispersion in Horiba <u>was</u> sonicated.	0 1 60 00
	WM-183	Testing performed with Composite A material (as described above).	8 Mar 00
	Composite A	Aliquot dispersion in Horiba was <u>not</u> sonicated.	
	WM-183	Testing performed with Composite B material (as described above).	
ਇ	VV IVI-105	 Testing pertormed with Composite D material (as described above). 	8Mar 00

 Table 2.
 WM-182 & 183 Heel Slurry PSD Data Sets.

3.2.1 WM-182#4 PSD Analysis

The WM-182 Sample #4 PSD analyses were the first performed on actual γ radiation material at the RAL with the newly installed Horiba. For the first five runs performed, the ultrasonic element (described previously in Section 2.3) which sonicates the liquid in the analyzer's aliquot dispersion/circulation tank, was <u>not</u> used. Sonication was used later and was found to significantly affect the PSD profile. The average PSD's for non-sonicated versus sonicated runs are presented in Figure 4. Initially, it was believed that sonication dispersed agglomerated particles and yielded the fundamental particle sizes in the sample. However at a later date, SEM photomicrographs of WM-182 solids (see Figure 4 insert) became available for inspection. It was then believed that the larger particles were not comprised of smaller, agglomerated particles. Moreover, the results for the unsonicated case represented the "as is" particle size distribution for the tank slurry sample (along the lines as what is seen in the SEM insert)—and the possibility that sonication is actually "breaking-up" larger particles was raised. This finding represents useful information regarding ultimate tank heel waste processing. Further investigation of sonication effects is needed and is recommended.

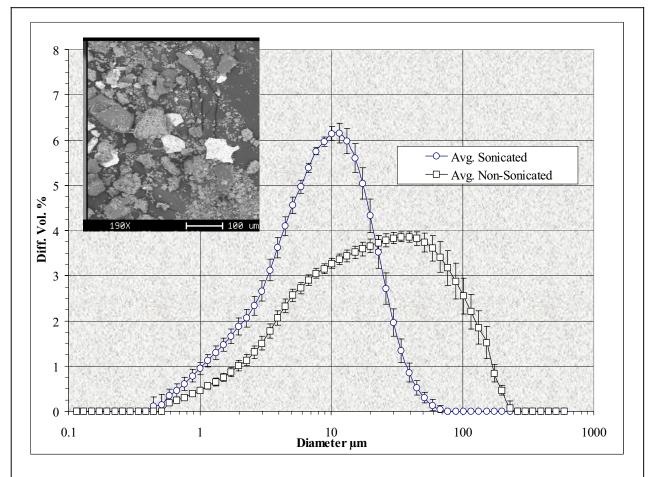
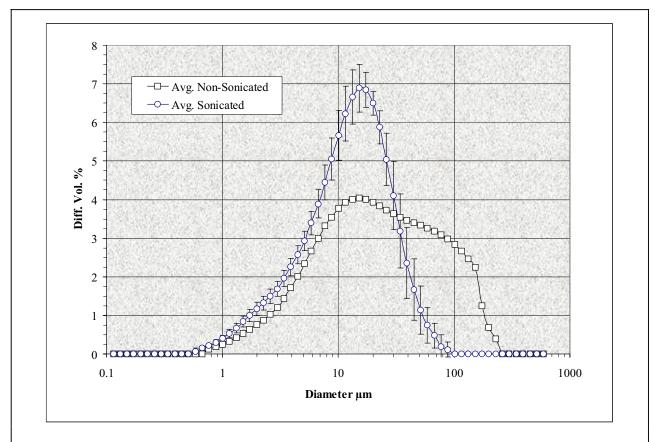


Figure 4. WM-182 #4 PSD Analyses; avg. PSD for non sonicated vs. sonicated samples. SEM photomicrograph insert of dried and mounted WM-182 slurry solids.

The particle sizes seen in the SEM photo compares with the non-sonicated PSD profile sizes in that there are particles on-the-order of 100 μ m, but none are seen of the size greater than 300 μ m (where the profile "zeroes-out" on the "big" end)—and the broad mode around 40 μ m can be easily supported. Obviously it can not be assumed that this photo represents the particle distribution that was "seen" by the Horiba (let alone, that of the slurry sample). Analyzer PSD data in the spreadsheet format for this WM-182#4 sample are provided in Appendix A.2 (as are all the remaining tank farm sample PSD data).

3.2.2 WM-183#3 PSD Analysis

PSD analyses were performed with solids which were redispersed from the original *suspended solids* fraction of WM-183 Sample #3 (Log Number 0001125). The *suspended solids* fraction is decanted/separated off the top of the *settled solids* fraction of the sample. The effect of sonication was noted for these results also. The average PSD's for non-sonicated versus sonicated runs are presented in Figure 5. Unlike the WM-182 results, an ~15 μ m mode shows up in both the unsonicated and the sonicated profile—albeit much less dominant in the non-sonicated case. Because this material was from the suspended solids fraction, the significant amount of larger size particles was not expected to be seen; further discussion of this is taken up later.





3.2.3 WM-183 Composite A PSD Analysis

PSD analyses were performed with solids which were redispersed from a composite of the original *settled solids* fraction of WM183 Sample #'s 1, 2 and 3. The average PSD's for unsonicated versus

sonicated runs are presented in Figure 6. Sonication had some effect on this sample. The unsonicated result shows larger particles out to $\sim 200 \mu m$; however, the mode at ~10µm is dominant, just like in the sonicated case. Because this material was from the settled solids fraction, a significant amount of larger size particles was expected to be seen; Again, further discussion to this is given later.

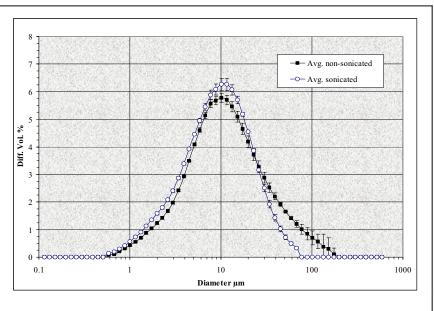


Figure 6. WM-183 Composite A PSD Analyses; avg. PSDs for non-sonicated vs. sonicated runs.

3.2.4 WM-183 Composite B PSD Analysis

Similarly, PSD analyses were performed with solids which were redispersed from a composite of

the original settled solids fraction of WM183 Sample #'s 4, 5, 6 and 7. The average PSD's for unsonicated versus sonicated runs are presented in Figure 7. The effect of sonication was similar to that noted for WM-183#3. This kind of distribution is what was expected for the settled fraction.

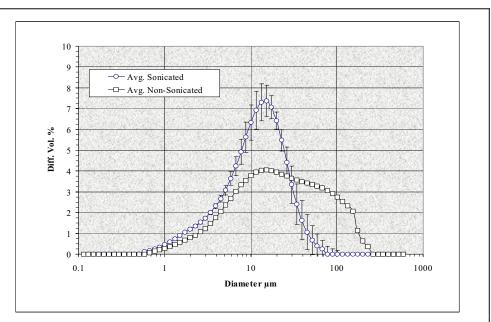
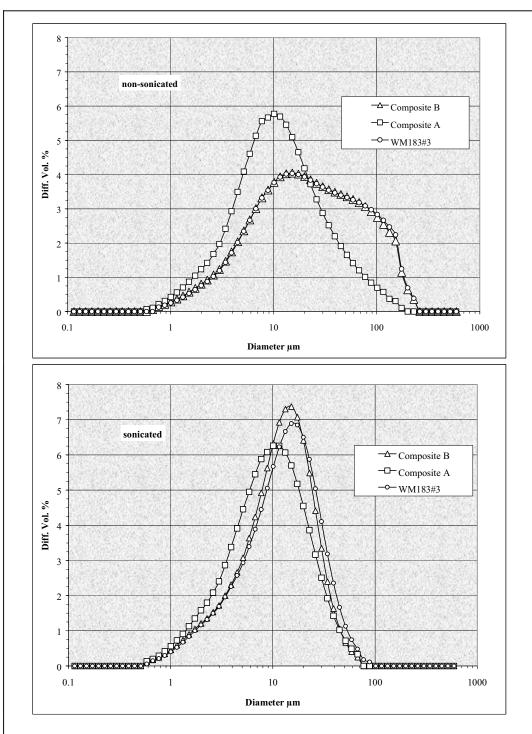
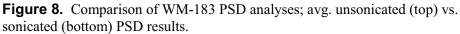


Figure 7. WM-183 Composite B PSD Analyses; avg. PSDs for non-sonicated vs. sonicated runs.

3.2.5 Comparison of WM-183 PSD Analyses

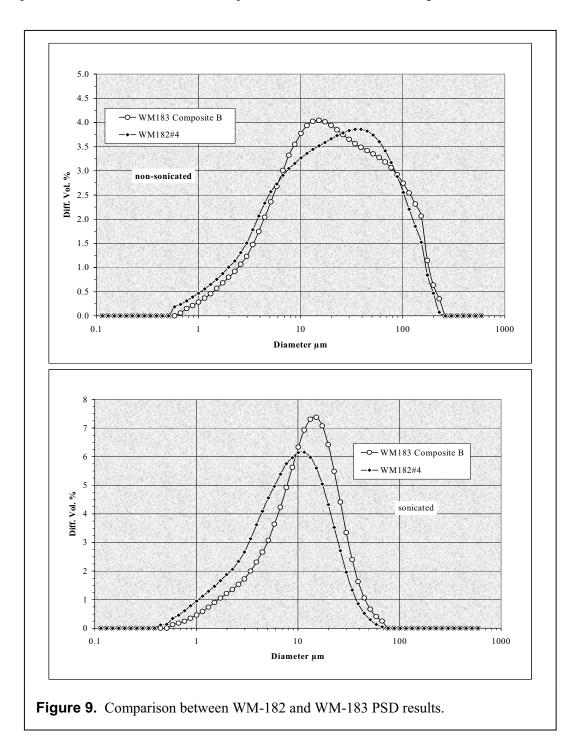
A comparison of the three WM-183 sample PSD analyses is presented in Figure 8 (unsonicated and sonicated results). Per the previous deferring discussions, only Composite B results seem reasonable for settled solids fraction material. WM183#3 and Composite A results appear to be reversed for their respective material as discussed earlier. However, concrete evidence to "correct" this anomaly has not been uncovered—the results stand as presented.





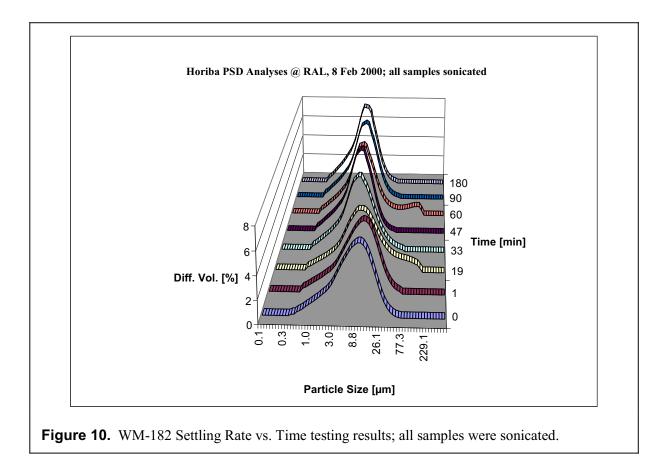
3.2.6 Comparison Between WM-182 and WM-183 PSD Analyses

On one hand, the assumption that the PSD results for WM-182 and WM-183 represent the entire particle size distribution for their respective vessels is not at all statistically defensible. Conversely, considering the minute quantities used from the two separate vessels to obtain these results, the similarities between the results is noteworthy; as can be seen in Figure 9, this holds for both the non-sonicated and the sonicated case. Take note that, based on the discussion in the previous WM183 comparison section, WM183#3 and Composite A were not included in Figure 9.



3.2.7 WM-182#4 Settling Rate Testing

Settling rate testing was performed with non-fractionated WM-182#4 sample material. The results are presented in Figure 10. For this case, a 3-D plot was generated (the overlay plot is presented in the Appendix). When the results of this testing were reviewed in conjunction with the WM182 SEM photomicrographs (shown earlier), it became apparent that sonication was significantly affecting the PSD's and probably do not represent those of the settling solids viewed in the graduated cylinder. It was at this juncture that the decision to <u>not</u> use sonication for the settling rate testing PSD analyses was made.



3.2.8 WM-183 Composite A Settling Rate Testing

Settling rate testing was performed with WM183 Composite A material under non-sonicated conditions. These results, along with some photographs taken during this testing are presented in Figure 11. Recall from Figure 6 that this sample showed this strong mode at $\sim 10 \mu m$ even for the unsonicated

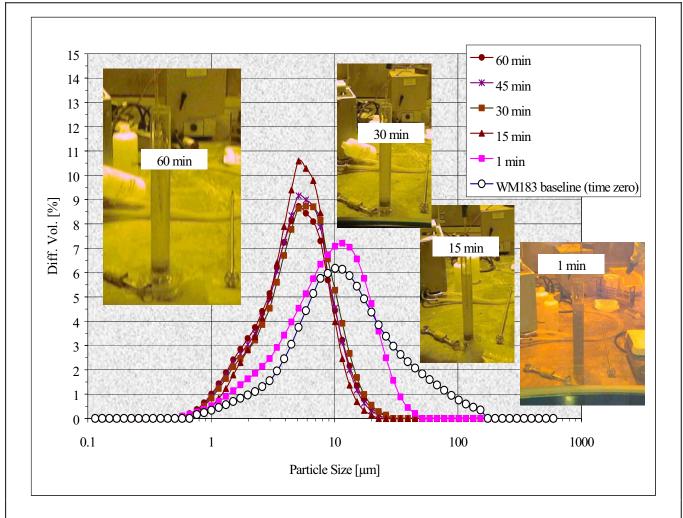


Figure 11. Non-sonicated WM183 Composite A Settling Rate PSD's vs. Time.

case. These results show that after 15 minutes of settling time, the PSD has aligned into a distribution having a strong mode at \sim 5µm and maximum particle size of about 30µm—this result was interestingly quite similar to the WM-182 settling test result which was performed under conditions of sonication. The one and the 30-minute photos are presented in Figure 12 for closer inspection; after 30 minutes, a distinct settled layer was observable.

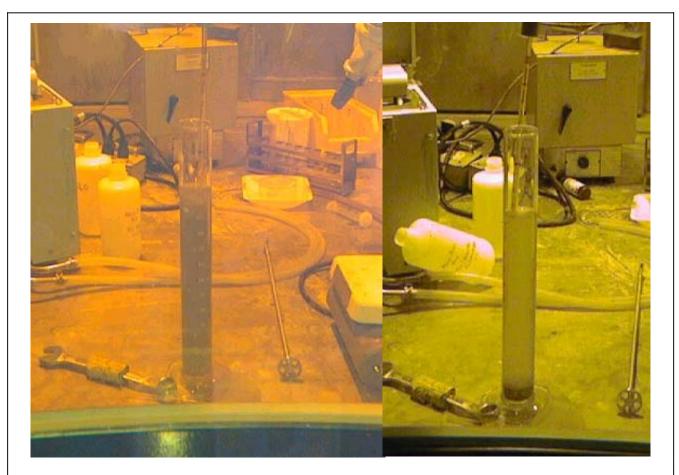
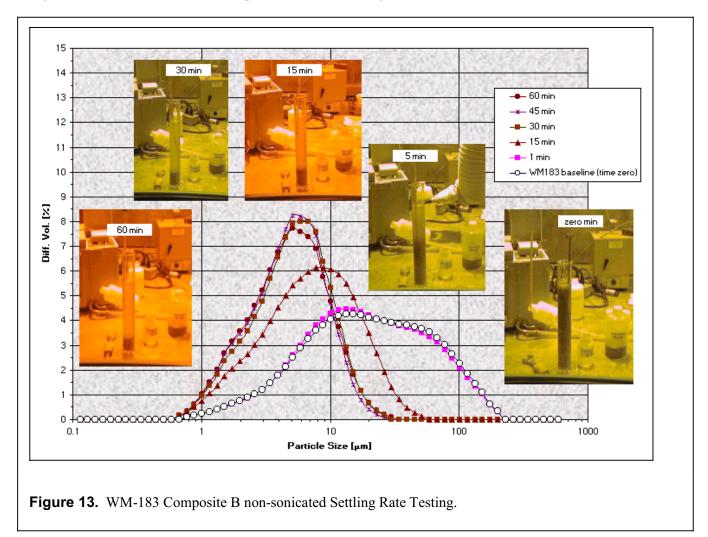


Figure 12. WM-183 Composite A non-sonicated settling rate testing; 1 min. on left and 30 min. on right..

A full set of the photographs taken during this Composite A settling rate testing is provided in Appendix A.3 (as is the Composite B settling rate testing set). While inspecting these, keep in mind that these photos were taken through the RAL cell shielding window, which is optically equivalent to about 3 feet thick glass; this is the reason for the poor quality for some of these photos; also take note that there is a $1.7 \times$ magnification through the window. Determination of a settling velocity and estimation of other solids physical characterization parameters (particle density, for example) were not in the scope of this work.

3.2.9 WM-183 Composite B Settling Rate Testing

Settling rate testing was performed with WM183 Composite B material under non-sonicated conditions. These results, along with some of the photographs taken during this testing are presented in Figure 13. This result is what was expected for these settling rate tests.



3.2.10 Comparison Between WM-182 and WM-183 Settling Rate Testing Results

In general, all settling rate testing results were fairly consistent in that it appears that most of the mass of solids settle to an agglomerated, yet easily redispersed layer at the bottom; and the $\sim 5\mu m$ mode and maximum 30 μ m size material remains dispersed/suspended in the "clear" layer (see photos) at equilibrium (that is, after about $\frac{1}{2}$ hr. settling time). Also, the non-sonicated PSD results represent the particle size of the settling material and the sonicated PSD results most likely do not.

Although a non-sonicated settling rate test was not performed with WM-182#4 sample material, the outcome would have most likely been quite similar to that observed for the WM-183 Composite B; that is, a broad distribution at one minute settling time and then alignment into the "equilibrium" PSD (described above) after 30 minutes or so.

3.2.11 PSD Results Closing Discussion

Use of non-fractionated slurry is recommended; this may be a problem in that it will require more sample volume. For future settling rate testing, suspended solids concentration (loading) data should be taken for a *detention test* analysis as detailed in Perry's [7]. Based on the experience gained from this work, smaller interval initial settling times are needed (at least two or three before the 15 minute mark); this may require duplicate PSD settling tests because of the sampling turnaround for the Horiba. If the settling times for both the solids loading testing and the Horiba PSD testing are matched, then these data can be coupled for more robust solids/liquid separation analyses. An approximate *bulk-settling rate* could be determined from the photos presented in this report (this was not done in this work). As alluded to before, WM-182 and -183 solids slurries appear to have a significant "unsettleable" solids fraction with a maximum size of about 30 µm and an ~5µm mode.

Care must be taken in the use of this particle size data for slurry simulant formulation and in predicting slurry processing and processing equipment performance based on particle size data. Laserbased particle size differs from traditional screen size. Because most materials are not perfectly spherical, screen sizing biases toward the shortest particle dimension. The laser diffraction particle size instrument measures the particle dynamic average size between the longest and the shortest particle dimension. A traditional screen size distribution is based on mass percent; as alluded to earlier, laser size distribution is based on volume percent. Take note that in this report only laser instrument particle size is used. Although it can be a very crucial parameter, particle shape considerations are not addressed in this report. Comparison of these tank farm data presented here against laboratory testing data obtained with classical light scattering particle sizing technology will be the ideal case, and is recommended.

An interesting and fortuitous situation occurred in that—particle sizes greater than 300 μ m were not observed for any of these WM-182 and –183 samples. This may have been an artifact of the LDUA sampling procedure (the 2100 μ m pipette tip opening should have precluded a bias problem with the Horiba aliqouting procedure). Further investigation of this was not in the scope of this work. In the future, if tank farm sample particle sizes exceed the Horiba's 600 μ m upper limit, the sample will require a prescreening preparation to remove the larger sizes (referred to as "scalping"). The prescreen sieve data would require "splicing" to the laser diffraction sizing data to generate a continuos distribution.

4. CONCLUSIONS AND RECOMMENDATIONS

Particle size distribution analysis of the WM-182 and WM-183 tank farm heel slurry samples was performed with a modified Horiba LA 300 laser diffraction PSD analyzer. There were two types of testing performed: 1) typical PSD analysis, and 2) *settling rate* testing. Particle size standards were used to demonstrate and verify the performance of the analyzer during testing. The conclusions and recommendations based on the results of this work follow:

- 1. The overall results for the standards testing were satisfactory and demonstrated that the Horiba was performing with excellent repeatability and acceptable accuracy during the actual tank farm PSD testing.
- 2. Use of a NIST 34-to-120µm glass bead Standard Reference Material is recommended over the more abrasive 35µm garnet used during his testing. This glass bead standard is for checking over a range of sizes. Continued use of engineered monosize spheres is satisfactory for checking analyzer performance at specific sizes.
- 3. Particle size distribution analysis showed that for both the WM-182 and WM-183 samples, the particles range approximately from a minimum of 0.5 to a maximum of 230 μ m—with about 90 Volume % between approximately 2 to 133 μ m. The WM-182 sample had a moderate mode at 32 μ m while the WM-183 mode was at 14 μ m. On one hand, the assumption that the PSD results for WM-182 and WM-183 represent the entire particle size distribution for their respective vessels is not at all statistically defensible. Conversely, considering the minute quantities used from the two separate vessels to obtain these results, the similarities between the results is noteworthy.
- 4. High frequency sonication may be breaking-up larger particles in the WM-182 and WM-183 tank farm heel slurries. This finding represents useful information regarding ultimate tank heel waste processing. Further investigation of sonication effects is needed and is recommended.
- 5. Settling rate testing results were fairly consistent in that it appears that most of the mass of solids settle to an agglomerated, yet easily redispersed layer at the bottom; and the \sim 5µm mode and maximum 30µm size material remains dispersed/suspended in the "clear" layer after about ½ hr. settling time. For future settling rate testing, suspended solids concentration (loading) data should be taken for a *detention test* analysis as detailed in Perry's. Use of non-fractionated slurry is recommended, however this may require more sample volume.
- 6. Care must be taken in the use of this particle size data for slurry simulant formulation and in predicting slurry processing and processing equipment performance based on particle size data. Laser-based particle size differs from traditional screen size. Comparison of these tank farm data presented here against laboratory testing data obtained with classical light scattering particle sizing technology will be the ideal case, and is recommended.

5. **REFERENCES**

- 1. M. Patterson, *Light Duty Utility Arm Deployment in Tank WM-188*, INEEL/EXT-99-1302, December 1999.
- 2. T. A. Batcheller, et al., *Remote Laser Diffraction PSD Analyzer*, INEEL/EXT-2000-479, June 2000.
- 3. INEEL Analytical Department Laboratory "Laser Light Scattering PSD Analysis" Method (in Draft), Spring 2000.
- 4. Terence Allen, *Particle Size Measurement*, 4th Edition, Chapman and Hall, New York, 1990
- 5. Horiba Instruction Manual, Laser Scattering Particle Size Distribution Analyzer LA-300, HORIBA, Ltd., Kyoto, Japan, 2nd Edition, September 1998.
- 6. Personal Conversation, M. Patterson, LDUA Project Manager, June 2000.
- 7. R. H. Perry, et al., *Perry's Chemical Engineers' Handbook*, 6th Edition, McGraw-Hill Book Company, New York, 1984.

Appendix A

Testing Results Data

	Coulter Data	DH. Vol. %	gamet35µm	Coulter PSD Data	0.038	0.073	0.12	0.16	0.19	0.22	0.23	0.24	0.24	0.23	0.21	0.19	0.16	0.13	0.1	0.081	0.063	0.05	0.042	0.038	0.038	0.04	0.043	0.047	0.051	0.055	0.059	0.063	0.067	0.073
	Coult		Diameter	[var]	0.393	0.432	0.474	0.52	0.571	0.627	0.688	0.755	0.829	16.0	0.999	1.097	1.204	1.322	1.451	1.593	1.749	1.919	2.106	2.312	2.539	2.787	3.06	3.359	3.687	4.047	4,444	4.878	5.355	5.878
	_		1 STD EV		00.0	00.0	0.0	00.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	00.0	0.0	0.0	0.0	10.0	10'0	10'0	20:0	0.0	0.0	0.00	8.0	0.0	0.0	0.0	0.0	0.0	0.0
			7 Feb 00	3	0	0	0	0	0	0	0	0	0	0	0	0	0.109	0.126	0.142	0.15	0.144	0.126	0.103	0	0	0	0	0	0	0	0	0	0	0
			RAL02Chk		0	0	0	0	0	0	0	0	0	0	0	0	0.117	0.132	0.147	0.154	0.149	0.132	0.11	0	0	0	0	0	0	0	0	0	0	0
et Standard			RALOIChk 23 Der 90		0	0	0	0	0	0	0	0	0	0	0	0	0.118	0.134	0.15	0.159	0.155	0.138	0.116	0	0	0	0	0	0	0	0	0	0	0
35 µm Modal Garnet Standard	lada.	Džff. Vol. %	35µmgamet14 Chk 20 Nor 00	Last Post Mod	0	0	0	0	0	0	0	0	0	0	0	0	0.115	0.132	0.148	0.156	0.151	0.133	0.11	0	0	0	0	0	0	0	0	0	0	0
	Horiba Data		35µmgamet1Chk 2 Nov 00	Post Mod	0	0	0	0	0	0	0	0	0	0	0	0	0.109	0.128	0.147	0.159	0.158	0.143	0.121	0.103	0	0	0	0	0	0	0	0	0	0
			gamet35µm 26 hil 00	Horiba Setup	0	0	0	0	0	0	0	0	0	0	0	0	0.215	0.222	0.217	0.198	0.166	0.13	0	0	0	0	0	0	0	0	0	0	0	0
					0	0	•	0	0	0	0	0	0	•	0	0	0.131	0.146	0.158	0.163	0.154	0.134	0.093	0.017	•	0	0	0	0	0	0	0	0	•
		Cum. < Vol %	âtre o Eine		0	0	0	0	0	0	0	0	0	0	0	0	0.131	0.277	0.435	0.598	0.752	0.886	0.979	966.0	966.0	966.0	966.0	966.0	966.0	966.0	966.0	966.0	966.0	966.0
			Diameter	[uor]	0.115	0.131	0.15	0.172	0.197	0.226	0.259	0.296	0.339	0.389	0.445	0.51	0.584	0.669	0.766	0.877	1.005	1.151	1.318	1.51	1.729	1.981	2.269	2.599	2.976	3.409	3.905	4.472	5.122	5.867

Appendix A-1 Particle Size Standards Results Data

Conition Data	Diff. Vol. %	gamet35um	Couffer PSD Data	0.073	0.079	0.087	0.096	0.11	0.13	0.15	0.2	0.29	0.44	0.71	1.15	1.83	2.81	4.11	5.68	7.37	8.93	10.1	2.01	10.1	6.8	7.2	5.35	3.7	2.46	1.64	1.15	0.82	0.47	0.13	0.0084	0	0	0
C on the		Diameter	[uar]	5.878	6.452	7.083	7.776	8.536	9.371	10.29	11.29	12.4	13.61	14.94	16.4	18	19.76	21.69	23.81	26.14	28.69	31.5	34.58	37.96	41.67	45.75	50.23	55.14	60.52	66.44	72.95	80.08	87.9	96.49	105.9	1163	127.6	140.1
_			1 STDEV	0.00	0.0	0.0	0.0	0.0	0.0	10:0	0.03	90.0	0.12	0.21	0:30	0.33	0.28	0.19	0.19	0.25	0.26	0.23	0.17	0.12	0.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	00.0	00.0	0.0	0.0	0.0
		RAL03Chk	7 Feb 00	0	0	0	0	0	0	0.127	0.35	0.947	2.373	5.22	9.64	14.489	17.451	16.845	13.228	8.691	4.962	2.573	1.268	0.621	0.313	0	0	0	0	0	0	0	0	0	0	0	0	0
		RAL02Chk	19 Jan 00	0	0	0	0	0	0	0.147	0.396	1.052	2.587	5.584	10.13	14.97	17.725	16.797	12.914	8.275	4.586	2.296	1.088	12.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		RALOIChk	23 Dec 99	0	0	0	0	0	0	121.0	0.403	1.062	2.593	5.571	10.075	14.865	17.607	16.73	12.926	8.343	4.668	2.364	1.134	0.539	0	0	0	0	0	0	0	0	•	0	0	0	0	0
, eta l	DEC Vol. %	35µmgamet14 Chk	29 Nov 99 Last Post Mod	0	0	0	0	0	0	0.133	0.36	96.0	2.376	5.164	9.449	14.128	17.013	16.525	13.165	8,868	5.258	2.875	1.519	0.81	0.451	0	0	0	0	0	0	0	0	0	0	0	0	0
HorrIts II ats		35µmgamet1Chk	2 Nov 99 Post Mod	0	0	0	0	0	0	0.127	0.347	0.936	2.347	5.182	9.628	14.569	17.642	17.064	13.354	8.684	4.869	2.46	1.173	0.552	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		gamet35µm	26 Jul 99 Horiba Setup	0	0	0	0	0	0	0.118	0.326	168.0	2.259	5.041	9.459	14.446	17.646	17.201	13.541	8.828	4.937	2.471	1.157	0.531	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				•	0	0	0	0	0	0.134	0.364	0.975	2.422	5.294	9.73	14.578	17.514	16.86	13.188	8.615	4.88	2.506	1.223	0.594	0.127	0	0	0	0	0	0	0	•	0	0	0	0	0
	Cum. < Vol %		Avg o Runs	0.996	0.996	0.996	966.0	966.0	966.0	1.13	1.494	2.469	4.891	10.185	210.01	34.493	52.007	68.867	82.055	90.67	95.55	98.056	99.279	99.873	100	100	10	100	100	100	100	100	100	100	100	100	100	100
_		Diameter	['uari]	5.867	6.72	7.697	8.816	10.097	11.565	13.246	15.172	17.377	19.904	22.797	26.111	29.907	34.255	39.234	44.938	51.471	58.953	67.523	77.339	88.583	101.46	116.21	133.103	152.453	174 616	200	229.075	262 376	300 518	344 206	394 244	451.556	517.2	592 387

35 µm Modal Garnet Standard

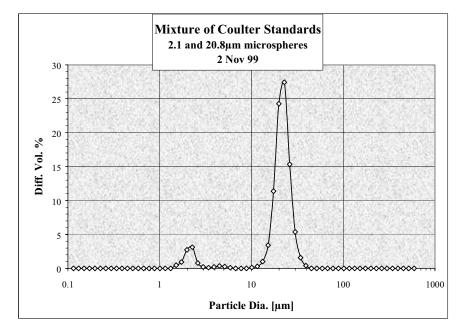
Coulter Data Defr Vol 06	gamet35µm Coulter PSD Data		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	c
5	Diameter [Jon]	140.1	153.8	168.8	1853	203.5	223.4	2452	269.2	295.5	324.3	356.1	390.9	429.2	471.1	517.2	567.8	623.3	684.2	1.127	8245	905.1	993.5	1001	1198	1315	1443	1584	1739	1000
	1 STDEV	00.0																												
	RAL03Chk 7 Feb 00	0		7/6/00 16:40	gar35@6.\$01	0.375	2000	8	35.13	33.75	1.041	34.58	6.376	63.87	14.67	2152	0.57	1.491												
	RAL02Chk 19 Jan 00	0		COULTER LS	File name:	From	2	Volume	Mean:	Median:	Mean/Median Dالعذير	Mode:	95% Conf. Limits:	95% Conf. Limits:	5.0.:	Variance:	Skew ness:	Kurtosis:												
	RAL01Chk 23 Dec 99	0	'	9.	<u>u</u> _		5.		.=			<u> </u>	0,					<u> </u>	,											
Data Data Vol 06	35µmgarnet14 Chk 29 Nov 99 Last Post Mod	0																												
Horiba Data	35µmgarnet1Chk 2 Nov 99 Post Mod	0																												
	gamet35µm 26 Jul 99 Horiba Setup	0																												
% [vy v unit]	Avg o Runs	100 0		:35µgarChkAvg <c></c>	:199912231311060	eed :6	:00:05	: 77.9(x)	^c orm of Distribution:Standard	8	:1.35-0.10i	: :35µgarChkAvg	35 microm modal Garnet	:1014	Dispersion Međum :RAL demin water	:6 Jul 2000	: Aug of garnet stand	:35.493954(µm)	:149.516983	:12227714(µm)	:32.291405(µm)	:32847691(µm)								
	Diameter [Jon]	592 387		Filename	 Ē	Circulation Speed :6	Ultra sonic	Laser TX	Form of Distrik	Calo Level	R.R.Index	Sample Name	Material	I Lot Number	Dispersion Me	Remarks 1	Remarks 2	Mean	Variance	U U U	Mode	Geo. Mean								

35 µm Modal Garnet Standard

2 & 21µm Microsphere Standards Mixture

Diameter		
[µm]	Frequency (%)	Undersize (%)
0.115	0	0
0.131	0	0
0.15	ů 0	0
0.172	0	0
0.197	0	0
0.226	0	0
0.259	0	0
0.296	0	0
0.339	0	0
0.389	0	0
0.445 0.51	0 0	0 0
0.51	0	0
0.669	0	0
0.766	0	0
0.877	0	0
1.005	0	0
1.151	0	0
1.318	0	0
1.51	0.472	0.472
1.729	0.942	1.414
1.981	2.735	4.149
2.269	3.125	7.274
2.599 2.976	0.796 0.215	8.07 8.285
3.409	0.215	8.406
3.905	0.211	8.617
4.472	0.357	8.975
5.122	0.27	9.244
5.867	0.113	9.358
6.72	0	9.358
7.697	0	9.358
8.816	0	9.358
10.097	0.127	9.485
11.565	0.298	9.783
13.246 15.172	1.009 3.402	10.792 14.194
17.377	11.39	25.584
19.904	24.272	49.856
22.797	27.436	77.293
26.111	15.345	92.638
29.907	5.374	98.012
34.255	1.578	99.589
39.234	0.411	100
44.938	0	100
51.471	0	100 100
58.953 67.523	0 0	100
77.339	0	100
88.583	0	100
101.46	0	100
116.21	0	100
133.103	0	100
152.453	0	100
174.616	0	100
200	0	100
229.075 262.376	0 0	100 100
262.376	0	100
344.206	0	100
394.244	0	100
451.556	Ő	100
517.2	0	100
592.387	0	100

Filename	:1mmPSChk	Mean	:18.969900(µm)
ID#	:199911020856019	Variance	:42.976208
Circulation Spe	eed :4	S.D.	: 6.555624(µm)
Ultra sonic	:OFF	Mode	:20.836029(µm)
Laser T%	: 90.0(%)	Geo. Mean	:16.468813(µm)
Form of Distrib	oution:Standard		Í.
Calc. Level	:30		I.
R.R.Index	:PSL-mm		
Sample Name	:1mmPSChk		
Material	:mixture polysty micrsphrs		
Source	:Coulter Standrds; 2µ & 21µ mix		
Lot Number	:6130 & 5740 (respectively)		i
Dispersion Me	dium :aqua		i
Remarks	:TAB operator		l I
Remarks 1	:2 Nov 99		
Remarks 2	:polystyrne mixtre of standrds		



Latron 300LS Standard 0.3 µm latex spheres Horiba PSD Analysis @ RAL 11 Apr 2000

152.453

174.616

229.075

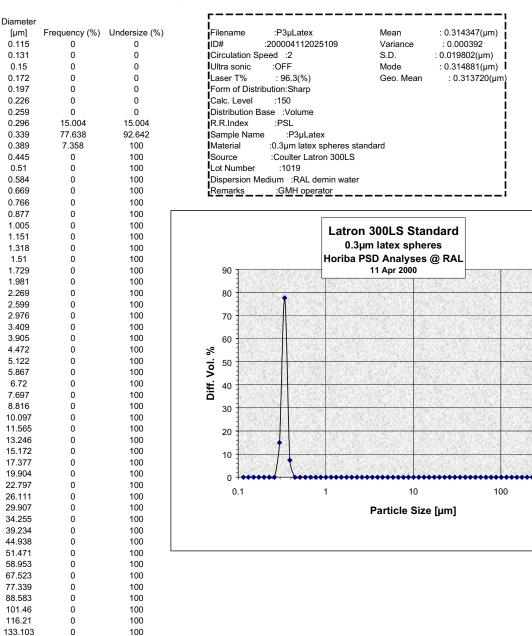
262.376

300.518

344.206

394.244

451.556

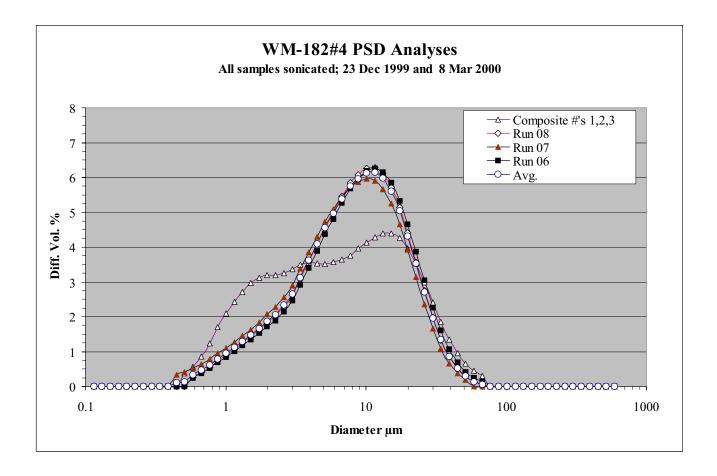


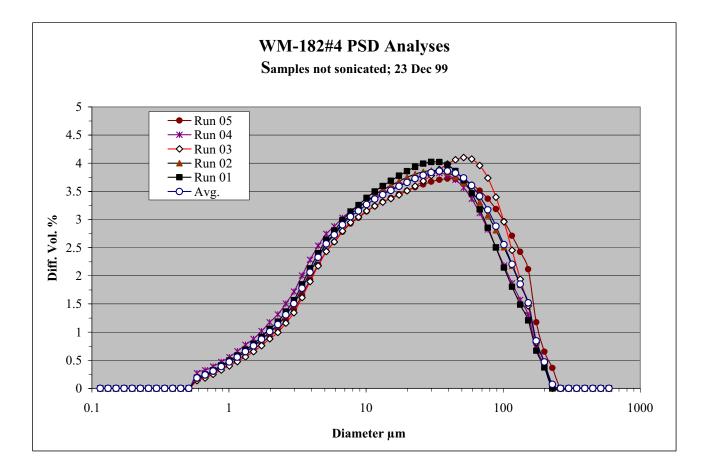
Appendix A-2 Tank Farm Slurry Sample PSD Results Data

WHI22 How Survey (%) WHI22 How Survey (%) WHI22 How Survey (%) WHI22 How Survey (%) <th colsp<="" th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>A</th><th>-!-</th><th></th><th></th><th></th><th></th><th></th></th>	<th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>A</th> <th>-!-</th> <th></th> <th></th> <th></th> <th></th> <th></th>								A	-!-					
Dameter Avery G.Rum Rum 01 Rum 02 Rum 03 Rum 04 R		w				v	VIVI182 PSD	WM182	2#4 non-se		uns			WM182 1,2,3Com	
1.11 0	Diamotor	Ava o Buno			,				-		Bup 04	Bup 05		Pup 01	
1.131 0 <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		-					0								
b.172 0 <td></td>															
0.147 0 <td>0.15</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0.00</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0.00</td> <td>0</td>	0.15	0	0	0	0	0.00	0	0	0	0	0	0	0.00	0	
0 0										-					
0 0															
0 0				-	-				-	-					
0.339 0 <td></td>															
0.389 0 0 0.343 0 0.200 <										-					
0.445 0.144 0 0.349 0 0.20 0															
0.844 0.342 0.246 0.566 0.667 0.299 0.247 0.297 0.276 0.056 0.667 0.766 0.612 0.515 0.776 0.687 0.643 0.340 0.329 0.227 0.227 0.466 0.276 0.65 1.238 0.677 0.677 0.687 0.646 1.01 0.9 0.13 0.489 0.446 0.466 0.44 0.565 0.552 0.476 0.659 0.74 0.697 0.672 0.692 0.072 2.429 1.151 1.164 1.237 1.747 1.466 1.35 0.166 0.754 0.737 0.676 0.698 0.648 0.569 0.74 0.630 0.611 0.602 0.692 2.776 1.51 1.644 1.524 1.837 1.636 0.167 1.017 0.381 0.168 0.302 0.12 3.201 1.281 1.877 1.781 2.662 2.665 2.679 0.741 0.575 </td <td>0.445</td> <td>0.114</td> <td>0</td> <td>0.343</td> <td>0</td> <td></td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td></td> <td>0</td>	0.445	0.114	0	0.343	0		0	0	0	0	0	0		0	
0.668 0.462 0.56 0.768 0.167 0.279 0.271 0.287 0.287 0.387 0.287 0.387 0.287 0.387 0.287 0.387 0.287 0.387 0.287 0.387 0.287 0.387 0.287 0.387 0.287 0.05 0.491 0.48 0.480 0.480 0.385 0.227 0.44 0.466 0.444 0.466 0.448 0.468 0.449 0.464 0.464 0.464 0.464 0.464 0.464 0.464 0.464 0.464 0.464 0.464 0.461 0.477 0.783 0.749 0.653 0.676 1.018 0.030 0.10 3.116 1.789 1.644 1.337 1.334 1.35 1.155 1.155 1.155 1.256 1.333 1.159 1.366 1.15 1.256 1.364 1.43 1.169 1.364 1.43 1.43 3.499 2.269 2.368 2.473 2.471 2.436 1.41	0.51	0.14	0	0.419	0	0.24	0	0	0	0	0	0	0.00	0.369	
0.766 0.777 0.687 0.697 0.697 0.697 0.697 0.697 0.697 0.697 0.697 0.697 0.697 0.697 0.697 0.697 0.697 0.697 0.697 0.697 0.696 0.496 0.496 0.496 0.496 0.496 0.497 0.695 0.550 0.657 0.667 0.699 0.077 0.429 1.151 1.171 1.176 1.476 0.15 0.552 0.685 0.552 0.681 0.698 0.088 2.099 0.977 0.529 0.649 0.581 0.781 0.682 0.691 0.716 0.748 0.741 0.596 0.08 2.977 1.291 1.644 1.577 1.63 0.16 0.733 0.749 0.766 0.761 0.163 0.333 0.391 2.599 2.463 2.465 2.463 2.465 0.21 1.307 1.346 1.776 1.346 1.776 1.346 1.777 1.541 1.346															
0.877 0.787 0.886 0.448 0.488 0.428 0.328 0.428 0.458 0.455 0.453 0.065 0.591 0.71 1.151 1.121 1.01 1.278 1.075 0.448 0.468 0.448 0.655 0.459 0.574 0.596 0.08 2.706 1.316 1.297 1.75 1.469 1.535 0.15 0.749 0.653 0.476 0.653 0.648 0.653 0.641 0.833 0.01 3.116 1.289 1.657 1.818 0.16 0.633 0.977 0.867 0.748 0.683 1.016 0.123 3.101 2.268 2.059 1.189 2.263 2.161 0.22 1.133 1.185 1.125 0.944 1.167 1.163 3.404 3.426 3.405 3.498 3.499 3.499 3.499 3.499 3.499 3.499 3.499 3.499 3.499 3.499 3.499 3.499 3.499															
1005 0.949 0.846 1.011 1.01 1.01 1.011 1.011 1.011 1.011 1.011 1.011 1.011 1.011 1.011 1.015 1.466 1.25 0.15 0.656 0.656 0.653 0.681 0.669 0.09 0.77 0.740 0.560 0.653 0.681 0.682 0.09 0.71 0.781 0.740 0.781 0.740 0.756 0.761 0.781 <td></td>															
1.151 1.127 1.174 0.144 0.566 0.562 0.476 0.569 0.749 0.569 0.744 0.569 0.744 0.569 0.744 0.569 0.744 0.569 0.744 0.569 0.744 0.569 0.744 0.569 0.744 0.569 0.744 0.569 0.744 0.569 0.744 0.569 0.744 0.569 0.744 0.569 0.767 0.761 0.881 0.692 0.13 3.116 1.729 1.664 1.527 1.747 1.780 1.074 0.141 3.116 0.742 0.123 3.116 2.269 2.059 2.613 0.22 1.056 1.567 1.51 1.467 1.167 0.16 3.462 3.409 3.126 2.917 3.378 0.23 2.056 1.814 1.057 1.613 2.064 1.337 0.163 3.362 3.400 3.416 0.777 0.571 0.574 0.571 0.574 0.571 <															
1.318 1.297 1.175 1.466 1.35 0.155 0.652 0.684 0.653 0.774 0.592 0.09 2.706 1.729 1.664 1.524 1.837 1.63 0.16 0.873 0.973 0.740 0.652 0.082 0.10 3.116 1.861 1.677 1.718 2.076 1.836 0.18 1.008 1.077 0.667 0.76 1.018 0.802 0.12 3.201 2.269 2.36 2.13 2.565 2.289 0.21 1.307 1.364 1.3 1.156 1.206 0.14 3.245 3.405 3.168 3.405 3.859 0.23 1.779 1.846 1.776 1.184 1.72 0.16 3.552 4.472 4.094 3.889 4.307 4.085 0.21 2.329 2.401 2.433 2.747 2.630 1.244 1.351 3.561 5.122 4.556 4.374 7.77 0.18 <															
1.51 1.469 1.343 1.629 1.435 0.15 0.774 0.774 0.764 0.881 0.682 0.09 2.977 1.729 1.664 1.527 1.684 1.527 1.681 0.081 0.083 0.10 3.116 2.269 2.059 1.889 2.273 2.040 0.20 1.133 1.185 1.125 0.994 1.316 0.143 3.149 2.269 2.463 2.905 2.613 0.22 1.506 1.567 1.51 1.467 1.167 0.16 3.492 3.409 3.216 2.917 3.378 3.086 0.21 1.239 2.063 1.977 1.554 1.467 1.167 1.66 3.492 3.409 3.317 5.67 4.564 4.377 4.571 0.18 2.568 2.411 2.538 2.177 2.438 0.14 3.599 5.867 4.964 4.807 5.815 6.072 0.11 2.599 1.2															
1.981 1.877 1.718 2.076 1.836 0.18 1.008 1.077 1.001 0.88 1.776 0.927 0.12 3.201 2.269 2.336 2.153 2.656 2.280 0.21 1.307 1.364 1.3 1.156 1.567 1.56 1.567 1.667 2.568 2.661 2.579 2.569 1.567 2.568 1.667 2.579 2.569 1.23 2.577 2.567 2.579 1.23 2.571 2.567 2.579 2.569 2.577 2.567 5.45 3.674 3.561 3.443															
2.269 2.699 1.889 2.273 2.014 0.20 1.133 1.185 1.125 0.494 1.316 1.043 0.13 3.199 2.599 2.366 2.463 2.905 2.613 0.22 1.506 1.567 1.5 1.346 1.72 1.396 0.16 3.362 3.409 3.126 2.407 3.378 3.044 0.23 1.779 1.846 1.777 2.564 1.934 0.16 3.552 4.472 4.094 3.889 4.307 4.085 0.21 2.2329 2.401 2.336 2.777 2.534 2.197 0.15 3.541 5.122 4.556 4.407 5.001 5.004 0.14 2.727 2.805 2.443 2.474 2.486 0.433 2.474 2.436 0.11 3.509 5.764 5.867 5.74 5.845 0.01 3.152 3.233 3.144 0.11 4.131 10.697 6.184 5.977	1.729	1.664	1.524	1.837	1.63	0.16	0.873	0.917	0.867	0.76	1.018	0.803	0.10	3.116	
2599 2.38 2.153 2.266 2.265 2.261 0.21 1.307 1.364 1.3 1.150 1.505 1.208 0.14 3.242 3.409 3.126 2.917 3.378 3.084 0.23 1.779 1.866 1.776 1.612 2.004 1.657 0.16 3.452 3.409 3.618 3.405 3.859 3.59 0.23 2.063 2.144 2.065 1.894 0.16 3.552 4.472 4.566 4.37 4.777 4.571 0.18 2.566 2.41 2.581 2.479 2.690 0.12 3.571 5.867 4.964 4.807 5.041 0.14 2.772 2.605 2.978 0.11 3.561 5.867 4.964 4.807 5.847 5.442 5.441 0.10 3.152 3.203 3.043 3.229 3.03 0.11 3.639 7.697 5.745 5.647 5.243 5.241 3.261 <															
2976 2.66 2.463 2.905 2.113 0.22 1.506 1.567 1.56 1.726 1.726 1.726 1.336 0.15 3.3492 3.409 3.126 2.917 3.378 3.084 0.23 2.063 2.134 2.065 1.899 2.206 1.934 0.16 3.552 4.472 4.094 3.889 4.307 4.085 0.21 2.229 2.401 2.362 2.474 2.436 0.14 3.509 5.122 4.964 4.807 5.081 5.041 0.14 2.727 2.805 2.749 2.405 0.11 3.639 6.72 5.386 5.244 5.445 0.08 3.053 3.14 3.09 2.979 0.11 3.639 7.697 5.754 5.647 5.74 5.450 0.08 3.261 3.493 3.229 3.030 1.11 3.639 13.26 6.152 6.265 5.096 6.284 0.21 3.361															
3.409 3.128 2.917 3.378 3.084 0.23 1.779 1.846 1.776 1.612 2.004 1.657 0.16 3.492 3.905 3.618 3.065 3.599 0.23 2.063 2.134 2.065 1.899 2.286 1.934 0.16 3.552 4.472 4.944 3.868 4.307 4.055 0.21 2.329 2.401 2.336 2.177 2.534 2.197 0.15 3.541 5.867 4.964 4.007 5.061 5.014 0.14 2.727 2.005 3.299 0.12 3.571 6.72 5.586 5.675 5.74 5.845 0.08 3.057 3.143 3.09 2.947 3.145 2.927 0.11 3.639 7.697 5.74 5.845 5.845 0.12 3.253 3.143 3.233 3.144 0.11 4.131 11.565 6.162 6.265 5.906 6.277 3.422 3.308 3.401 3.233 3.144 4.13 15.172 5.668 6.1617<															
3.905 3.818 3.405 3.859 3.89 0.23 2.063 2.134 2.062 1.899 2.824 2.177 2.534 2.177 0.15 3.541 5.122 4.566 4.37 4.727 4.571 0.18 2.2668 2.641 2.514 2.433 2.747 2.456 0.14 3.509 5.67 4.964 4.007 5.081 5.040 0.14 2.727 2.805 2.749 2.626 2.929 0.12 3.571 6.72 5.564 5.427 5.454 0.08 3.05 3.14 3.09 2.947 3.145 2.927 0.11 3.749 8.816 5.964 5.971 6.163 0.15 3.267 3.203 3.144 0.11 4.131 11.526 6.126 5.645 5.423 5.721 0.32 3.617 3.687 3.238 3.414 0.11 4.131 11.526 6.162 6.245 5.14 0.35 3.589 3.777 3.613 3.447 0.15 3.531 11.727 5.524															
4.422 4.094 3.889 4.307 4.085 0.21 2.229 2.401 2.368 2.477 2.534 2.197 0.15 3.541 5.122 4.556 4.37 4.727 4.571 0.16 2.566 2.749 2.635 2.747 2.436 0.14 3.599 5.667 5.74 5.675 5.745 5.845 0.011 2.906 2.988 2.906 3.145 2.292 0.11 3.639 7.697 5.754 5.875 5.072 0.10 3.152 3.257 3.203 3.144 0.11 4.131 10.697 6.139 6.184 5.917 6.768 6.268 0.21 3.361 3.496 3.323 3.144 0.11 4.131 15.65 6.152 6.626 5.908 6.264 0.21 3.361 3.496 3.233 3.144 0.11 4.394 15.172 5.603 5.445 5.433 5.721 0.32 3.517 3.605 3.371 3.583 3.220 1.14 4.394 15.172 5.60															
5.122 4.566 4.37 4.727 4.571 0.18 2.686 2.641 2.581 2.433 2.747 2.436 0.14 3.509 5.867 4.964 4.807 5.081 5.004 0.141 2.727 2.805 2.749 2.605 2.679 2.599 0.12 3.571 6.72 5.366 5.264 5.442 5.442 0.10 3.152 3.27 3.203 3.03 0.11 3.769 7.697 5.74 5.677 6.72 6.023 0.15 3.267 3.203 3.144 0.11 4.131 11.565 6.152 6.265 5.908 6.284 0.21 3.361 3.496 3.434 3.238 3.414 0.11 4.369 15.172 5.603 5.443 5.243 5.721 0.32 3.517 3.687 3.605 3.71 3.538 3.342 0.13 4.364 17.377 5.641 5.243 5.24 5.243 5.247 3.633 3.66 3.687 3.663 3.672 3.447 0.15 4.3242 </td <td></td>															
6.72 5.386 5.244 5.442 5.451 0.11 2.906 2.988 2.936 2.796 3.029 2.78 0.11 3.639 7.697 5.754 5.677 5.74 5.845 6.072 0.10 3.152 3.257 3.203 3.043 3.229 3.03 0.111 3.749 8.816 5.994 6.875 6.072 0.10 3.152 3.257 3.203 3.043 3.229 3.13 0.114 4.131 11.565 6.152 6.266 5.908 6.284 0.21 3.361 3.496 3.424 3.238 3.401 3.236 0.12 4.287 13.246 5.977 6.615 5.668 6.107 0.27 3.442 3.595 3.524 3.023 3.461 4.323 4.331 0.13 4.389 15.172 5.063 5.844 5.243 5.721 0.32 3.517 3.667 3.347 3.538 3.427 0.15 4.262 19.904 4.327 4.653 3.927 4.402 0.37 3.767 3.941 3.868 3.786 3.625 0.14 2.991 22.797 3.525 3.864 3.136 3.787 3.813 3.677 0.15 3.633 22.197 3.527 3.863 3.786 3.863 3.784 3.672 0.14 2.991 22.997 1.966 2.269 1.656 1.74 0.31 3.863 3.766 <td>5.122</td> <td>4.556</td> <td></td> <td>4.727</td> <td>4.571</td> <td>0.18</td> <td>2.568</td> <td>2.641</td> <td>2.581</td> <td>2.433</td> <td>2.747</td> <td>2.436</td> <td>0.14</td> <td></td>	5.122	4.556		4.727	4.571	0.18	2.568	2.641	2.581	2.433	2.747	2.436	0.14		
7.697 5.754 5.647 5.645 0.08 3.05 3.14 3.09 2.947 3.145 2.927 0.11 3.749 8.816 5.964 5.947 5.875 6.072 0.10 3.152 3.223 3.043 3.229 3.03 0.11 3.96 10.097 6.139 6.184 5.917 6.265 5.908 6.244 0.21 3.361 3.496 3.223 3.144 0.13 3.13 4.331 13.246 5.977 6.167 5.668 6.107 0.32 3.517 3.687 3.605 3.371 3.538 3.382 0.14 4.389 15.172 5.603 5.845 5.243 5.71 0.32 3.517 3.681 3.437 3.515 3.572 0.15 3.571 19.904 4.327 4.653 3.574 0.37 3.727 3.934 3.665 3.681 3.483 3.680 3.682 3.774 3.51 3.672 0.15 3.533	5.867	4.964	4.807	5.081		0.14	2.727	2.805	2.749	2.605	2.879	2.599	0.12	3.571	
8.816 5.964 5.947 5.875 6.072 0.10 3.152 3.267 3.203 3.043 3.229 3.03 0.11 3.96 10.097 6.139 6.184 5.971 6.263 0.15 3.267 3.368 3.229 3.153 3.223 3.144 0.11 4.131 11.565 6.152 6.265 5.906 6.244 0.21 3.361 3.424 3.238 3.401 3.236 0.12 4.287 13.246 5.977 6.157 5.686 6.107 0.27 3.442 3.595 3.524 3.308 3.411 3.313 0.13 4.389 15.172 5.603 5.845 5.243 5.721 0.32 3.517 3.605 3.471 3.565 3.447 0.15 4.262 19.904 4.327 4.653 3.927 4.02 0.37 3.66 3.861 3.479 3.51 3.672 0.15 3.573 22.797 3.525 3.843 3.061 3.663 3.766 3.625 0.14 2.991 22.4															
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$															
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$															
13.2465.9776.1575.6686.1070.273.4423.5953.5243.3083.4713.3130.134.38915.1725.6035.8455.2435.7210.323.5173.6673.0653.3713.5383.3820.144.39417.3775.0415.3334.655.140.3373.6663.8613.4773.6613.4723.6153.97122.7973.5253.6643.1383.5740.373.7273.9943.8063.5923.7343.570.153.53326.1112.7133.0432.5722.7390.343.7663.9913.8483.6833.7863.6250.142.99129.9071.9662.2691.6561.9740.313.8334.0223.8693.7833.8193.6720.132.40634.2551.341.6011.0831.3360.263.8664.0193.8653.8443.7933.7250.111.84439.240.6591.0720.6580.8480.213.6663.8623.7663.7250.150.95851.4710.3010.420.1940.2880.113.7393.8043.6494.13.5653.6650.210.6658.9530.1350.2500.1560.133.6043.4643.4973.7053.6170.280.44867.5230.0490.14700 <td></td>															
15.172 5.603 5.845 5.243 5.721 0.32 3.517 3.687 3.605 3.371 3.538 3.382 0.14 4.394 17.377 5.041 5.333 4.65 5.14 0.35 3.589 3.777 3.681 3.437 3.605 3.447 0.15 4.262 19.904 4.327 4.653 3.927 4.020 0.37 3.766 3.861 3.479 3.57 0.15 3.573 22.797 3.525 3.864 3.138 3.574 0.37 3.727 3.934 3.861 3.576 3.672 0.15 3.533 26.111 2.713 3.043 2.557 2.739 0.34 3.786 3.899 3.848 3.685 3.866 3.622 0.14 2.991 29.907 1.966 2.669 1.656 1.974 0.31 3.833 4.022 3.869 3.783 3.672 0.14 2.991 34.255 1.34 1.601 1.083 1.336 0.26 3.66 4.019 3.866 3.824 3.707 0.11 1.844 39.234 0.859 1.072 0.658 0.37 0.508 0.16 3.822 3.664 3.494 4.022 3.766 3.665 0.21 0.66 58.953 0.147 0.428 0.114 3.793 3.765 3.685 0.21 0.66 58.953 0.143 0.00 0.00 3.614 3.497 <															
$\begin{array}{cccccccccccccccccccccccccccccccccccc$															
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	17.377	5.041	5.333	4.65	5.14	0.35	3.589	3.777	3.681	3.437	3.605	3.447	0.15	4.262	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$													0.15		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$															
$\begin{array}{cccccccccccccccccccccccccccccccccccc$															
$\begin{array}{cccccccccccccccccccccccccccccccccccc$															
44.938 0.521 0.685 0.37 0.508 0.16 3.822 3.862 3.76 4.062 3.706 3.72 0.15 0.958 51.471 0.301 0.42 0.194 0.288 0.11 3.739 3.694 3.649 4.1 3.565 3.685 0.21 0.66 58.953 0.135 0.25 0 0.156 0.13 3.604 3.464 3.497 4.074 3.367 3.617 0.28 0.448 67.523 0.049 0.147 0 0 0.08 3.111 2.853 3.075 3.736 2.823 3.686 0.38 0.38 77.339 0 0 0 0.00 3.171 2.853 3.075 3.736 2.823 3.686 0.38 0 101.46 0 0 0 0.00 2.553 2.148 2.508 2.959 2.182 2.967 0.40 0 116.21 0 0 0 0.00 2.204 1.806 2.18 2.454 1.867 2.712 0.39 0 133.103 0 0 0 0.00 1.852 1.488 1.839 1.937 1.572 2.425 0.37 0 174.616 0 0 0 0.00 0.844 0.67 0.838 0.814 0.752 1.176 0.20 0 229.075 0 0 0 0.00 0 0 0 0 0 </td <td></td>															
58.953 0.135 0.25 0 0.156 0.13 3.604 3.464 3.497 4.074 3.367 3.617 0.28 0.448 67.523 0.049 0.147 0 0 0.08 3.414 3.179 3.305 3.959 3.115 3.512 0.34 0.304 77.339 0 0 0 0.000 2.813 3.075 3.736 2.823 3.368 0.38 0 88.583 0 0 0 0 0.000 2.583 2.608 3.398 2.506 3.186 0.40 0 101.46 0 0 0 0.000 2.553 2.148 2.595 2.182 2.967 0.40 0 116.21 0 0 0 0.000 1.852 1.488 1.839 1.937 1.57 2.425 0.37 0 122.453 0 0 0 0.000 1.852 1.488 1.839 1.937 1.															
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	51.471	0.301	0.42	0.194	0.288	0.11	3.739	3.694	3.649	4.1	3.565	3.685	0.21	0.66	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$															
88.583 0 0 0 0 0.00 2.88 2.503 2.808 3.398 2.506 3.186 0.40 0 101.46 0 0 0 0.00 2.553 2.148 2.508 2.959 2.182 2.967 0.40 0 116.21 0 0 0 0.00 2.204 1.806 2.18 2.454 1.867 2.712 0.39 0 133.103 0 0 0 0.00 1.852 1.488 1.839 1.937 1.572 2.425 0.37 0 152.453 0 0 0 0.00 1.852 1.488 1.839 1.937 1.572 2.425 0.37 0 174.616 0 0 0 0.000 0.844 0.67 0.838 0.814 0.725 1.176 0.20 0 200 0 0 0 0.000 0.469 0.372 0.465 0.452 0.454 0.11 0 229.075 0 0 0 0.00 0															
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				-											
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$															
$\begin{array}{cccccccccccccccccccccccccccccccccccc$															
$\begin{array}{cccccccccccccccccccccccccccccccccccc$															
200 0 0 0 0.00 0.469 0.372 0.465 0.452 0.403 0.654 0.11 0 229.075 0 0 0 0 0.00 0.073 0 0 0 0.363 0.16 0 262.376 0			0												
229.075 0 0 0 0 0.00 0.073 0 0 0 0.363 0.16 0 262.376 0<															
262.376 0 0 0 0.00 0															
300.518 0 0 0 0.00 0															
344.206 0 0 0 0.00 0 0 0 0 0 0.00 0 394.244 0 0 0 0.00 0															
394.244 0 0 0 0.00 0 0 0 0 0 0.00 0 451.556 0 0 0 0.00 0															
451.556 0 0 0 0.00 0 0 0 0 0 0.00 0 517.2 0 0 0 0.00 0															
517.2 0 0 0 0.00 0 0 0 0 0 0 0 0 0 0															
	592.387	0	0	0	0		0	0	0	0	0	0		0	

:9911082WM182#4-savg<C> Filename :200003081413108 ID# Circulation Speed :6 Ultra sonic :00:13 Laser T% : 87.2(%) Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i :WM182#4 Material Source Lot Number Dispersion Medium :RAL demin water + usonic Remarks :GMH operator Remarks 1 :8 Mar 2000 :Avg of Runs 06 to 08 Remarks 2 :10.023014(µm) Mean :69.660103 Variance S.D. : 8.346263(µm) :10.786839(µm) Mode : 6.977938(µm) Geo. Mean

Filename :9911082WM182#4-nsavg<C> :199912231337061 ID# Circulation Speed :6 :OFF Ultra sonic : 73.8(%) Laser T% Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i :WM182 #4 Slurry Material Source Lot Number Dispersion Medium :RAL demin water :GMH/TAB operators Remarks Remarks 1 :23 Dec 99 :Avg of Runs 01 to 05 Remarks 2 :33.539398(µm) Mean :1352.909424 Variance S.D. :36.781918(µm) :32.022137(µm) Mode :17.479652(µm) Geo. Mean





WM183#3 PSD Analysis

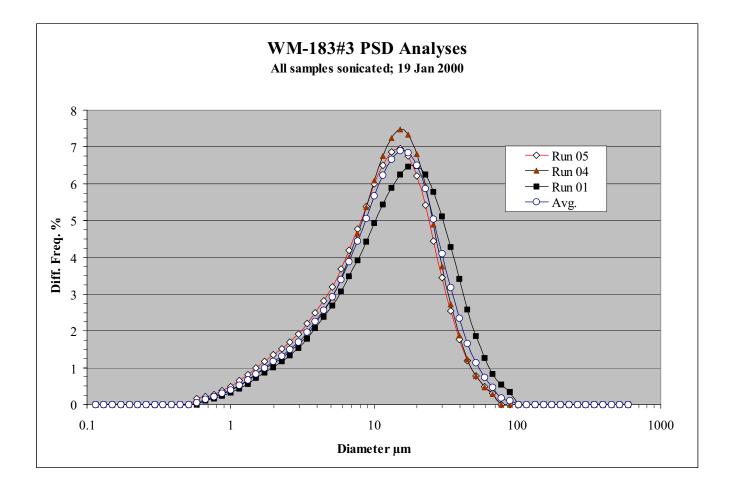
	WM183#3 sonicated runs					 WM183#3 non-sonicated runs					
	Diff. Frequency (%) Avg o Runs Run 01 Run 04 Run 05 1 STDEV					Diff. Frequency %					
Diameter	Avg o Runs					Avg o Runs				1 STDEV	
0.115 0.131	0 0	0 0	0 0	0 0	0 0.000	0 0	0 0	0 0	0 0	0 0.000	
0.15	0	0	0	0	0.000	0	0	0	0	0.000	
0.172	0	0	0	0	0.000	0	0	0	0	0.000	
0.197	0	0	0	0	0.000	0	0	0	0	0.000	
0.226	0	0	0	0	0.000	0	0	0	0	0.000	
0.259	0	0	0	0	0.000	0	0	0	0	0.000	
0.296	0	0	0	0	0.000	0	0	0	0	0.000	
0.339	0	0	0	0	0.000	0	0	0	0	0.000	
0.389	0	0	0	0	0.000 0.000	0	0	0	0	0.000	
0.445 0.51	0 0	0 0	0 0	0 0	0.000	0 0	0 0	0 0	0 0	0.000 0.000	
0.584	0.055	0	0	0.164	0.000	0	0	0	0	0.000	
0.669	0.15	0.11	0.131	0.21	0.053	0	0	0	0 0	0.000	
0.766	0.212	0.162	0.194	0.279	0.060	0.128	0.13	0.134	0.12	0.007	
0.877	0.298	0.237	0.282	0.375	0.070	0.184	0.185	0.192	0.174	0.009	
1.005	0.404	0.329	0.388	0.494	0.084	0.25	0.252	0.261	0.239	0.011	
1.151	0.53	0.438	0.511	0.642	0.103	0.329	0.329	0.342	0.314	0.014	
1.318	0.674	0.563	0.649	0.81	0.125	0.418	0.417	0.436	0.402	0.017	
1.51	0.839	0.716	0.815	0.986	0.137	0.527	0.524	0.549	0.509	0.020	
1.729	1	0.865	0.971	1.165	0.152	0.639	0.634	0.664	0.619	0.023	
1.981 2.269	1.166	1.02 1.168	1.128 1.273	1.351	0.169	0.759 0.876	0.752	0.788	0.736	0.027 0.029	
2.209	1.319 1.497	1.342	1.444	1.516 1.706	0.179 0.188	1.027	0.868 1.017	0.909 1.063	0.852 1.001	0.029	
2.976	1.691	1.532	1.63	1.913	0.198	1.193	1.182	1.232	1.166	0.032	
3.409	1.96	1.792	1.892	2.196	0.210	1.435	1.423	1.476	1.406	0.037	
3.905	2.254	2.075	2.189	2.499	0.219	1.712	1.7	1.753	1.684	0.036	
4.472	2.573	2.375	2.52	2.824	0.229	2.016	2.004	2.053	1.989	0.033	
5.122	2.931	2.698	2.904	3.19	0.247	2.342	2.332	2.373	2.319	0.028	
5.867	3.392	3.074	3.424	3.677	0.303	2.663	2.656	2.686	2.648	0.020	
6.72	3.887	3.481	3.987	4.193	0.366	3	2.995	3.012	2.993	0.010	
7.697	4.447	3.927	4.64	4.774	0.455	3.317	3.314	3.317	3.321	0.004	
8.816 10.097	5.053 5.667	4.416 4.926	5.357 6.085	5.386 5.989	0.552 0.643	3.539 3.767	3.534 3.762	3.526 3.742	3.555 3.797	0.015 0.028	
11.565	6.228	5.427	6.749	6.508	0.704	3.927	3.92	3.89	3.97	0.020	
13.246	6.663	5.882	7.248	6.86	0.704	4.014	4.005	3.969	4.069	0.051	
15.172	6.892	6.245	7.472	6.958	0.616	4.035	4.023	3.984	4.098	0.058	
17.377	6.847	6.46	7.336	6.746	0.447	4.002	3.987	3.949	4.07	0.062	
19.904	6.5	6.475	6.813	6.211	0.302	3.93	3.913	3.879	3.999	0.062	
22.797	5.872	6.251	5.955	5.41	0.427	3.836	3.817	3.79	3.9	0.057	
26.111	5.04	5.784	4.887	4.448	0.681	3.733	3.715	3.696	3.789	0.049	
29.907	4.108	5.106	3.765	3.454	0.878	3.635	3.619	3.608	3.677	0.037	
34.255 39.234	3.185 2.354	4.286 3.413	2.731 1.874	2.539 1.776	0.958 0.918	3.545 3.467	3.533 3.459	3.532 3.468	3.571 3.475	0.022 0.008	
44.938	1.665	2.579	1.225	1.19	0.792	3.398	3.395	3.400	3.386	0.008	
51.471	1.131	1.852	0.772	0.77	0.624	3.331	3.334	3.358	3.301	0.029	
58.953	0.744	1.271	0.473	0.487	0.457	3.261	3.271	3.297	3.216	0.041	
67.523	0.477	0.839	0.287	0.305	0.314	3.182	3.199	3.221	3.127	0.049	
77.339	0.18	0.54	0	0	0.312	3.087	3.111	3.122	3.029	0.051	
88.583	0.114	0.342	0	0	0.197	2.972	3.002	2.994	2.919	0.046	
101.46	0	0	0	0	0.000	2.832	2.867	2.836	2.793	0.037	
116.21	0	0	0	0	0.000	2.665	2.702	2.645	2.648	0.032	
133.103 152.453	0 0	0 0	0 0	0 0	0.000 0.000	2.467 2.24	2.502 2.269	2.421 2.171	2.478 2.281	0.042 0.060	
174.616	0	0	0	0	0.000	1.245	1.261	1.206	1.267	0.034	
200	0	0	0	0	0.000	0.691	0.7	0.67	0.704	0.019	
229.075	0	0	0	0	0.000	0.384	0.389	0.372	0.391	0.010	
262.376	0	0	0	Õ	0.000	0	0	0	0	0.000	
300.518	0	0	0	0	0.000	0	0	0	0	0.000	
344.206	0	0	0	0	0.000	0	0	0	0	0.000	
394.244	0	0	0	0	0.000	0	0	0	0	0.000	
451.556	0	0	0	0	0.000	0	0	0	0	0.000	
517.2 592.387	0 0	0 0	0 0	0 0	0.000	0 0	0 0	0 0	0 0	0.000	
092.301	U	U	0	U	0.000	U	U	U	0	0.000	

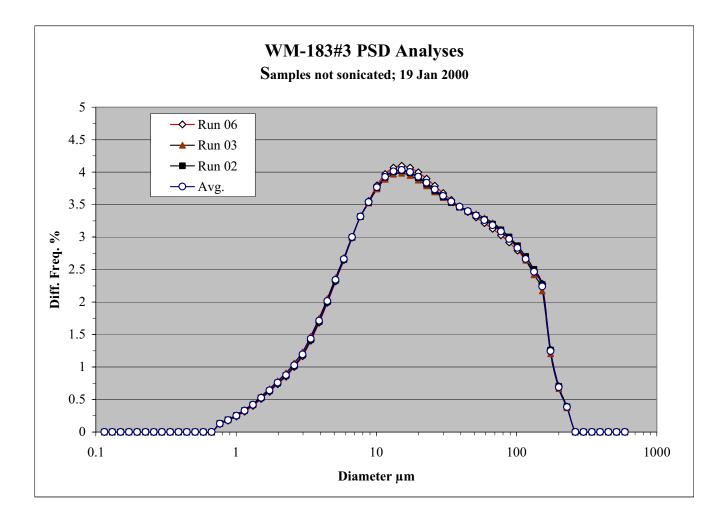
Filename :000112-5WM183#3 s -avg<C> ID# :200001191105068 Circulation Speed :5 Ultra sonic :00:06 Laser T% : 78.4(%) Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i Material :WM183 Suspended Solids Source · Lot Number • Dispersion Medium :RAL demin water Remarks :GMH/TAB operators Remarks 1 :19 Jan 2000 :Avg o Runs 1, 4 & 5 (w/usonic) Remarks 2 Mean :14.761811(µm) Variance :136.578308 S.D. :11.686672(µm) Mode :14.202041(µm)

:10.592593(µm)

Geo. Mean

Filename :000112-5WM183#3 ns-avg<C> ID# :200001191115069 Circulation Speed :5 :OFF Ultra sonic Laser T% : 80.8(%) Form of Distribution:Standard Calc. Level :30 :1.35-0.10i R.R.Index Material :WM183 Suspended Solids Source Lot Number Dispersion Medium :RAL demin water Remarks :GHH/TAB operators Remarks 1 :19 Jan 2000 Remarks 2 :Avg. 2,3,6 non-sonic Mean :37.176636(µm) Variance :1703.956299 S.D. :41.279007(µm) Mode :14.173473(µm) Geo. Mean :19.812233(µm)



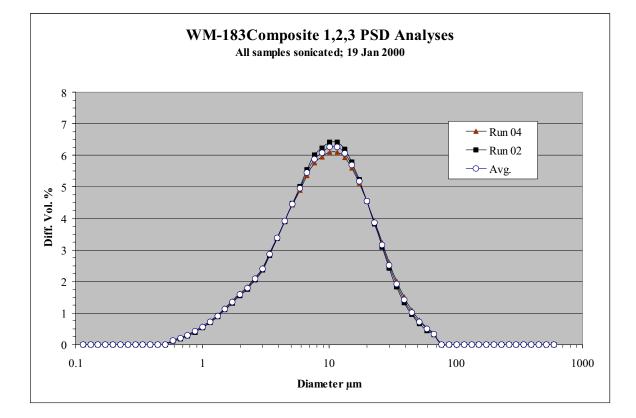


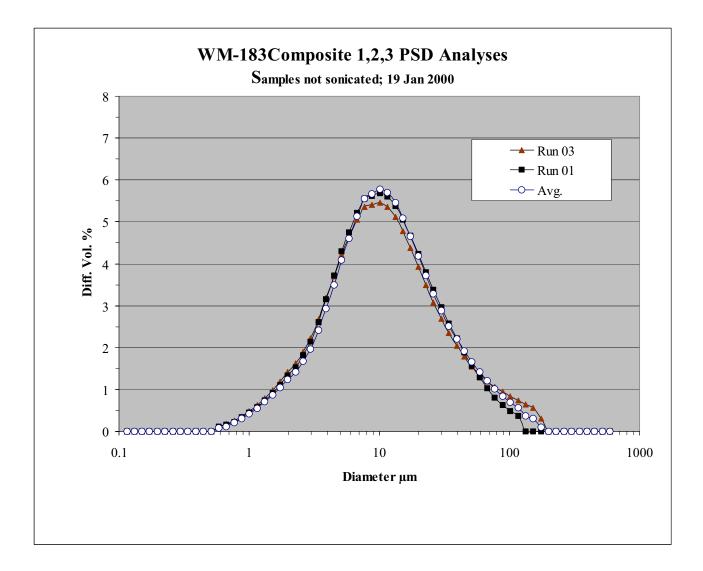
		WM183	Comp	osite 1,2	2,3 PSD Anal	ysis		
		Com 1,2 3				om123 non	-sonicated	runs
		Diff. Vo				ff. Vol. %		
Diameter	Avg o Runs	Run 02	Run 04	1 STDEV	Avg o Runs	Run 01	Run 03	1 STDEV
0.115	0	0	0	0	0	0	0	0
0.131	0	0	0	0.000	0	0	0	0.000
0.15	0	0	0	0.000	0	0	0	0.000
0.172	0	0	0	0.000	0	0	0	0.000
0.197	0	0	0	0.000	0	0	0	0.000
0.226	0	0	0	0.000	0	0	0	0.000
0.259	0	0	0	0.000	0	0	0	0.000
0.296	0	0	0	0.000	0	0	0	0.000
0.339	0	0	0	0.000	0	0	0	0.000
0.389	0	0	0	0.000	0	0	0	0.000
0.445	0	0	0	0.000	0	0	0	0.000
0.51	0	0	0	0.000	0	0	0	0.000
0.584	0.134	0.119	0.149	0.021	0.074	0.105	0.118	0.009
0.669	0.197	0.18	0.214	0.024	0.11	0.156	0.173	0.012
0.766	0.29	0.271	0.309	0.027	0.214	0.231	0.252	0.015
0.877	0.417	0.397	0.438	0.029	0.312	0.334	0.362	0.020
1.005	0.563	0.542	0.584	0.030	0.426	0.453	0.487	0.024
1.151	0.727	0.703	0.751	0.034	0.555	0.587	0.63	0.030
1.318	0.911	0.884	0.939	0.039	0.701	0.739	0.792	0.037
1.51	1.131	1.104	1.158	0.038	0.871	0.925	0.987	0.044
1.729	1.349	1.319	1.38	0.043	1.046	1.118	1.189	0.050
1.981	1.582	1.547	1.617	0.049	1.236	1.331	1.409	0.055
2.269	1.797	1.758	1.835	0.054	1.419	1.535	1.618	0.059
2.599	2.083	2.044	2.122	0.055	1.677	1.819	1.899	0.057
2.976	2.404	2.365	2.444	0.056	1.97	2.14	2.215	0.053
3.409	2.867	2.832	2.903	0.050	2.414	2.614	2.672	0.041
3.905	3.38	3.356	3.404	0.034	2.929	3.154	3.18	0.018
4.472	3.911	3.906	3.917	0.008	3.493	3.723	3.702	0.015
5.122	4.453	4.474	4.432	0.030	4.089	4.298	4.222	0.054
5.867	4.948	5.002	4.894	0.076	4.606	4.75	4.634	0.082
6.72	5.449	5.538	5.361	0.125	5.133	5.209	5.048	0.114
7.697	5.881	6.003	5.759	0.173	5.559	5.557	5.361	0.139
8.816 10.097	6.081 6.259	6.22 6.412	5.942 6.106	0.197 0.216	5.665 5.773	5.619 5.687	5.409 5.457	0.148 0.163
11.565	6.259	6.408	6.106	0.210	5.696	5.599	5.353	0.103
13.246	6.067	6.197	5.936	0.214	5.455	5.377	5.117	0.174
15.172	5.697	5.792	5.602	0.134	5.09	5.051	4.778	0.104
17.377	5.176	5.225	5.127	0.069	4.651	4.66	4.372	0.204
19.904	4.547	4.547	4.547	0.000	4.18	4.234	3.934	0.212
22.797	3.859	3.816	3.903	0.062	3.715	3.799	3.494	0.216
26.111	3.165	3.089	3.24	0.107	3.276	3.373	3.074	0.211
29.907	2.508	2.415	2.6	0.131	2.877	2.965	2.689	0.195
34.255	1.921	1.826	2.017	0.135	2.519	2.581	2.344	0.168
39.234	1.425	1.337	1.513	0.124	2.199	2.22	2.041	0.127
44.938	1.025	0.952	1.097	0.103	1.912	1.882	1.779	0.073
51.471	0.717	0.662	0.772	0.078	1.652	1.569	1.553	0.011
58.953	0.49	0.452	0.529	0.054	1.415	1.284	1.361	0.054
67.523	0.33	0.305	0.355	0.035	1.201	1.03	1.198	0.119
77.339	0	0	0	0.000	1.01	0.811	1.06	0.176
88.583	0	0	0	0.000	0.841	0.629	0.943	0.222
101.46	0	0	0	0.000	0.694	0.483	0.839	0.252
116.21	0	0	0	0.000	0.569	0.369	0.742	0.264
133.103	0	0	0	0.000	0.369	0	0.648	0.458
152.453	0	0	0	0.000	0.303	0	0.556	0.393
174.616	0	0	0	0.000	0.103	0	0.309	0.218
200	0	0	0	0.000	0	0	0	0.000
229.075	0	0	0	0.000	0	0	0	0.000
262.376	0	0	0	0.000	0	0	0	0.000
300.518	0	0	0	0.000	0	0	0	0.000
344.206	0	0	0	0.000	0	0	0	0.000
394.244	0	0	0	0.000	0	0	0	0.000
451.556	0	0	0	0.000	0	0	0	0.000
517.2	0	0	0	0.000	0	0	0	0.000
592.387	0	0	0	0.000	0	0	0	0.000

WM183Composite 1,2,3 PSD Analysis

Filename	:000105-6WM183-1,2,3,com s-avg <c></c>	Filen ID#					
ID#							
Circulation S	peed :5	Circu					
Ultra sonic	:00:24	Ultra					
Laser T%	: 90.3(%)	Lase					
Form of Distr	ibution:Standard	Form					
Calc. Level	:30	Calc.					
R.R.Index	:1.35-0.10i	R.R.					
Material	:WM183 Solids Composite	Mate					
Source	:	Sour					
Lot Number	:	Lot N					
Dispersion M	ledium :RAL demin water + usonic	Dispe					
Remarks	:GHH/TAB operators	Rem					
Remarks 1	:19 Jan 2000	Rem					
Remarks 2	:Avg Runs 2, 4	Rem					
Mean	:11.579919(µm)	Mear					
Variance	:100.125282	Varia					
S.D.	:10.006262(µm)	S.D.					
Mode	: 9.452659(µm)	Mode					
Geo. Mean		Geo.					

:000105-6 ns WM183-avg<C> name :200003081011101 culation Speed :6 a sonic :OFF er T% : 92.0(%) m of Distribution:Standard c. Level :30 :1.35-0.10i .Index :WM183Compos1,2,3 erial irce 2 Number : persion Medium :RAL demin water narks :GMH operator narks 1 :8 Mar 2000 narks 2 : :17.159410(µm) an :438.032654 iance :20.929230(µm) : 9.438090(µm) le . Mean :10.284929(µm)

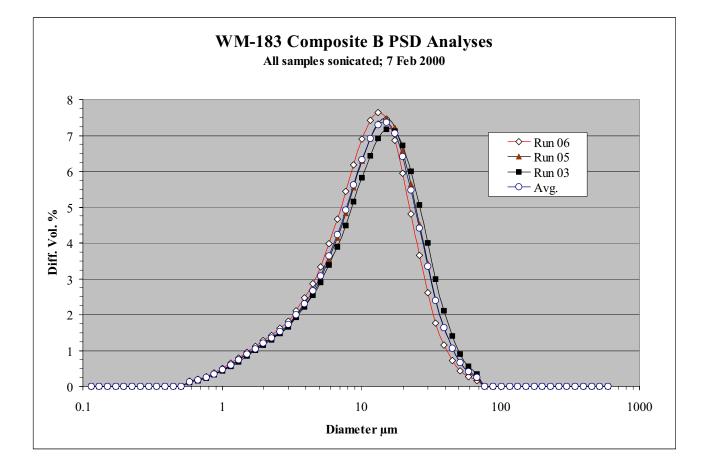


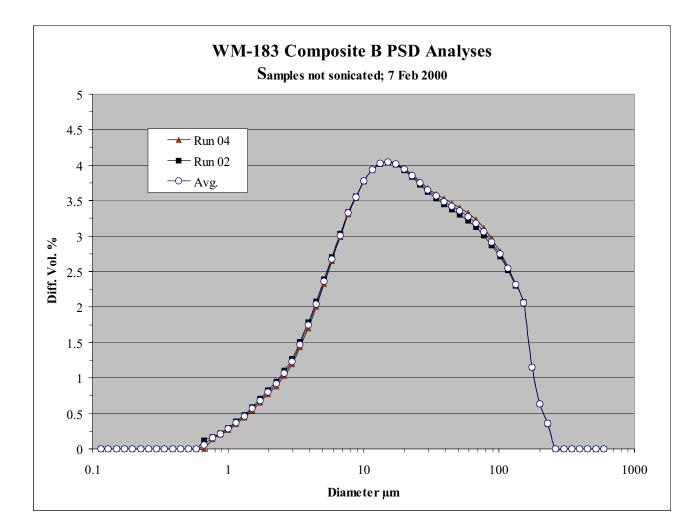


WM183 Composite B PSD Analysis

					iposite	DFSDF		niantad m		
		Diff. Fred	ited runs					nicated ru requency		
Diameter	Avg o Runs			/%) Run 05	Run 06	1 STDEV	Avg o Runs			
0.115	Avg 0 Runs 0	0	0	0	0	0	Avg 0 Runs	0	0	0
0.131	0	0	0	0	0	0.000	0	0	0	0.000
0.15	0	0	0	0	0	0.000	0	0	0	0.000
0.172	0	0	0 0	0	0	0.000	0	0	Õ	0.000
0.197	0	0	0	0	0	0.000	0	0	0	0.000
0.226	0	0	0	0	0	0.000	0	0	0	0.000
0.259	0	0	0	0	0	0.000	0	0	0	0.000
0.296	0	0	0	0	0	0.000	0	0	0	0.000
0.339	0	0	0	0	0	0.000	0	0	0	0.000
0.389	0	0	0	0	0	0.000	0	0	0	0.000
0.445	0	0	0	0	0	0.000	0	0	0	0.000
0.51	0	0	0	0	0	0.000	0	0	0	0.000
0.584	0.125	0.121	0.111	0.12	0.143	0.014	0	0	0	0.000
0.669	0.176	0.163	0.159	0.169	0.199	0.018	0.058	0.117	0	0.083
0.766	0.248	0.223	0.227	0.241	0.278	0.025	0.152	0.162	0.142	0.014
0.877	0.347	0.306	0.32	0.338	0.384	0.034	0.212	0.224	0.2	0.017
1.005	0.461	0.404	0.429	0.451	0.505	0.043	0.283	0.297	0.269	0.020
1.151	0.592	0.521	0.554	0.579	0.642	0.051	0.365	0.383	0.348	0.025
1.318	0.735	0.654	0.692	0.72	0.792	0.058	0.459	0.481	0.438	0.030
1.51	0.898	0.801	0.853	0.882	0.959	0.066	0.568	0.591	0.545	0.033
1.729	1.054	0.952	1.006	1.036	1.119	0.070	0.68	0.707	0.654	0.037
1.981	1.212	1.111	1.161	1.191	1.283	0.072	0.801	0.831	0.772	0.042
2.269	1.354	1.258	1.303	1.331	1.429	0.072	0.917	0.949	0.884	0.046
2.599	1.531	1.437	1.474	1.503	1.615	0.077	1.067	1.102	1.032	0.049
2.976	1.721	1.633	1.66	1.689	1.816	0.081	1.231	1.269	1.194	0.053
3.409	1.998	1.904	1.923	1.956	2.115	0.096	1.471	1.511	1.431	0.057
3.905	2.311	2.197	2.214	2.258	2.46	0.121	1.744	1.784	1.703	0.057
4.472	2.663	2.504	2.534	2.599	2.857	0.161	2.04	2.078	2.002	0.054
5.122	3.076	2.832	2.898	3	3.33	0.221	2.358	2.392	2.324	0.048
5.867	3.635	3.203	3.379	3.55	3.975	0.331	2.677	2.706	2.648	0.041
6.72 7.697	4.235 4.92	3.599 4.019	3.899 4.493	4.143 4.826	4.664 5.44	0.451 0.597	3.009 3.323	3.031 3.339	2.986 3.308	0.032 0.022
8.816	4.92 5.627	4.019	4.493 5.148	4.820 5.553	6.18	0.397	3.546	3.557	3.536	0.022
10.097	6.33	4.889	5.815	6.283	6.893	0.720	3.775	3.779	3.771	0.006
11.565	6.924	5.298	6.433	6.918	7.421	0.908	3.935	3.935	3.936	0.000
13.246	7.304	5.644	6.917	7.352	7.642	0.882	4.024	4.02	4.029	0.006
15.172	7.372	5.892	7.175	7.475	7.465	0.753	4.046	4.038	4.054	0.000
17.377	7.072	6.007	7.126	7.218	6.873	0.552	4.014	4.003	4.024	0.015
19.904	6.415	5.956	6.729	6.577	5.939	0.412	3.942	3.928	3.955	0.019
22.797	5.483	5.721	6.008	5.634	4.807	0.516	3.848	3.831	3.865	0.024
26.111	4.412	5.305	5.056	4.529	3.651	0.732	3.746	3.725	3.767	0.030
29.907	3.346	4.737	4.004	3.422	2.613	0.899	3.65	3.623	3.676	0.037
34.255	2.399	4.064	2.986	2.438	1.773	0.969	3.563	3.531	3.595	0.045
39.234	1.633	3.347	2.104	1.647	1.15	0.941	3.488	3.449	3.527	0.055
44.938	1.064	2.647	1.408	1.063	0.72	0.840	3.42	3.374	3.465	0.064
51.471	0.669	2.015	0.902	0.662	0.441	0.699	3.351	3.3	3.403	0.073
58.953	0.41	1.484	0.56	0.403	0.267	0.550	3.275	3.219	3.331	0.079
67.523	0.249	1.064	0.341	0.243	0.163	0.414	3.181	3.124	3.239	0.081
77.339	0	0.749	0	0	0	0.375	3.064	3.009	3.118	0.077
88.583	0	0.524	0	0	0	0.262	2.918	2.871	2.966	0.067
101.46	0	0.368	0	0	0	0.184	2.744	2.708	2.781	0.052
116.21	0	0	0	0	0	0.000	2.542	2.518	2.565	0.033
133.103	0	0	0	0	0	0.000	2.312	2.302	2.322	0.014
152.453	0	0	0	0	0	0.000	2.062	2.064	2.061	0.002
174.616	0	0	0	0	0	0.000	1.146	1.147	1.145	0.001
200	0	0	0	0	0	0.000	0.637	0.637	0.636	0.001
229.075	0	0	0	0	0	0.000	0.354	0.354	0.353	0.001
262.376	0	0	0	0	0	0.000	0	0	0	0.000
300.518	0	0	0	0	0	0.000	0	0	0	0.000
344.206	0	0	0	0	0	0.000	0	0	0	0.000
394.244 451.556	0 0	0 0	0 0	0 0	0 0	0.000 0.000	0 0	0 0	0 0	0.000 0.000
451.556 517.2	0	0	0	0	0	0.000	0	0	0	0.000
592.387	0	0	0	0	0	0.000	0	0	0	0.000
002.001	0	U	0	0	0	0.000	U	0	0	0.000

Filename ID#	:000117-5WM183ComB s avg <c> :200002071150080</c>	Filename ID#	:000117-5WM183ComB ns avg <c> :200002071130079</c>
Circulation S		Circulation Sp	
Ultra sonic	:01:15	Ultra sonic	:OFF
Laser T%	: 72.1(%)	Laser T%	: 68.2(%)
	ibution:Standard		bution:Standard
Calc. Level	:30	Calc. Level	:30
R.R.Index	:1.35-0.10i	R.R.Index	:1.35-0.10i
Material	:WM183 Solids Composite B	Material	:WM183 Solids Composite B
Source	:	Source	:
Lot Number	:	Lot Number	:
Dispersion M	ledium :RAL demin water + usonic	Dispersion Me	edium :RAL demin water + usonic
Remarks	:GHH/TAB operators	Remarks	:GHH/TAB operators
Remarks 1	:07 Feb 2000	Remarks 1	:07 Feb 2000
Remarks 2	:Avg. Runs 3,5,6	Remarks 2	:Avg Runs 2,4
Mean	:13.214108(µm)	Mean	:36.193790(µm)
Variance	:97.520866	Variance	:1631.289551
S.D.	: 9.875265(µm)	S.D.	:40.389225(µm)
Mode	:14.146187(µm)	Mode	:14.173810(µm)
Geo. Mean	: 9.731933(µm)	Geo. Mean	:19.242262(µm)



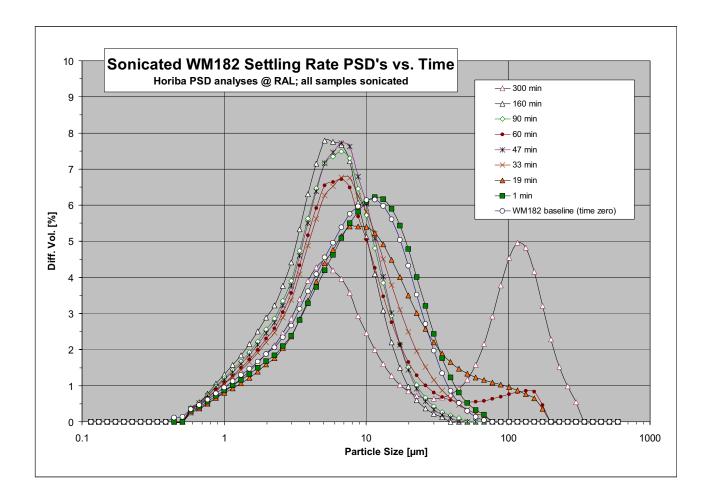


WM182 Settling Rate PSD vs. Time Testing Data	
Horiba PSD Analyses Diff. Freq %; @ RAL, 8 Feb 2000; all samples so	onicated
Diameter	

0	Diameter	_	-		Frequ	uency (%)	-			
	[µm]									
Time [min]		0	1	19	33	47	60	90	160	300
	0 1 1 5	0	0	0	0	0	0	0	0	0
	0.115 0.131	0 0								
	0.15	0	0	0	0	0	0	0	0	0
	0.172	0	0	0	0	0	0	0	0	0
	0.197	0	Õ	0	Ő	Õ	Õ	0	0	0 0
	0.226	0	0	0	0	0	0	0	0	0
	0.259	0	0	0	0	0	0	0	0	0
	0.296	0	0	0	0	0	0	0	0	0
	0.339	0	0	0	0	0	0	0	0	0
	0.389	0	0	0	0	0	0	0	0	0
	0.445	0.114	0	0	0	0	0	0	0	0
	0.51	0.14	0	0	0	0	0	0	0	0
	0.584	0.342	0.303	0.276	0.336	0.37	0.343	0.378	0.376	0.241
	0.669	0.462	0.415	0.381	0.475	0.525	0.484	0.537	0.547	0.349
	0.766	0.612	0.555	0.512	0.653	0.724	0.667	0.742	0.775	0.492
	0.877	0.787 0.949	0.718	0.664	0.863	0.96	0.885	0.988	1.054	0.669 0.836
	1.005 1.151	1.121	0.864 1.007	0.799 0.93	1.052 1.237	1.174 1.384	1.083 1.279	1.211 1.432	1.315 1.573	1.006
	1.318	1.297	1.155	1.068	1.435	1.606	1.49	1.667	1.848	1.19
	1.51	1.469	1.317	1.222	1.658	1.854	1.727	1.929	2.16	1.403
	1.729	1.664	1.49	1.395	1.911	2.133	1.996	2.223	2.499	1.635
	1.981	1.877	1.683	1.593	2.203	2.458	2.309	2.562	2.885	1.894
	2.269	2.059	1.847	1.767	2.463	2.745	2.588	2.861	3.226	2.125
	2.599	2.336	2.102	2.044	2.882	3.219	3.038	3.344	3.77	2.462
	2.976	2.66	2.392	2.364	3.37	3.771	3.565	3.91	4.411	2.863
	3.409	3.126	2.816	2.84	4.09	4.6	4.337	4.742	5.336	3.394
	3.905	3.618	3.276	3.364	4.873	5.509	5.163	5.634	6.3	3.901
	4.472	4.094	3.734	3.886	5.616	6.388	5.923	6.464	7.15	4.273
	5.122	4.556	4.192	4.39	6.264	7.165	6.542	7.16	7.79	4.462
	5.867	4.964	4.628	4.763	6.525	7.465	6.641	7.342	7.747	4.194
	6.72 7.697	5.386 5.754	5.083 5.507	5.141 5.408	6.769 6.761	7.716 7.619	6.715 6.484	7.487 7.299	7.673 7.219	3.961 3.566
	8.816	5.964	5.814	5.408 5.408	6.26	6.785	5.694	6.455	6.072	2.936
	10.097	6.139	6.09	5.396	5.819	6.036	5.036	5.719	5.126	2.458
	11.565	6.152	6.219	5.224	5.212	5.071	4.266	4.813	4.085	1.998
	13.246	5.977	6.165	4.91	4.513	4.02	3.482	3.852	3.078	1.596
	15.172	5.603	5.903	4.488	3.793	3.008	2.761	2.939	2.198	1.269
	17.377	5.041	5.433	4.004	3.109	2.13	2.147	2.144	1.494	1.021
	19.904	4.327	4.783	3.5	2.493	1.432	1.656	1.503	0.971	0.842
	22.797	3.525	4.015	3.014	1.963	0.918	1.282	1.016	0.607	0.724
	26.111	2.713	3.206	2.576	1.522	0.566	1.009	0.668	0.368	0.658
	29.907	1.966	2.436	2.201	1.162	0.338	0.816	0.429	0.218	0.638
	34.255	1.34	1.766	1.894	0.874	0.197	0.686	0.272	0.128	0.667
	39.234	0.859	1.224	1.653	0.646	0.114	0.604	0.171	0	0.753
	44.938 51.471	0.521 0.301	0.815 0.523	1.469 1.332	0.469 0.334	0 0	0.558 0.542	0.107 0	0 0	0.912 1.175
	58.953	0.301	0.325	1.332	0.334	0	0.542	0	0	1.175
	67.523	0.049	0.199	1.157	0.161	0	0.582	0	0	2.156
	77.339	0	0	1.095	0	Õ	0.633	0	0	2.915
	88.583	0	0	1.034	0	0	0.698	0	0	3.774
	101.46	0	0	0.962	0	0	0.768	0	0	4.542
	116.21	0	0	0.873	0	0	0.826	0	0	4.954
	133.103	0	0	0.765	0	0	0.852	0	0	4.815
	152.453	0	0	0.649	0	0	0.83	0	0	4.155
	174.616	0	0	0.36	0	0	0.461	0	0	3.215
	200	0	0	0	0	0	0	0	0	2.281
	229.075	0	0	0	0	0	0	0	0	1.522
	262.376	0	0	0	0	0	0	0	0	0.983
	300.518 344.206	0 0	0.546 0							
	394.206 394.244	0	0	0	0	0	0	0	0	0
	451.556	0	0	0	0	0	0	0	0	0
•	517.2	0	0	0	0	0	0	0	0	0
ł	592.387	0	0	0	0	0	0	0	0	0
	-		-		-	-	-			

Filename :9911082WM182#3A-01 Set Vel 1 min	Filename :9911082WM182#3A-01 Set Vel 19 min
ID# :200002080935085	ID# :200002080953086
Circulation Speed :5	Circulation Speed :5
Ultra sonic :00:21	Ultra sonic :00:21
Laser T% : 84.2(%)	Laser T% : 88.5(%)
Form of Distribution:Standard	Form of Distribution:Standard
Calc. Level :30	Calc. Level :30
R.R.Index :1.35-0.10i	R.R.Index :1.35-0.10i
Material :WM182 Samp 3A	Material :WM182 Solids Sam 3A
Source :	Source :
Lot Number :	Lot Number :
Dispersion Medium :RAL demin water + usonic	Dispersion Medium :RAL demin water + usonic
Remarks :GMH operator	Remarks :GMH operators
Remarks 1 :08 Feb 2000	Remarks 1 :08 Feb 2000
Remarks 2 :Run #1	Remarks 2 :Run #2
Mean :11.140379(μm)	Mean :17.622223(µm)
Variance :88.970901	Variance :643.727295
S.D. : 9.432439(µm)	S.D. :25.371782(μm)
Mode :10.814984(µm)	Mode : 7.215792(µm)
IGeo. Mean : 7.715176(μm)	Geo. Mean : 9.138258(µm)
Filename :9911082WM182#3A-01 Set Vel 33 min	Filename :9911082WM182#3A-01 Set Vel 47 min
ID# :200002081008087	ID# :200002081021088
Circulation Speed :5	Circulation Speed :5
Ultra sonic :00:22	Ultra sonic :00:20
Laser T% : 91.6(%)	Laser T% : 89.5(%)
Form of Distribution:Standard	Form of Distribution:Standard
Calc. Level :30	Calc. Level :30
IR.R.Index :1.35-0.10i	R.R.Index :1.35-0.10i
Material :WM182 Solids Sam 3A	Material :WM182 Solids Sam 3A
Source :	Source :
Lot Number :	Lot Number :
Dispersion Medium :RAL demin water + usonic	Dispersion Medium :RAL demin water + usonic
Remarks :GMH operators	Remarks :GMH operators
Remarks 1 :08 Feb 2000	Remarks 1 :08 Feb 2000
Remarks 2 :Run #3	Remarks 2 :Run #4
lMean : 8.391519(μm)	Mean : 6.556015(μm)
Variance :63.008438	Variance :23.448687
S.D. : 7.937786(µm)	S.D. : 4.842384(µm)
Mode : 6.293754(µm)	Mode : 6.287407(µm)
Geo. Mean : 5.855623(µm)	<u>Geo. Mean</u> : <u>5.007885(µm)</u>

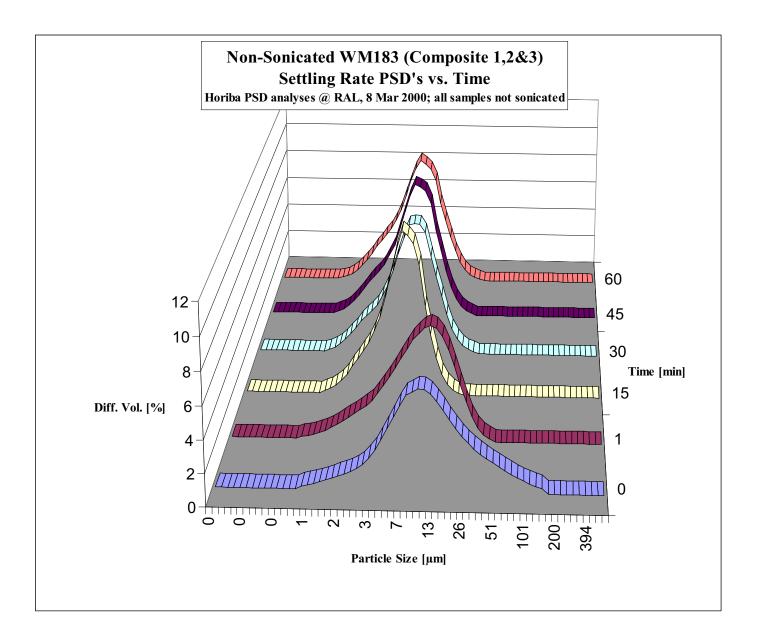
Filename :9911082WM182#3A-01 Set Vel 60 min	Filename :9911082WM182#3A-01 Set Vel 90 min
ID# :200002081035089	ID# :200002081105090
Circulation Speed :5	Circulation Speed :5
Ultra sonic :00:20	Ultra sonic :00:20
Laser T% : 89.5(%)	Laser T% : 89.0(%)
Form of Distribution:Standard	Form of Distribution:Standard
Calc. Level :30	Calc. Level :30
R.R.Index :1.35-0.10i	R.R.Index :1.35-0.10i
Material :WM182 Solids Sam 3A	Material :WM182 Solids Sam 3A
Source :	Source :
Lot Number :	Lot Number :
Dispersion Medium :RAL demin water + usonic	Dispersion Medium :RAL demin water + usonic
Remarks :GMH operators	Remarks :GMH operators
Remarks 1 :08 Feb 2000	Remarks 1 :08 Feb 2000
Remarks 2 :Run #5	Remarks 2 :Run #6
Mean :13.417995(µm)	Mean : 6.600207(μm)
Variance :633.813354	Variance :26.895119
S.D. :25.175650(μm)	S.D. : 5.186050(µm)
Mode : 6.268930(µm)	Mode : 6.276420(µm)
Geo. Mean : 6.355613(µm)	Geo. Mean : 4.959979(μm)
Filename :9911082WM182#3A-01 Set Vel 160 min	Filename :9911082WM182#3A-01 Set Vel 5.0 hr.
ID# :200002081216091	ID# :200002081439092
Circulation Speed :5	Circulation Speed :5
Ultra sonic :00:26	Ultra sonic :00:20
Laser T% : 92.2(%)	Laser T% : 93.9(%)
Form of Distribution:Standard	Form of Distribution:Standard
Calc. Level :30	Calc. Level :30
IR.R.Index :1.35-0.10i	R.R.Index :1.35-0.10i
Material :WM182 Solids Sam 3A	Material :WM182 Solids Sam 3A
Source :	Source :
Lot Number :	Lot Number :
Dispersion Medium :RAL demin water + usonic	Dispersion Medium :RAL demin water + usonic
Remarks :GMH operators	Remarks :GMH operators
Remarks 1 :08 Feb 2000	Remarks 1 :08 Feb 2000
Remarks 2 :Run #7	Remarks 2 :Run #8
Mean : 5.837456(μm)	Mean :50.771538(µm)
Ivariance :18.252897	Variance :4015.596191
S.D. : 4.272341(µm)	S.D. :63.368732(µm)
Mode : 4.811123(µm)	Mode :108.991638(µm)
Geo. Mean: 4.506188(µm)	Geo. Mean:16.119543(µm)



WM183 Composite A Settling Rate PSD's vs. Time

	Diameter			Freque	ency (%)		
Time [min]	[µm]	0	1	15	30	45	60
	0.115	0	0	0	0	0	0
	0.113	0	0	0	0	0	0
	0.15	0	0	0	0	0	0
	0.172	0	0	0	0	0	0
	0.197 0.226	0 0	0 0	0 0	0 0	0 0	0 0
	0.259	0	0	0	0	0	0
	0.296	0	0	0	0	0	0
	0.339	0 0	0 0	0 0	0 0	0 0	0 0
	0.389 0.445	0	0	0	0	0	0
	0.51	0	0	0	0	0	0
	0.584	0	0.105	0	0	0	0.101
	0.669 0.766	0 0.16	0.165 0.253	0 0.141	0.125 0.266	0.144 0.3	0.197 0.37
	0.877	0.241	0.376	0.285	0.51	0.567	0.647
	1.005	0.337	0.525	0.514	0.842	0.923	1.005
	1.151 1.318	0.45 0.57	0.703 0.906	0.832 1.235	1.23 1.644	1.337 1.778	1.426 1.883
	1.51	0.699	1.144	1.795	2.123	2.288	2.416
	1.729	0.832	1.385	2.303	2.463	2.659	2.847
	1.981	0.968	1.63	2.829	2.815	3.047	3.289
	2.269 2.599	1.106 1.314	1.859 2.141	3.359 4.128	3.225 3.86	3.493 4.181	3.745 4.405
	2.976	1.555	2.464	5.035	4.531	4.915	5.133
	3.409	1.956	2.92	6.39	5.602	6.074	6.199
	3.905 4.472	2.454 3.052	3.427 3.962	7.895 9.397	6.702 7.774	7.247 8.346	7.236 8.13
	5.122	3.748	4.532	10.587	8.64	9.162	8.721
	5.867	4.435	5.131	10.284	8.725	8.993	8.432
	6.72 7.697	5.142 5.759	5.746 6.336	9.785 8.456	8.704 8.149	8.721 7.871	8.092 7.297
	8.816	5.966	6.735	5.777	6.558	5.974	5.689
	10.097	6.175	7.085	3.984	5.276	4.542	4.446
	11.565 13.246	6.136 5.872	7.207 7.04	2.458 1.366	3.913 2.674	3.155 2.004	3.22 2.161
	15.172	5.442	6.552	0.693	1.687	1.17	1.348
	17.377	4.92	5.757	0.327	0.99	0.633	0.787
	19.904 22.797	4.373 3.851	4.727 3.588	0.147 0	0.544 0.285	0.323 0.157	0.433 0.228
	26.111	3.382	2.491	0	0.205	0.157	0.220
	29.907	2.977	1.567	0	0	0	0
	34.255 39.234	2.632 2.336	0.886 0.449	0 0	0 0	0 0	0 0
	44.938	2.074	0.205	0	0	0	0
	51.471	1.832	0	0	0	0	0
	58.953 67.523	1.602 1.377	0 0	0 0	0 0	0 0	0 0
	77.339	1.158	0	0	0	0	0
	88.583	0.95	0	0	0	0	0
	101.46 116.21	0.761 0.597	0 0	0 0	0 0	0 0	0 0
	133.103	0.397	0	0	0	0	0
	152.453	0.352	0	0	0	0	0
	174.616 200	0 0	0 0	0 0	0 0	0 0	0 0
	200 229.075	0	0	0	0	0	0
	262.376	0	0	0	0	0	0
	300.518 344.206	0	0	0	0	0	0
	344.206 394.244	0 0	0 0	0 0	0 0	0 0	0 0
	451.556	0	0	0	0	0	0
	517.2	0 0	0 0	0 0	0 0	0 0	0 0
	592.387	0	0	U	0	0	U

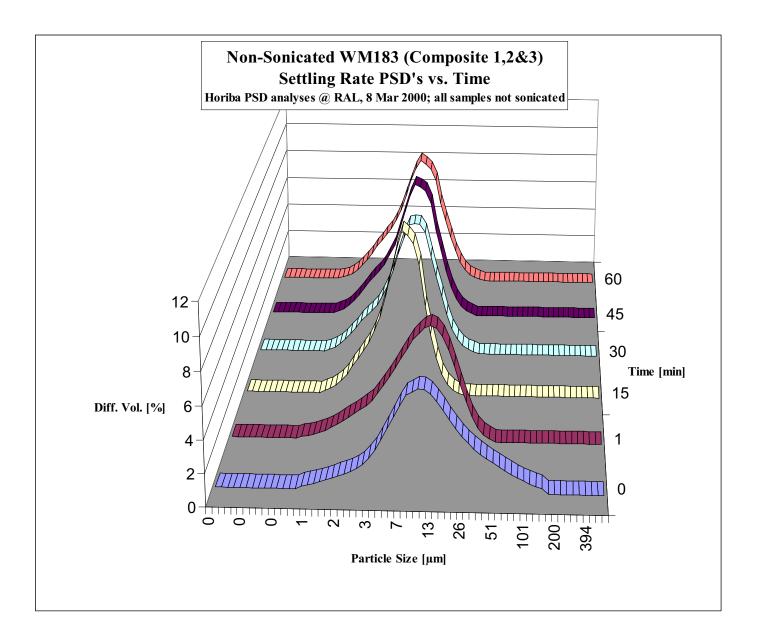
E		
Filename	:000105-6 SV time zero	Filename :000105-6 SV 1 min
ID#	:200003081011101	ID# :200003080854096
Circulation Sp		Circulation Speed :6
Ultra sonic	:OFF	Ultra sonic :OFF
Laser T%	: 92.0(%)	Laser T% : 85.5(%)
	bution:Standard	Form of Distribution:Standard
Calc. Level	:30	Calc. Level :30
R.R.Index	:1.35-0.10i	R.R.Index :1.35-0.10i
Material	:WM183Compos1,2,3	Material :WM183Compos1,2,3
Source	:	Source :
Lot Number	:	Lot Number :
	edium :RAL demin water	Dispersion Medium :RAL demin water + usonic
Remarks	:GMH operator	Remarks :GMH operator
Remarks 1	:8 Mar 2000	Remarks 1 :8 Mar 2000
Remarks 2	:	Remarks 2 :
Mean	:18.189390(µm)	Mean : 9.917294(µm)
Variance	:450.924561	Variance :48.605122
S.D.	:21.234983(µm)	S.D. : 6.971737(μm)
Mode	: 9.452181(µm)	Mode :10.801532(µm)
	<u>:11.246674(µm)</u>	<u>Geo. Mean: 7.535396(µm)</u>
Filename	:000105-6 SV 15 min	Filename :000105-6 SV 30 min
ID#	:200003080912097	ID# :200003080924098
Circulation Sp		Circulation Speed :6
Ultra sonic	OFF	Ultra sonic :OFF
	: 98.1(%)	Laser T% : 98.2(%)
	bution:Standard	Form of Distribution:Standard
Calc. Level	:30	Calc. Level :30
R.R.Index	:1.35-0.10i	R.R.Index :1.35-0.10i
Material	:WM183Compos1,2,3	Material :WM183Compos1,2,3
	. 101010300110051,2,5	
Sourco	•	Sourco
Source	:	Source :
Lot Number	: : :	Lot Number :
Lot Number Dispersion Me	: edium :RAL demin water	Lot Number : Dispersion Medium :RAL demin water
Lot Number Dispersion Me Remarks	:GMH operator	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator
Lot Number Dispersion Me Remarks Remarks 1		Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2	:GMH operator :8 Mar 2000 :	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 :
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean	:GMH operator :8 Mar 2000 : : 5.100872(µm)	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm)
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D.	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm)	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm)
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm)	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm)
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.408837(μm)	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u>
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.408837(μm) : 000105-6 SV 45 min	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u> Filename :000105-6 SV 60 min
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID#	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.408837(μm) : 000105-6 SV 45 min :200003080941099	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u> Filename :000105-6 SV 60 min ID# :200003080956100
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) <u>: 4.408837(μm)</u> :000105-6 SV 45 min :200003080941099 eed :6	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u> Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp Ultra sonic	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.408837(μm) : 000105-6 SV 45 min :200003080941099	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u> Filename :000105-6 SV 60 min ID# :200003080956100
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) <u>: 4.408837(μm)</u> :000105-6 SV 45 min :200003080941099 eed :6	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u> Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp Ultra sonic Laser T%	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.408837(μm) :000105-6 SV 45 min :200003080941099 weed :6 :OFF	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u> Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp Ultra sonic Laser T%	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.408837(μm) :000105-6 SV 45 min :200003080941099 weed :6 :OFF : 98.2(%)	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u> Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF Laser T% : 97.8(%)
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp Ultra sonic Laser T% Form of Distri	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.408837(μm) :000105-6 SV 45 min :200003080941099 meed :6 :OFF : 98.2(%) bution:Standard	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) Geo. Mean : 4.610907(µm) Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF Laser T% : 97.8(%) Form of Distribution:Standard
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp Ultra sonic Laser T% Form of Distri Calc. Level	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.408837(μm) :000105-6 SV 45 min :200003080941099 weed :6 :OFF : 98.2(%) bution:Standard :30	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) Geo. Mean : 4.610907(µm) Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF Laser T% : 97.8(%) Form of Distribution:Standard Calc. Level :30
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp Ultra sonic Laser T% Form of Distri Calc. Level R.R.Index	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.408837(μm) :000105-6 SV 45 min :200003080941099 weed :6 :OFF : 98.2(%) bution:Standard :30 :1.35-0.10i	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u> Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF Laser T% : 97.8(%) Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename IID# Circulation Sp Ultra sonic Laser T% Form of Distri Calc. Level R.R.Index Material	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.408837(μm) :000105-6 SV 45 min :200003080941099 weed :6 :OFF : 98.2(%) bution:Standard :30 :1.35-0.10i	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u> Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF Laser T% : 97.8(%) Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i Material :WM183Compos1,2,3
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp Ultra sonic Laser T% Form of Distri Calc. Level R.R.Index Material Source Lot Number	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.408837(μm) :000105-6 SV 45 min :200003080941099 weed :6 :OFF : 98.2(%) bution:Standard :30 :1.35-0.10i	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u> Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF Laser T% : 97.8(%) Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Lot Number :
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp Ultra sonic Laser T% Form of Distri Calc. Level R.R.Index Material Source Lot Number	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.813475(μm) : 000105-6 SV 45 min :200003080941099 meed :6 : OFF : 98.2(%) bution:Standard :30 :1.35-0.10i :WM183Compos1,2,3 : : edium :RAL demin water	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u> Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF Laser T% : 97.8(%) Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Lot Number : Dispersion Medium :RAL demin water
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp Ultra sonic Laser T% Form of Distri Calc. Level R.R.Index Material Source Lot Number Dispersion Me Remarks	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.813475(μm) : 000105-6 SV 45 min :200003080941099 meed :6 : OFF : 98.2(%) bution:Standard :30 :1.35-0.10i :WM183Compos1,2,3 : : edium :RAL demin water :GMH operator	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u> Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF Laser T% : 97.8(%) Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp Ultra sonic Laser T% Form of Distri Calc. Level R.R.Index Material Source Lot Number Dispersion Me Remarks Remarks 1	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.813475(μm) : 000105-6 SV 45 min :200003080941099 meed :6 : OFF : 98.2(%) bution:Standard :30 :1.35-0.10i :WM183Compos1,2,3 : : edium :RAL demin water	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u> Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF Laser T% : 97.8(%) Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp Ultra sonic Laser T% Form of Distri Calc. Level R.R.Index Material Source Lot Number Dispersion Me Remarks Remarks 1 Remarks 2	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.813475(μm) : 000105-6 SV 45 min :000105-6 SV 45 min :200003080941099 meed :6 :OFF : 98.2(%) bution:Standard :30 :1.35-0.10i :WM183Compos1,2,3 : : edium :RAL demin water :GMH operator :8 Mar 2000 :	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) Geo. Mean :4.610907(µm) Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF Laser T% : 97.8(%) Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 :
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp Ultra sonic Laser T% Form of Distri Calc. Level R.R.Index Material Source Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.813475(μm) : 4.408837(μm) : 000105-6 SV 45 min :200003080941099 meed :6 :OFF : 98.2(%) bution:Standard :30 :1.35-0.10i :WM183Compos1,2,3 : : edium :RAL demin water :GMH operator :8 Mar 2000 : : 5.219898(μm)	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) Geo. Mean : 4.610907(µm) Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF Laser T% : 97.8(%) Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.221494(µm)
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp Ultra sonic Laser T% Form of Distri Calc. Level R.R.Index Material Source Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.813475(μm) : 4.408837(μm) : 000105-6 SV 45 min :200003080941099 meed :6 :OFF : 98.2(%) bution:Standard :30 :1.35-0.10i :WM183Compos1,2,3 : : edium :RAL demin water :GMH operator :8 Mar 2000 : : 5.219898(μm) : 9.859966	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) Geo. Mean : 4.610907(µm) Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF Laser T% : 97.8(%) Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Lot Number : Dispersion Medium :RAL demin water Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.221494(µm) Variance :11.266287
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp Ultra sonic Laser T% Form of Distri Calc. Level R.R.Index Material Source Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D.	:GMH operator :8 Mar 2000 : 5.100872(μm) :7.270061 :2.696305(μm) :4.813475(μm) :4.813475(μm) :4.408837(μm) :000105-6 SV 45 min :200003080941099 meed :6 :OFF :98.2(%) bution:Standard :30 :1.35-0.10i :WM183Compos1,2,3 : : : edium :RAL demin water :GMH operator :8 Mar 2000 : : 5.219898(μm) : 9.859966 : 3.140058(μm)	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u> Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF Laser T% : 97.8(%) Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.221494(µm) Variance :11.266287 S.D. : 3.356529(µm)
Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance S.D. Mode Geo. Mean Filename ID# Circulation Sp Ultra sonic Laser T% Form of Distri Calc. Level R.R.Index Material Source Lot Number Dispersion Me Remarks Remarks 1 Remarks 2 Mean Variance	:GMH operator :8 Mar 2000 : : 5.100872(μm) : 7.270061 : 2.696305(μm) : 4.813475(μm) : 4.813475(μm) : 4.408837(μm) : 000105-6 SV 45 min :200003080941099 meed :6 :OFF : 98.2(%) bution:Standard :30 :1.35-0.10i :WM183Compos1,2,3 : : edium :RAL demin water :GMH operator :8 Mar 2000 : : 5.219898(μm) : 9.859966	Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.618893(µm) Variance :12.310927 S.D. : 3.508693(µm) Mode : 5.484677(µm) <u>Geo. Mean : 4.610907(µm)</u> Filename :000105-6 SV 60 min ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF Laser T% : 97.8(%) Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Lot Number : Dispersion Medium :RAL demin water Remarks 1 :8 Mar 2000 Remarks 2 : Mean : 5.221494(µm) Variance :11.266287



WM183 Composite A Settling Rate PSD's vs. Time

	Diameter			Freque	ency (%)		
Time [min]	[µm]	0	1	15	30	45	60
	0.115	0	0	0	0	0	0
	0.113	0	0	0	0	0	0
	0.15	0	0	0	0	0	0
	0.172	0	0	0	0	0	0
	0.197 0.226	0 0	0 0	0 0	0 0	0 0	0 0
	0.259	0	0	0	0	0	0
	0.296	0	0	0	0	0	0
	0.339	0 0	0 0	0 0	0 0	0 0	0 0
	0.389 0.445	0	0	0	0	0	0
	0.51	0	0	0	0	0	0
	0.584	0	0.105	0	0	0	0.101
	0.669 0.766	0 0.16	0.165 0.253	0 0.141	0.125 0.266	0.144 0.3	0.197 0.37
	0.877	0.241	0.376	0.285	0.51	0.567	0.647
	1.005	0.337	0.525	0.514	0.842	0.923	1.005
	1.151 1.318	0.45 0.57	0.703 0.906	0.832 1.235	1.23 1.644	1.337 1.778	1.426 1.883
	1.51	0.699	1.144	1.795	2.123	2.288	2.416
	1.729	0.832	1.385	2.303	2.463	2.659	2.847
	1.981	0.968	1.63	2.829	2.815	3.047	3.289
	2.269 2.599	1.106 1.314	1.859 2.141	3.359 4.128	3.225 3.86	3.493 4.181	3.745 4.405
	2.976	1.555	2.464	5.035	4.531	4.915	5.133
	3.409	1.956	2.92	6.39	5.602	6.074	6.199
	3.905 4.472	2.454 3.052	3.427 3.962	7.895 9.397	6.702 7.774	7.247 8.346	7.236 8.13
	5.122	3.748	4.532	10.587	8.64	9.162	8.721
	5.867	4.435	5.131	10.284	8.725	8.993	8.432
	6.72 7.697	5.142 5.759	5.746 6.336	9.785 8.456	8.704 8.149	8.721 7.871	8.092 7.297
	8.816	5.966	6.735	5.777	6.558	5.974	5.689
	10.097	6.175	7.085	3.984	5.276	4.542	4.446
	11.565 13.246	6.136 5.872	7.207 7.04	2.458 1.366	3.913 2.674	3.155 2.004	3.22 2.161
	15.172	5.442	6.552	0.693	1.687	1.17	1.348
	17.377	4.92	5.757	0.327	0.99	0.633	0.787
	19.904 22.797	4.373 3.851	4.727 3.588	0.147 0	0.544 0.285	0.323 0.157	0.433 0.228
	26.111	3.382	2.491	0	0.205	0.157	0.220
	29.907	2.977	1.567	0	0	0	0
	34.255 39.234	2.632 2.336	0.886 0.449	0 0	0 0	0 0	0 0
	44.938	2.074	0.205	0	0	0	0
	51.471	1.832	0	0	0	0	0
	58.953 67.523	1.602 1.377	0 0	0 0	0 0	0 0	0 0
	77.339	1.158	0	0	0	0	0
	88.583	0.95	0	0	0	0	0
	101.46 116.21	0.761 0.597	0 0	0 0	0 0	0 0	0 0
	133.103	0.397	0	0	0	0	0
	152.453	0.352	0	0	0	0	0
	174.616 200	0 0	0 0	0 0	0 0	0 0	0 0
	200 229.075	0	0	0	0	0	0
	262.376	0	0	0	0	0	0
	300.518 344.206	0	0	0	0	0	0
	344.206 394.244	0 0	0 0	0 0	0 0	0 0	0 0
	451.556	0	0	0	0	0	0
	517.2	0 0	0 0	0 0	0 0	0 0	0 0
	592.387	0	0	U	0	0	U

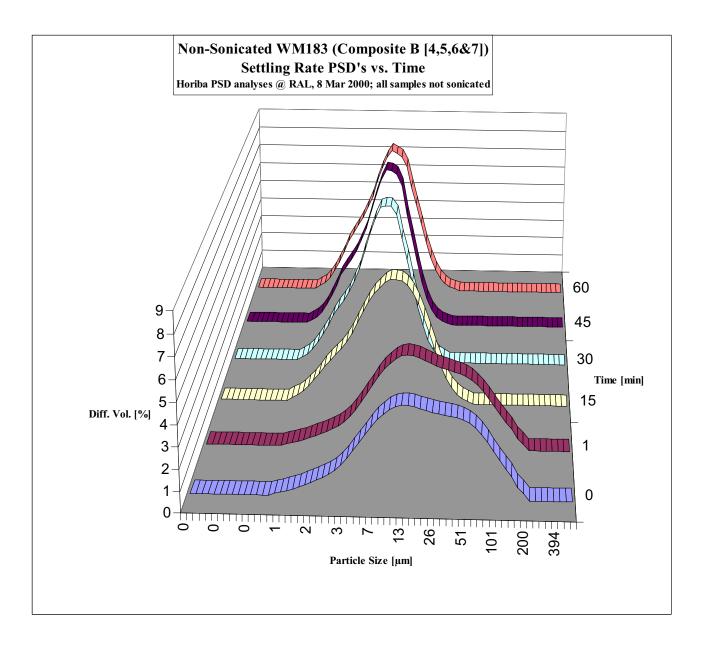
D# :200003081011101 D# :200003080854096 Circulation Speed :6 Circulation Speed :6 Laser T% :92.00%) Laser T% :85.5(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 Calc. Level :30 Naterial :WM183Compos1.2,3 Source : Material :WM183Compos1.2,3 Source : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water + usonic Remarks :SMH operator Remarks :SMH operator Remarks 1 Remarks 1 :SMa 2000 Remarks 2 : Mean :917294(µm) Variance :450.924561 Variance :900105-65 V3 00 min ID Filename :000105-65 V4 51 min Filename :0001010-65 SV3 00 min ID ID# :200003080912097 ID# :2000303080924098 Circulation Speed :6 Circulation Speed :6 Circulation Speed :6			
Circulation Speed : 6 Circulation Speed : 6 Uhra sonic : OFF Uhra sonic : OFF Laser T% : 85.5(%) Form of Distribution:Standard Caic. Level : 30. Calc. Level : 30. Caic. Level : 30. R.R.Indax : 1:35-0.10i R.R.Indax : 1:35-0.10i Material : WM183Compos1,2,3 Source : Source : Lot Number : Dispersion Medium : RAL demin water Remarks : GMH operator Remarks : :GMH operator Remarks : :GMH operator Remarks : :GMH operator Remarks : :GMH operator Remarks : :GMM operator Remarks : :GM at 2000 Remarks : :GM at 2000 Remarks : :GM at 2000 S.D. : 21.234983(um) S.D. : 6.97177(µm) Mode : :9.452161(µm) Gao. Mean : :7.53539(µm) IG# :20000308012097 ID# ID# :20000308012097 ID# :20000308012097 ID# :20000308012097 ID# :2000030801203 Calc. Level : 30 <	Filename	:000105-6 SV time zero	Filename :000105-6 SV 1 min
Ultra sonic OFF Ultra sonic OFF Laser T% :92.0(%) Laser T% :85.5(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water + usonic Remarks :SMH operator Remarks 1 :B Mar 2000 Remarks 2 : Remarks 2 : Remarks 2 : Geo Mean : : : : : : : : : : : : : : : : : : :			
Laser 7% :92.0(%) Laser 7% :85.5(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Lot Number : Lot Number : Remarks :GMH operator Remarks 1 :B Mar 2000 Remarks 2 : Mean :18.189390(µm) Mean :9.17294(µm) Yariance :450.924561 Variance :450.924561 Variance :48.005122 :5.0 :6.971737(µm) Mode :9.452181(µm) Mode :10.246674(µm) :Geo_Mean :7.535396(µm) Geo_Mean :11.246674(µm) Geo_Mean :7.535396(µm) :Geo_Mean Ibb :200003080912097 ID# :200003080924098 :Girculation Speed :6 Circulation Speed :G UItra sonic<:OFF			
Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Lot Number :1.35-0.10i Internal :WM183Compos1,2,3 Source : Lot Number : Lot Number : Internal Premarks : SMd operator Remarks : RMd operator Remarks 1 : 18.189390(µm) Mean : 9.917294(µm) Variance : 4.8005122 S.D. : 2.1234983(µm) S.D. : 6.97137(µm) Mode : 9.917294(µm) Meae : 10.255296(µm) IE Filename :: S.D. : : 2.1234983(µm) S.D. : :			
Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Jource : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water + usonic Remarks :SMH operator Remarks :SMH operator Remarks :SMH operator Remarks :SMar 2000 Remarks :SMar 2000 Remarks 2 : Mean :18.189390(µm) Mean :9.917294(µm) Yariance :48.605122 S.D. :21.234983(µm) S.D. :6.971737(µm) Mode :0.90105-6 SV 30 min ID# :200003080912097 ID# :200003080924098 :0.108 dis2(µm) :0.128 dis2(µm) Calc. Level :30 Calc. Level :30 :20000308092408 :0.108 dis2(µm) Calc. Level :30 Calc. Level :30 :1.24674(µm) Geo. Mean :7.535396(µm) ID# :200003080912097 ID# :200003080924089 :0.108 dis2(µm)			• ()
R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Lot Number : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water + usonic Remarks :: SMH operator Remarks :: GMH operator Remarks 2 : Mean :: 0.917294(µm) Variance :48.005122 S.D. :: 0.637137(µm) Mode :: 0.917294(µm) Mean :: 0.90105-65 V3 0 min ID# :: :: 0.00105-65 V15 min Filename :: :: 0.00105-65 V3 0 min ID# ::			
Naterial WM183Compos1,2,3 Material VM183Compos1,2,3 Source : Source : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water + usonic Remarks : 8 Mar 2000 Remarks :SMH Operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Wean :18.189390(µm) S.D. :6.971737(µm) Mode :9.452181(µm) Geo. Mean :7.535396(µm) Mode :0.00105-65 V15 fmin Filename :000105-65 V3 30 min ID# :200003080912097 ID# :200003080924098 Circulation Speed :6 Circulation Speed :6 Uthra sonic :OFF Laser T% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard :0 Calc. Level :30 Calc. Level :30 Remarks :3Mat2000 Remark			
Source Source Source Lot Number Dispersion Medium: :RAL demin water Dispersion Medium: :RAL demin water + usonic Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks :8 Mar 2000 Remarks 2 : Mean :9.917294(µm) Variance :450.924661 Yariance :46.06122 S.D. :21.234983(µm) S.D. :6.971737(µm) Mode :9.452181(µm) Mode :10.801532(µm) Mode :9.452181(µm) Mode :10.8053296(µm) Filename <td:000105-6 15="" min<="" sv="" td=""> Filename :000105-6 SV 30 min ID# :2000003080924098 Circulation Speed :6 Utra sonic OFF Laser T% :98.1(%) Laser T% :98.2(%) Form of Distribution:Standard Carculation Speed :6 Utra sonic OFF Lot Number : Lot Number :98.2(%) Form of Distribution:Standard : Carculation Speed :6 Utra sonic :0FF :</td:000105-6>			
Lot Number Lot Number Ibipersion Medium IRAL demin water		:vvivi183Compos1,2,3	
Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water + usonic Remarks :GMH operator Remarks :GMH operator Remarks Remarks 2 : Remarks 1 :B Mar 2000 Remarks 2 : Mean :18.189390(µm) Mean :9.917294(µm) Variance :46.05122 S.D. :21.234983(µm) S.D. :6.971737(µm) Mode :10.246674(µm) Geo. Mean :7.353396(µm) Geo. Mean :11.246674(µm) Geo. Mean :7.353396(µm) Geo. Mean :7.353396(µm) ID# :200003080924097 ID# :200003080924098 Circulation Speed :6 Ultra sonic :OFF Utra sonic :OFF Saser 7% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard Eorure : : RR.Index :1.35-0.10i RR.R.Index :1.35-0.10i RR.R.Index :1.35-0.10i Remarks :6 Mar 2000 Remarks :6 Mar 2000 Remarks :6 Mar 2000 Remarks :8 Mar 2000 <td></td> <td>:</td> <td></td>		:	
Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean :18.189390(µm) Mean :9.917294(µm) Variance :450.924561 Variance :48.065122 S.D. :21.234983(µm) Kean :10.801532(µm) Mode :9.4262181(µm) Mode :10.801532(µm) Geo. Mean :11.246674(µm) Geo. Mean :7.535396(µm) ID# <td:200003080912097< td=""> ID# :2000003665 SV 15 min ID# <td:200003080912097< td=""> ID# :200003080924098 Circulation Speed :6 Uttra sonic :OFF Laser T% :98.1(%) Laser T% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard :0 Calc. Level :30 IR.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Source : Lot Number : Lot Number : Dispersion Medium :RAL demin water</td:200003080912097<></td:200003080912097<>	1	: diuma u DAL danaia unatan	1
Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Wean :18.189390(µm) Mean :9.917294(µm) Mean :9.917294(µm) Variance :450.924561 Variance :48.605122 S.D. :2.1234983(µm) S.D. :6.971737(µm) Mode :1.9.45674(µm) Mode :10.01532(µm) Image: 1.11111111111111111111111111111111111	• •		
Remarks 2 Remarks 2 <t< td=""><td>-</td><td>•</td><td>· · · · · · · · · · · · · · · · · · ·</td></t<>	-	•	· · · · · · · · · · · · · · · · · · ·
Mean :18.189390(µm) Mean :9.917294(µm) Variance :48.005122 S.D. :21.234983(µm) S.D. :6.971737(µm) Mode :9.452181(µm) Mode :10.801532(µm) Geo_Mean :11.246674(µm) Geo_Mean :7.555396(µm) Filename :000105-6 SV 15 min Filename :00003060924098 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Laser T% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 Calc. Level :30 IR.R.Index :1.35-0.101 Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source : Lot Number : Lot Number : Dispersion Medium :RR.Index :1.35-0.101 Remarks : : : : : : : : : : : : : : : : : : :		:8 Mar 2000	· · · · · · · · · ·
Variance :450.924561 Variance :48.605122 S.D. :21.234983(µm) S.D. :6.971737(µm) Mode :19.452181(µm) Geo. Mean :7.353996(µm) Geo. Mean :11.246674(µm) Geo. Mean :7.353996(µm) Filename :000105-6 SV 15 min Filename :0000105-6 SV 30 min ID# :200003080924098 Circulation Speed :6 Ultra sonic :OFF Laser T% :98.1(%) Laser T% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material<:WM183Compos1,2,3		:	
S.D. :21.234983(µm) S.D. :6.971737(µm) Mode :9.452181(µm) Mode :10.801532(µm) Geo. Mean :11.246674(µm) Geo. Mean :7.535396(µm) Filename :000105-6 SV 15 min Filename :000105-6 SV 30 min ID# :200003080912097 ID# :200003080924098 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser 7% :98.1(%) Laser 7% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 Calc. Level :30 Source : Jource : Lot Number : Dispersion Medium :RAL demin water Remarks : GMH operator Remarks : GMH operator Remarks : MMean : 5.618893(µm) Variance : 7.270061 Variance : 2.30093080956100 Circulation Speed :6 Ultra sonic :OFF Ultra sonic<:OFF		u ,	
Mode :9.452181(µm) Mode :10.801532(µm) Geo. Mean :11.246674(µm) Geo. Mean :7.535396(µm) Filename :000105-6 SV 30 min illame :200003080912097 ID# :200003080912097 ID# :200003080924098 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Laser T% :98.1(%) Laser T% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard [Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i [Raterial :WM183Compos1,2,3 Source : Source : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 1 :8 Mar 2000 S.D. : 2.696305(µm) <td< td=""><td></td><td></td><td></td></td<>			
Geo. Mean :11.246674(um) Geo. Mean :7.555396(um) Filename :000105-6 SV 15 min Filename :00003080924098 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% :98.1(%) Laser T% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source : Source : Lot Number : Dispersion Medium :RAL demin water PRemarks : SMH operator Remarks : SMH operator Remarks : SMH operator Remarks : SMar 2000 Remarks : 3.150893(µm) Variance : 12.310927 S.D. : 2.696305(µm) S.D. : 3.508693(µm) Variance : 12.310927 S.D. : 2.696305(µm) S.D. : 3.508693(µm) Variance : 12.310927 S.D. : 2.696305(µm) <t< td=""><td>I^{S.D.}</td><td>:21.234983(µm)</td><td></td></t<>	I ^{S.D.}	:21.234983(µm)	
Filename :000105-6 SV 15 min Filename :000105-6 SV 30 min ID# :200003080912097 ID# :200003080924098 Circulation Speed : 6 Circulation Speed : 6 Ultra sonic :OFF Ultra sonic :OFF Ultra sonic :OFF Laser T% :98.1(%) Laser T% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard [Calc. Level :30 Calc. Level :30 Calc. Level :30 [Salerial :WM183Compos1,2,3 Source : Lot Number : [Dot Number : [Source Lot Number : Lot Number : [Dot Number : [Source : Remarks : :SMar 2000 Remarks ::SMar 2000 [Remarks 1 :S Mar 2000 Remarks 1 : :S Mar 2000 Remarks 2 : [Mean : 5.100872(µm) Mode : 4.610907(µm) Variance : 7.270061 Variance : 2.696305(µm) S.D. : 3.508693(µm) [Mode : 4.610907(µm) Filename :000105-6 SV 45 min Filen		: 9.452181(µm)	INIOAE :10.801532(µm)
ID# :200003080912097 ID# :200003080924098 Circulation Speed :6 Ultra sonic :OFF Laser T% :98.1(%) Laser T% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source : Lot Number : ID# source : Lot Number : Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.010872(µm) Mean : 5.618893(µm) Variance : 7.270061 Variance : 12.310927 S.D. : 2.696305(µm) S.D. : 3.608693(µm) Mode : 4.813475(µm) Geo. Mean : 4.610907(µm) Geo. Mean : 4.408837(µm) Geo. Mean : 4.610907(µm)			
Circulation Speed :6Circulation Speed :6Ultra sonic:OFFLaser T%:98.1(%)Form of Distribution:StandardForm of Distribution:StandardCalc. Level:30Calc. Level:30R.R.Index:1.35-0.10iMaterial:WM183Compos1,2,3Source:Lot Number:Lot Number:Lot Number:Lot Number:Lot Number:Remarks:GMH operatorRemarks:S Mar 2000Remarks 1:8 Mar 2000Remarks 2:Mean:5.100872(µm)Mode:4.813475(µm)Mode:5.484677(µm)Geo. Mean:4.408837(µm)Geo. Mean:4.610907(µm)Filename:000105-6 SV 45 minIID#:200003080941099ID#:200003080956100Circulation Speed :6Circulation Speed :6Ultra sonic:OFFLaser T%:98.2(%)Falser T%:97.8(%)Form of Distribution:StandardGalc. Level :30Calc. Level:30Calc. Level:30Calc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iR.R.Index:1.35-0.10iR.R.Index:1.35-0.10iR.R.Index:1.35-0.10iR.R.Index:1.35-0.10iR.R.Index:1.35-0.10iR.R.Index:1.35-0.10iR.R.Index:1.35-0.10iR.R.Index:1.3			· · · · · · · · · · · · · · · ·
Ultra sonic:OFFUltra sonic:OFFLaser T%:98.1(%)Laser T%:98.2(%)Form of Distribution:StandardForm of Distribution:Standard[Calc. LevelCalc. Level:30Calc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WW183Compos1,2,3Material:WW183Compos1,2,3Source:Lot Number:Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 2:Mean:5.100872(µm)Mean:5.618893(µm)Variance:7.270061Variance:12.310927S.D.:2.696305(µm)S.D.:3.508693(µm)Mode:4.413475(µm)Mode:5.484677(µm)Geo. Mean:4.408837(µm)Geo. Mean:4.610907(µm)Filename:000105-6 SV 45 minFilename:00003080956100Uitra sonic:OFFUltra sonic:OFFLaser T%:98.2(%)Laser T%:97.8(%)Form of Distribution:StandardForm of Distribution:Standard:Galc. LevelCalc. Level:30Calc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WM183Compos1,2,3Material:WM183Compos1,2,3Source:Lot Number:Lot Number:Dispersion Med	1		1 1
Laser T% : 98.1(%) Laser T% : 98.2(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 Calc. Level :30 Image: Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Lot Number : Lot Number : Lot Number : Lot Number : Lot Number : Remarks :GMH operator Remarks :GMH operator Remarks :GMH operator Remarks 2 : Remarks 2 : Remarks 2 : Image: Calce			
Form of Distribution:StandardForm of Distribution:StandardCalc. Level:30Calc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WW183Compos1,2,3Material:WW183Compos1,2,3Source:Source:Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterPemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: 5.100872(µm)Mean: 5.618893(µm)Variance: 7.270061Variance: 12.310927S.D.: 2.696305(µm)S.D.: 3.508693(µm)Mode: 4.408837(µm)Geo, Mean: 4.610907(µm)Geo, Mean: 4.408837(µm)Geo, Mean: 4.610907(µm)Filename:000105-6 SV 45 minFilename:000105-6 SV 60 minID#:20000308094109ID#:200003080956100Circulation Speed:6Circulation Speed:6Ultra sonic<:			
Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source : Source : Lot Number : Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks :SMH operator Remarks :GMH operator Remarks :SMH operator Remarks :SMA 2000 Remarks :BMar 2000 Remarks :SMar 2000 Remarks :SMar 2000 Variance :7.270061 Variance :12.310927 S.D. :2.696305(µm) Mode :5.484677(µm) Geo. Mean :4.40837(µm) Geo. Mean :4.610907(µm) Filename :000105-6 SV 45 min Filename :000105-6 SV 60 min ID# :200003080941099 ID# :200003080956100 Circulation Speed :6 Ultra sonic :OFF		. ,	. ,
R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source : Lot Number : Lot Number : Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 2 : Mean :5.100872(µm) Mean :5.618893(µm) Variance :7.270061 Variance :12.310927 S.D. :2.696305(µm) S.D. :3.508693(µm) Mode :4.813475(µm) Geo. Mean :4.610907(µm) Geo. Mean :4.408837(µm) Geo. Mean :4.610907(µm) Filename :000105-6 SV 45 min Filename :00003080956100 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% :98.2(%) Laser T% :97.8(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Le			
Material:WM183Compos1,2,3Material:WM183Compos1,2,3Source:Source:Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean:5.100872(µm)Mean:5.618893(µm)Variance:7.270061Variance:12.310927S.D.:2.696305(µm)S.D.:3.508693(µm)Mode:4.813475(µm)Geo. Mean:4.610907(µm)Geo. Mean:4.408837(µm)Geo. Mean:4.610907(µm)Filename:000105-6 SV 45 minFilename:000105-6 SV 60 minID#:200003080941099ID#:200003080956100Circulation Speed:6Circulation Speed:6Ultra sonic:OFFUltra sonic<::OFF	Calc. Level	:30	
SourceSourceSourceImage: Control of the control of th	R.R.Index		
Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: 5.100872(µm)Mean: 5.618893(µm)Variance: 7.270061Variance: 12.310927S.D.: 2.696305(µm)S.D.: 3.508693(µm)Mode: 4.813475(µm)Geo. Mean: 4.610907(µm)Geo. Mean: 4.408837(µm)Geo. Mean: 4.610907(µm)Filename:000105-6 SV 45 minFilename:000105-6 SV 60 minID#:200003080941099ID#:200003080956100Circulation Speed:6Circulation Speed:6Ultra sonic:OFFUltra sonic:OFFLaser T%: 98.2(%)Laser T%: 97.8(%)Form of Distribution:StandardForm of Distribution:StandardForm of Distribution:StandardCalc. Level:30R.R.Index:1.35-0.10iMaterial:WM183Compos1,2,3Material:WM183Compos1,2,3Source:Lot Number:Dispersion Medium:RAL demin waterRemarksRemarks:GMH operatorRemarks:GMH operatorRemarks:GMH operatorRemarks:GMH operatorRemarks:GMH operatorRemarks:GMH operatorRemarks:GMH operatorRemarks:GMH operatorR		:WM183Compos1,2,3	
Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.100872(µm) Mean : 5.618893(µm) Variance : 7.270061 Variance : 12.310927 S.D. : 2.696305(µm) S.D. : 3.508693(µm) Mode : 4.413475(µm) Mode : 5.484677(µm) Geo. Mean : 4.408837(µm) Geo. Mean : 4.610907(µm) Filename :000105-6 SV 45 min Filename :0000105-6 SV 60 min ID# :200003080941099 ID# :200003080956100 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic<:OFF		:	Source :
Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : IRemarks 2 : Mean : 5.100872(µm) Mean : 5.618893(µm) Variance : 7.270061 Variance : 12.310927 S.D. : 2.696305(µm) S.D. : 3.508693(µm) Mode : 4.413475(µm) Geo. Mean : 4.610907(µm) Geo. Mean : 4.408837(µm) Geo. Mean : 4.610907(µm) Filename :000105-6 SV 45 min Filename :000105-6 SV 60 min ID# :200003080941099 ID# :200003080956100 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Laser T% : 97.8(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index : 1.35-0.10i R.R.Index : 1.35-0.10i R.R.Index : 1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 <	Lot Number	:	
Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.100872(µm) Mean : 5.618893(µm) Variance : 7.270061 Variance : 12.310927 S.D. : 2.696305(µm) S.D. : 3.508693(µm) Mode : 4.813475(µm) Geo. Mean : 4.610907(µm) Geo. Mean : 4.408837(µm) Geo. Mean : 4.610907(µm) Filename :000105-6 SV 45 min Filename :000105-6 SV 60 min ID# :200003080941099 ID# :200003080956100 ID# Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% : 98.2(%) Laser T% : 97.8(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source :			
Remarks 2 : Remarks 2 : Mean : 5.100872(µm) Mean : 5.618893(µm) Variance : 7.270061 Variance : 12.310927 S.D. : 2.696305(µm) S.D. : 3.508693(µm) Mode : 4.813475(µm) Mode : 5.484677(µm) Geo. Mean : 4.408837(µm) Geo. Mean : 4.610907(µm) Filename :000105-6 SV 45 min Filename :000105-6 SV 60 min I ID# :200003080941099 ID# :200003080956100 I Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% : 98.2(%) Laser T% : 97.8(%) Form of Distribution:Standard Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source : Lot Number : Dispersion Medium :RAL demin water Remarks : GMH operator Remarks <t< td=""><td>Remarks</td><td>:GMH operator</td><td>Remarks :GMH operator</td></t<>	Remarks	:GMH operator	Remarks :GMH operator
Mean : 5.100872(µm) Mean : 5.618893(µm) Variance : 7.270061 Variance : 12.310927 S.D. : 2.696305(µm) S.D. : 3.508693(µm) Mode : 4.813475(µm) Mode : 5.484677(µm) Geo. Mean : 4.408837(µm) Geo. Mean : 4.610907(µm) Filename :000105-6 SV 45 min Filename :000105-6 SV 60 min IID# ID# :200003080941099 ID# :200003080956100 ICirculation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% :97.8(%) Form of Distribution:Standard Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Source : Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8	Remarks 1	:8 Mar 2000	Remarks 1 :8 Mar 2000
Variance : 7.270061 Variance : 12.310927 S.D. : 2.696305(μm) S.D. : 3.508693(μm) Mode : 4.813475(μm) Mode : 5.484677(μm) Geo. Mean : 4.408837(μm) Geo. Mean : 4.610907(μm) Filename :000105-6 SV 45 min Filename :000105-6 SV 60 min ID# :200003080941099 ID# :200003080956100 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% : 98.2(%) Laser T% : 97.8(%) Form of Distribution:Standard Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks 1 <td< td=""><td>Remarks 2</td><td>:</td><td>• • • • •</td></td<>	Remarks 2	:	• • • • •
S.D. : 2.696305(μm) S.D. : 3.508693(μm) Mode : 4.813475(μm) Mode : 5.484677(μm) Geo. Mean : 4.408837(μm) Geo. Mean : 4.610907(μm) Filename :000105-6 SV 45 min Filename :000105-6 SV 60 min ID# :200003080941099 ID# :200003080956100 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% : 98.2(%) Laser T% : 97.8(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source : Lot Number : Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.219898(µm)			
Mode : 4.813475(µm) Mode : 5.484677(µm) Geo. Mean : 4.408837(µm) Geo. Mean : 4.610907(µm) Filename :000105-6 SV 45 min Filename :000105-6 SV 60 min ID# :200003080941099 ID# :200003080956100 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% : 98.2(%) Laser T% : 97.8(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.219898(µm) Mean : 5.221494(µm) Variance : 9.8			
Geo. Mean : 4.408837(µm) Geo. Mean : 4.610907(µm) Filename :000105-6 SV 45 min Filename :000105-6 SV 60 min ID# :200003080941099 ID# :200003080956100 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% : 98.2(%) Laser T% : 97.8(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 Mean : 5.219898(µm) Mean : 5.221494(µm) Variance Variance : 9.859966 Variance			
Filename :000105-6 SV 45 min Filename :000105-6 SV 60 min ID# :200003080941099 ID# :200003080956100 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% : 98.2(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source : Lot Number : Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.219898(µm) Mean : 5.221494(µm) Variance : 9.859966 Variance :1.266287 S.D. : 3.140058(µm) S.D. : 3.356529(µm) Mode : 4.809167(µm) Mode			
ID# :200003080941099 ID# :200003080956100 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Laser T% :98.2(%) Laser T% :97.8(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source : Source : Source : Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks : GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Remarks 2 : Mean : 5.219898(µm) Variance :9.859966 Variance : 11.266287 S.D. : 3.356529(µm) Mode :4.809167(µm) Mode : 4.797433(µm)	Geo. Mean	<u>: 4.408837(µm)</u>	<u>Geo. Mean: 4.610907(μm)</u>
Circulation Speed:6Circulation Speed:6Ultra sonic:OFFUltra sonic:OFFLaser T%: 98.2(%)Laser T%: 97.8(%)Form of Distribution:StandardForm of Distribution:StandardCalc. LevelCalc. Level:30Calc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WM183Compos1,2,3Material:WM183Compos1,2,3Source:Lot Number:Lot Number:Lot Number:Remarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: 5.219898(µm)Mean: 5.221494(µm)Variance: 9.859966Variance: 1.266287S.D.: 3.140058(µm)S.D.: 3.356529(µm)Mode: 4.809167(µm)Mode: 4.797433(µm)	Filename	:000105-6 SV 45 min	
Ultra sonic:OFFUltra sonic:OFFLaser T%: 98.2(%)Laser T%: 97.8(%)Form of Distribution:StandardForm of Distribution:StandardCalc. Level:30Calc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WM183Compos1,2,3Material:WM183Compos1,2,3Source:Source:Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: 5.219898(µm)Mean: 5.221494(µm)Variance: 9.859966Variance: 1.266287S.D.: 3.140058(µm)S.D.: 3.356529(µm)Mode: 4.809167(µm)Mode: 4.797433(µm)	ID#	:200003080941099	ID# :200003080956100
Laser T%: 98.2(%)Laser T%: 97.8(%)Form of Distribution:StandardForm of Distribution:StandardCalc. Level:30Calc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WM183Compos1,2,3Material:WM183Compos1,2,3Source:Source:Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 2:Mean: 5.219898(µm)Mean: 5.221494(µm)Variance: 9.859966Variance:11.266287S.D.: 3.140058(µm)S.D.: 3.356529(µm)Mode: 4.809167(µm)Mode: 4.797433(µm)		eed :6	Circulation Speed :6
Form of Distribution:StandardForm of Distribution:StandardCalc. Level:30Calc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WM183Compos1,2,3Material:WM183Compos1,2,3Source:Source:Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: 5.219898(µm)Mean: 5.221494(µm)Variance: 9.859966Variance:11.266287S.D.: 3.140058(µm)S.D.: 3.356529(µm)Mode: 4.809167(µm)Mode: 4.797433(µm)	Ultra sonic	:OFF	Ultra sonic :OFF
Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source : Source : Lot Number : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.219898(µm) Mean : 5.221494(µm) Variance : 9.859966 Variance : 1.266287 S.D. : 3.140058(µm) S.D. : 3.356529(µm) Mode : 4.809167(µm) Mode : 4.797433(µm)	Laser T%	: 98.2(%)	Laser T% : 97.8(%)
R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos1,2,3 Material :WM183Compos1,2,3 Source : Source : Lot Number : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.219898(µm) Mean : 5.221494(µm) Variance : 9.859966 Variance : 11.266287 S.D. : 3.140058(µm) S.D. : 3.356529(µm) Mode : 4.809167(µm) Mode : 4.797433(µm)	Form of Distrib	oution:Standard	Form of Distribution:Standard
Material:WM183Compos1,2,3Material:WM183Compos1,2,3Source:Source:Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: 5.219898(µm)Mean: 5.221494(µm)Variance: 9.859966Variance: 11.266287S.D.: 3.140058(µm)S.D.: 3.356529(µm)Mode: 4.809167(µm)Mode: 4.797433(µm)	Calc. Level	:30	Calc. Level :30
SourceSourceLot NumberLot NumberDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 2.Mean:5.219898(µm)Variance:9.859966S.D.:3.140058(µm)Mode:4.809167(µm)Mode:4.809167(µm)	R.R.Index	:1.35-0.10i	R.R.Index :1.35-0.10i
Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: 5.219898(µm)Mean: 5.221494(µm)Variance: 9.859966Variance:11.266287S.D.: 3.140058(µm)S.D.: 3.356529(µm)Mode: 4.809167(µm)Mode: 4.797433(µm)	Material	:WM183Compos1,2,3	Material :WM183Compos1,2,3
Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: 5.219898(µm)Mean: 5.221494(µm)Variance: 9.859966Variance:11.266287S.D.: 3.140058(µm)S.D.: 3.356529(µm)Mode: 4.809167(µm)Mode: 4.797433(µm)	Source	:	Source :
Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.219898(µm) Mean : 5.221494(µm) Variance : 9.859966 Variance : 11.266287 S.D. : 3.140058(µm) S.D. : 3.356529(µm) Mode : 4.809167(µm) Mode : 4.797433(µm)	Lot Number	:	Lot Number :
Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.219898(µm) Mean : 5.221494(µm) Variance : 9.859966 Variance : 11.266287 S.D. : 3.140058(µm) S.D. : 3.356529(µm) Mode : 4.809167(µm) Mode : 4.797433(µm)	Dispersion Me	dium :RAL demin water	•
Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.219898(μm) Mean : 5.221494(μm) Variance : 9.859966 Variance :11.266287 S.D. : 3.140058(μm) S.D. : 3.356529(μm) Mode : 4.809167(μm) Mode : 4.797433(μm)	1 ·		
Remarks 2 : Remarks 2 : Mean : 5.219898(μm) Mean : 5.221494(μm) Variance : 9.859966 Variance :11.266287 S.D. : 3.140058(μm) S.D. : 3.356529(μm) Mode : 4.809167(μm) Mode : 4.797433(μm)	Remarks 1	•	
Mean : 5.219898(μm) Mean : 5.221494(μm) Variance : 9.859966 Variance :11.266287 S.D. : 3.140058(μm) S.D. : 3.356529(μm) Mode : 4.809167(μm) Mode : 4.797433(μm)		:	
Variance : 9.859966 Variance :11.266287 S.D. : 3.140058(μm) S.D. : 3.356529(μm) Mode : 4.809167(μm) Mode : 4.797433(μm)	Mean	: 5.219898(µm)	· ·
S.D.: 3.140058(μm)S.D.: 3.356529(μm)Mode: 4.809167(μm)Mode: 4.797433(μm)	Variance		
Mode : 4.809167(µm) Mode : 4.797433(µm)	-		
			· · · · · · · · · · · · · · · · · · ·



Non-Sonicated WM183 Composite B Settling Rate PSD's vs. Time 8 Mar 2000

	Diameter			Freque	ency (%)		
Time [min]	[µm]	0	1	15	30	45	60
	0.115	0	0	0	0	0	0
	0.113	0	0	0	0	0	0
	0.15	0	0	0	0	0	0
	0.172	0	0	0	0	0	0
	0.197	0	0	0	0	0	0
	0.226	0	0	Ő	0	0	0
	0.259	0	0	0	0	0	0
	0.296	0	0	0	0	0	0
	0.339	0	0	0	0	0	0
	0.389	0	0	0	0	0	0
	0.445	0	0	0	0	0	0
	0.51	0	0	0	0	0	0
	0.584	0	0	0	0	0	0
	0.669	0	0	0.17	0.156	0.136	0.166
	0.766 0.877	0.101	0.104 0.159	0.304	0.317	0.294	0.332 0.618
	1.005	0.157 0.227	0.159	0.511 0.768	0.589 0.95	0.579 0.984	1.013
	1.151	0.227	0.312	1.063	1.374	1.479	1.499
	1.318	0.41	0.407	1.38	1.828	2.017	2.036
	1.51	0.524	0.516	1.757	2.368	2.656	2.679
	1.729	0.639	0.627	2.061	2.763	3.079	3.147
	1.981	0.757	0.742	2.353	3.147	3.472	3.583
	2.269	0.878	0.859	2.645	3.561	3.9	4.026
	2.599	1.035	1.018	3.015	4.142	4.494	4.591
	2.976	1.215	1.2	3.422	4.77	5.115	5.202
	3.409	1.484	1.479	3.982	5.681	6.042	6.038
	3.905	1.796	1.808	4.518	6.551	6.911	6.774
	4.472	2.143	2.183	5	7.329	7.689	7.364
	5.122 5.867	2.519 2.881	2.597 2.998	5.408 5.683	7.919 7.994	8.251 8.19	7.731 7.591
	6.72	3.259	2.990 3.418	5.958	7.984	8.017	7.395
	7.697	3.607	3.804	6.139	7.591	7.411	6.89
	8.816	3.825	4.034	6.12	6.371	5.918	5.755
	10.097	4.054	4.277	6.07	5.31	4.702	4.787
	11.565	4.2	4.421	5.861	4.103	3.432	3.728
	13.246	4.264	4.468	5.485	2.925	2.295	2.708
	15.172	4.261	4.435	4.945	1.923	1.408	1.831
	17.377	4.21	4.347	4.264	1.167	0.796	1.153
	19.904	4.131	4.228	3.487	0.659	0.42	0.68
	22.797	4.046	4.1	2.682	0.35	0.21	0.379
	26.111	3.968	3.981	1.929	0.178	0.102	0.202 0.105
	29.907 34.255	3.904 3.855	3.878 3.792	1.296 0.814	0 0	0 0	0.105
	39.234	3.811	3.712	0.483	0	0	0
	44.938	3.754	3.624	0.274	0	0	0
	51.471	3.665	3.507	0.151	0	0	0
	58.953	3.52	3.34	0	0	0	0
	67.523	3.304	3.109	0	0	0	0
	77.339	3.011	2.812	0	0	0	0
	88.583	2.651	2.46	0	0	0	0
	101.46	2.25	2.077	0	0	0	0
	116.21	1.84	1.692	0	0	0	0
	133.103 152.453	1.452 1.114	1.335	0 0	0 0	0 0	0 0
	152.455	0.619	1.025 0.57	0	0	0	0
	200	0.344	0.316	0	0	0	0
	229.075	0.044	0.510	0	0	0	0
	262.376	0	0	0	0	0	0
	300.518	0	0	0	0	0	0
	344.206	0	0	0	0	0	0
	394.244	0	0	0	0	0	0
	451.556	0	0	0	0	0	0

ID# :200003081352107 ID# :200003081243102 Circulation Speed : 6 Circulation Speed : 6 Circulation Speed : 6 Hars onic :0:02 Ultra sonic :0:FF Form of Distribution:Standard Form of Distribution:Standard Calc. Level : 30 R.R.Index : 1:350-10i R.R.Index : 1:350-10i Material ::WM183Compos4,5,6,7 Source : Source : Lot Number : Lot Number : Lot Number : Lot Number : R.R.Index : 1:350-10i Remarks 1: :8 Mar 2000 Remarks 2: Remarks 2: Mean : :312.503231(um) Mean ::30.018270(um) Yariance : :125.904663 Variance ::06056641 SD : :32.56494(um) SD ::32.681137(um) Mode : :12.399057(um) Mode ::2.379803(um) Geo Mean : :17.89219(um) Geo: Mean ::17.89219(um) Groutation Speed : Outra sonic ::0FF Ultra sonic ::0FF List :97.8(%) Laser T% ::98.2(%) Calc. Level : 30 :0G :200030301314104 Calc. Level : 30 Calc. Level ::30	Filename :000107-5 SV time zero	Filename :000107-5 SV 1 min				
Circulation Speed : 6 Circulation Speed : 6 Litrs sonic : 99.7(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.101 R.R.Index :1.35-0.101 R.R.Index :1.35-0.101 R.R.Index :1.35-0.101 Material :WM183Compos4.5.6.7 Source : Lot Number : Dispersion Medium :RAL demin water Remarks : Remarks 1 Remarks 2 : Remarks 3 : Remarks 2 S.D. :33.545504(µm) S.D. Yariance :172.899643(µm) Variance :172.899643(µm) Geo_Mean :172.899643(µm) Variance :1068.056641 S.D. :33.545504(µm) S.D. :33.545504(µm) Geo_Mean :177.892(1µm) Felname :000107.5 SV 30 min ID# :200030301104 <td></td> <td></td>						
ultra sonic :00:02 Ultra sonic :0FF Laser T% :89.4(%) Laser T% :89.7(%) Form of Distribution:Standard Form of Distribution:Standard Image: Standard Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.101 R.R.Index :1.35-0.101 Material :WM183Compos4.5.6.7 Material :WM183Compos4.5.6.7 Source : Lot Number : Dispersion Medium :RAL demin water Remarks :Sumode :Sumode :Sumode : :Sumode Remarks 1 :8 Mar 2000 Remarks 2 : :Sumode :Sumode : Yeriance :125.904663 Variance :106.8056641 : : S.D. :33.545404(um) So. :Sumodos081341404 : : Grego Mean :17.159219(um) Goo. Mean : : : Ultra sonic :OFF Ultra sonic :OFF : : : : Goo. Mean<						
Laser 7% :89.7(%) Laser 7% :89.7(%) Form of Distribution:Standard Form of Distribution:Standard Caic. Level :30 Caic. Level :30 Caic. Level :30 R.R.Index :1.35-0.101 R.R.Index :1.35-0.101 Material :WM183Compos4,5,6,7 Source : Job Spersion Medium :RAL demin water Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Dispersion Medium :RAM 2000 Remarks 1 :R Mar 2000 Remarks :S Mar 2000 Remarks 1 :R Mar 2000 Remarks 1 :R Mar 2000 Remarks 2: : Remarks 1 :R Mar 2000 Remarks 1 :R Mar 2000 Yariance :1125.904663 Variance :108.056641 :: :: S.D. :33.554504(µm) S.D. :23.681137(µm) Mode :: :: Flename ::00107.5 SV 30 min Flename<::::::::::::::::::::::::::::::::::::						
Form of Distribution:Standard Form of Distribution:Standard I Calc. Level 30 Calc. Level 30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Source : Lot Number : I Lot Number : Lot Number : I Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water I Remarks : 38 Mar 2000 Remarks 1 :8 Mar 2000 I Remarks : 1125.904663 Variance ::068.056641 S.D. ::33.545404(µm) S.D. :32.681137(µm) I Mode ::12.39007(µm) ID# ::200003081314104 I::149219(µm) I Circulation Speed :6 Uitra sonic :OFF IUtra sonic :OFF Laser T% :97.8(%) Laser T% :98.2(%) I I Calc. Level :30 RR.Index :1.35-0.						
Calc. Level 30 Calc. Level :30 I R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Source : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks : SMar 2000 Remarks :SMar 2000 Remarks :SMar 2000 Remarks 2 : Remarks :SMar 2000 Remarks :SMar 2000 Variance :1125.904663 Variance :1080.056641 :SD :S354564(Um) SD :33.545640(Um) SD :32.681137(Um) Mode :2.200003081258103 :D# ::::::::::::::::::::::::::::::::::::						
R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Source : Lot Number : Lot Number : Lot Number : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks :GMH operator Remarks 2 : Remarks :: Remarks 2 : Mean :31.263231(µm) Mean :30.018270(µm) Mode :12.5.9.04663 Variance :106.056641 S.D. :33.545604(µm) Goc. Mean :17.189219(µm) Mode :12.399063(µm) Goc. Mean :17.189219(µm) Geo. Mean :17.189219(µm) Goc. Mean :17.189219(µm) ID# :200003081256103 ID# :200003081314104 :17.189219(µm) ID# :200003081256103 ID# :200003081341104 :17.189219(µm) ID# :200003081256103 ID# :200003081341104 :17.189219(µm) Calc. Level <td></td> <td></td>						
Material WM183Compos4,5,6,7 Material WM183Compos4,5,6,7 Source : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL Remarks :SMH operator Remarks : :SMH operator Remarks 1 :8 Mar 2000 Remarks : :SMH operator Remarks 2 : Remarks : :SMH operator Remarks 3 :3.545404(m) SD. :33.545404(m) SD. :33.545404(m) SD. :33.545404(m) SD. :32.681137(m) Mode Mode :12.389057(µm) Mode :12.379803(µm) Mode :12.379803(µm) CGo. Mean :17.482(19/10m) ID# :200003081258103 ID# :200003081258103 ID# ID# :200003081258103 ID# :200003081214104 Corr Circulation Speed :6 Ultra sonic :OFF Laser T% :98.2(%) Carc. Level :30 Carc. Level :30 RR.Ridex :1.35-0.10i Remarks :GMH operator						
Source Source Source Interview Source Source Interview Source						
Lot Number : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks : GMH operator Remarks : GMH operator Remarks 1 : Mar 2000 Remarks 1 : Mar 2000 Remarks 2 : Remarks 2 : Remarks 2 : Mean :31.263231(µm) Mean :30.018270(µm) Variance :1125.904663 S.D. :33.354504(µm) S.D. :32.681137(µm) Mode :12.379803(µm) Image 2000303(µm) Image 2000 Image 2000 Image 2000303(µm)						
Dispersion Medium RAL demin water Dispersion Medium RAL demin water Remarks :SMH operator Remarks 1 Remarks 1 SMar 2000 Remarks 2 : Remarks 2 : Mean :31.263231(µm) Mean :30.018270(µm) Variance :102.3906463 Variance :1066.056641 S.D. :33.564504(µm) Mode :12.390967(µm) Mode :12.390967(µm) Geo. Mean :17.189219(µm) Filename :0000107.5 SV 15 min Filename :0000107.5 SV 30 min ID# :20000308128103 ID# :200003081314104 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% :98.2(%) Laser T% :98.2(%) R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Source : Lot Number : Dispersion Medium :RAL demin water <td< td=""><td></td><td></td></td<>						
Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks :8 Mar 2000 Remarks :3 Mean :30.018270(µm) Mean :30.018270(µm) Variance :1125.904663 Variance :068.056641 S.D. :33.54504(µm) Mode :12.379803(µm) Mode :12.398057(µm) Mode :12.379803(µm) Geo. Mean :17.89634(µm) Geo. Mean :17.18921(µm) J Filename :000107-5 SV 15 min Filename :000107-5 SV 30 min I ID# :200003081258103 ID# :98.2(%) I Form of Distribution:Standard Form of Distribution:Standard ICrculation Speed :6 Utra sonic :OFF Utra sonic :OFF I Raser T% : :98.2(%) Form of Distribution:Standard I :0 Calc. Level :30 R.R.Index :1.35-0.10 R.R.Index :1.35-0		1				
Remarks 1 :B Mar 2000 Remarks 1 :B Mar 2000 Remarks 2 : Remarks 2 : Mean :31.263231(µm) Mean :30.018270(µm) Variance :1125.904663 Variance :1068.056641 S.D. :33.564504(µm) Mode :12.379603(µm) Geo_Mean :17.189219(µm) Geo_Mean :17.199219(µm) Jibre :200003081258103 ID# :200003081314104 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser 7% :97.8(%) Laser 7% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard Image: Source Calc. Level :30 Calc. Level :30 Source : Source : Convert Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 1	· ·	• • •				
Remarks 2 Remarks 1 Remarks 2 Remarks 1 Remarks 2 Remarks 1 Remarks 2 Remarks 2 <t< td=""><td>• • • • • • • • • • • • • • • • • • •</td><td></td></t<>	• • • • • • • • • • • • • • • • • • •					
Mean :31.253231(µm) Mean :30.018270(µm) Variance :1125.904663 Variance :1068.056641 S.D. :33.554504(µm) S.D. :32.681137(µm) Mode :12.399057(µm) Mode :12.399803(µm) Geo. Mean :17.899543(µm) Geo. Mean :17.189219(µm) Filename :000107-5 SV 15 min Filename :000107-5 SV 30 min ID# :200003081258103 ID# :200003081314104 Circulation Speed :6 Ultra sonic :OFF Laser T% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard Form of Distribution:Standard Source Calc. Level :30 Calc. Level :30 Naterial :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Naterial :WM183Compos4,5,6,7 Naterial :WM183Compos4,5,6,7 Surce : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water						
Variance :1125.904663 Variance :1068.056641 S.D. :33.554504(µm) S.D. :32.681137(µm) Mode :12.389057(µm) Mode :12.379803(µm) Geo.Mean :17.189219(µm) I Filename :000107-5 SV 30 min ID# ID# :200003081258103 ID# :200003081314104 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% :97.8(%) Laser T% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Source : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 S.D. :7.079829(µm) Mode :5.623656(µm) <t< td=""><td></td><td></td></t<>						
S.D. :33:554504(µm) S.D. :32:681137(µm) Mode :12:339037(µm) Geo_Mean :17:39213(µm) Geo_Mean :17:39243(µm) Geo_Mean :17:39213(µm) Filename :000107-5 SV 15 min Filename :000107-5 SV 30 min ID# ID# :200003061258103 ID# :200003061314104 ID# Circulation Speed :6 Ultra sonic :OFF Laser T% :97.8(%) Laser T% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard Geor Mean :80.7(%) R.R.Index :1.35-0.10i IR.R.Index :1.35-0.10i Material :WM183Compos4,5.6.7 Source : Lot Number : Lot Number : Ioi Number Edwarks :GMH operator Remarks :GMH operator Remarks :GMH operator Remarks :3 Mar 2000 Remarks :3 637858 S.D. :3.623668(µm) Variance :1.3 637858 S.D. :3.623668(µm) Variance :1.3 637858 S.D. :3.623467(µm) Mode :5.7.0920(µm) S.D. :3.82947(µm)	Mean :31.263231(µm)					
Node :12.389057(µm) Mode :17.189219(µm) Geo. Mean :17.189219(µm) Geo. Mean :17.189219(µm) Filename :000107-5 SV 30 min Filename :000107-5 SV 30 min ID# :200003081258103 ID# :200003081314104 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser 7% :97.8(%) Laser 7% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Source : Lot Number : Source : Lot Number : Lot Number : NM183Compos4,5,6,7 Remarks : GMH operator Remarks :GMH operator Remarks :GMH operator Remarks 1 : 8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 1 :S Mar 2000 Remarks 2						
Geo. Mean :17.899643(µm) Geo. Mean :17.189219(µm) Filename :000107-5 SV 15 min Filename :000107-5 SV 30 min ID# :200003081314104 ID# :200003081314104 Circulation Speed :6 Circulation Speed :6 ID# Ultra sonic :OFF Ultra sonic :OFF Laser T% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.10i IR.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Source : Lot Number : Lot Number : Dispersion Medium :RAL demin water Remarks : SMH operator Remarks :GMH operator Remarks 2 : Remarks 2 : Mean : 5.623658(µm) Mode : 5.623658(µm) Variance : 5.04374 Variance : 3.637858 S.D. : 7.079829(µm) S.D						
Filename :000107-5 SV 15 min Filename :000107-5 SV 30 min ID# :200003081258103 ID# :20000308134104 Circulation Speed :6 Ultra sonic :OFF Laser T% :97.8(%) Laser T% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 Calc. Level :30 Image: Source : Lot Number : Source : Lot Number : Lot Number : Iospersion Medium :RAL demin water Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks : SMH operator Remarks :SMH operator Remarks 2 : Mean : 6.623658(µm) Variance :50.123974 Variance :1.3637858 S.D. :3.682947(µm) Mode :5.48497(µm) Mode :5.48497(µm) Mode :5.48497(µm) Mode :5.48497(µm) Mode :5.48497(µm) Mode :5.48497(µm) Mode :5.48497(µm) </td <td>•</td> <td></td>	•					
ID# :200003081258103 ID# :200003081314104 Circulation Speed :6 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Laser T% :98.2(%) Form of Distribution:Standard Form of Distribution:Standard Interview inter						
Circulation Speed :6Circulation Speed :6Ultra sonic:OFFLaser T%:97.8(%)Laser T%:97.8(%)Calc. Level:30Calc. Level:30R.R.Index:1.35-0.10iMaterial:WM183Compos4,5,6,7Source:Lot Number:Lot Number:Lot Number:Lot Number:Lot Number:Lot Number:Lot Number:Lot Number:Source:Lot Number:Source:Lot Number:Naterial:8/M12000Remarks:6MH operatorRemarks 1:8 Mar 2000Remarks 2:Mean:8.716022(µm)Mode:5.623658(µm)Variance:10.367858S.D.:7.079829(µm)Mode:5.623658(µm)Mode:6.319472(µm)Geo. Mean:6.319472(µm)Geo. Mean:6.319472(µm) <tr< td=""><td></td><td>· · · · · · · · · · · · · · · · · · ·</td></tr<>		· · · · · · · · · · · · · · · · · · ·				
Ultra sonic:OFFUltra sonic:OFFLaser 7%:97.8(%)Laser 7%:98.2(%)Form of Distribution:StandardCalc. Level:30Calc. Level:30Calc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Lot Number:Lot Number:Lot Number:Image: Source:Lot Number:Number:Number:Image: Source:Source:Number:Number:Image: Source:Number:Number:Number:Number:Number:Number:Number:Number:Number:Number:Number:Number:Number:Number:Number:Number::Number::Remarks 1:::::Mean:::						
Laser T%: 97.8(%)Laser T%: 98.2(%)Form of Distribution:StandardForm of Distribution:StandardCalc. Level:30Calc. Level:30Calc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Lot Number:Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean:8.716022(µm)Mean:5.623658(µm)Variance:50.123974Variance:1.3637858S.D.:7.079829(µm)S.D.:3.692947(µm)Mode:7.204556(µm)Mode:5.484972(µm)Geo. Mean:6.319472(µm)Geo. Mean:4.527143(µm)Filename:000107-5 SV 45 minFilename:000107-5 SV 60 minID#:200003081329105ID#:200003081344106Circulation Speed:6Circulation Speed:6Ultra sonic:OFFUltra sonic:OFFLaser T%:98.0(%)Form of Distribution:StandardCalc. LevelCalc. Level:30Calc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Lot Number:Lot Number <t< td=""><td>•</td><td></td></t<>	•					
Form of Distribution:StandardForm of Distribution:StandardCalc. Level:30Calc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Lot Number:Lot Number:Lot Number:Ibspersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 2Remarks 2:IRemarks 2:IRemarks 2Mean: 8.716022(µm)Mean: 5.623658(µm)Variance:50.123974Variance: 13.637858S.D.: 7.079829(µm)S.D.: 3.692947(µm)Mode: 7.024556(µm)Mode: 5.484972(µm)Geo. Mean: 6.319472(µm)Geo. Mean: 4.522143(µm)Filename:000107-5 SV 45 minFilename:000107-5 SV 60 minID#:200003081329105ID#:200003081344106Circulation Speed:6Ultra sonicOFFLaser T%: 98.5(%)Laser T%: 98.0(%)Form of Distribution:StandardForm of Distribution:StandardCalc. LevelCalc. Level: 30: 2.52161(µm)iterialMaterial:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Lot Number:Lot Number:Lot Number:Dispersion Medium:RAL demin waterRemarks:GMH operator<						
Calc. Level :30 Calc. Level :30 R.R. Index :1.35-0.10i R.R. Index :1.35-0.10i Material :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Source : Lot Number : Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean :8,716022(µm) Mean :5,623658(µm) Variance :50,123974 Variance :13,637858 S.D. :7,079829(µm) S.D. :3,692947(µm) Mode :7,204556(µm) Mode :4,527143(µm) Geo. Mean :6,319472(µm) Geo. Mean :4,5227143(µm) Filename :000107-5 SV 45 min Filename :000107-5 SV 45 min If it a sonic :OFF Ultra sonic :OFF Laser T% :98.0(%) Laser T% :98.0(%) Form of Distribution:Standard Calc. Level :30 C						
R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Source:Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 2:Mean: 8.716022(µm)Mean: 5.623658(µm)Variance:5.0.123974Variance:13.637858S.D.: 7.079829(µm)S.D.: 3.637858S.D.: 7.079829(µm)Mode: 5.484972(µm)Geo. Mean: 6.319472(µm)Geo. Mean: 4.527143(µm)Filename:000107-5 SV 45 minID#:200003081329105ID#:200003081329105ID#:20001374Ultra sonic: OFFUltra sonic: OFFLaser T%: 98.5(%)Laser T%: 98.0(%)Form of Distribution:StandardCalc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Lot Number:Dispersion Medium:RAL demin waterDispersion MediumRemarks 1:8 Mar 2000Remarks 2:Material:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Lot Number:Lot NumberDispersion Medium:RAL demin water <td></td> <td>•</td>		•				
Material:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Source:Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:IRemarks 2:Mean: 8.716022(µm)Mean: 5.623658(µm)Variance: 5.0123974Variance: 13.637858S.D.: 7.079829(µm)S.D.: 3.692947(µm)Mode: 7.204556(µm)Mode: 5.484972(µm)Geo. Mean: 6.319472(µm)Geo. Mean: 4.227143(µm)Filename:000107-5 SV 45 minFilename:000107-5 SV 60 minID#:200003081329105ID#:200003081341106Circulation Speed:6Circulation Speed:6Ultra sonic:OFFLaser T%: 98.0(%)Form of Distribution:StandardForm of Distribution:StandardForm of Distribution:StandardCalc. Level:30R.R.Index:1.35-0.10iMaterial:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Source:Lot Number:Dispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 1:8 Mar 2000Remar	Calc. Level :30	Calc. Level :30				
SourceSourceSourceLot Number:Lot NumberDispersion Medium:RAL demin waterDispersion MediumRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 2:Mean:8.716022(µm)Variance:50.123974Variance:13.637858S.D.:7.079829(µm)Mode:7.204556(µm)Mode:7.204556(µm)Mode:7.204556(µm)Mode:7.204556(µm)Mode:5.484972(µm)Geo. Mean:6.319472(µm)Filename:000107-5 SV 45 minID#:200003081329105ID#:200003081344106Circulation Speed:6Circulation Speed:6Ultra sonic:OFFLaser T%:98.5(%)Form of Distribution:StandardForm of Distribution:StandardCalc. Level:30R.R.Index:1.35-0.10iMaterial:WM183Compos4,5,6,7Source:Lot Number:Dispersion Medium<:RAL demin water		· · · · · · · · · · · · · · · · · · ·				
Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:IRemarks 2:Mean: 8.716022(µm)Mean: 5.623658(µm)Variance: 50.123974Variance: 13.637858S.D.: 7.079829(µm)S.D.: 3.692947(µm)Mode: 7.204556(µm)Mode: 5.484972(µm)Geo. Mean: 6.319472(µm)Geo. Mean: 4.527143(µm)Filename:000107-5 SV 45 minFilename:000107-5 SV 60 minID#:200003081329105ID#:200003081344106Circulation Speed:6Circulation Speed:6Ultra sonic:OFFUltra sonic:OFFLaser T%: 98.5(%)Laser T%: 98.0(%)Form of Distribution:StandardForm of Distribution:StandardCalc. LevelCalc. Level:30R.R.Index: 1.350-10iR.R.Index: 1.350-10iR.R.Index: 1.350-10iMaterial:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Lot Number:Iot Number:Dispersion Medium:RAL demin waterRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Mean: 5.252161(µm)Mean: 5.444707(µm)Variance:		Material :WM183Compos4,5,6,7				
Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: $5.623658(\mu m)$ Variance: 13.637858 S.D.: $7.079829(\mu m)$ Mode: $5.623658(\mu m)$ Mode: $7.204556(\mu m)$ Mode: $5.623658(\mu m)$ Mode: $7.204556(\mu m)$ Mode: $5.623678(\mu m)$ Mode: $7.204556(\mu m)$ Mode: $5.623678(\mu m)$ Geo. Mean: $6.319472(\mu m)$ Geo. Mean: $4.527143(\mu m)$ Filename:000107-5 SV 45 minFilename:000107-5 SV 60 minID#:200003081329105ID#:200003081344106Circulation Speed:6Circulation Speed:6Ultra sonic:OFFUltra sonic <td: off<="" td="">Laser T%: 98.0(%)Form of Distribution:StandardCalc. Level:30R.R.Index: 1.35-0.10iR.R.Index: 1.35-0.10iR.R.Index: 1.35-0.10iMaterial:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Lot Number:Dispersion Medium<:RAL demin water</td:>	Source :	Source :				
Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean :8.716022(µm) Mean :5.623658(µm) Variance :5.0123974 Variance :13.637858 S.D. :7.079829(µm) S.D. :3.692947(µm) Mode :7.204556(µm) Mode :5.484972(µm) Geo. Mean :6.319472(µm) Geo. Mean :4.527143(µm) Filename :000107-5 SV 45 min Filename :00003081344106 ID# :200003081329105 ID# :200003081344106 Circulation Speed :6 Ultra sonic :OFF Laser T% :98.5(%) Laser T% :98.0(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Source	Lot Number :	Lot Number :				
Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 8.716022(µm) Mean : 5.623658(µm) Variance :50.123974 Variance :13.637858 S.D. : 7.079829(µm) S.D. : 3.692947(µm) Mode : 7.204556(µm) Mode : 5.484972(µm) Geo. Mean : 6.319472(µm) Geo. Mean : 4.527143(µm) Filename :000107-5 SV 45 min Filename :000107-5 SV 60 min ID# :200003081329105 ID# :200003081344106 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% : 98.5(%) Laser T% :98.0(%) Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Source : Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator <td>•</td> <td></td>	•					
Remarks 2 : Remarks 2 : Mean : 8.716022(µm) Mean : 5.623658(µm) Variance :50.123974 Variance :13.637858 S.D. : 7.079829(µm) S.D. : 3.692947(µm) Mode : 7.204556(µm) Mode : 5.484972(µm) Geo. Mean _: 6.319472(µm) Geo. Mean : 4.527143(µm) Filename :000107-5 SV 45 min Filename :00003081329105 ID# D# :200003081329105 ID# :200003081344106 ID# Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% :98.5(%) Laser T% :98.0(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Source : Source : Lot Number : Iot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks 1	Remarks :GMH operator	1 · · · · ·				
Mean : 8.716022(µm) Mean : 5.623658(µm) Variance :50.123974 Variance :13.637858 S.D. :7.079829(µm) S.D. :3.692947(µm) Mode :7.204556(µm) Mode :5.484972(µm) Geo. Mean :6.319472(µm) Geo. Mean :4.527143(µm) Filename :000107-5 SV 45 min Filename :000107-5 SV 60 min ID# :200003081329105 ID# :200003081344106 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% : 98.5(%) Laser T% : 98.0(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Source : Lot Number : Lot Number Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000	Remarks 1 :8 Mar 2000	Remarks 1 :8 Mar 2000				
Variance :50.123974 Variance :13.637858 S.D. :7.079829(µm) S.D. :3.692947(µm) Mode :7.204556(µm) Mode :5.484972(µm) Geo. Mean :6.319472(µm) Geo. Mean :4.527143(µm) Filename :000107-5 SV 45 min Filename :000107-5 SV 60 min ID# :200003081329105 ID# :200003081344106 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% : 98.5(%) Laser T% : 98.0(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,56,7 Material :WM183Compos4,5,6,7 Source : Lot Number : ID Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 <t< td=""><td>Remarks 2 :</td><td>Remarks 2 :</td></t<>	Remarks 2 :	Remarks 2 :				
S.D. : 7.079829(µm) S.D. : 3.692947(µm) Mode : 7.204556(µm) Mode : 5.484972(µm) Geo. Mean : 6.319472(µm) Geo. Mean : 4.527143(µm) Filename :000107-5 SV 45 min Filename :000107-5 SV 60 min ID# :200003081329105 ID# :200003081344106 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% : 98.5(%) Laser T% : 98.0(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Source : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean :5.25						
Mode : 7.204556(µm) Mode : 5.484972(µm) Geo. Mean : 6.319472(µm) Geo. Mean : 4.527143(µm) Filename :000107-5 SV 45 min Filename :000107-5 SV 60 min ID# :200003081329105 ID# :200003081344106 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% : 98.5(%) Laser T% : 98.0(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Source : Ioot Number : Lot Number : Lot Number : Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Mean :5.252161(µm) <	Variance :50.123974	Variance :13.637858				
Geo. Mean : 6.319472(µm) Geo. Mean : 4.527143(µm) Filename :000107-5 SV 45 min Filename :000107-5 SV 60 min ID# :200003081329105 ID# :200003081344106 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% : 98.5(%) Laser T% : 98.0(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Source : Source : Lot Number : Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.252161(µm) Mean : 5.444707(µm) Variance :11.454658 Vari	S.D. : 7.079829(µm)	S.D. : 3.692947(µm)				
Filename :000107-5 SV 45 min Filename :000107-5 SV 60 min ID# :200003081329105 ID# :200003081344106 Circulation Speed :6 Circulation Speed :6 Ultra sonic :OFF Ultra sonic :OFF Laser T% : 98.5(%) Laser T% : 98.0(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Source : Lot Number : Lot Number : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.252161(µm) Mean : 5.444707(µm) Variance :1.454658 Variance	Mode : 7.204556(µm)	Mode : 5.484972(µm)				
ID# :200003081329105 ID# :200003081344106 Circulation Speed: 6 Circulation Speed: 6 Ultra sonic :OFF Ultra sonic :OFF Laser T% : 98.5(%) Laser T% : 98.0(%) Form of Distribution:Standard Form of Distribution:Standard Calc. Level :30 Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Source : Lot Number : Lot Number : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.252161(µm) Mean : 5.444707(µm) Variance :1.454658 Variance :14.334759 S.D. :3.384473(µm) S.D. :3.7861	Geo. Mean : 6.319472(µm)	<u>Geo. Mean : 4.527143(µm)</u>				
Circulation Speed: 6Circulation Speed: 6Ultra sonic:OFFLaser T%: 98.5(%)Form of Distribution:StandardForm of Distribution:StandardCalc. Level:30R.R.Index:1.35-0.10iMaterial:WM183Compos4,5,6,7Source:Lot Number:Dispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 2:Mean: 5.252161(µm)Variance:11.454658S.D.: 3.384473(µm)Mode: 4.805934(µm)Mode: 4.795689(µm)	Filename :000107-5 SV 45 min	Filename :000107-5 SV 60 min				
Ultra sonic:OFFUltra sonic:OFFLaser T%: 98.5(%)Laser T%: 98.0(%)Form of Distribution:StandardForm of Distribution:StandardCalc. Level:30Calc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Source:Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: 5.252161(µm)Mean: 5.444707(µm)Variance:11.454658Variance:14.334759S.D.: 3.384473(µm)S.D.: 3.786127(µm)Mode: 4.805934(µm)Mode: 4.795689(µm)	ID# :200003081329105	ID# :200003081344106				
Laser T% $: 98.5(\%)$ Laser T% $: 98.0(\%)$ Form of Distribution:StandardForm of Distribution:StandardCalc. Level:30Calc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Source:Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: 5.252161(µm)Mean: 5.444707(µm)Variance:11.454658Variance:14.334759S.D.: 3.384473(µm)S.D.: 3.786127(µm)Mode: 4.805934(µm)Mode: 4.795689(µm)	Circulation Speed :6					
Form of Distribution:StandardForm of Distribution:StandardCalc. Level:30Calc. Level:30R.R.Index:1.35-0.10iR.R.Index:1.35-0.10iMaterial:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Source:Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: 5.252161(µm)Mean: 5.444707(µm)Variance:11.454658Variance:14.334759S.D.: 3.384473(µm)S.D.: 3.786127(µm)Mode: 4.805934(µm)Mode: 4.795689(µm)	Ultra sonic :OFF	Ultra sonic :OFF				
Calc. Level :30 Calc. Level :30 R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Source : Source : Lot Number : Lot Number : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.252161(µm) Mean : 5.444707(µm) Variance :11.454658 Variance :14.334759 S.D. : 3.384473(µm) S.D. : 3.786127(µm) Mode : 4.805934(µm) Mode : 4.795689(µm)	Laser T% : 98.5(%)	Laser T% : 98.0(%)				
R.R.Index :1.35-0.10i R.R.Index :1.35-0.10i Material :WM183Compos4,5,6,7 Material :WM183Compos4,5,6,7 Source : Source : Lot Number : Source : Dispersion Medium :RAL demin water Dispersion Medium :RAL demin water Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.252161(µm) Mean : 5.444707(µm) Variance :11.454658 Variance :14.334759 S.D. : 3.384473(µm) S.D. : 3.786127(µm) Mode : 4.805934(µm) Mode : 4.795689(µm)	Form of Distribution:Standard	Form of Distribution:Standard				
Material:WM183Compos4,5,6,7Material:WM183Compos4,5,6,7Source:Source:Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: 5.252161(µm)Mean: 5.444707(µm)Variance:11.454658Variance:14.334759S.D.: 3.384473(µm)S.D.: 3.786127(µm)Mode: 4.805934(µm)Mode: 4.795689(µm)	Calc. Level :30	Calc. Level :30				
Source:Source:Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: 5.252161(µm)Mean: 5.444707(µm)Variance:11.454658Variance:14.334759S.D.: 3.384473(µm)S.D.: 3.786127(µm)Mode: 4.805934(µm)Mode: 4.795689(µm)	R.R.Index :1.35-0.10i	R.R.Index :1.35-0.10i				
Lot Number:Lot Number:Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: 5.252161(µm)Mean: 5.444707(µm)Variance:11.454658Variance:14.334759S.D.: 3.384473(µm)S.D.: 3.786127(µm)Mode: 4.805934(µm)Mode: 4.795689(µm)	Material :WM183Compos4,5,6,7	Material :WM183Compos4,5,6,7				
Dispersion Medium:RAL demin waterDispersion Medium:RAL demin waterRemarks:GMH operatorRemarks:GMH operatorRemarks 1:8 Mar 2000Remarks 1:8 Mar 2000Remarks 2:Remarks 2:Mean: 5.252161(µm)Mean: 5.444707(µm)Variance:11.454658Variance:14.334759S.D.: 3.384473(µm)S.D.: 3.786127(µm)Mode: 4.805934(µm)Mode: 4.795689(µm)	Source :	Source :				
Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.252161(µm) Mean : 5.444707(µm) Variance :11.454658 Variance :14.334759 S.D. : 3.384473(µm) S.D. : 3.786127(µm) Mode : 4.805934(µm) Mode : 4.795689(µm)	Lot Number :					
Remarks :GMH operator Remarks :GMH operator Remarks 1 :8 Mar 2000 Remarks 1 :8 Mar 2000 Remarks 2 : Remarks 2 : Mean : 5.252161(µm) Mean : 5.444707(µm) Variance :11.454658 Variance :14.334759 S.D. : 3.384473(µm) S.D. : 3.786127(µm) Mode : 4.805934(µm) Mode : 4.795689(µm)						
Remarks 2 : Remarks 2 : Mean : 5.252161(µm) Mean : 5.444707(µm) Variance :11.454658 Variance :14.334759 S.D. : 3.384473(µm) S.D. : 3.786127(µm) Mode : 4.805934(µm) Mode : 4.795689(µm)	Remarks :GMH operator					
Remarks 2 : Remarks 2 : Mean : 5.252161(µm) Mean : 5.444707(µm) Variance :11.454658 Variance :14.334759 S.D. : 3.384473(µm) S.D. : 3.786127(µm) Mode : 4.805934(µm) Mode : 4.795689(µm)	Remarks 1 :8 Mar 2000	Remarks 1 :8 Mar 2000				
Mean : 5.252161(µm) Mean : 5.444707(µm) Variance :11.454658 Variance :14.334759 S.D. : 3.384473(µm) S.D. : 3.786127(µm) Mode : 4.805934(µm) Mode : 4.795689(µm)	Remarks 2 :					
Variance :11.454658 Variance :14.334759 I S.D. :3.384473(µm) S.D. :3.786127(µm) I Mode :4.805934(µm) Mode :4.795689(µm) I						
S.D. : 3.384473(μm) S.D. : 3.786127(μm) Mode : 4.805934(μm) Mode : 4.795689(μm)	. ,	· · · · ·				
Mode : 4.805934(µm) Mode : 4.795689(µm)						
Geo. Mean: 4.268958(µm) Geo. Mean : 4.326528(µm)		Mode : 4.795689(µm)				
	Geo. Mean: <u>4.268958(µm)</u>	Geo. Mean: 4.326528(µm)				



Appendix A-3 Settling Rate Testing Photographs

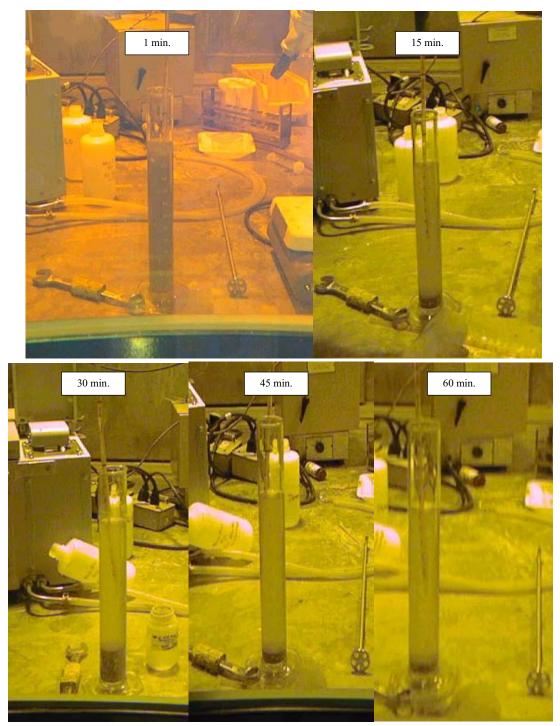


Figure A-3a. WM-183 Composite A settling rate testing photographs.

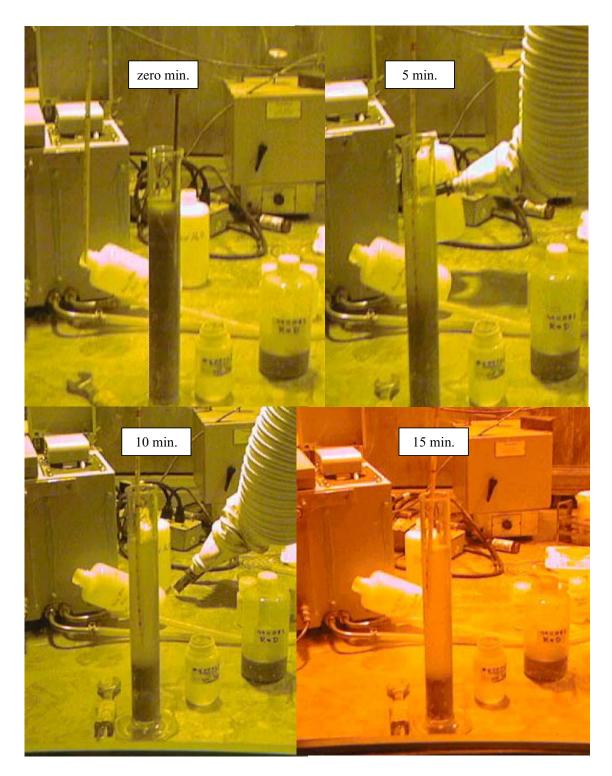


Figure A-3b. WM-183 Composite B settling rate testing photographs.

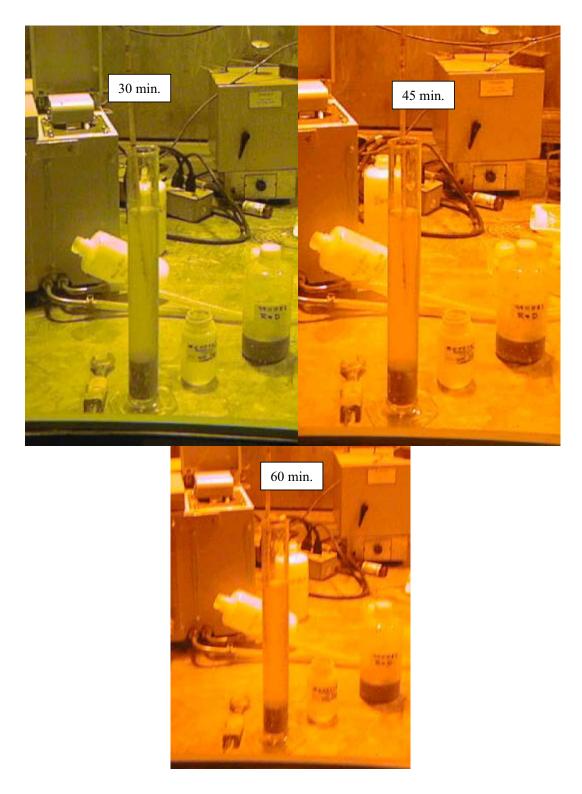


Figure A-3b. (continued). WM-183 Composite B settling rate testing photographs.