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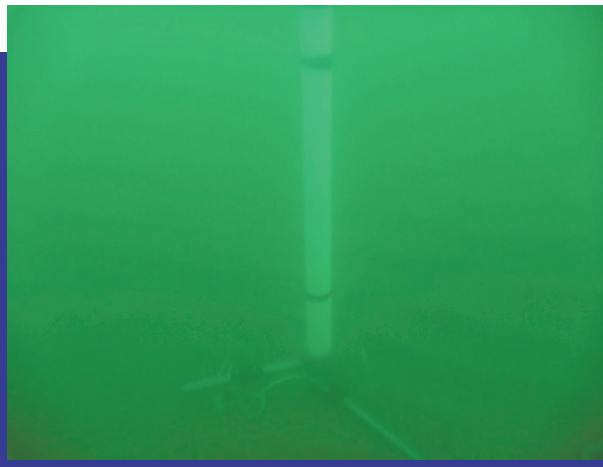
Anketell Point Port (APP) Development – Terminal 2, Stage 1

Sediment Sampling and Analysis Plan Implementation Report

September 2011



Anketell Point Port (APP) Development – Terminal 2, Stage 1

Sediment Sampling and Analysis Plan Implementation Report

Prepared for

API Management

Prepared by

Oceanica Consulting Pty Ltd

September 2011

Report No. 813_01_003/2

Client: API Management

Revisions history

Revision	Author	DISTRIBUTION			REVIEW		
		Recipients	No. Copies & Format	Date	Reviewer	Intent	Date
A	J Anderson	M Nyegaard M Bailey	1 x pdf	22/06/11	M Nyegaard M Bailey	Technical Editorial	28/06/11
B	J Anderson	M Nyegaard M Bailey S Shute	1 x pdf	29/06/11	S Shute	Technical Editorial	29/06/11
C	J Anderson	M Bailey S Shute	1 x pdf	20/07/11	S Shute	Technical	20/07/11
D	J Anderson	M Nyegaard	1 x pdf	22/07/11	M Nyegaard	Technical	23/07/11
Rev0	J Anderson	S Shute Oceanica	1 x pdf 2x hardcopy	28/07/11			
Rev1	J.Anderson	S.Shute Oceanica	1 x pdf	20/09/11			
Rev2	J.Anderson	S.Shute Oceanica	1 x pdf 2 x harcopy	21/09/11			

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The current version of this report has been subject to the following level of Quality Assurance:

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Cover

Main image: Anketell Point (Oceanica Consulting).

Minor images: Sediment sampling core and extractors, Anketell Point, (Oceanica Consulting); Sediment core in tray (Oceanica Consulting).

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List of Abbreviations

CoC	Chain of Custody
DSEWPaC	Department of Sustainability, Environment, Water, Populations and Community
LoR	Limit of Reporting
MPL	Enviro-lab Group Laboratory
NAGD	National Assessment Guidelines for Dredging
NMI	National Measurement Institute
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance / Quality Control
RPD	Relative Percent Difference
RSD	Relative Standard Deviation
UCL	Upper Confidence Limit
USEPA	United States Environmental Protection Agency

Executive Summary

Australian Premium Iron Management Pty Ltd (API) proposes to develop the Anketell Point Port (APP) to process and export iron ore from its West Pilbara Iron Ore Project mining operations. The proposed port will be established at Anketell Point, Western Australia. Dredging of a shipping channel, turning basin and berth pockets is proposed. The preferred method of disposal for dredge material is ocean disposal to three offshore disposal areas. Following publication of the Public Environmental Review (PER) for this proposal, the proposal has been amended to avoid crossing Bouguer Passage and the use of Dixon Island. This report describes investigations undertaken within the section of the revised dredge footprint not previously sampled.

Sediment investigations were undertaken in May 2011 to characterise sediments within the proposed Terminal 2, Stage 1 footprint. A previous pilot sediment sampling program (Oceanica 2010) was undertaken within the adjacent proposed port development footprint (Terminal 1) in November 2009 to confirm that sediments from this 'greenfield site' were suitable for unconfined ocean disposal in accordance with the National Assessment Guidelines for Dredging (NAGD 2009) (Commonwealth of Australia 2009).

Sediments in this study were investigated for concentrations of antimony, arsenic, nickel, chromium, silver, cadmium, mercury, copper, lead and zinc. In addition, particle size distribution analysis was determined. A total of 36 sites were sampled to a depth of 1.0 m or to depth of refusal.

Sediment analysis showed that all metals recorded above the Limit of Reporting (LOR) were below screening levels, according to the NADG 2009. Particle size distribution analysis showed that sediments were dominated by fine to medium sands and that silt and clay made up a minor portion. These sediments were similar to sediments at the nearshore disposal grounds DMDA1 (API 2010).

The results presented in this report are similar to the findings for the pilot study (Oceanica 2010) in the adjacent proposed dredge area (Terminal 1) and in the disposal areas. According to Figure 3, pg 12 of the NADG 2009, no further testing of these sediments will be required to confirm that they are suitable for unconfined ocean disposal.

1. Introduction

1.1 Background

Australian Premium Iron Management Pty Ltd (API) proposes to develop the Anketell Point Port (APP), to process and export iron ore from its West Pilbara Iron Ore Project (WPIOP) Stage One mining operations. The proposed APP comprises one part of the greater WPIOP, the other part being the establishment and operation of the mining area and associated infrastructure and the construction of a railway to access port facilities (Stage 1 Mine and Rail).

The proposed port is located at Anketell Point, Western Australia. Anketell Point is situated at the eastern end of Nickol Bay, immediately adjacent to the eastern end of Dixon Island in the Shire of Roebourne, Western Australia.

Construction of the proposed Port will require dredging of a shipping channel, berth pockets, and a turning basin, along with the construction of a wharf and other associated port infrastructure.

The APP proposal was formally referred to the Environmental Protection Authority (EPA) by API on 26 June 2009 in accordance with section 38 of the Environmental Protection Act 1986 (EP Act 1986). A Public Environmental Review (PER) level of assessment was set by the EPA for 27 July 2009, with an eight week public review period for the level of assessment (EPA Assessment No. 1794). An EPBC Referral was submitted to the Department of Environment, Water, Heritage and Arts (now Department of Sustainability, Environment, Water, Population and Communities - DSEWPaC) on 10 September 2009. A sea dumping permit application was submitted in October 2009 (EPBC 2009/5120).

The original position of the proposed dredge footprint (Terminal 1), as detailed in the PER and EPBC referral, is shown in Figure 1.1. Subsequently an alternative layout for the inshore portion of the dredge footprint has been considered by API corresponding to the proposed Stage 2 of the project (Refer to Figure 1.4 of the PER/Draft PER), adjacent to the original layout (Terminal 1). The alternative footprint would link into the original shipping channel, as show in Figure 1.1. Following publication of the Public Environmental Review (PER) for this proposal, the proposal has been amended to avoid crossing Bouguer Passage and the use of Dixon Island. The alternative position has been termed the proposed 'Terminal 2, Stage 1' footprint, and is of similar proportions as the original layout, specifically consisting of:

- Short channel linking to the original shipping channel; 2.65 km long, 200 m wide with an aerial extent of 87 ha
- Turning basin and two berth pockets cover approximately 134 ha
- The total dredge area combined is 221 ha

A sediment survey was undertaken in 2009 to assess the suitability for ocean disposal of the material within the original dredge footprint (Oceanica 2009). The study found that all material was suitable for unconfined ocean disposal (Oceanica 2010). Following the identification of an alternative, adjacent position of the load-out facility (Terminal 2, Stage 1), further sediment data was required to assess the suitability for ocean disposal of the material from the new dredge area.

The benthic habitat within the Terminal 2, Stage 1 dredge footprint is comprised of mud and sand, as shown in Figure 1.2. Ocean disposal to three offshore disposal areas with sandy habitat is proposed (Figure 1.2).

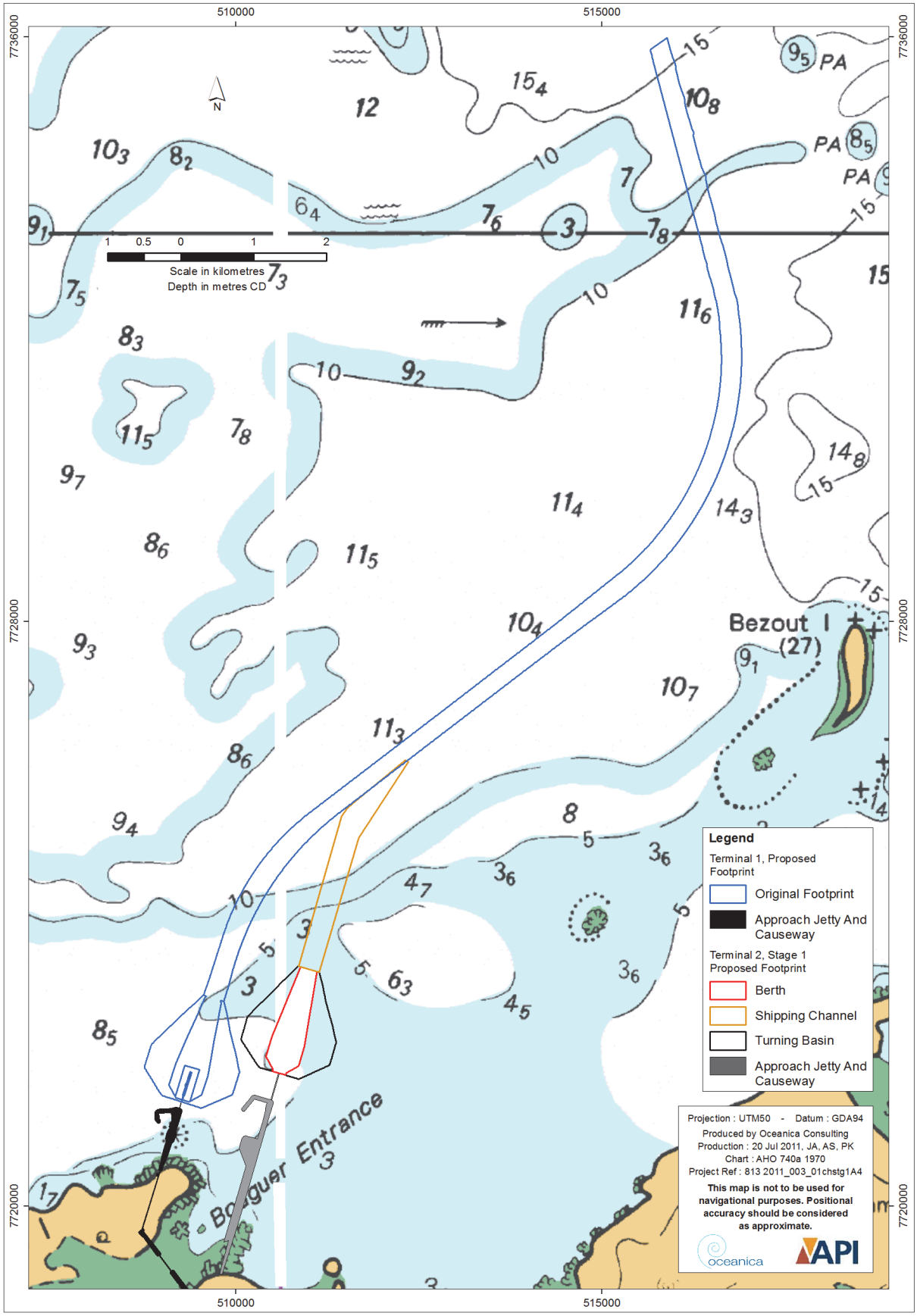

Figure 1.1 Proposed Terminal 2 footprint in relation to the Terminal 1 footprint

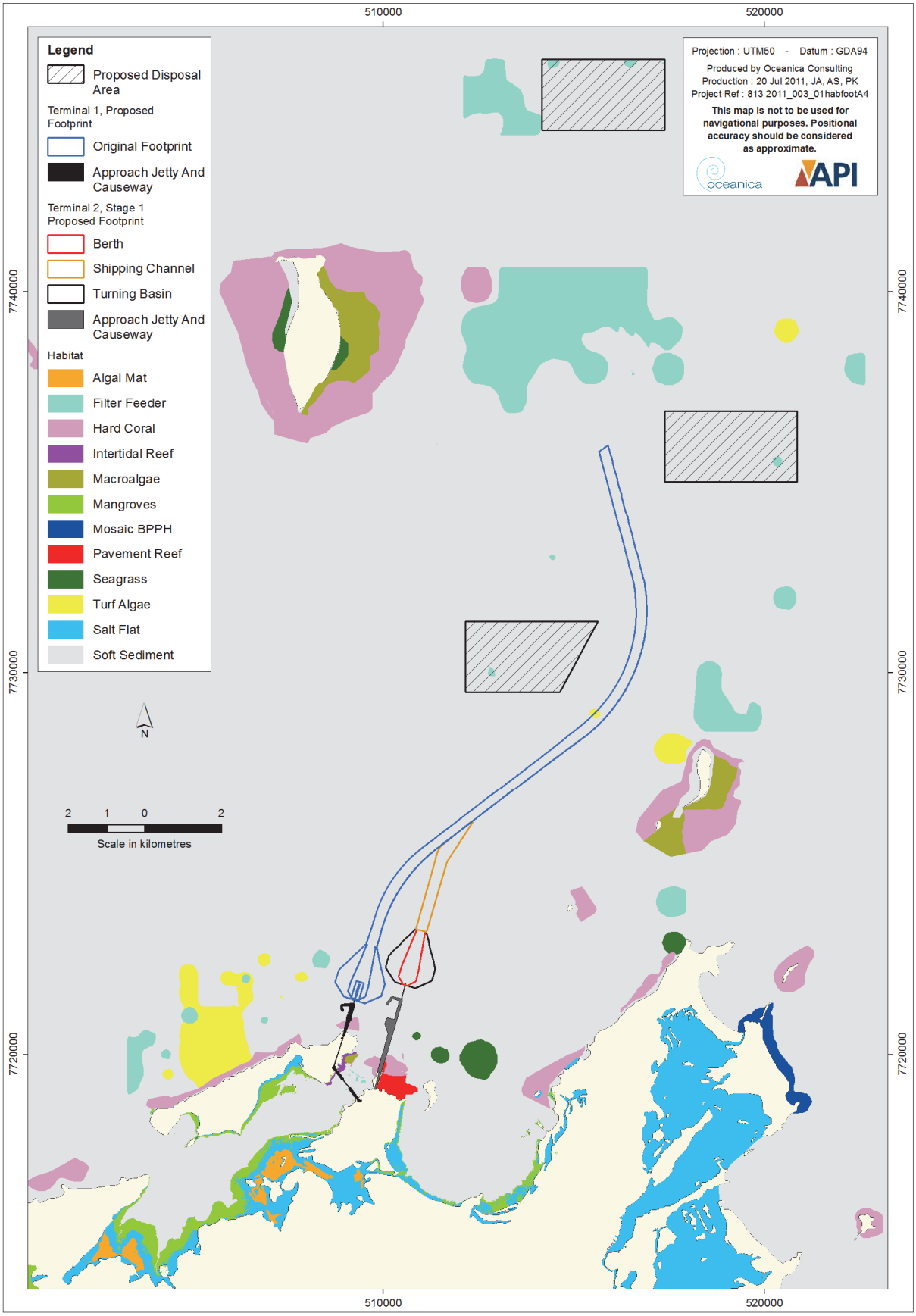

Figure 1.2 **Map of benthic habitats adjacent to Anketell Point and Dixon Island showing Terminal 1 and Terminal 2 footprints**

1.2 Objectives

For assessment of suitability for ocean disposal, investigations are required to characterise the level of potential contaminants in the sediments to be disposed of to sea. Material to be dredged within the APP Terminal 2, Stage 1 dredge footprint was assessed in accordance with the National Assessment Guidelines for Dredging (NAGD) (Commonwealth of Australia 2009) to confirm the suitability for unconfined ocean disposal.

Specific objectives relating to this project were as follows:

1. Collection of sediment samples to achieve sufficient coverage of the proposed Terminal 2, Stage 1 dredge area;
2. Collection of sediment samples to fully characterise the surface (≤1 m) unconsolidated sediments to be dredged;
3. Maintenance of rigorous sample handling, transport and storage processes to ensure sample integrity and high quality data; and,
4. Assessment of the survey results for all identified contaminants of concern against the NAGD.

1.3 This document

This document presents the results from the implementation of the Sediment Sampling and Analysis Plan (SAP) for the Terminal 2, Stage 1 footprint area (Oceanica 2010). The report assesses the results against the NAGD for assessment of the suitability of dredge material for ocean disposal.

2. Sampling Methods

2.1 Introduction

The proposed sampling and analysis of the Terminal 2, Stage 1 dredge footprint sediments was described in the SAP (Oceanica 2011) and is summarised in the sections below. The relevant history of the prior sampling within the region (within 10 km), potential for contamination and sampling rationale is explained in full in the SAP (Oceanica 2011).

2.2 Dredge areas and classifications

It was expected in the SAP (Oceanica 2011) that the status of the material to be dredged was 'probably clean' for the proposed Terminal 2, Stage 1 area (Table 2.1). Thus, no subdivision of the footprint was undertaken for the sampling design, and both the berth pocket and shipping channel areas were analysed together.

The total volume of the top 1 m of material to be dredged within the shipping channel and berth pockets is approximately 2.21 Mm^3. Using the extension of Table 6 for projects over 500,000 m3, (sample size = 0.025 * (volume of dredge material (x 1000 m^3) + 15.547) screening of this volume results in the requirement for 71 sampling sites (pg 60 of NAGD 2009). Based on recent data from adjacent areas, and the low risk of contamination, this number was halved to give a total of 36 sampling sites.

Table 2.1 Dredge volumes and classification of proposed Terminal 2, Stage 1 dredge area

Description	Dredge Volume to a 1 m depth	Area classification
Shipping channel	0.87 Mm^3	Probably clean
Berth pockets & turning basin	1.34 Mm^3	Probably clean

2.3 Target sampling depth

The target sampling depth for sediments was 1 m as per the SAP (Oceanica 2010).

2.4 Contaminants list

Although it was expected that the material to be dredged will contain no contaminants above the screening levels, screening of the material was undertaken for those chemicals considered most likely to be present based on the APP Terminal 1 pilot study which occurred adjacent (< 1 km) to the proposed Terminal 2, Stage 1 dredge footprint.

The list of contaminants of concern, together with justification of their inclusion, and the relevant screening levels are given in
Table 2.2.

Table 2.2 List of contaminants of concern for sediment screening (including Limits of Reporting (LOR) and screening levels)

Analyte	Potential source	LOR[1]	Screening Level[2]	Analysis Method
		mg/kg (unless otherwise specified)		
Moisture content	Laboratory requires for correction of metal concentrations by weight	1%	N/A	Oven dried
Antimony	Detected above the 1/10 screening level during the pilot study (Oceanica 2010) and are 'contaminants of concern' in accordance with the NAGD 2009	1.0	2.0	(NMI) Strong acid digest Recommended by NAGD 2009 Allows comparison of data with SAP pilot study (Oceanic 2010)
Arsenic		1.0	20	
Nickel	Detected above the 1/10 screening level in the pilot study (Oceanica 2010) and are 'contaminants of concern' in accordance with the NAGD 2009	1.0	21	
Chromium	Naturally high levels recorded within region (SKM 2009)	1.0	80	

Analyte	Potential source	LOR[1]	Screening Level[2]	Analysis Method
		mg/kg (unless otherwise specified)		
Silver	Although not expected to be present above limits of reporting; included to confirm low/negligible concentrations	1.0	1.0	
Cadmium		1.0	1.5	
Mercury		0.1	0.15	
Copper	Detected above the 1/10 screening level in the pilot study (Oceanica 2010) and is a 'contaminant of concern' in accordance with the NAGD 2009	1.0	65	
Lead	Analysed at 13 sites	1.0	50	
Zinc		1.0	200	
Particle Size Distribution	Data to be used as contextual information.	Size distribution and rates of settlement after 50% and 90% of settlement (comparison will be done in seawater)		Microanalysis Australia Sieving (> 106 µm) Sedigraph (106 – 2 µm)

Notes:
1. Limits of Reporting (NMI)
2. National Assessment Guidelines for Dredging (NAGD 2009)

Lead and zinc were analysed within 1/3 of the sites in accordance to the NAGD 2009 for pilot studies (>20%), as concentrations of these metals did not exceed 1/10 of screening levels in the prior APP pilot study. Of the 13 sites sampled for lead and zinc, two sites sampled were field splits (SC2 and SC3).

2.5 Sediment analysis

2.5.1 Metals

Sediment samples were analysed for antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc (Table 2.2).

2.5.2 Particle size distribution

Particle size distributions (PSD) were measured as contextual information. Future use of data may include plume modelling or used in conjunction with chemical analysis. Samples from each site consisted of the entire sediment column (i.e. 0 – 0.5 and 0.5 - 1.0 m core sections) being homogenized, after sub-samples for metal analysis were collected, and a 250 g sample was retained in a ziplock bag. Sample analysis consisted of:

1. Sedigraph analysis was done using $(NaPO_3)_6$ for each site (106 – ~0.6 microns);
2. Wet sieving (2000, 1000, 500, 212, 106 µm) for each sample;
3. Sedigraph was also done using seawater for 10 samples (selecting for wide ranging (PSD) comparisons, with five having high clay (>3%) contents) (as recommended by the NAGD 2009)

2.5.3 Others

In accordance with the SAP (Oceanica 2011) pesticides, PCB's, petroleum hydrocarbons and radionuclides were not analysed based on the low likelihood of contamination, due to the lack of a pollutant source.

Likewise, Polycyclic Aromatic Hydrocarbons (PAHs) were not included as concentrations were below the LOR, at all but three sites, sampled during the Cape Lambert Port B sediment investigations (SKM 2009), suggesting very little risk of contamination at this distance from existing infrastructure.

2.6 Sites locations

Sampling sites within the berth, turning basin and shipping channel were all designated within one classification area as per Section 2.2.

In accordance within the NAGD 2009, sample site locations were determined randomly (using a grid overlay, with sites a minimum of 50 m from the footprint boundary and at least 50 m apart). Sampling locations are shown in Figure 2.1 with the coordinates given in Table 2.3.

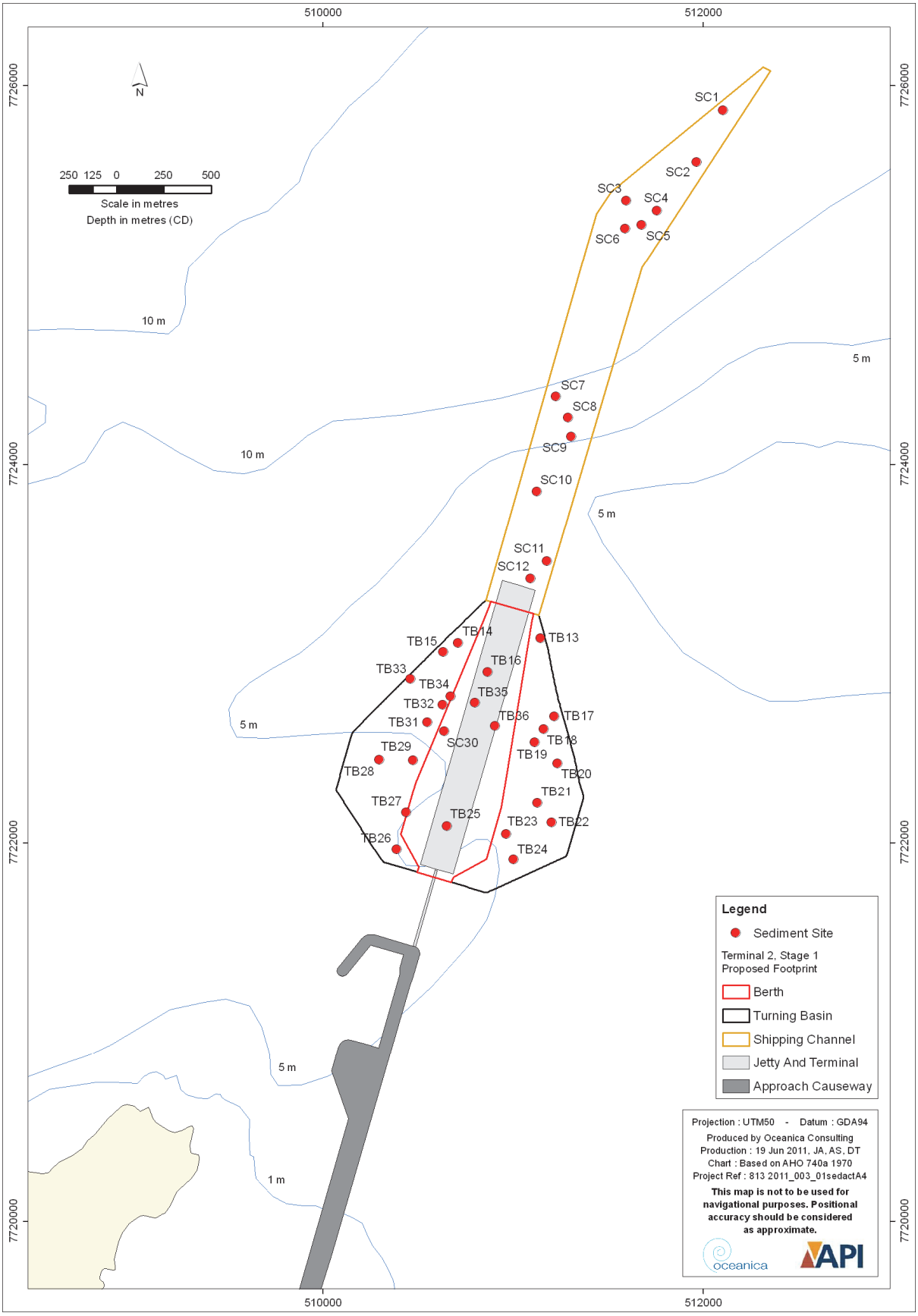

Figure 2.1 Sediment sampling sites within the proposed Terminal 2, Stage 1 footprint

Table 2.3 Coordinates of sediment sampling sites (UTM 50, GDA 94)

Area	Site name	Easting	Northing
Terminal 2, Stage 1 dredge footprint	SC1	512104	7725870
	SC2	511964	7725596
	SC3	511596	7725394
	SC4	511756	7725340
	SC5	511676	7725266
	SC6	511590	7725245
	SC7	511224	7724357
	SC8	511288	7724245
	SC9	511306	7724145
	SC10	511123	7723856
	SC11	511176	7723487
	SC12	511090	7723395
	TB13	511144	7723081
	TB14	510710	7723055
	TB15	510632	7723008
	TB16	510864	7722903
	TB17	511215	7722668
	TB18	511160	7722600
	TB19	511114	7722533
	TB20	511234	7722421
	TB21	511126	7722209
	TB22	511202	7722106
	TB23	510963	7722045
	TB24	511002	7721909
	TB25	510651	7722085
	TB26	510387	7721965
	TB27	510437	7722159
	TB28	510294	7722440
	TB29	510474	7722437
	TB30	510637	7722589
	TB31	510549	7722636
	TB32	510629	7722729
	TB33	510460	7722867
	TB34	510670	7722772
	TB35	510799	7722739
	TB36	510905	7722618

3. Implementation

3.1.1 Survey dates

The sediment sampling diver survey occurred on 16-19 May 2011.

3.1.2 Vessel positioning

The crew located the site using a GPS system and deployed a surface marker buoy as close to the location as possible. Site TB25 was an exception to this as a jack up rig was operating in the proposed location. The site was moved to the nearest safe location adjacent to the rig (~200 m). The vessel anchored up as close to the marker buoy as weather and sea conditions permitted. When the vessel was in position the diver descended to the seafloor to complete the sediment coring. The actual position where the sample was taken was recorded with a GPS unit (Table 2.3).

3.1.3 Quality assurance and quality control

For field QA/QC purposes 10% of the sites (4 sites – SC9, SC10 TB15 and TB16) were sampled in triplicate and >5% of the total number of samples were sampled as field splits (4 samples – SC2 top, SC3 top, TB13 top and TB13 bottom). An additional seven samples (SC2 bottom, TB18 top, TB24 top, TB 31 top and bottom, TB32 top and bottom) were split into two subsamples to further investigate inter-laboratory variation (i.e. one to NMI and one to MPL). These additional seven samples were over and above the required samples specified by NADG 2009.

At triplicate sites three sediment cores were taken and processed individually (3 samples per site) to determine the variability of the sediment chemical characteristics within each site. These cores (SC9, SC10 TB15 and TB16) had one depth (0-0.5 or 0.5-1.0 m) sampled for triplicate. The field splits (4 samples) consisted of one sample thoroughly mixed, then split into three containers (3 subsamples) to assess laboratory variation, with one of the three samples sent to a second reference laboratory (MPL) for analysis, as specified within Appendix F of the NAGD 2009.

All samples were taken to the laboratory in one consignment.

Table 3.1 Number of sites and samples collected within the proposed Terminal 2, Stage 1 dredge footprint

	Proposed Terminal 2, Stage 1 footprint	Triplicate samples	Field splits (into 3 sub samples)	Field splits (into 2 sub samples)*
Sites	36	4	4	7
Samples (0-0.5 m)	36	6 extra	6 extra	4 extra
Samples (0.5–1 m)	23	2 extra	2 extra	3 extra
Sub total	59	8	8	7
Total samples = 82				

Notes:
1. * – Samples over and above the requirements from NAGD 2009

3.1.4 Equipment and personnel

Commercial scientific divers were used to complete the sediment survey. Diving was undertaken in accordance with AS/NZS 2299.1 (2007). The dive team consisted of an ADAS qualified dive supervisor and three ADAS 2 qualified divers. All dive and sediment sampling equipment was supplied as stated in the SAP (Oceanica 2011).

3.1.5 Consideration of environmental factors

Environmental factors did not result in any collection failures. Strong tidal currents, poor underwater visibility (<1-2 m) and short winter days did inhibit work, but all samples were retrieved in a four day period (16-19 May 2011).

3.2 Sampling, sample handling and storage

3.2.1 Coring methods

To obtain sediment samples a diver used hand-cores made from 50 mm diameter acid-washed PVC pipe which was 1.8 m long. The diver obtained the sediment using the PVC corer and stainless steel hammer by hammering the core 1 m into the sediment, or until refusal. A bung was inserted in the top of the corer before extraction from the seabed. A bung was inserted into the bottom of the corer when the opening was still just below the seabed surface to avoid sediment loss due to any washing effect from the surrounding water. The method of using a vacuum to hold the sediments in place during extraction of the corer is described by the United States Environmental Protection Agency on their $21M^2$ programme web page (USEPA 2008).

A single core was obtained from all sites, with three cores retrieved from triplicate sites, as described in Section 3.1.3.

3.2.2 Sediment core documentation

Upon recovery the core was pushed out onto a core tray. The length was noted on the field log along with any apparent sediment characteristics such as shell content, change in sediment layers and particular odour. Photographs were taken of the cores before sub-sampling for chemical and physical analysis.

The sediment cores were then separated into the top 0.5 m (0-0.5 m) and bottom 0.5 m (0.5-1.0 m) fractions, each fraction was homogenised within a glass bowl and then sub-sampled for metals as required, and placed into sample containers provided by each laboratory. One glass jar (250 ml) was filled with sediment to the bottom of the neck as appropriate to reduce head space while allowing for expansion during freezing. Both depth sections were then homogenized together for collection of the PSD sampled and placed into a plastic Ziplock bag.

3.2.3 Sample storage and transport

The required sample volumes were recovered at all sites which included: 100 g sediment for metals analysis (wet weight), moisture content 50 g (wet weight) and 200 g (wet weight) for Particle Size Distribution (PSD). The sample containers were stored on ice on the vessel until they were taken to a freezer on land upon completion of the day's sampling. The samples remained in the freezer until flown to Perth (May 20, 2011). During transport the samples were kept in eskies with ice blocks to keep the samples frozen. All samples from site were taken to the laboratory in one consignment.

3.2.4 Sample labelling

Each sample container was provided with a unique identifier applied with a waterproof pen. A field log was also kept to ensure that each sample can be identified according to:

- Date of sampling;
- Sampler;
- Sampling location;
- Section within the core;
- Sediment characteristics (type of material, colour, odour)

3.2.5 Cross-contamination control

To avoid cross contamination between sampling events, all sample gear was washed in Decon 90 after each sampling event. Samplers wore a pair of inert (powder free) gloves, washed between samples and changed regularly.

3.3 Variations from Sediment Sampling and Analysis Plan

Sediment samples were collected from all sites as proposed in the SAP (Oceanica 2011). Thirteen sites (SC3 and TB17-28) had a depth of core refusal at 0.5 m or less resulting in only a top (0-0.5 m) sample being collected.

Two additional site field splits were collected over the original SAP designated amount. An additional seven samples were collected as field splits (two sub-samples) to further investigate inter-lab variability.

No other variations occurred.

3.4 Quality Assurance /Quality Control

3.4.1 Field splits (replicate samples)

Four field split samples (SC2 top, SC3 top, TB13 top, TB13 bottom) were taken as specified in NAGD 2009 (>5% of total number of samples). An additional seven samples (SC2 bottom, TB18 top, TB24 top, TB31 top and bottom, TB32 top and bottom) were taken for further quality control purposes, which were over and above those required by NAGD 2009. These additional quality control samples had one of the two subsamples being sent to each laboratory to further investigate inter-laboratory variability.

The Relative Percent Difference (RPD) was calculated for field splits as follows:

$$\text{RPD (\%)} = \frac{(\textit{difference between replicates}) \times 100}{(\textit{average of replicate})}$$

The acceptable RPD for field splits is ±50% (NAGD 2009). These data are reported in Section 4.4.1.

3.4.2 Field triplicate samples

A total of four sites were sampled in triplicate (10% of locations) as specified in Oceanica (2011) and summarised in Section 3.1.3. The Relative Standard Deviation (RSD) was calculated for field triplicates as follows:

$$\text{RSD (\%)} = \frac{(\textit{standard deviation of triplicate}) \times 100}{(\textit{average of triplicate})}$$

The acceptable RDS for triplicate samples is ±50% (NAGD, 2009). These data are reported in Section 4.4.2.

3.4.3 Chain of Custody

Samples were consigned using Chain of Custody forms to the laboratories for analysis (see Appendix A). Data received for the laboratories was crosschecked with the CoC to ensure all data was received.

3.4.4 Laboratory Internal QA/QC

Intra-laboratory duplicate, spikes and blank samples were performed on each batch (10-20 samples). The acceptable range for duplicate and blank samples is ±35% (NAGD 2009). The acceptable range for spike recovery rates is 75-120% for metals. These data are reported in full in Appendix B.

3.4.5 Data management procedures

All data was validated prior to reporting. Data was checked for completeness and compared against the submitted CoC forms delivered to the laboratories. Data was analysed for outliners using Rosners test; no outliers were removed from the data set. The complete field log is in Appendix C along with corresponding photos. The complete metals data set as analysed is in Appendix D and all original metals data reports are in Appendix B. Summaries of the particle size distribution data is shown in Appendix E. Particle size distribution reports including PSD curves and settling velocities are shown in Appendix F. Additional photos of the seabed at sampled sites, where available, are shown in Appendix G.

4. Results

4.1 Sample recovery

Samples were recovered from 100% of sites visited, although the recovery depth varied from 0.2-1.0 m (Figure 4.1).

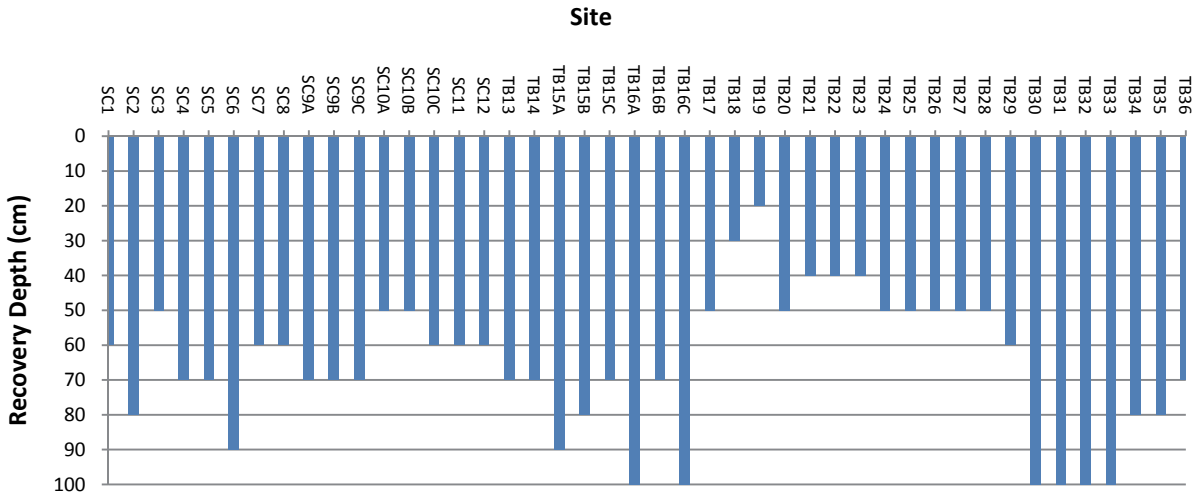

Figure 4.1 Recovery depth (cm) of cores at all sites

A complete field log is included in Appendix C along with corresponding photos.

4.2 Data Analysis

4.2.1 Computation of 95% upper confidence limit (UCL)

The distribution of data and the 95% UCL was calculated using ProUCL 4.0 (Version 4.00.02, USEPA). Data below LORs were assigned a value of LOR/2. For sites which had triplicates or splits the mean of the replicates (or subsamples) were used, so that the triplicate or replicate data did not skew the analysis. Where data were normally distributed, student's t-test was used to calculate the 95% UCL. Where data were not normally distributed, lognormal, gamma or non-parametric (bootstrap) analysis was used to calculate the 95% UCL as determined appropriate by the software. The analysed data and the computed 95% UCL for each contaminant of concern is provided in Appendix D.

The limits of reporting for NMI laboratory did not reach the PQLs as requested in NAGD 2009 for antimony, cadmium, mercury and silver and MPL failed to reach the PQL for cadmium (Table 4.1).

Table 4.1 Practical Quantitation Limits (PQL) and Limits of Reporting (LOR) for metals by laboratories used in this study

Metal	PQL[1] (mg/kg)	Screening levels[1] (mg/kg)	NMI[2] LOR (mg/kg)	MPL[3] LOR (mg/kg)
Antimony	0.5	2.0	1.0	0.5
Arsenic	1.0	20	1.0	0.5
Cadmium	0.1	1.5	1.0	0.5
Chromium	1.0	80	1.0	0.5
Copper	1.0	65	1.0	0.05
Lead	1.0	50	1.0	0.05
Mercury	0.01	0.15	0.1	0.01
Nickel	1.0	21	1.0	0.5
Silver	0.1	1.0	1.0	0.5
Zinc	1.0	200	1.0	0.05

Notes:
1. National Assessment Guidelines for Dredging (NAGD 2009)
2. National Measurement Institute (NMI)
3. MPL laboratories (Enviro-lab Group)

As all metal concentrations were below the limits of reporting and well below the screening levels for these four metals, and this did not affect the statistical analysis for the 95% UCLs, lower limits of reporting were not requested.

4.3 Metals

The 95% upper confidence limits (UCL) for metals in the dredge footprint in both the top (0-0.5 m) and bottom (0.5-1.0 m) sediments were below the NAGD screening levels (Table 4.2). When the top and bottom sediments from the dredge footprint were combined, as could be expected during dredging, the 95% UCL for all metals were also below the screening level.

Table 4.2 95% upper confidence limit (UCL) of metals (mg/kg)

Sample	Depth (m)	Antimony*	Arsenic	Cadmium*	Chromium	Copper	Lead	Mercury*	Nickel	Silver*	Zinc
Screening Level	-	2	20	1.5	80	65	50	0.15	21	1.0	200
Dredge Footprint	**0-0.5**	0.5*	18.3	0.5*	34.2	4.1	2.7	0.05*	11.5	0.5*	9.3
Dredge Footprint	**0.5-1.0**	0.5*	18.9	0.5*	33.8	5.6	2.6	0.05*	11.5	0.5*	8.1
Dredge Footprint	**Top & Bottom 0-1.0**	0.5*	18.2	0.5*	33.0	4.7	2.6	0.05*	11.0	0.5*	7.7

Notes:
1. Where the concentration of a contaminant in a sample was below the limit of reporting (LOR), a value of half the LOR was used in the analysis. In some cases no results above LOR were recorded, in which case, values are half the limit of reporting

The low concentrations of lead and zinc confirm the low concentrations found in the APP Terminal 1 pilot study (Oceanica 2010), as none of the individual values were found to be > 1/10 of the screening levels in either study. Data normality distribution and the distribution used to calculate the 95% UCL are shown in Appendix D. Laboratory reports are included in Appendix B.

4.4 Quality assurance / quality control (QA/QC)

4.4.1 Field splits (replicate samples)

Metals

All samples had RPDs within the acceptable level of ±50% (Table 4.3), except copper in sample TB13 bottom (0.5-1.0 m) with a value of 118%. This resulted from the difference in two small values (1.7-5 mg/kg) which were approaching the practical quantitation limits. All other results produced differences below the 50% level and all data are considered reliable. Lead and zinc were not determined in additional samples (i.e. those over and above the requirements specified by NAGD 2009).

Table 4.3 Metal Relative Percent Difference (RPD)

Sample	Depth (m)	Antimony*	Arsenic	Cadmium*	Chromium	Copper	Lead	Mercury*	Nickel	Silver*	Zinc
NAGD specified samples											
SC2	0-0.5	0*	9	0*	25	7	0	0*	29	0*	12
SC3	0-0.5	0*	0	0*	15	0	6	0*	24	0*	5
TB13	0-0.5	0*	34	0*	3	16	ND	0*	9	0*	ND
TB13	0.5-1.0	0*	11	0*	23	***118***	ND	0*	33	0*	ND

Sample	Depth (m)	Antimony*	Arsenic	Cadmium*	Chromium	Copper	Lead	Mercury*	Nickel	Silver*	Zinc
Additional QA samples#											
SC2	0.5-1.0	0*	48	0*	3	4	26	0*	7	0*	8
TB18	0-0.5	0*	0	0*	37	35	22	0*	43	0*	35
TB24	0-0.5	0*	0	0*	17	11	14	0*	24	0*	8
TB31	0-0.5	0*	4	0*	20	40	ND	0*	29	0*	ND
TB31	0.5-1.0	0*	0	0*	18	31	ND	0*	23	0*	ND
TB32	0-0.5	0*	20	0*	0	40	ND	0*	13	0*	ND
TB32	0.5-1.0	0*	11	0*	4	31	ND	0*	16	0*	ND

Notes:
1. * – All values were below limits of reporting thus resulting in 0 values.
2. # – splits with only 2 subsamples (one to NMI and one to MPL)
3. ND – not determined

4.4.2 Field triplicate samples

Metals

All samples had RSDs within the acceptable level of ±50% (Table 4.4). The results are considered reliable with intra-site variability being minimal. Lead and zinc were not determined in triplicate samples as they were only analysed at the pilot study level (20% of total samples).

Table 4.4 Metal Relative Standard Deviation (RSD%)

Sample	Depth (m)	Antimony*	Arsenic	Cadmium*	Chromium	Copper	Lead	Mercury*	Nickel	Silver*	Zinc
SC9	0.5-1.0	0*	0	0*	23	19	ND	0*	28	0*	ND
SC10	0-0.5	0*	3	0*	12	8	ND	0*	14	0*	ND
TB15	0-0.5	0*	6	0*	7	4	ND	0*	6	0*	ND
TB16	0-0.5	0*	6	0*	9	7	ND	0*	11	0*	ND

Notes:
1. * –All values were below Limits of reporting thus resulting in 0 values.
2. ND – not determined

4.4.3 Laboratory QA/QC

Intra-laboratory duplicate and blank samples had a RPD within ±35%, which is acceptable. Spike recovery rates were within the acceptable ranges of 75-120 (NMI 89-103%; MPL 86-117%) (Appendix B).

4.5 Particle size distributions

Sediments at all sites were dominated (>50%) by fine (106-212 µm) and medium (212-500 µm) sands. Silt (4-63 µm) particles were < 20% and clay particles (<4 µm) were < 5% of the particle distributions at all sites. These sediments were similar to sediments at the nearshore disposal grounds DMDA1 (API 2010).

Summaries of the particle size distribution data is shown in Appendix E. Particle size distribution reports including PSD curves and settling velocities are shown in Appendix F.

5. Assessment

The suitability of the dredge material for unconfined ocean disposal was determined by following the procedure as outlined within Figure 3 of the NAGD 2009.

As all concentrations of lead and zinc were below the 1/10 screening levels it is requested that an exemption is granted for no further sampling for these metals within the Terminal 2, Stage 1 dredging footprint. It is proposed that as the 95% UCLs for all contaminants of concern fell below the screening levels (Table 2.2), no further testing is required and the material is considered suitable for unconfined ocean disposal.

6. Conclusions

The sediments in the proposed Terminal 2, Stage 1 dredge area exhibited metal (antimony, arsenic, chromium, cadmium, copper, lead, mercury, nickel and zinc) concentrations below screening levels.

Particle size distributions showed that sediments were dominated by fine to medium sands, while the silt and clay fractions made up a minor portion of the distribution. The particle size distribution data from all sites were similar to the nearshore disposal site DMDA1 (API 2010).

As all metal concentrations found during this Anketell Point Port study were below screening levels, the sediment in the Terminal 2, Stage 1 Anketell Point Port dredge footprint is considered suitable for unconfined ocean disposal and an exemption from further testing is requested.

7. Acknowledgements

Sediment sampling was undertaken by marine scientist/commercial divers: **Antosh Sokol**, **Adelaide Bevilaqua**, **Dr. Jonathan Anderson**, **Rob Little** and **Glenn Underhay** (Oceanica). **Phillip Kindleysides** and **Dinesh Tuladhar** (Oceanica) designed figures and prepared geo-spatial information.

Sediment metals analyses were performed by the National Measurement Institute (NMI) and MPL laboratories. Particle size distribution analyses were performed by Microanalysis Australia.

This report was prepared by **Dr. Jonathan Anderson** with beneficial reviews and revisions from **Marianne Nyegaard**, **Mark Bailey** (Oceanica) and **Spencer Shute** (API) and administrative assistance from **Dennis Bothur** and **Rachael Hillman** (Oceanica).

8. References

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USEPA 2007. ProUCL version 4.0. http://www.epa.gov/esd/tsc/software.htm.

Appendix A

Chain of Custody (CoC) forms

oceanica

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Tel: +61 8 6272 0000 Fax: +61 8 6272 0099 oceanica@oceanica.com.au ABN: 89 093 752 811

mpl Laboratories
Job No. - 111483
Date Rec - 23/5
Time Rec - 15:30
Rec By - mme
Temp - cool/ambient
Cooling - ice/ice pack/None
Security Seal - Yes/No

CHAIN OF CUSTODY

ATTN: Sarah Abbott	**QUOTE/REFERENCE No.:** 11/P129
LABORATORY: MPL	
ADDRESS: 16-18 Hayden Court, Myaree, WA 6154 9317 2505	

Oceanica Project Manager. Dr. Jonathan Anderson	**Oceanica Job No. 813_003**
Project name: API SAP Terminal B	
Email contact: jonathan.anderson@oceanica.com.au 0422 518 581	

SAMPLE DETAILS

Sampling location: Anketell Point	
Comments: Sediment sampling splits	
Delivery:	**Hand** ☒ **Courier** ☒ **Mail** ☐ **Other**
Sample Preservation:	**None** ☐ **Warm** ☐ **Cool** ☐ **Ice** ☐ **Frozen** ☒ **Acidified** ☐ **Filtered** ☐ **Other**
Sample Type:	**Water: Marine** ☐ **Estuarine** ☐ **River** ☐ **Terrestrial** ☐ **Groundwater** ☐ **Wastewater** ☐ **Other**
	Sediment ☒ **Flora** ☐ **Fauna** ☐

REQUIRED SAMPLE TREATMENT

Comments/Details: please keep remaining sample frozen for possible future use

REQUIRED ANALYSIS DETAILS

	Analyte:	Mercury	Silver and Cadmium	Antimony	Arsenic, nickel, chromium, copper	Lead and zinc		
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
	Required Reporting Limit:	0.01	0.1	0.5	1	1	***Tick if packed***	***Tick if received***
	Sample Code / **Sampling Date**							
1	SC2 Top	Yes	Yes	Yes	Yes	Yes	✓	
2	SC2 Bottom1	Yes	Yes	Yes	Yes	Yes	✓	

	Analyte:	Mercury	Silver and Cadmium	Antimony	Arsenic, nickel, chromium, copper	Lead and zinc	Tick if packed	Tick if received
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
	Required Reporting Limit:	0.01	0.1	0.5	1	1		
Sample Code	**Sampling Date**							
-3 SC3 Top3		Yes	Yes	Yes	Yes	Yes	✓	
-4 TB13 bottom3		Yes	Yes	Yes	Yes	Yes	✓	
-5 TB13 Top 2		Yes	Yes	Yes	Yes	Yes	✓	
-6 TB13 Top3		Yes	Yes	Yes	Yes	Yes	✓	
-7 TB18 Top		Yes	Yes	Yes	Yes	Yes	✓	
-8 TB24 Top		Yes	Yes	Yes	Yes	Yes	✓	
-9 TB31 Top		Yes	Yes	Yes	Yes	Yes	✓	
-10 TB31 Bottom		Yes	Yes	Yes	Yes	Yes	✓	
-11 TB32 Top		Yes	Yes	Yes	Yes	Yes	✓	
-12 TB32 Bottom		Yes	Yes	Yes	Yes	Yes	✓	

Analysis Comments: please keep remaining sample frozen for possible future use

REQUIRED QA/QC

Comments/Details: as required by NAGD 2009

FOR LAB USE	**Relinquished by:** M.L	**Received by:** Michael	**Date received:** 23/5/11	**Time received:** 15:30
	Samples in stated condition (Y/N):			
	Comments from laboratory: Frozen			

oceanica

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Tel +61 8 6272 0000 Fax +61 8 6272 0099 oceanica@oceanica.com.au ABN 89 093 752 811

CHAIN OF CUSTODY

ATTN: Oana Lord	**QUOTE/REFERENCE No.: Oceanica IQ090511- 1780C**
LABORATORY: National Measurement Institute	
ADDRESS: 26 Dick Perry Avenue Kensington WA 6151 Phone: +61 8 9368 8400 Fax: +61 8 9368 8499	

Oceanica Project Manager: Jonathan Anderson	**Oceanica Job No. 813_003**
Project name: API SAP Terminal B	
Email contact: jonathan.anderson@oceanica.com.au 0422 518 581	

SAMPLE DETAILS

Sampling location: Anketell Point	
Comments: Sediment sampling analysis	
Delivery:	**Hand** ☐ **Courier** ☒ **Mail** ☐ **Other**
Sample Preservation:	**None** ☐ **Warm** ☐ **Cool** ☐ **Ice** ☐ **Frozen** ☒ **Acidified** ☐ **Filtered** ☐ **Other**
Sample Type:	**Water: Marine** ☐ **Estuarine** ☐ **River** ☐ **Terrestrial** ☐ **Groundwater** ☐ **Wastewater** ☐ **Other**
	Sediment ☒ **Flora** ☐ **Fauna** ☐

REQUIRED SAMPLE TREATMENT

Comments/Details: only **18** samples require lead and zinc; **please keep remaining sample frozen for pick up by Oceanica**

FAXED

FAXED

REQUIRED ANALYSIS DETAILS

	Analyte:	Moisture	Mercury	Silver and Cadmium	Antimony	Arsenic, nickel, chromium, copper	Lead and zinc		
	Units:	g/100g	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
	Required Reporting Limit:	0.1	0.01	0.1	0.5	1	1	***Tick if packed***	***Tick if received***
Sample Code	**Sampling Date**								
SC1	Top	yes	yes	yes	yes	yes		✓	VV11/008676
SC1	Bottom	yes	yes	yes	yes	yes		✓	VV11/008677
SC2	Top	yes	yes	yes	yes	yes	yes	✓	VV11/008678
SC2	Bottom1	yes	yes	yes	yes	yes	yes	✓	VV11/008679
SC3	Top 1	yes	yes	yes	yes	yes	yes	✓	VV11/008680
SC3	Top 2	yes	yes	yes	yes	yes	yes	✓	VV11/008681
SC4	Top	yes	yes	yes	yes	yes		✓	VV11/008682
SC4	Bottom	yes	yes	yes	yes	yes		✓	VV11/008683
SC5	Top	yes	yes	yes	yes	yes		✓	VV11/008684
SC5	Bottom	yes	yes	yes	yes	yes		✓	VV11/008685
SC6	Top	yes	yes	yes	yes	yes		✓	VV11/008686
SC6	Bottom	yes	yes	yes	yes	yes		✓	VV11/008687
SC7	Top	yes	yes	yes	yes	yes		✓	VV11/008688
SC7	Bottom	yes	yes	yes	yes	yes		✓	VV11/008689
SC8	Top	yes	yes	yes	yes	yes		✓	VV11/008690
SC8	Bottom	yes	yes	yes	yes	yes		✓	VV11/008691
SC9	Top	yes	yes	yes	yes	yes		✓	VV11/008692
SC9	Bottom1	yes	yes	yes	yes	yes		✓	VV11/008693
SC9	Bottom2	yes	yes	yes	yes	yes		✓	VV11/008694
SC9	Bottom3	yes	yes	yes	yes	yes		✓	VV11/008695
SC10	Top1	yes	yes	yes	yes	yes		✓	VV11/008696
SC10	Top2	yes	yes	yes	yes	yes		✓	VV11/008697
SC10	Top3	yes	yes	yes	yes	yes	yes	✓	VV11/008698
SC10	Bottom3	yes	yes	yes	yes	yes	yes	✓	VV11/008699
SC11	Top	yes	yes	yes	yes	yes		✓	VV11/008700
SC11	Bottom	yes	yes	yes	yes	yes		✓	VV11/008701

FAXED

Analyte:		Moisture	Mercury	Silver and Cadmium	Antimony	Arsenic, nickel, chromium, copper	Lead and zinc		
Units:		g/100g	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
Required Reporting Limit:		0.1	0.01	0.1	0.5	1	1	Tick if packed	Tick if received
Sample Code	**Sampling Date**								
SC12	Top	yes	yes	yes	yes	yes	yes	✓	VW11/008702
SC12	Bottom	yes	yes	yes	yes	yes	yes	✓	VW11/008703
TB13	Top	yes	yes	yes	yes	yes		✓	VW11/008704
TB13	Bottom1	yes	yes	yes	yes	yes		✓	VW11/008705
TB13	Bottom2	yes	yes	yes	yes	yes		✓	VW11/008706
TB14	Top	yes	yes	yes	yes	yes	yes	✓	VW11/008707
TB14	Bottom	yes	yes	yes	yes	yes	yes	✓	VW11/008708
TB15	Top 1	yes	yes	yes	yes	yes		✓	VW11/008709
TB15	Bottom	yes	yes	yes	yes	yes		✓	VW11/008710
TB15	Top 2	yes	yes	yes	yes	yes		✓	VW11/008711
TB15	Top 3	yes	yes	yes	yes	yes		✓	VW11/008712
TB16	Top	yes	yes	yes	yes	yes		✓	VW11/008713
TB16	Bottom	yes	yes	yes	yes	yes		✓	VW11/008714
TB16	Top 2	yes	yes	yes	yes	yes		✓	VW11/008715
TB16	Top 3	yes	yes	yes	yes	yes		✓	VW11/008716
TB17	Top 1	yes	yes	yes	yes	yes		✓	VW11/008717
TB18	Top	yes	yes	yes	yes	yes	yes	✓	VW11/008718
TB19	Top	yes	yes	yes	yes	yes		✓	VW11/008719
TB20	Top	yes	yes	yes	yes	yes		✓	VW11/008720
TB21	Top	yes	yes	yes	yes	yes		✓	VW11/008721
TB22	Top	yes	yes	yes	yes	yes		✓	VW11/008722
TB23	Top	yes	yes	yes	yes	yes		✓	VW11/008723
TB24	Top	yes	yes	yes	yes	yes	yes	✓	VW11/008724
TB25	Top	yes	yes	yes	yes	yes		✓	VW11/008725
TB26	Top	yes	yes	yes	yes	yes		✓	VW11/008726
TB27	Top	yes	yes	yes	yes	yes		✓	VW11/008727
TB28	Top	yes	yes	yes	yes	yes		✓	VW11/008728

FAXED

Analyte:		Moisture	Mercury	Silver and Cadmium	Antimony	Arsenic, nickel, chromium, copper	Lead and zinc		
Units:		g/100g	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
Required Reporting Limit:		0.1	0.01	0.1	0.5	1	1	*Tick if packed*	*Tick if received*
Sample Code	**Sampling Date**								
TB29	Top	yes	yes	yes	yes	yes	yes	✓	VW11/008729
TB29	Bottom	yes	yes	yes	yes	yes	yes	✓	VW11/008730
TB30	Top	yes	yes	yes	yes	yes		✓	VW11/008731
TB30	Bottom	yes	yes	yes	yes	yes		✓	VW11/008732
TB31	Top	yes	yes	yes	yes	yes		✓	VW11/008733
TB31	Bottom	yes	yes	yes	yes	yes		✓	VW11/008734
TB32	Top	yes	yes	yes	yes	yes		✓	VW11/008735
TB32	Bottom	yes	yes	yes	yes	yes		✓	VW11/008736
TB33	Top	yes	yes	yes	yes	yes	yes	✓	VW11/008737
TB33	Bottom	yes	yes	yes	yes	yes	yes	✓	VW11/008738
TB34	Top	yes	yes	yes	yes	yes		✓	VW11/008739
TB34	Bottom	yes	yes	yes	yes	yes		✓	VW11/008740
TB35	Top	yes	yes	yes	yes	yes		✓	VW11/008741
TB35	Bottom	yes	yes	yes	yes	yes		✓	VW11/008742
TB36	Top	yes	yes	yes	yes	yes	yes	✓	VW11/008743
TB36	Bottom	yes	yes	yes	yes	yes	yes	✓	VW11/008744

Analysis Comments: please keep remaining sample frozen for pick up by Oceanica

REQUIRED QA/QC

Comments/Details: as required by NAGD 2009

FOR LAB USE			
Relinquished by:	**Received by:** Kevin Robins	**Date received:** 23/05/11	**Time received:** 15:05
Samples in stated condition (Y)/N):	SEDIMENTS ALL FROZEN.		
Comments from laboratory:	69 x 250mL Glass Jars.		

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CHAIN OF CUSTODY

ATTN: Rick Hughes	**QUOTE/REFERENCE No.:**
LABORATORY: Microanalysis Australia	
ADDRESS:	

Oceanica Project Manager. Dr. Jonathan Anderson	**Oceanica Job No.: 813_003**
Project name: API SAP Terminal B	
Email contact: jonathan.anderson@oceanica.com.au 0422 518 581	

SAMPLE DETAILS

Sampling location: Anketell Point	
Comments: marine sediment sampling	
Delivery:	**Hand** ☒ **Courier** ☐ **Mail** ☐ **Other**
Sample Preservation:	**None** ☐ **Warm** ☐ **Cool** ☐ **Ice** ☐ **Frozen** ☒ **Acidified** ☐ **Filtered** ☐ **Other**
Sample Type:	**Water: Marine** ☒ **Estuarine** ☐ **River** ☐ **Terrestrial** ☐ **Groundwater** ☐ **Wastewater** ☐ **Other**
	Sediment ☒ **Flora** ☐ **Fauna** ☐

REQUIRED SAMPLE TREATMENT

Comments/Details: Sieving (% of material > 212 µm);
Sedigraph (212 – 2 µm) in $Na(PO_3)_6$ – all samples
Sedigraph (212 – 2 µm) in seawater – 10 for comparison (5 with very high clay content, 5 which span the range of textures)

REQUIRED ANALYSIS DETAILS

		Analyte:	% of material > 212 µm	212 – 2 µm	212 – 2 µm		
		Units:	Sieve	Sedigraph	Sedigraph		
		Required Reporting Limit:		In NA(PO3)6	Seawater	***Tick if packed***	***Tick if received***
Sample Code	**Sampling Date**						
SC1			Yes	Yes	See analysis comments		
SC2			Yes	Yes			

	Analyte:	% of material > 212 µm	212 – 2 µm	212 – 2 µm		
	Units:	Sieve	Sedigraph	Sedigraph		
	Required Reporting Limit:		In NA(PO3)6	Seawater	***Tick if packed***	***Tick if received***
Sample Code	**Sampling Date**					
SC3		Yes	Yes	See analysis comments		
SC4		Yes	Yes			
SC5		Yes	Yes			
SC6		Yes	Yes			
SC7		Yes	Yes			
SC8		Yes	Yes			
SC9		Yes	Yes			
SC10		Yes	Yes			
SC11		Yes	Yes			
SC12		Yes	Yes			
TB13		Yes	Yes			
TB14		Yes	Yes			
TB15		Yes	Yes			
TB16		Yes	Yes			
TB17		Yes	Yes			
TB18		Yes	Yes			
TB19		Yes	Yes			
TB20		Yes	Yes			
TB21		Yes	Yes			
TB22		Yes	Yes			
TB23		Yes	Yes			
TB24		Yes	Yes			
TB25		Yes	Yes			
TB26		Yes	Yes			
TB27		Yes	Yes			
TB28		Yes	Yes			
TB29		Yes	Yes			
TB30		Yes	Yes			

		Analyte:	% of material > 212 µm	212 – 2 µm	212 – 2 µm		
		Units:	Sieve	Sedigraph	Sedigraph		
		Required Reporting Limit:		In NA(PO3)6	Seawater	***Tick if packed***	***Tick if received***
Sample Code	**Sampling Date**						
TB31			Yes	Yes	See analysis comments		
TB32			Yes	Yes			
TB33			Yes	Yes			
TB34			Yes	Yes			
TB35			Yes	Yes			
TB36			Yes	Yes			

Analysis Comments: Sedigraph (212 – 2 µm) in seawater – 10 for comparison (5 with very high clay content, 5 which span the range of textures) **THIS IS UP TO YOUR LAB TO DECIDE, THANKS**

REQUIRED QA/QC

Comments/Details: In accordance with NAGD 2009

FOR LAB USE	**Relinquished by:**	**Received by:**	**Date received:**	**Time received:**
	Samples in stated condition (Y/N):			
	Comments from laboratory:			

Appendix B

Laboratory data reports

Part of the Envirolab Group

16 - 18 Hayden Court, Myaree, Western Australia 6154
PO Box 4023 Myaree BC, Western Australia 6960
Tel: +61 8 9317 2505 / Fax: +61 8 9317 4163
email: laboratory@mpl.com.au
www.envirolabservices.com.au
Envirolab Services (WA) Pty Ltd ABN 53 140 099 207

CERTIFICATE OF ANALYSIS 111483

Client:
Oceanica Marine & Coastal Specialists
PO Box 462
WEMBLEY
WA 6913

Attention: Dr Jonathon Anderson

Sample log in details:

Your Reference:	**API SAP Terminal B**
No. of samples:	12 Sediments
Date samples received:	25/5/11
Date completed instructions received:	25/5/11
Location:	Anketell Point

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by:	30/05/11
Date of Preliminary Report:	Not Issued
Issue Date:	30/05/11

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Accredited for compliance with ISO/IEC 17025.
Tests not covered by NATA are denoted with *.

Results Approved By:

Sandra Taylor
Chemistry Lab Supervisor

Metals - soil Our Reference: Your Reference Type of sample	UNITS ----------	111483-1 SC2 Top soil	111483-2 SC2 Bottom1 soil	111483-3 SC3 Top3 soil	111483-4 TB13 Top 2 soil	111483-5 TB13 Top 2 soil
Date digested	-	30/5/11	30/5/11	30/5/11	30/5/11	30/5/11
Date analysed	-	30/5/11	30/5/11	30/5/11	30/5/11	30/5/11
Arsenic	mg/kg	12	11	13	14	15
Silver	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Cadmium	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	mg/kg	51	38	49	20	19
Copper	mg/kg	6	5	6	2	2
Lead	mg/kg	3	2	3	2	1
Antimony	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Mercury	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	mg/kg	20	15	19	6	6
Zinc	mg/kg	11	8	11	3	3

Metals - soil Our Reference: Your Reference Type of sample	UNITS ----------	111483-6 TB13 Top3 soil	111483-7 TB18 Top soil	111483-8 TB24 Top soil	111483-9 TB31 Top soil	111483-10 TB31 Bottom soil
Date digested	-	30/5/11	30/5/11	30/5/11	30/5/11	30/5/11
Date analysed	-	30/5/11	30/5/11	30/5/11	30/5/11	30/5/11
Arsenic	mg/kg	20	16	12	25	22
Silver	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Cadmium	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	mg/kg	23	45	50	33	36
Copper	mg/kg	5	6	6	3	3
Lead	mg/kg	2	3	2	2	2
Antimony	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Mercury	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	mg/kg	7	17	19	10	11
Zinc	mg/kg	4	10	10	5	5

Metals - soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	111483-11 TB32 Top soil	111483-12 TB32 Bottom soil
Date digested	-	30/5/11	30/5/11
Date analysed	-	30/5/11	30/5/11
Arsenic	mg/kg	18	18
Silver	mg/kg	<0.1	<0.1
Cadmium	mg/kg	<0.1	<0.1
Chromium	mg/kg	25	28
Copper	mg/kg	3	3
Lead	mg/kg	2	2
Antimony	mg/kg	<0.5	<0.5
Mercury	mg/kg	<0.01	<0.01
Nickel	mg/kg	8	9
Zinc	mg/kg	4	4

Method ID	Methodology Summary
METALS-020	Metals in soil and water by ICP-OES.
METALS-024	Metals by GF-AAS.

QUALITY CONTROL Metals - soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date digested	-			30/5/11	111483-1	30/5/11 || 30/5/11	LCS	30/5/11
Date analysed	-			30/5/11	111483-1	30/5/11 || 30/5/11	LCS	30/5/11
Arsenic	mg/kg	1	METALS-020	<2	111483-1	12 || 12 || RPD: 0	LCS	111%
Silver	mg/kg	0.1	METALS-020	<10	111483-1	<0.1 || <0.1	LCS	116%
Cadmium	mg/kg	0.1	METALS-020	<0.1	111483-1	<0.1 || <0.1	LCS	110%
Chromium	mg/kg	1	METALS-020	<1	111483-1	51 || 48 || RPD: 6	LCS	112%
Copper	mg/kg	1	METALS-020	<1	111483-1	6 || 6 || RPD: 0	LCS	104%
Lead	mg/kg	1	METALS-020	<1	111483-1	3 || 3 || RPD: 0	LCS	102%
Antimony	mg/kg	0.5	METALS-020	<2	111483-1	<0.5 || <0.5	LCS	117%
Mercury	mg/kg	0.01	METALS-024	<0.1	111483-1	<0.01 || <0.01	LCS	92%
Nickel	mg/kg	1	METALS-020	<1	111483-1	20 || 18 || RPD: 11	LCS	101%
Zinc	mg/kg	1	METALS-020	<5	111483-1	11 || 11 || RPD: 0	LCS	86%

QUALITY CONTROL Metals - soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	111483-2	30/5/11
Date analysed	-	[NT]	[NT]	111483-2	30/5/11
Arsenic	mg/kg	[NT]	[NT]	111483-2	113%
Silver	mg/kg	[NT]	[NT]	[NR]	[NR]
Cadmium	mg/kg	[NT]	[NT]	111483-2	101%
Chromium	mg/kg	[NT]	[NT]	111483-2	#
Copper	mg/kg	[NT]	[NT]	111483-2	92%
Lead	mg/kg	[NT]	[NT]	111483-2	93%
Antimony	mg/kg	[NT]	[NT]	111483-2	#
Mercury	mg/kg	[NT]	[NT]	111483-2	92%
Nickel	mg/kg	[NT]	[NT]	111483-2	101%
Zinc	mg/kg	[NT]	[NT]	111483-2	86%

Report Comments:

Metals in Soil: # Percent recovery is not possible to report due to the high concentration of the element/s in the sample/s and matri

Metals in Soil analyzed by Envirolab Sydney, Job No: 56173

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform & E.coli levels are less than 1cfu/100mL.
The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC& ARMC 2004.

Asbestos was analysed by Approved Identifier: Not applicable for this job
Airborne fibres were analysed by Approved Counter: Not applicable for this job

INS: Insufficient sample for this test; NT: Not tested; PQL: Practical Quantitation Limit; <: Less than; >: Greater than
RPD: Relative Percent Difference; NA: Test not required; LCS: Laboratory Control Sample; NR: Not requested
NS: Not specified; NEPM: National Environmental Protection Measure
DOL: Sample rejected due to particulate overload

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however were analysed at a frequency to meet of exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD a matrix spike recoveries for the sample batch were within laboratory acceptance criteria.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spike and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and Speciated Phenols is acceptable.
Surrogates: 60-140% is acceptable for general organics and 10-140% for SVOC and Speciated Phenols.

QUALITY ASSURANCE REPORT

OCEANICA CONSULTING

Level 1
353 Cambridge Street
Wembley PO Box 462
WA 6913

Attention: Karen Crawley

NMI Job No: OCEA26_W/110524
Sample Matrix: Soil
Sample LRN Range: W11/008676 - 008744

Analyte	LOR	Blank	Units	LRN	Duplicate	LRN	Duplicate	LRN	Duplicate	LRN	Duplicate	LRN	Duplicate	LRN	Duplicate	LRN	Duplicate	Recovery	Acceptability
				W11/008680	D	W11/008690	D	W11/008700	D	W11/008710	D	W11/008720	D	W11/008730	D	W11/008740	D	%	Limits
Moisture	0.1	<0.1	%	27	27	27	28	26	27	25	26	27	26	32	32	22	22	-	-
Trace Elements																			
Antimony	1	<1	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	100 %	75 - 120
Arsenic	1	<1	mg/kg	13	13	18	18	21	22	18	18	19	19	18	18	18	18	95 %	75 - 120
Cadmium	1	<1	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	100 %	75 - 120
Chromium	1	<1	mg/kg	42	42	22	21	25	25	29	29	25	25	63	63	26	27	100 %	75 - 120
Copper	1	<1	mg/kg	5.9	6.0	1.8	1.7	2.1	2.1	2.4	2.5	2.2	2.2	11	11	2.0	2.1	96 %	75 - 120
Lead	1	<1	mg/kg	3.1	3.1	-	-	-	-	-	-	-	-	4.3	4.3	-	-	100 %	75 - 120
Mercury	0.1	<0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	89 %	75 - 120
Nickel	1	<1	mg/kg	15	15	6.3	6.1	7.2	7.4	8.9	8.9	7.3	7.2	23	23	7.7	7.8	103 %	75 - 120
Silver	1	<1	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	100 %	75 - 120
Zinc	1	<1	mg/kg	10	11	-	-	-	-	-	-	-	-	16	16	-	-	99 %	75 - 120

Signed: **David Lynch**
Senior Environmental Chemist
NMI WA, Inorganic Section

Date: **13/06/2011**

REPORT OF ANALYSIS

Report No. RN860543

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008676	SC1 Top	Anketell Point SEDIMENT
W11/008677	SC1 Bottom	Anketell Point SEDIMENT
W11/008678	SC2 Top	Anketell Point SEDIMENT
W11/008679	SC2 Bottom1	Anketell Point SEDIMENT

Lab Reg No.		W11/008676	W11/008677	W11/008678	W11/008679	
Sample Reference	Units	SC1 Top	SC1 Bottom	SC2 Top	SC2 Bottom1	Method
Inorganics						
Moisture	%	29	28	29	26	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	12	13	11	18	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	40	38	38	37	WL273
Copper	mg/kg	5.5	5.5	5.6	5.2	WL273
Lead	mg/kg	Not Tested	Not Tested	3.0	2.6	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	14	14	14	14	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	Not Tested	Not Tested	9.7	8.7	WL273

David Lynch, Section Manager
Inorganics - WA
Accreditation No. 2474

14-JUN-2011

REPORT OF ANALYSIS

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008680	SC3 Top 1	Anketell Point SEDIMENT
W11/008681	SC3 Top 2	Anketell Point SEDIMENT
W11/008682	SC4 Top	Anketell Point SEDIMENT
W11/008683	SC4 Bottom	Anketell Point SEDIMENT

Lab Reg No.		W11/008680	W11/008681	W11/008682	W11/008683	
Sample Reference	Units	SC3 Top 1	SC3 Top 2	SC4 Top	SC4 Bottom	Method
Inorganics						
Moisture	%	27	28	29	29	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	13	13	12	13	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	42	43	40	37	WL273
Copper	mg/kg	5.9	6.1	5.7	5.5	WL273
Lead	mg/kg	3.1	3.3	Not Tested	Not Tested	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	15	15	15	13	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	10	11	Not Tested	Not Tested	WL273

David Lynch, Section Manager
Inorganics - WA
Accreditation No. 2474

14-JUN-2011

REPORT OF ANALYSIS

Report No. RN860543

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008684	SC5 Top	Anketell Point SEDIMENT
W11/008685	SC5 Bottom	Anketell Point SEDIMENT
W11/008686	SC6 Top	Anketell Point SEDIMENT
W11/008687	SC6 Bottom	Anketell Point SEDIMENT

Lab Reg No.		W11/008684	W11/008685	W11/008686	W11/008687	
Sample Reference	Units	SC5 Top	SC5 Bottom	SC6 Top	SC6 Bottom	Method
Inorganics						
Moisture	%	29	28	28	28	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	13	12	12	17	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	42	45	38	47	WL273
Copper	mg/kg	6.0	6.6	5.3	6.6	WL273
Lead	mg/kg	Not Tested	Not Tested	Not Tested	Not Tested	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	15	16	13	17	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	Not Tested	Not Tested	Not Tested	Not Tested	WL273

David Lynch, Section Manager
Inorganics - WA
Accreditation No. 2474

14-JUN-2011

REPORT OF ANALYSIS

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008688	SC7 Top	Anketell Point SEDIMENT
W11/008689	SC7 Bottom	Anketell Point SEDIMENT
W11/008690	SC8 Top	Anketell Point SEDIMENT
W11/008691	SC8 Bottom	Anketell Point SEDIMENT

Lab Reg No.		W11/008688	W11/008689	W11/008690	W11/008691	
Sample Reference	Units	SC7 Top	SC7 Bottom	SC8 Top	SC8 Bottom	Method
Inorganics						
Moisture	%	26	27	27	28	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	18	19	18	18	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	23	22	22	16	WL273
Copper	mg/kg	2.1	1.7	1.8	1.5	WL273
Lead	mg/kg	Not Tested	Not Tested	Not Tested	Not Tested	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	6.6	5.9	6.3	4.2	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	Not Tested	Not Tested	Not Tested	Not Tested	WL273

David Lynch, Section Manager
Inorganics - WA
Accreditation No. 2474

14-JUN-2011

REPORT OF ANALYSIS

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008692	SC9 Top	Anketell Point SEDIMENT
W11/008693	SC9 Bottom1	Anketell Point SEDIMENT
W11/008694	SC9 Bottom2	Anketell Point SEDIMENT
W11/008695	SC9 Bottom3	Anketell Point SEDIMENT

Lab Reg No.		W11/008692	W11/008693	W11/008694	W11/008695	
Sample Reference	Units	SC9 Top	SC9 Bottom1	SC9 Bottom2	SC9 Bottom3	Method
Inorganics						
Moisture	%	28	28	29	30	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	20	17	17	17	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	21	19	17	26	WL273
Copper	mg/kg	1.7	1.6	1.5	2.1	WL273
Lead	mg/kg	Not Tested	Not Tested	Not Tested	Not Tested	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	5.9	5.2	4.7	7.8	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	Not Tested	Not Tested	Not Tested	Not Tested	WL273

David Lynch, Section Manager
Inorganics - WA
Accreditation No. 2474

14-JUN-2011

REPORT OF ANALYSIS

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008696	SC10 Top 1	Anketell Point SEDIMENT
W11/008697	SC10 Top 2	Anketell Point SEDIMENT
W11/008698	SC10 Top 3	Anketell Point SEDIMENT
W11/008699	SC10 Bottom3	Anketell Point SEDIMENT

Lab Reg No.		W11/008696	W11/008697	W11/008698	W11/008699	
Sample Reference	Units	SC10 Top 1	SC10 Top 2	SC10 Top 3	SC10 Bottom3	Method
Inorganics						
Moisture	%	26	24	24	26	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	23	22	22	18	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	23	25	29	29	WL273
Copper	mg/kg	2.2	2.2	2.5	2.5	WL273
Lead	mg/kg	Not Tested	Not Tested	2.1	1.8	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	6.9	7.0	8.8	8.9	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	Not Tested	Not Tested	4.8	4.8	WL273

David Lynch, Section Manager
Inorganics - WA
Accreditation No. 2474

14-JUN-2011

REPORT OF ANALYSIS

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008700	SC11 Top	Anketell Point SEDIMENT
W11/008701	SC11 Bottom	Anketell Point SEDIMENT
W11/008702	SC12 Top	Anketell Point SEDIMENT
W11/008703	SC12 Bottom	Anketell Point SEDIMENT

Lab Reg No.		W11/008700	W11/008701	W11/008702	W11/008703	
Sample Reference	Units	SC11 Top	SC11 Bottom	SC12 Top	SC12 Bottom	Method
Inorganics						
Moisture	%	26	26	27	29	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	21	20	18	18	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	25	19	30	25	WL273
Copper	mg/kg	2.1	2.1	2.5	2.2	WL273
Lead	mg/kg	Not Tested	Not Tested	1.9	1.8	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	7.2	5.7	9.3	7.8	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	Not Tested	Not Tested	5.1	4.3	WL273

David Lynch, Section Manager
Inorganics - WA
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14-JUN-2011

REPORT OF ANALYSIS

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008704	TB13 Top	Anketell Point SEDIMENT
W11/008705	TB13 Bottom1	Anketell Point SEDIMENT
W11/008706	TB13 Bottom2	Anketell Point SEDIMENT
W11/008707	TB14 Top	Anketell Point SEDIMENT

Lab Reg No.		W11/008704	W11/008705	W11/008706	W11/008707	
Sample Reference	Units	TB13 Top	TB13 Bottom1	TB13 Bottom2	TB14 Top	Method
Inorganics						
Moisture	%	27	28	27	27	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	20	19	17	17	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	19	19	18	26	WL273
Copper	mg/kg	1.7	1.8	1.6	2.3	WL273
Lead	mg/kg	Not Tested	Not Tested	Not Tested	1.5	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	5.5	5.3	4.9	8.1	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	Not Tested	Not Tested	Not Tested	4.4	WL273

David Lynch, Section Manager
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REPORT OF ANALYSIS

Report No. RN860543

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008708	TB14 Bottom	Anketell Point SEDIMENT
W11/008709	TB15 Top 1	Anketell Point SEDIMENT
W11/008710	TB15 Bottom	Anketell Point SEDIMENT
W11/008711	TB15 Top 2	Anketell Point SEDIMENT

Lab Reg No.		W11/008708	W11/008709	W11/008710	W11/008711	
Sample Reference	Units	TB14 Bottom	TB15 Top 1	TB15 Bottom	TB15 Top 2	Method
Inorganics						
Moisture	%	27	28	25	26	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	15	17	18	18	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	23	29	29	30	WL273
Copper	mg/kg	2.0	2.5	2.4	2.5	WL273
Lead	mg/kg	1.5	Not Tested	Not Tested	Not Tested	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	7.2	9.0	8.9	9.1	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	3.9	Not Tested	Not Tested	Not Tested	WL273

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REPORT OF ANALYSIS

Report No. RN860543

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008712	TB15 Top 3	Anketell Point SEDIMENT
W11/008713	TB16 Top	Anketell Point SEDIMENT
W11/008714	TB16 Bottom	Anketell Point SEDIMENT
W11/008715	TB16 Top 2	Anketell Point SEDIMENT

Lab Reg No.		W11/008712	W11/008713	W11/008714	W11/008715	
Sample Reference	Units	TB15 Top 3	TB16 Top	TB16 Bottom	TB16 Top 2	Method
Inorganics						
Moisture	%	27	25	22	27	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	19	19	21	21	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	33	22	28	24	WL273
Copper	mg/kg	2.7	1.7	2.2	1.9	WL273
Lead	mg/kg	Not Tested	Not Tested	Not Tested	Not Tested	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	10	6.3	8.4	6.9	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	Not Tested	Not Tested	Not Tested	Not Tested	WL273

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REPORT OF ANALYSIS

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008716	TB16 Top 3	Anketell Point SEDIMENT
W11/008717	TB17 Top 1	Anketell Point SEDIMENT
W11/008718	TB18 Top	Anketell Point SEDIMENT
W11/008719	TB19 Top	Anketell Point SEDIMENT

Lab Reg No.		W11/008716	W11/008717	W11/008718	W11/008719	
Sample Reference	Units	TB16 Top 3	TB17 Top 1	TB18 Top	TB19 Top	Method
Inorganics						
Moisture	%	28	25	29	26	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	21	14	16	17	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	20	34	31	21	WL273
Copper	mg/kg	1.7	4.1	4.2	2.0	WL273
Lead	mg/kg	Not Tested	Not Tested	2.4	Not Tested	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	5.5	12	11	6.3	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	Not Tested	Not Tested	7.0	Not Tested	WL273

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REPORT OF ANALYSIS

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008720	TB20 Top	Anketell Point SEDIMENT
W11/008721	TB21 Top	Anketell Point SEDIMENT
W11/008722	TB22 Top	Anketell Point SEDIMENT
W11/008723	TB23 Top	Anketell Point SEDIMENT

Lab Reg No.		W11/008720	W11/008721	W11/008722	W11/008723	
Sample Reference	Units	TB20 Top	TB21 Top	TB22 Top	TB23 Top	Method
Inorganics						
Moisture	%	27	29	30	30	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	19	9.7	10	11	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	25	45	40	44	WL273
Copper	mg/kg	2.2	6.4	5.5	6.1	WL273
Lead	mg/kg	Not Tested	Not Tested	Not Tested	Not Tested	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	7.3	17	14	16	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	Not Tested	Not Tested	Not Tested	Not Tested	WL273

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REPORT OF ANALYSIS

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008724	TB24 Top	Anketell Point SEDIMENT
W11/008725	TB25 Top	Anketell Point SEDIMENT
W11/008726	TB26 Top	Anketell Point SEDIMENT
W11/008727	TB27 Top	Anketell Point SEDIMENT

Lab Reg No.		W11/008724	W11/008725	W11/008726	W11/008727	
Sample Reference	Units	TB24 Top	TB25 Top	TB26 Top	TB27 Top	Method
Inorganics						
Moisture	%	27	26	25	26	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	12	18	16	16	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	42	24	31	33	WL273
Copper	mg/kg	5.4	2.0	3.1	3.6	WL273
Lead	mg/kg	2.3	Not Tested	Not Tested	Not Tested	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	15	7.0	10	11	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	9.2	Not Tested	Not Tested	Not Tested	WL273

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REPORT OF ANALYSIS

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008728	TB28 Top	Anketell Point SEDIMENT
W11/008729	TB29 Top	Anketell Point SEDIMENT
W11/008730	TB29 Bottom	Anketell Point SEDIMENT
W11/008731	TB30 Top	Anketell Point SEDIMENT

Lab Reg No.		W11/008728	W11/008729	W11/008730	W11/008731	
Sample Reference	Units	TB28 Top	TB29 Top	TB29 Bottom	TB30 Top	Method
Inorganics						
Moisture	%	24	29	32	22	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	27	17	18	25	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	25	49	63	23	WL273
Copper	mg/kg	1.9	7.7	11	1.9	WL273
Lead	mg/kg	Not Tested	3.5	4.3	Not Tested	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	6.6	17	23	6.5	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	Not Tested	13	16	Not Tested	WL273

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REPORT OF ANALYSIS

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008732	TB30 Bottom	Anketell Point SEDIMENT
W11/008733	TB31 Top	Anketell Point SEDIMENT
W11/008734	TB31 Bottom	Anketell Point SEDIMENT
W11/008735	TB32 Top	Anketell Point SEDIMENT

Lab Reg No.		W11/008732	W11/008733	W11/008734	W11/008735	
Sample Reference	Units	TB30 Bottom	TB31 Top	TB31 Bottom	TB32 Top	Method
Inorganics						
Moisture	%	21	24	22	25	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	23	24	22	22	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	24	27	30	25	WL273
Copper	mg/kg	2.2	2.0	2.2	2.0	WL273
Lead	mg/kg	Not Tested	Not Tested	Not Tested	Not Tested	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	6.8	7.5	8.7	7.0	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	Not Tested	Not Tested	Not Tested	Not Tested	WL273

David Lynch, Section Manager
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REPORT OF ANALYSIS

Report No. RN860543

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008736	TB32 Bottom	Anketell Point SEDIMENT
W11/008737	TB33 Top	Anketell Point SEDIMENT
W11/008738	TB33 Bottom	Anketell Point SEDIMENT
W11/008739	TB34 Top	Anketell Point SEDIMENT

Lab Reg No.		W11/008736	W11/008737	W11/008738	W11/008739	
Sample Reference	Units	TB32 Bottom	TB33 Top	TB33 Bottom	TB34 Top	Method
Inorganics						
Moisture	%	24	28	24	25	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	20	20	21	20	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	27	29	29	27	WL273
Copper	mg/kg	2.2	2.6	2.4	2.1	WL273
Lead	mg/kg	Not Tested	1.8	1.8	Not Tested	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	7.7	8.8	8.7	7.8	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	Not Tested	4.7	4.5	Not Tested	WL273

David Lynch, Section Manager
Inorganics - WA
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REPORT OF ANALYSIS

Report No. RN860543

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
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Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008740	TB34 Bottom	Anketell Point SEDIMENT
W11/008741	TB35 Top	Anketell Point SEDIMENT
W11/008742	TB35 Bottom	Anketell Point SEDIMENT
W11/008743	TB36 Top	Anketell Point SEDIMENT

Lab Reg No.		W11/008740	W11/008741	W11/008742	W11/008743	
Sample Reference	Units	TB34 Bottom	TB35 Top	TB35 Bottom	TB36 Top	Method
Inorganics						
Moisture	%	22	24	21	26	WL170
Trace Elements						
Antimony	mg/kg	< 1	< 1	< 1	< 1	WL273
Arsenic	mg/kg	18	24	21	16	WL273
Cadmium	mg/kg	< 1	< 1	< 1	< 1	WL273
Chromium	mg/kg	26	26	24	22	WL273
Copper	mg/kg	2.0	2.0	1.8	2.2	WL273
Lead	mg/kg	Not Tested	Not Tested	Not Tested	1.7	WL273
Mercury	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	WL41
Nickel	mg/kg	7.7	7.3	6.5	6.6	WL273
Silver	mg/kg	< 1	< 1	< 1	< 1	WL273
Zinc	mg/kg	Not Tested	Not Tested	Not Tested	3.9	WL273

David Lynch, Section Manager
Inorganics - WA
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REPORT OF ANALYSIS

Client	: OCEANICA CONSULTING PTY LTD	Job No.	: OCEA26_W/110524
	LEVEL 1	Quote No.	: QT-01780
	353 CAMBRIDGE STREET	Order No.	: 813_003
	WEMBLEY WA 6913	Date Sampled	:
		Date Received	: 23-MAY-2011
Attention	: JONATHAN ANDERSON	Sampled By	: CLIENT
Project Name	:		
Your Client Services Manager	: DAVID LYNCH	Phone	: (08) 9368 8420

Lab Reg No.	Sample Ref	Sample Description
W11/008744	TB36 Bottom	Anketell Point SEDIMENT

Lab Reg No.		W11/008744				
Sample Reference	Units	TB36 Bottom				Method
Inorganics						
Moisture	%	24				WL170
Trace Elements						
Antimony	mg/kg	< 1				WL273
Arsenic	mg/kg	16				WL273
Cadmium	mg/kg	< 1				WL273
Chromium	mg/kg	22				WL273
Copper	mg/kg	2.3				WL273
Lead	mg/kg	1.9				WL273
Mercury	mg/kg	< 0.1				WL41
Nickel	mg/kg	6.9				WL273
Silver	mg/kg	< 1				WL273
Zinc	mg/kg	3.8				WL273

David Lynch, Section Manager
Inorganics - WA
Accreditation No. 2474

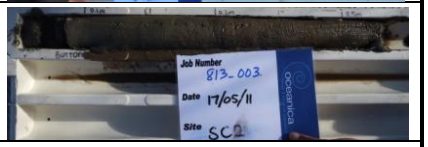
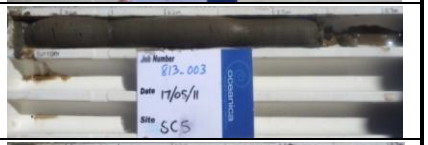
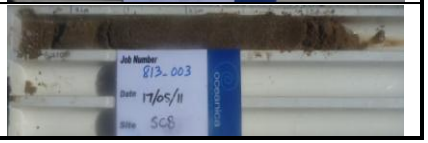
14-JUN-2011

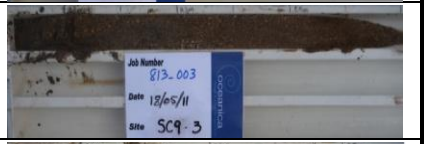
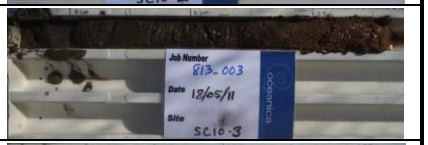
Unless notified to the contrary, the above samples will be disposed of one month from the reporting date.

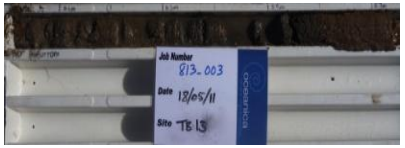
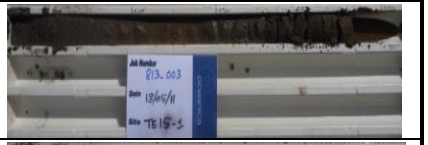
This report is issued in accordance with NATA's accreditation requirements.
Accreditated for compliance with ISO/IEC 17025.
This report shall not be reproduced except in full.
Results relate only to the sample(s) tested.

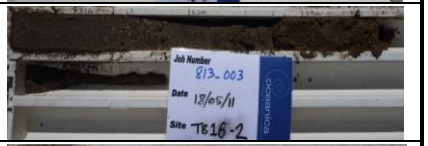
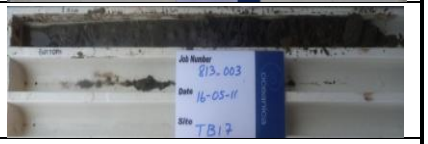
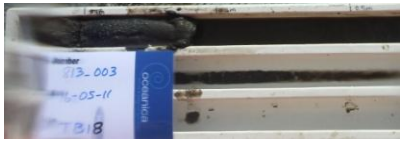
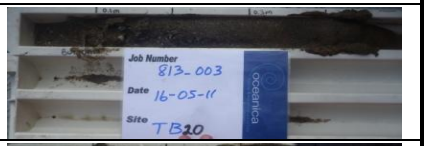
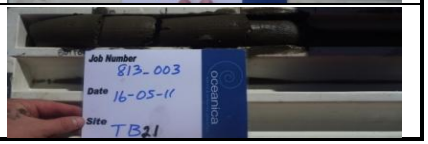
Appendix C

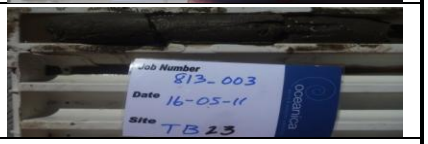
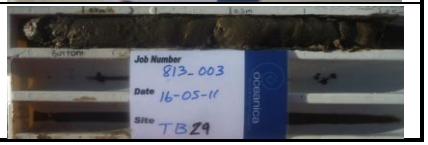
Field log

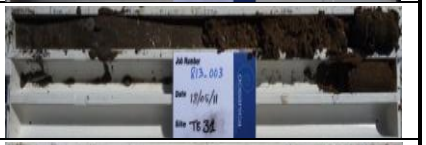
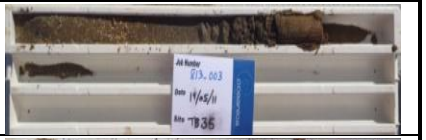
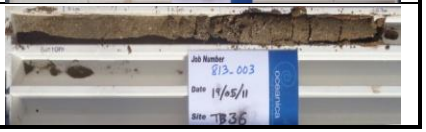
Date & Diver	Site	Core length	Section	Metals (250 ml)	PSD (1 bag)	Sample Characteristics - type of material, colour, odour	Photo Taken
JA 17/05/2011	SC1	60	Top	yes	Yes	Dark brown, uniform, large shell content at 50-60 cm, no odour	
			Bottom	yes		**SITE:** N/A*	
JA 17/05/2011	SC2	80	Top	Yes	Yes	Dark grey, high shell content, no odour	
			Bottom1	Yes			
	Splits		Top	Yes		**SITE:** N/A	
			Top	Yes			
JA 17/05/2011	SC3	50	Top 1	yes	Yes	Brown clay surface 0 -10, dark bottom, no odour	
			Bottom	**N/A**			
	Splits		Top 2	Yes	No	**SITE:** N/A	
			Top 3	Yes	No		
JA 17/05/2011	SC4	50	Top	Yes	Yes	Dark grey, uniform, shell at bottom, no odour	
			Bottom	Yes		**SITE:** Sandy high energy	
JA 17/05/2011	SC5	70	Top	Yes	Yes	Dark grey, uniform, shell at bottom, no odour	
			Bottom	Yes		**SITE:** Sandy high energy	
JA 17/05/2011	SC6	90	Top	Yes	Yes	Brown surface, dark grey, shell material at bottom, no odour	
			Bottom	Yes		**SITE:** Sandy high energy	
AB 17/05/2011	SC7	60	Top	Yes	Yes	High shell content, dark brown, course, , no odour	
			Bottom	Yes		**SITE:** Sandy high energy	
AB 17/05/2011	SC8	60	Top	Yes	Yes	Brown surface, dark brown, high shell content, no odour	
			Bottom	Yes		**SITE:** Sandy high energy	

Date & Diver	Site	Core length	Section	Metals (250 ml)	PSD (1 bag)	Sample Characteristics - type of material, colour, odour	Photo Taken
AB 18/05/11	SC9 **Triplicates**	70	Top	Yes	Yes	Brown surface, dark brown, high shell content, no odour	
			Bottom	Yes		**SITE:** Sandy, high energy	
		70	Bottom	Yes	No	Brown surface, dark brown, high shell content, no odour	
		70	Bottom	Yes	No	Brown surface, dark brown, high shell content, no odour	
AB 18/05/11	SC10	50	Top	Yes	Yes	Brown surface, dark brown, high shell content, no odour	
			Bottom	Yes		**SITE:** Sandy, high energy	
	Triplicates	50	Top2	Yes	No	Brown surface, dark brown, high shell content, no odour	
		50	Top3	Yes	No	Brown surface, dark brown, high shell content , no odour	
AB 17/05/2011	SC11	60	Top	Yes	Yes	Brown surface, dark brown, high shell content, no odour	
			Bottom	Yes		**SITE:** Sandy high energy	
AB 17/05/2011	SC12	60	Top	Yes	Yes	Brown surface, dark brown, , no odour	
			Bottom	Yes		**SITE:** Sandy high energy	

Date & Diver	Site	Core length	Section	Metals (250 ml)	PSD (1 bag)	Sample Characteristics - type of material, colour, odour	Photo Taken
AB 18/05/2011	TB13	70	Top	Yes	Yes	Brown surface, dark brown, high shell content, no odour	
			Top	Yes			
			Top	Yes			
			Bottom1	Yes			
	Splits		Bottom2	Yes	No	**SITE:** Sandy, high energy	
			Bottom3	Yes	No		
AB 18/05/2011	TB14	70	Top	Yes	Yes	Brown surface, dark brown, high shell content, no odour	
			Bottom	Yes		**SITE:** Sandy	
JA 18/05/2011	TB15	90	Top 1	yes	Yes	Brown surface, dark brown, high shell content, no odour	
			Bottom	yes		**SITE:** Sandy, high energy	
	Triplicates	80	Top 2	yes	No	Brown surface, dark brown, high shell content, no odour	
		70	Top 3	yes	No	Brown surface, dark brown, high shell content, no odour	

Date & Diver	Site	Core length	Section	Metals (250 ml)	PSD (1 bag)	Sample Characteristics - type of material, colour, odour	Photo Taken
JA 18/05/2011	TB16	100	Top	yes	Yes	Clay 0-20, shells 40-50, dark grey 50-100, no odour	
			Bottom	yes		**SITE:** Sandy, high energy	
	Triplicates	70	Top 2	yes	No	Clay 0-20, shells 40-50, dark grey 50-70, no odour	
		100	Top 3	yes	No	Clay 0-20, shells 40-50, dark grey 50-100, no odour	
RL 16/05/11	TB17	50	Top	yes	Yes	Brown to dark grey, shell material bottom, no odour	
			Bottom	**N/A**		**SITE:** N/A	
RL 16/05/11	TB18	30	Top	yes	Yes	Dark grey uniform, shell material bottom, no odour	
			Bottom	**N/A**		**SITE:** N/A	
RL 16/05/11	TB19	20	Top	yes	Yes	Dark grey uniform, large shell material bottom, no odour	
			Bottom	**N/A**		**SITE:** N/A	
RL 16/05/11	TB20	50	Top	yes	Yes	Dark grey uniform, shell material bottom, no odour	
			Bottom	**N/A**		**SITE:** N/A	
RL 16/05/11	TB21	40	Top	yes	Yes	Dark grey uniform, shell material bottom, no odour	
			Bottom	**N/A**		**SITE:** N/A	

Date & Diver	Site	Core length	Section	Metals (250 ml)	PSD (1 bag)	Sample Characteristics - type of material, colour, odour	Photo Taken
RL 16/05/11	TB22	40	Top	yes	Yes	0-5 shell material, dark grey uniform, shell material bottom, no odour	
			Bottom	**N/A**		**SITE:** N/A	
AB 16/05/11	TB23	40	Top	yes	Yes	0-5 shell material, dark grey uniform, shell material bottom, no odour	
			Bottom	**N/A**		**SITE:** N/A	
AB 16/05/11	TB24	50	Top	yes	Yes	Uniform dark grey sands, no odour	
			Bottom	**N/A**		**SITE:** N/A	
AB 16/05/11	TB25	50	Top	yes	Yes	Brown surface to dark grey sands, no odour	
			Bottom	**N/A**		**SITE:** N/A	
AB 16/05/11	TB26	50	Top	yes	Yes	Brown surface to dark grey sands, no odour	
			Bottom	**N/A**		**SITE:** N/A	
AB 16/05/11	TB27	50	Top	yes	Yes	Uniform dark grey sands, no odour	
			Bottom	**N/A**		**SITE:** N/A	
AB 16/05/11	TB28	50	Top	yes	Yes	Uniform dark grey sands, no odour	
			Bottom	**N/A**		**SITE:** N/A	
AB 16/05/11	TB29	60	Top	yes	Yes	Brown surface to dark grey sands, no odour	
			Bottom	yes		**SITE:** N/A	

Date & Diver	Site	Core length	Section	Metals (250 ml)	PSD (1 bag)	Sample Characteristics - type of material, colour, odour	Photo Taken
JA 18/05/11	TB30	100	Top	yes	Yes	Light brown at surface, dark /grey brown, shell throughout, no odour	
			Bottom	yes		**SITE:** Sandy, high energy	
JA 18/05/11	TB31	100	Top	yes	Yes	Light brown at surface, dark /grey brown, shell throughout, no odour	
			Bottom	yes		**SITE:** Sandy, high energy	
JA 18/05/11	TB32	100	Top	yes	Yes	Light brown at surface, dark /grey brown, shell throughout, no odour	
			Bottom	yes		**SITE:** Sandy, high energy	
JA 18/05/11	TB33	100	Top	yes	Yes	Light brown at surface, dark /grey brown, shell throughout, no odour	
			Bottom	yes		**SITE:** Sandy, high energy	
JA 19/05/11	TB34	80	Top	yes	Yes	Light brown at surface, dark /grey brown, shell throughout, no odour	
			Bottom	yes		**SITE:** Sandy, high energy	
JA 19/05/11	TB35	80	Top	yes	Yes	Light brown at surface, dark /grey brown, shell layer at 50 cm, no odour	
			Bottom	yes		**SITE:** Sandy, high energy	
JA 19/05/11	TB36	70	Top	yes	Yes	Light brown at surface, dark /grey brown, shell throughout, no odour	
			Bottom	yes		**SITE:** Sandy, high energy	

Notes:
*N/A some site seabed descriptions are not available due to <0.5 m underwater visibility during sample collection

Appendix D

Metal Data

Dredge footprint top 0-0.5 m metal concentration and 95% upper confidence limit (UCL) (mg/kg)

Sample	Antimony*	Arsenic	Cadmium*	Chromium	Copper	Lead	Mercury*	Nickel	Silver*	Zinc
SC1	0.5	12.0	0.5	40.0	5.5	ND	0.05	14.0	0.5	ND
SC2	0.5	11.7	0.5	45.7	5.9	3.0	0.05	17.3	0.5	10.6
SC3	0.5	13.0	0.5	44.7	6.0	3.1	0.05	16.3	0.5	10.7
SC4	0.5	12.0	0.5	40.0	5.7	ND	0.05	15.0	0.5	ND
SC5	0.5	13.0	0.5	42.0	6.0	ND	0.05	15.0	0.5	ND
SC6	0.5	12.0	0.5	38.0	5.3	ND	0.05	13.0	0.5	ND
SC7	0.5	18.0	0.5	23.0	2.1	ND	0.05	6.6	0.5	ND
SC8	0.5	18.0	0.5	22.0	1.8	ND	0.05	6.3	0.5	ND
SC9	0.5	20.0	0.5	21.0	1.7	ND	0.05	5.9	0.5	ND
SC10	0.5	22.3	0.5	25.7	2.3	2.1	0.05	7.6	0.5	4.8
SC11	0.5	21.0	0.5	25.0	2.1	ND	0.05	7.2	0.5	ND
SC12	0.5	18.0	0.5	30.0	2.5	1.9	0.05	9.3	0.5	5.1
TB13	0.5	16.3	0.5	19.3	1.9	1.5	0.05	5.8	0.5	3.0
TB14	0.5	17.0	0.5	26.0	2.3	1.5	0.05	8.1	0.5	4.4
TB15	0.5	18.0	0.5	30.7	2.6	ND	0.05	9.4	0.5	ND
TB16	0.5	20.3	0.5	22.0	1.8	ND	0.05	6.2	0.5	ND
TB17	0.5	14.0	0.5	34.0	4.1	ND	0.05	12.0	0.5	ND
TB18	0.5	16.0	0.5	38.0	5.1	2.7	0.05	14.0	0.5	8.5
TB19	0.5	17.0	0.5	21.0	2.0	ND	0.05	6.3	0.5	ND
TB20	0.5	19.0	0.5	25.0	2.2	ND	0.05	7.3	0.5	ND
TB21	0.5	9.7	0.5	45.0	6.4	ND	0.05	17.0	0.5	ND
TB22	0.5	10.0	0.5	40.0	5.5	ND	0.05	14.0	0.5	ND
TB23	0.5	11.0	0.5	44.0	6.1	ND	0.05	16.0	0.5	ND
TB24	0.5	12.0	0.5	46.0	5.7	2.2	0.05	17.0	0.5	9.6
TB25	0.5	18.0	0.5	24.0	2.0	ND	0.05	7.0	0.5	ND
TB26	0.5	16.0	0.5	31.0	3.1	ND	0.05	10.0	0.5	ND
TB27	0.5	16.0	0.5	33.0	3.6	ND	0.05	11.0	0.5	ND
TB28	0.5	27.0	0.5	25.0	1.9	ND	0.05	6.6	0.5	ND
TB29	0.5	17.0	0.5	49.0	7.7	3.5	0.05	17.0	0.5	13.0
TB30	0.5	25.0	0.5	23.0	1.9	ND	0.05	6.5	0.5	ND
TB31	0.5	24.5	0.5	30.0	2.5	2.0	0.05	8.8	0.5	5.0
TB32	0.5	20.0	0.5	25.0	2.5	2.0	0.05	7.5	0.5	4.0
TB33	0.5	20.0	0.5	29.0	2.6	1.8	0.05	8.8	0.5	4.7
TB34	0.5	20.0	0.5	27.0	2.1	ND	0.05	7.8	0.5	ND
TB35	0.5	24.0	0.5	26.0	2.0	ND	0.05	7.3	0.5	ND
TB36	0.5	16.0	0.5	22.0	2.2	1.7	0.05	6.6	0.5	3.9

Sample	Antimony*	Arsenic	Cadmium*	Chromium	Copper	Lead	Mercury*	Nickel	Silver*	Zinc
Screening Level	2	20	1.5	80	65	50	0.15	21	1.0	200
95% UCL Top	0.5*	18.3	0.5*	34.2	4.1	2.7	0.05*	11.5	0.5*	9.3
Distribution	ND	Normal	ND	Lognormal	Normal	Normal	ND	Normal	ND	Lognormal

*Data below LOR were assigned a value of LOR/2
ND – not determined

Dredge footprint bottom 0.5-1.0 m metal concentration and 95% upper confidence limit (UCL) (mg/kg)

Sample	Antimony*	Arsenic	Cadmium*	Chromium	Copper	Lead	Mercury*	Nickel	Silver*	Zinc
SC1	0.5	13.0	0.5	38.0	5.5	ND	0.05	14.0	0.5	ND
SC2	0.5	14.5	0.5	37.5	5.1	2.3	0.05	14.5	0.5	8.4
SC4	0.5	13.0	0.5	37.0	5.5	ND	0.05	13.0	0.5	ND
SC5	0.5	12.0	0.5	45.0	6.6	ND	0.05	16.0	0.5	ND
SC6	0.5	17.0	0.5	47.0	6.6	ND	0.05	17.0	0.5	ND
SC7	0.5	19.0	0.5	22.0	1.7	ND	0.05	5.9	0.5	ND
SC8	0.5	18.0	0.5	16.0	1.5	ND	0.05	4.2	0.5	ND
SC9	0.5	17.0	0.5	20.7	1.7	ND	0.05	5.9	0.5	ND
SC10	0.5	18.0	0.5	29.0	2.5	1.8	0.05	8.9	0.5	4.8
SC11	0.5	20.0	0.5	19.0	2.1	ND	0.05	5.7	0.5	ND
SC12	0.5	18.0	0.5	25.0	2.2	1.8	0.05	7.8	0.5	4.3
TB13	0.5	18.7	0.5	20.0	2.8	2.0	0.05	5.7	0.5	4.0
TB14	0.5	15.0	0.5	23.0	2.0	1.5	0.05	7.2	0.5	3.9
TB15	0.5	18.0	0.5	29.0	2.4	ND	0.05	8.9	0.5	ND
TB16	0.5	21.0	0.5	28.0	2.2	ND	0.05	8.4	0.5	ND
TB29	0.5	18.0	0.5	63.0	11.0	4.3	0.05	23.0	0.5	16.0
TB30	0.5	23.0	0.5	24.0	2.2	ND	0.05	6.8	0.5	ND
TB31	0.5	22.0	0.5	33.0	2.6	2.0	0.05	9.9	0.5	5.0
TB32	0.5	19.0	0.5	27.5	2.6	2.0	0.05	8.4	0.5	4.0
TB33	0.5	21.0	0.5	29.0	2.4	1.8	0.05	8.7	0.5	4.5
TB34	0.5	18.0	0.5	26.0	2.0	ND	0.05	7.7	0.5	ND
TB35	0.5	21.0	0.5	24.0	1.8	ND	0.05	6.5	0.5	ND
TB36	0.5	16.0	0.5	22.0	2.3	1.9	0.05	6.9	0.5	3.8
Screening Level	2	20	1.5	80	65	50	0.15	21	1.0	200
95% UCL Bottom	0.5*	18.9	0.5*	33.8	5.6	2.6	0.05*	11.5	0.5*	8.1
Distribution	ND	Gamma	ND	Normal	Non parametric	Normal	ND	Lognormal	ND	Normal
95% UCL Top & Bottom Combined	0.5*	18.2	0.5*	33.0	4.7	2.6	0.05*	11.0	0.5*	7.7
Distribution	ND	Normal	ND	Normal	Non-parametric	Normal	ND	Normal	ND	Normal

Notes:*Data below LOR were assigned a value of LOR/2
ND – not determined

Appendix E

Particle size distributions

Particle size distribution for sediment samples within the Terminal 2, Stage 1 footprint

Site	Particle size range							
	Clay	Silt	Very fine sand	Fine sand	Medium sand	Coarse sand	Very coarse sand	Gravel
	<4 µm	4-63 µm	64-106 µm	106-212 µm	212-500 µm	500-1000 µm	1000-2000 µm	>2000 µm
	Percent (%)							
SC1	0.11	0.59	0.67	25.92	58.66	11.17	1.99	0.90
SC2	4.69	15.14	5.24	45.10	14.51	6.42	3.70	5.21
SC3	3.53	12.05	7.51	41.53	14.48	6.18	2.89	11.83
SC4	3.52	16.10	5.00	42.29	13.21	5.45	3.80	10.64
SC5	5.56	17.24	4.87	48.19	13.87	4.55	2.26	3.47
SC5 SEA	2.13	16.55	8.99	48.19	13.87	4.55	2.26	3.47
SC6	4.47	13.12	5.92	42.82	13.60	5.97	3.69	10.41
SC7	0.64	1.29	0.56	10.53	61.04	17.33	5.70	2.91
SC8	0.36	0.24	0.13	10.45	59.84	22.36	4.24	2.39
SC9	0.25	0.10	0.09	10.65	54.88	23.68	5.89	4.47
SC10	0.23	1.57	0.79	21.19	37.09	25.14	8.77	5.23
SC11	0.41	0.78	0.70	20.29	51.83	18.10	5.72	2.17
SC12	4.38	14.23	5.97	41.96	15.29	6.70	3.76	7.71
SC12 SEA	2.63	16.96	4.99	41.96	15.29	6.70	3.76	7.71
TB13	0.32	0.39	0.40	13.57	55.38	21.88	6.27	1.79
TB14	0.06	0.94	0.90	36.43	45.28	8.51	2.61	5.27
TB15	0.35	0.88	0.77	28.46	54.03	9.17	2.92	3.42
TB15 SEA	0.53	0.86	0.62	28.46	54.03	9.17	2.92	3.42
TB16	0.48	0.46	0.34	15.81	62.60	14.00	3.47	2.84
TB17	2.29	5.81	4.03	52.52	21.64	7.98	2.45	3.27
TB17 SEA	1.82	5.63	4.68	52.52	21.64	7.98	2.45	3.27
TB18	3.86	9.27	4.17	32.70	19.68	17.37	6.31	6.64
TB18 SEA	3.03	8.27	6.00	32.70	19.68	17.37	6.31	6.64
TB19	0.19	1.56	2.38	18.76	34.64	20.18	6.01	16.27
TB19 SEA	1.13	1.77	1.25	18.76	34.64	20.18	6.01	16.27
TB20	0.43	1.25	1.02	9.51	52.10	22.35	4.40	8.94
TB21	4.00	14.69	12.56	57.52	6.39	2.59	0.97	1.27
TB21 SEA	1.59	19.84	9.81	57.52	6.39	2.59	0.97	1.27
TB22	2.15	10.33	11.16	55.92	9.31	5.43	2.91	2.79
TB23	2.73	10.73	10.45	52.17	10.03	7.27	3.45	3.18
TB23 SEA	4.21	12.98	6.72	52.17	10.03	7.27	3.45	3.18
TB24	1.96	9.74	9.38	63.01	10.69	2.60	1.09	1.54
TB25	0.20	0.65	0.75	11.19	61.19	20.88	3.22	1.92
TB26	0.00	13.21	27.69	11.19	38.99	5.40	1.65	1.87
TB27	0.52	3.37	3.79	49.12	28.32	9.05	2.76	3.06
TB27 SEA	1.96	2.80	2.92	49.12	28.32	9.05	2.76	3.06
TB28	0.30	0.55	0.50	8.45	62.67	21.35	3.66	2.51
TB29	4.59	16.73	6.15	20.19	19.52	20.74	3.07	9.02
TB29 SEA	2.91	17.74	6.81	20.19	19.52	20.74	3.07	9.02
TB30	0.53	1.04	0.96	10.10	51.41	27.27	4.68	4.01
TB31	0.62	0.41	0.36	9.92	68.98	14.73	2.81	2.15
TB32	0.40	0.41	0.35	14.12	68.29	11.00	2.67	2.75
TB33	0.33	0.42	0.34	24.89	51.78	11.96	3.79	6.48
TB34	0.29	0.41	0.37	12.82	69.18	9.95	2.73	4.26
TB35	0.30	0.36	0.26	9.33	64.48	16.29	4.00	4.98
TB36	0.69	0.83	0.95	19.34	46.60	23.18	4.91	3.49

Appendix F

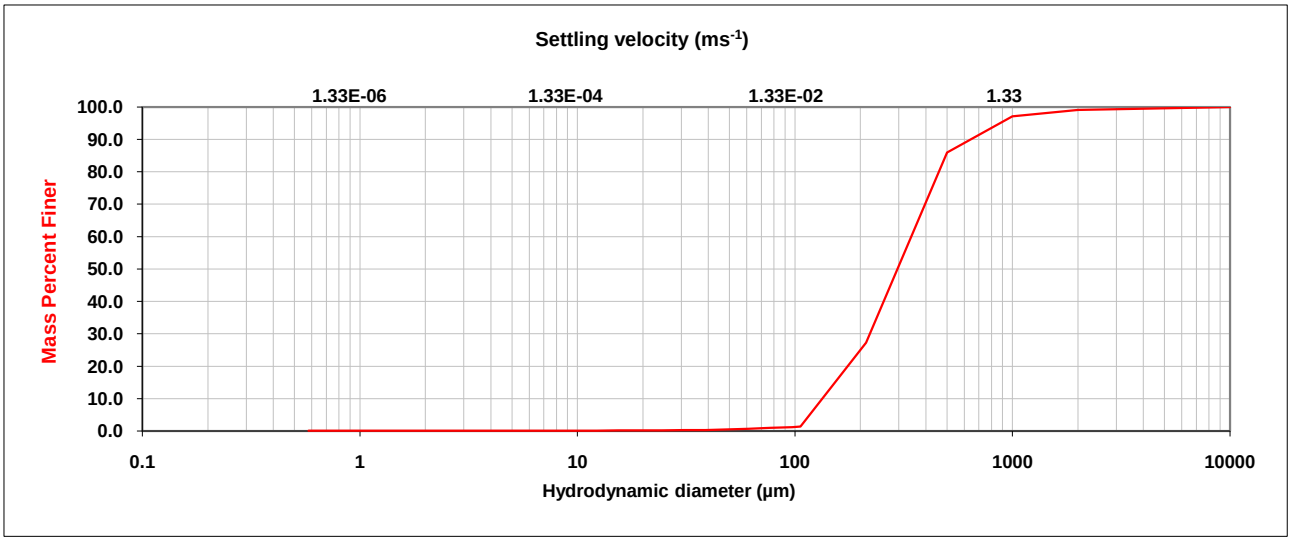
Particle size distribution reports

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	SC1
Job No:	11_336
Laboratory ID:	11_336_01

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.07 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	0.90	8.53E+01	15.40	12.23	0.04	3.17E-04
2000.00	1000.00	1.99	4.10E+00	12.23	9.17	0.02	1.92E-04
1000.00	500.00	11.17	1.03E+00	9.17	7.29	0.02	1.13E-04
500.00	212.00	58.66	2.42E-01	7.29	5.79	0.00	7.11E-05
212.00	106.00	25.92	4.61E-02	5.79	4.60	0.00	4.48E-05
106.00	97.16	0.15	1.70E-02	4.60	3.65	0.01	2.83E-05
97.16	77.18	0.25	1.26E-02	3.65	2.90	0.01	1.78E-05
77.18	61.31	0.27	7.97E-03	2.90	2.30	0.00	1.12E-05
61.31	48.70	0.22	5.03E-03	2.30	1.83	0.01	7.09E-06
48.70	38.68	0.14	3.17E-03	1.83	1.45	0.01	4.47E-06
38.68	30.73	0.06	2.00E-03	1.45	1.15	0.01	2.81E-06
30.73	24.41	0.02	1.26E-03	1.15	0.92	0.01	1.78E-06
24.41	19.39	0.03	7.97E-04	0.92	0.73	0.00	1.13E-06
19.39	15.40	0.04	5.03E-04	0.73	0.58	0.00	7.13E-07
				0.58	0.00	0.07	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

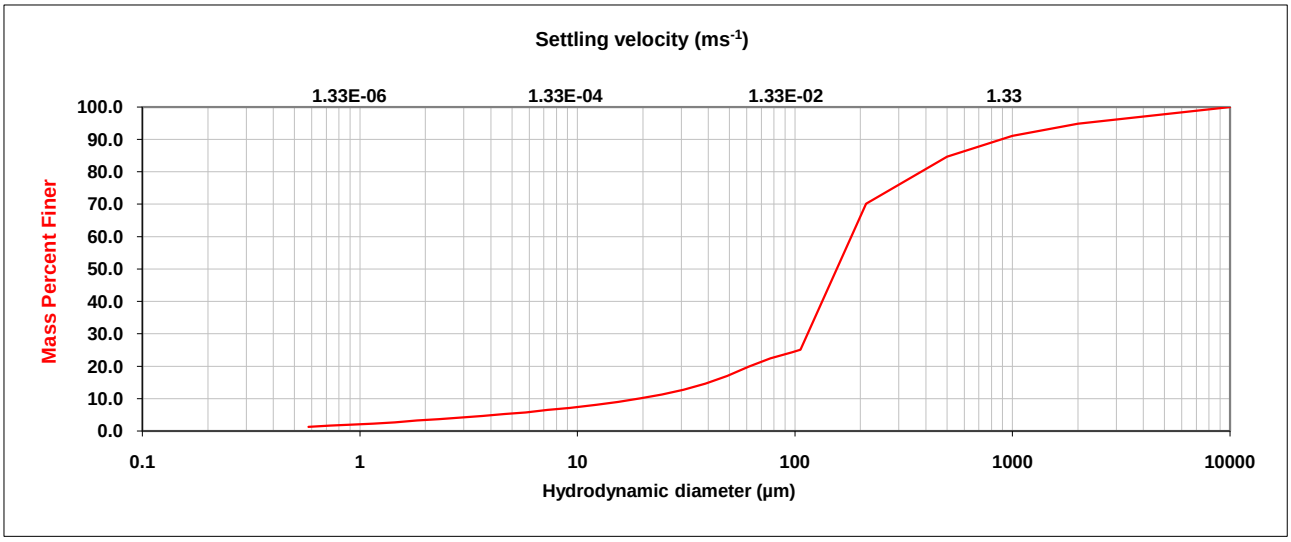
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	SC2
Job No:	11_336
Laboratory ID:	11_336_02

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.07 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms-1)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms-1)
10000.00	2000.00	5.21	8.53E+01	15.40	12.23	0.95	3.17E-04
2000.00	1000.00	3.70	4.10E+00	12.23	9.17	0.93	1.92E-04
1000.00	500.00	6.42	1.03E+00	9.17	7.29	0.68	1.13E-04
500.00	212.00	14.51	2.42E-01	7.29	5.79	0.70	7.11E-05
212.00	106.00	45.10	4.61E-02	5.79	4.60	0.55	4.48E-05
106.00	97.16	0.80	1.70E-02	4.60	3.65	0.55	2.83E-05
97.16	77.18	1.85	1.26E-02	3.65	2.90	0.53	1.78E-05
77.18	61.31	2.58	7.97E-03	2.90	2.30	0.45	1.12E-05
61.31	48.70	2.78	5.03E-03	2.30	1.83	0.48	7.09E-06
48.70	38.68	2.38	3.17E-03	1.83	1.45	0.53	4.47E-06
38.68	30.73	1.88	2.00E-03	1.45	1.15	0.43	2.81E-06
30.73	24.41	1.48	1.26E-03	1.15	0.92	0.33	1.78E-06
24.41	19.39	1.20	7.97E-04	0.92	0.73	0.30	1.13E-06
19.39	15.40	1.05	5.03E-04	0.73	0.58	0.35	7.13E-07
				0.58	0.00	1.30	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

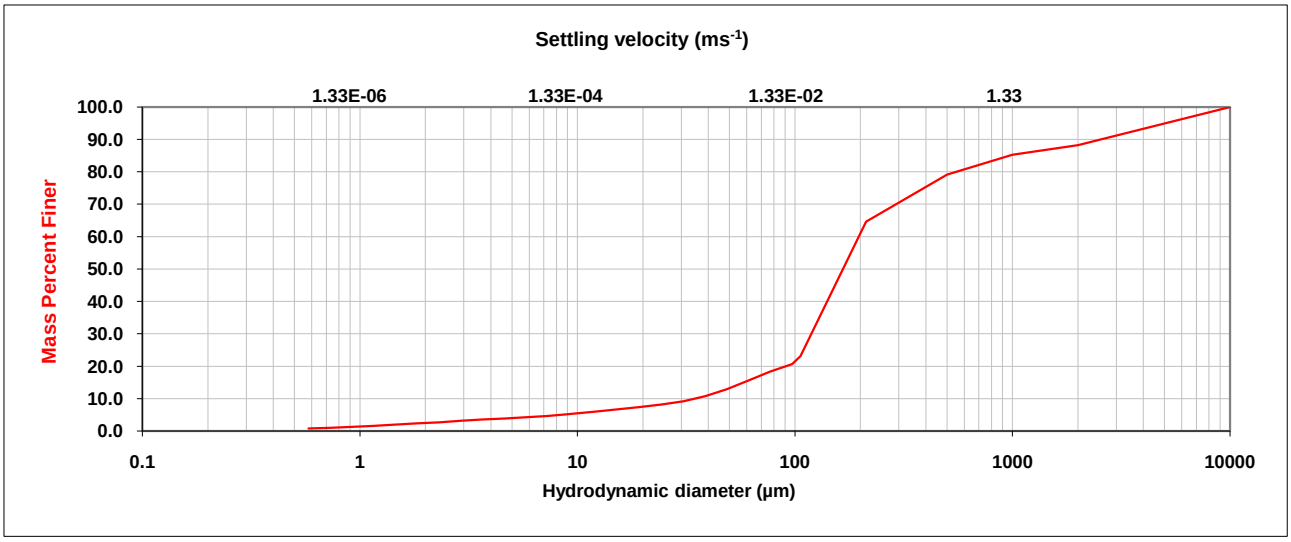
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	SC3
Job No:	11_336
Laboratory ID:	11_336_03

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.07 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms-1)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms-1)
10000.00	2000.00	11.83	8.53E+01	15.40	12.23	0.65	3.17E-04
2000.00	1000.00	2.89	4.10E+00	12.23	9.17	0.81	1.92E-04
1000.00	500.00	6.18	1.03E+00	9.17	7.29	0.60	1.13E-04
500.00	212.00	14.48	2.42E-01	7.29	5.79	0.44	7.11E-05
212.00	106.00	41.53	4.61E-02	5.79	4.60	0.32	4.48E-05
106.00	97.16	2.42	1.70E-02	4.60	3.65	0.37	2.83E-05
97.16	77.18	2.26	1.26E-02	3.65	2.90	0.39	1.78E-05
77.18	61.31	2.82	7.97E-03	2.90	2.30	0.42	1.12E-05
61.31	48.70	2.66	5.03E-03	2.30	1.83	0.37	7.09E-06
48.70	38.68	2.12	3.17E-03	1.83	1.45	0.35	4.47E-06
38.68	30.73	1.57	2.00E-03	1.45	1.15	0.37	2.81E-06
30.73	24.41	1.06	1.26E-03	1.15	0.92	0.37	1.78E-06
24.41	19.39	0.79	7.97E-04	0.92	0.73	0.30	1.13E-06
19.39	15.40	0.67	5.03E-04	0.73	0.58	0.21	7.13E-07
				0.58	0.00	0.76	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

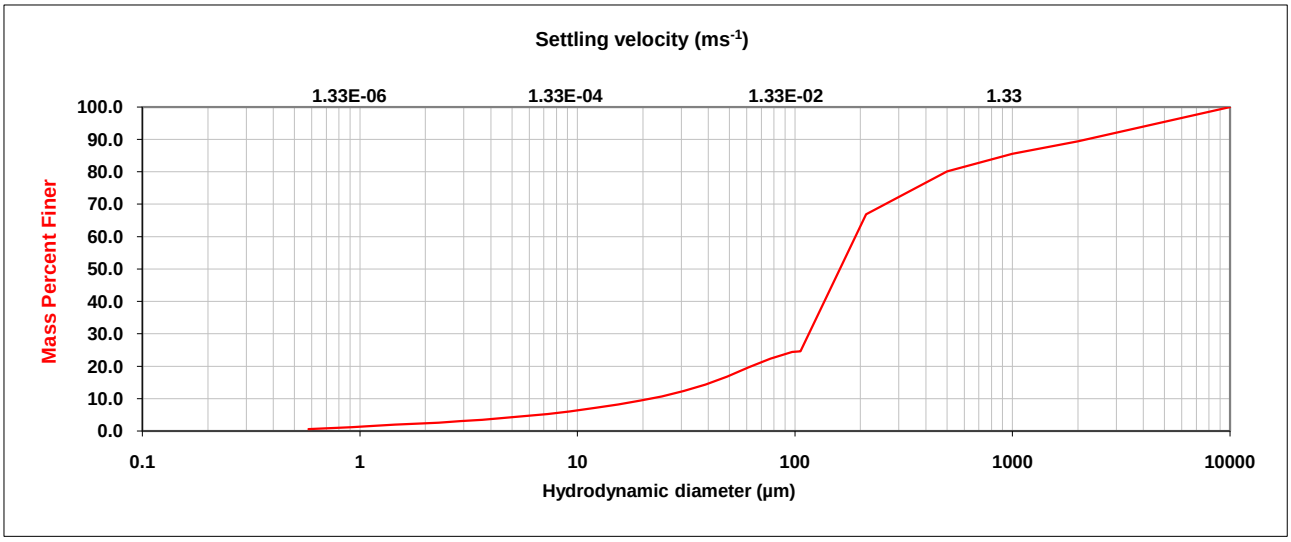
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	SC4
Job No:	11_336
Laboratory ID:	11_336_04

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.07 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	10.64	8.53E+01	15.40	12.23	1.03	3.17E-04
2000.00	1000.00	3.80	4.10E+00	12.23	9.17	1.13	1.92E-04
1000.00	500.00	5.45	1.03E+00	9.17	7.29	0.79	1.13E-04
500.00	212.00	13.21	2.42E-01	7.29	5.79	0.64	7.11E-05
212.00	106.00	42.29	4.61E-02	5.79	4.60	0.59	4.48E-05
106.00	97.16	0.20	1.70E-02	4.60	3.65	0.52	2.83E-05
97.16	77.18	2.07	1.26E-02	3.65	2.90	0.49	1.78E-05
77.18	61.31	2.73	7.97E-03	2.90	2.30	0.42	1.12E-05
61.31	48.70	2.86	5.03E-03	2.30	1.83	0.32	7.09E-06
48.70	38.68	2.44	3.17E-03	1.83	1.45	0.32	4.47E-06
38.68	30.73	1.99	2.00E-03	1.45	1.15	0.34	2.81E-06
30.73	24.41	1.62	1.26E-03	1.15	0.92	0.39	1.78E-06
24.41	19.39	1.35	7.97E-04	0.92	0.73	0.32	1.13E-06
19.39	15.40	1.13	5.03E-04	0.73	0.58	0.27	7.13E-07
				0.58	0.00	0.64	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

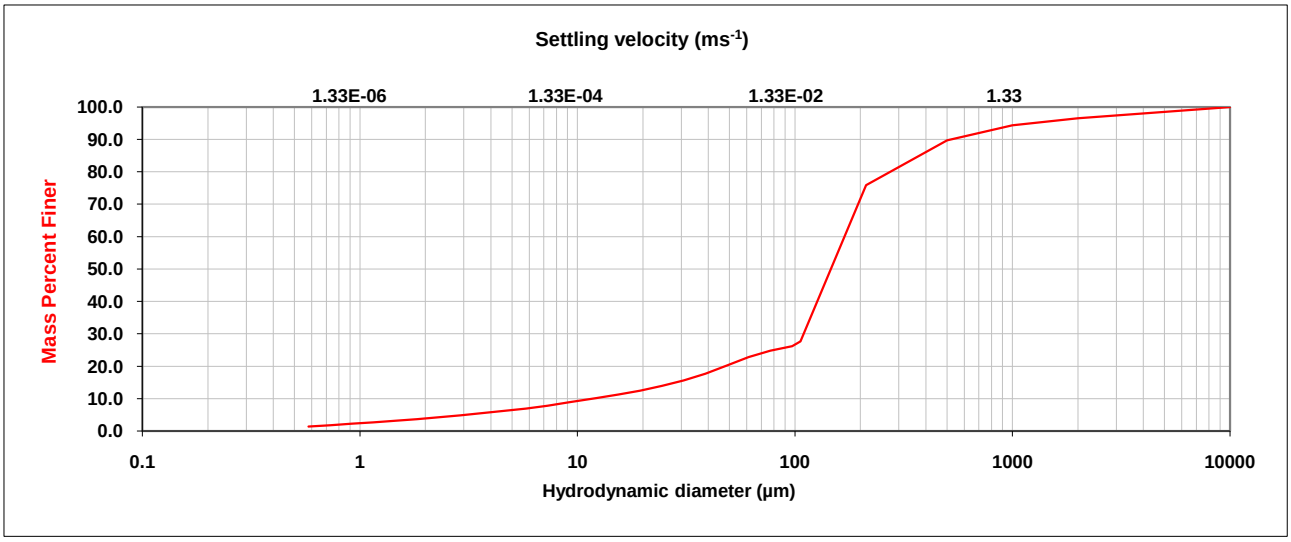
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	SC5
Job No:	11_336
Laboratory ID:	11_336_05

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.07 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	3.47	8.53E+01	15.40	12.23	1.13	3.17E-04
2000.00	1000.00	2.26	4.10E+00	12.23	9.17	1.33	1.92E-04
1000.00	500.00	4.55	1.03E+00	9.17	7.29	1.05	1.13E-04
500.00	212.00	13.87	2.42E-01	7.29	5.79	0.89	7.11E-05
212.00	106.00	48.19	4.61E-02	5.79	4.60	0.69	4.48E-05
106.00	97.16	1.47	1.70E-02	4.60	3.65	0.66	2.83E-05
97.16	77.18	1.38	1.26E-02	3.65	2.90	0.66	1.78E-05
77.18	61.31	2.02	7.97E-03	2.90	2.30	0.66	1.12E-05
61.31	48.70	2.52	5.03E-03	2.30	1.83	0.53	7.09E-06
48.70	38.68	2.55	3.17E-03	1.83	1.45	0.53	4.47E-06
38.68	30.73	2.16	2.00E-03	1.45	1.15	0.50	2.81E-06
30.73	24.41	1.69	1.26E-03	1.15	0.92	0.44	1.78E-06
24.41	19.39	1.38	7.97E-04	0.92	0.73	0.42	1.13E-06
19.39	15.40	1.19	5.03E-04	0.73	0.58	0.39	7.13E-07
				0.58	0.00	1.44	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

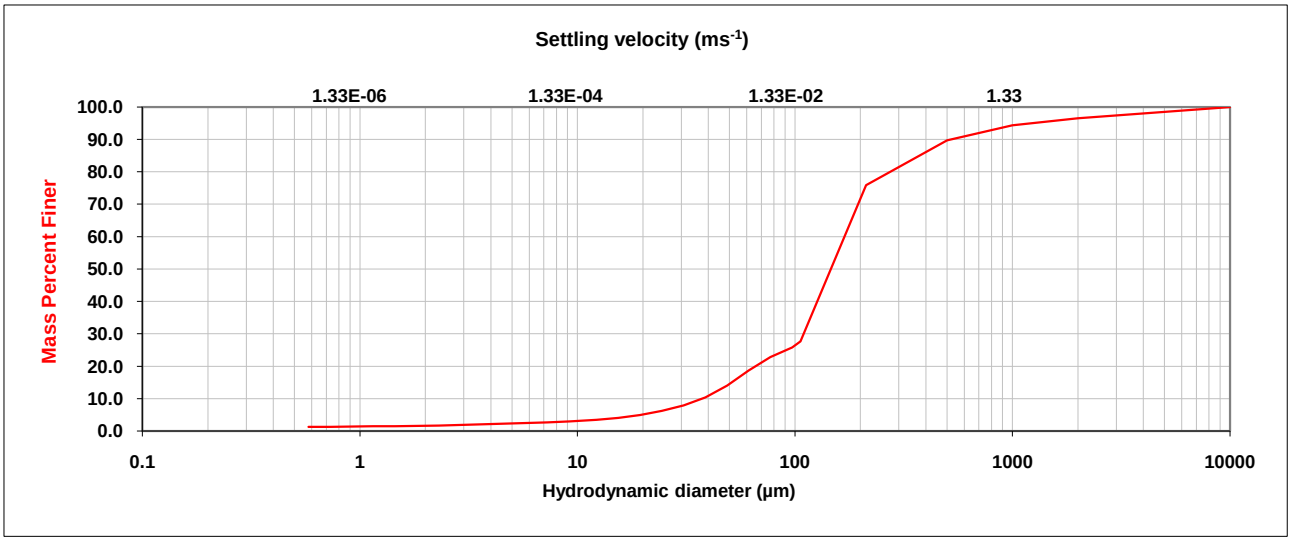
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	SC5B
Job No:	11_336
Laboratory ID:	11_336_05B

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Seawater	**Sonication:**	10 min
Additives:	None	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	1.030	g/cm^3	**Critical diameter:**	54.46 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	3.47	8.53E+01	15.40	12.23	0.58	3.17E-04
2000.00	1000.00	2.26	4.10E+00	12.23	9.17	0.47	1.92E-04
1000.00	500.00	4.55	1.03E+00	9.17	7.29	0.33	1.13E-04
500.00	212.00	13.87	2.42E-01	7.29	5.79	0.17	7.11E-05
212.00	106.00	48.19	4.61E-02	5.79	4.60	0.17	4.48E-05
106.00	97.16	1.88	1.70E-02	4.60	3.65	0.19	2.83E-05
97.16	77.18	2.93	1.26E-02	3.65	2.90	0.22	1.78E-05
77.18	61.31	4.18	7.97E-03	2.90	2.30	0.22	1.12E-05
61.31	48.70	4.59	5.03E-03	2.30	1.83	0.11	7.09E-06
48.70	38.68	3.68	3.17E-03	1.83	1.45	0.06	4.47E-06
38.68	30.73	2.49	2.00E-03	1.45	1.15	0.03	2.81E-06
30.73	24.41	1.69	1.26E-03	1.15	0.92	0.11	1.78E-06
24.41	19.39	1.25	7.97E-04	0.92	0.73	0.08	1.13E-06
19.39	15.40	0.94	5.03E-04	0.73	0.58	0.00	7.13E-07
				0.58	0.00	1.30	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

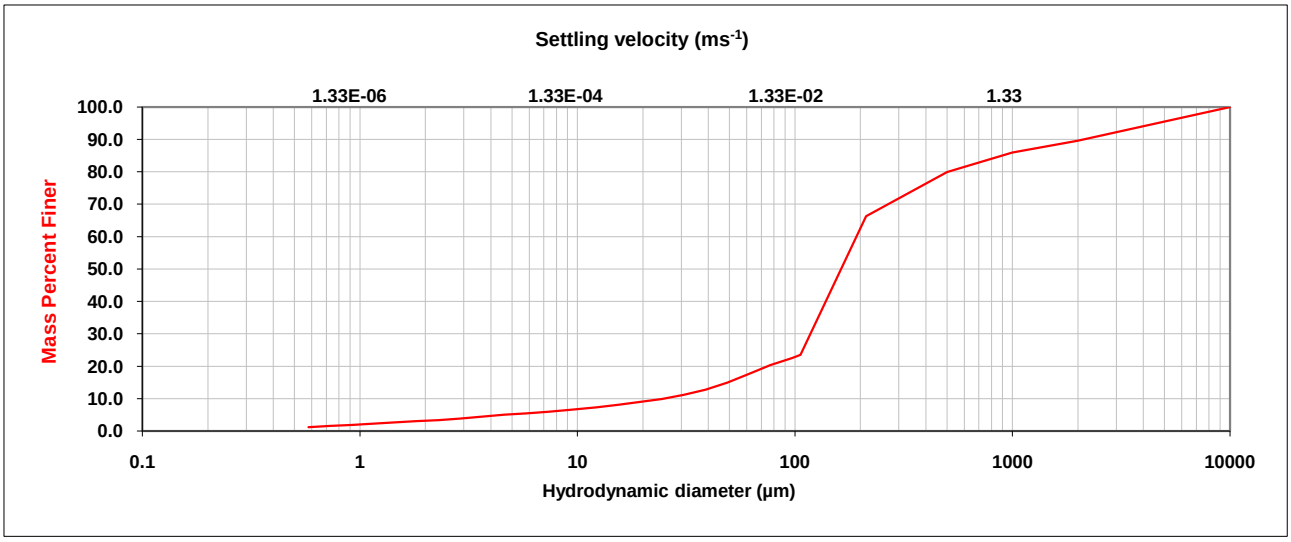
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	SC6
Job No:	11_336
Laboratory ID:	11_336_06

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.07 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	10.41	8.53E+01	15.40	12.23	0.78	3.17E-04
2000.00	1000.00	3.69	4.10E+00	12.23	9.17	0.80	1.92E-04
1000.00	500.00	5.97	1.03E+00	9.17	7.29	0.59	1.13E-04
500.00	212.00	13.60	2.42E-01	7.29	5.79	0.49	7.11E-05
212.00	106.00	42.82	4.61E-02	5.79	4.60	0.47	4.48E-05
106.00	97.16	0.94	1.70E-02	4.60	3.65	0.54	2.83E-05
97.16	77.18	2.21	1.26E-02	3.65	2.90	0.59	1.78E-05
77.18	61.31	2.77	7.97E-03	2.90	2.30	0.47	1.12E-05
61.31	48.70	2.68	5.03E-03	2.30	1.83	0.35	7.09E-06
48.70	38.68	2.12	3.17E-03	1.83	1.45	0.35	4.47E-06
38.68	30.73	1.65	2.00E-03	1.45	1.15	0.38	2.81E-06
30.73	24.41	1.25	1.26E-03	1.15	0.92	0.42	1.78E-06
24.41	19.39	0.94	7.97E-04	0.92	0.73	0.35	1.13E-06
19.39	15.40	0.82	5.03E-04	0.73	0.58	0.33	7.13E-07
				0.58	0.00	1.22	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

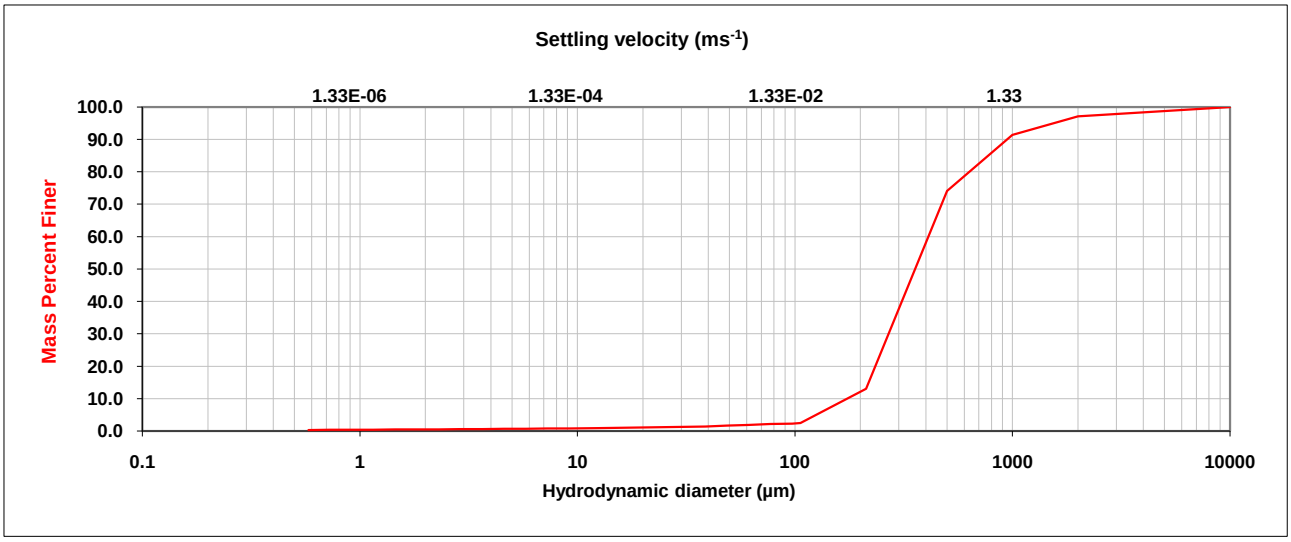
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	SC7
Job No:	11_336
Laboratory ID:	11_336_07

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.07 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	2.91	8.53E+01	15.40	12.23	0.08	3.17E-04
2000.00	1000.00	5.70	4.10E+00	12.23	9.17	0.09	1.92E-04
1000.00	500.00	17.33	1.03E+00	9.17	7.29	0.05	1.13E-04
500.00	212.00	61.04	2.42E-01	7.29	5.79	0.04	7.11E-05
212.00	106.00	10.53	4.61E-02	5.79	4.60	0.04	4.48E-05
106.00	97.16	0.19	1.70E-02	4.60	3.65	0.04	2.83E-05
97.16	77.18	0.15	1.26E-02	3.65	2.90	0.05	1.78E-05
77.18	61.31	0.22	7.97E-03	2.90	2.30	0.04	1.12E-05
61.31	48.70	0.25	5.03E-03	2.30	1.83	0.04	7.09E-06
48.70	38.68	0.24	3.17E-03	1.83	1.45	0.05	4.47E-06
38.68	30.73	0.18	2.00E-03	1.45	1.15	0.04	2.81E-06
30.73	24.41	0.11	1.26E-03	1.15	0.92	0.03	1.78E-06
24.41	19.39	0.08	7.97E-04	0.92	0.73	0.02	1.13E-06
19.39	15.40	0.09	5.03E-04	0.73	0.58	0.02	7.13E-07
				0.58	0.00	0.35	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

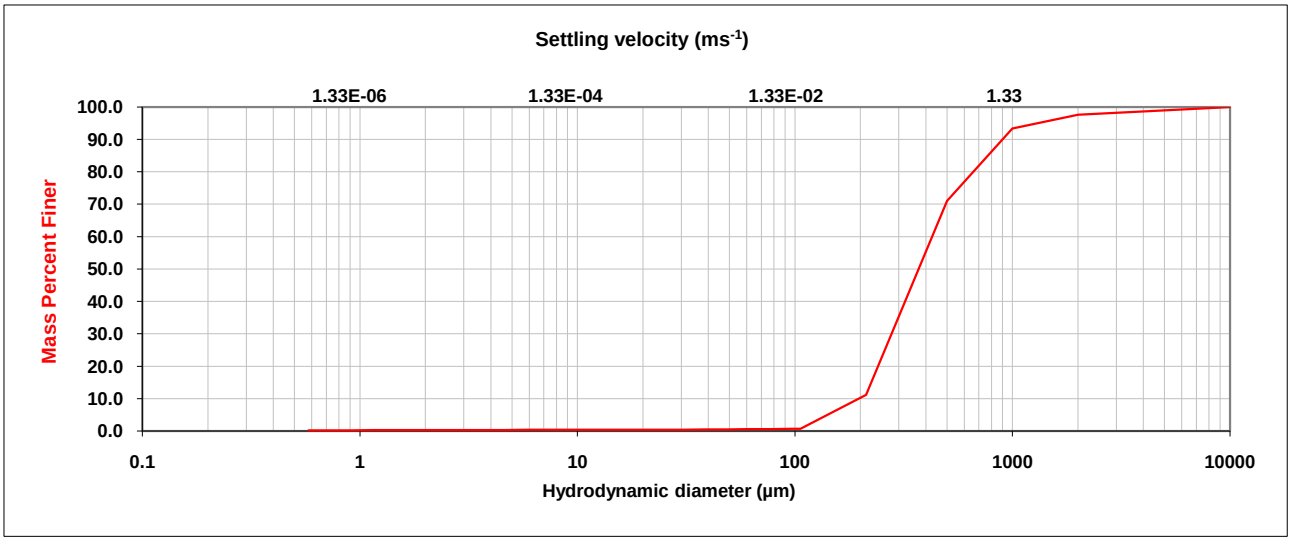
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	SC8
Job No:	11_336
Laboratory ID:	11_336_08

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	2.39	8.53E+01	15.40	12.23	0.01	3.17E-04
2000.00	1000.00	4.24	4.10E+00	12.23	9.17	0.01	1.92E-04
1000.00	500.00	22.36	1.03E+00	9.17	7.29	0.01	1.13E-04
500.00	212.00	59.84	2.42E-01	7.29	5.79	0.01	7.11E-05
212.00	106.00	10.45	4.61E-02	5.79	4.60	0.01	4.48E-05
106.00	97.16	0.05	1.70E-02	4.60	3.65	0.00	2.83E-05
97.16	77.18	0.03	1.26E-02	3.65	2.90	0.02	1.78E-05
77.18	61.31	0.05	7.97E-03	2.90	2.30	0.04	1.12E-05
61.31	48.70	0.06	5.03E-03	2.30	1.83	0.02	7.09E-06
48.70	38.68	0.05	3.17E-03	1.83	1.45	0.01	4.47E-06
38.68	30.73	0.03	2.00E-03	1.45	1.15	0.00	2.81E-06
30.73	24.41	0.02	1.26E-03	1.15	0.92	0.00	1.78E-06
24.41	19.39	0.02	7.97E-04	0.92	0.73	0.00	1.13E-06
19.39	15.40	0.02	5.03E-04	0.73	0.58	0.00	7.13E-07
				0.58	0.00	0.26	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

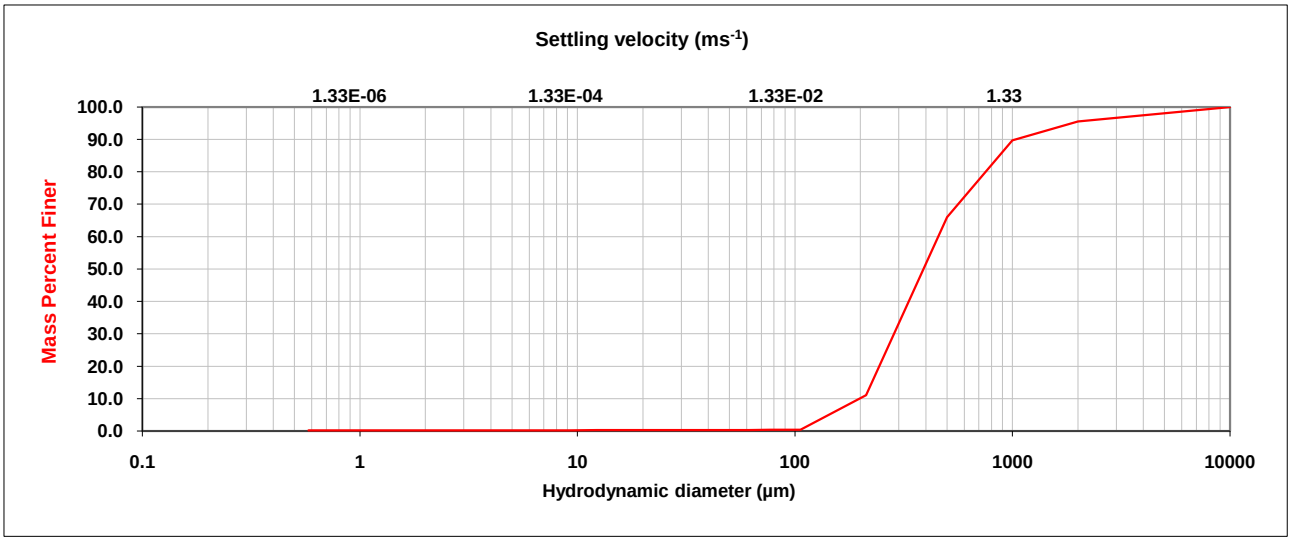
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	SC9
Job No:	11_336
Laboratory ID:	11_336_09

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.03 µm
Liquid viscosity:	0.712	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	4.47	8.53E+01	15.40	12.23	0.00	3.17E-04
2000.00	1000.00	5.89	4.10E+00	12.23	9.17	0.00	1.92E-04
1000.00	500.00	23.68	1.03E+00	9.17	7.29	0.00	1.13E-04
500.00	212.00	54.88	2.42E-01	7.29	5.79	0.00	7.11E-05
212.00	106.00	10.65	4.61E-02	5.79	4.60	0.00	4.48E-05
106.00	97.16	0.05	1.70E-02	4.60	3.65	0.00	2.83E-05
97.16	77.18	0.02	1.26E-02	3.65	2.90	0.00	1.78E-05
77.18	61.31	0.03	7.97E-03	2.90	2.30	0.00	1.12E-05
61.31	48.70	0.03	5.03E-03	2.30	1.83	0.00	7.09E-06
48.70	38.68	0.02	3.17E-03	1.83	1.45	0.00	4.47E-06
38.68	30.73	0.01	2.00E-03	1.45	1.15	0.00	2.81E-06
30.73	24.41	0.01	1.26E-03	1.15	0.92	0.00	1.78E-06
24.41	19.39	0.01	7.97E-04	0.92	0.73	0.00	1.13E-06
19.39	15.40	0.01	5.03E-04	0.73	0.58	0.00	7.13E-07
				0.58	0.00	0.24	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

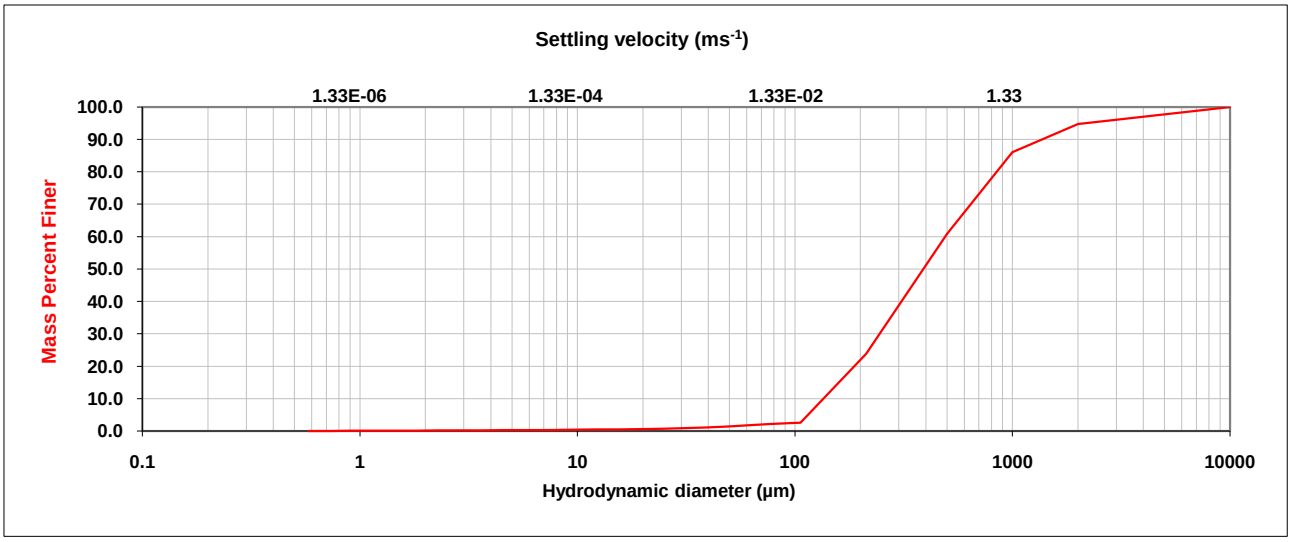
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	SC10
Job No:	11_336
Laboratory ID:	11_336_10

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	5.23	8.53E+01	15.40	12.23	0.06	3.17E-04
2000.00	1000.00	8.77	4.10E+00	12.23	9.17	0.08	1.92E-04
1000.00	500.00	25.14	1.03E+00	9.17	7.29	0.06	1.13E-04
500.00	212.00	37.09	2.42E-01	7.29	5.79	0.04	7.11E-05
212.00	106.00	21.19	4.61E-02	5.79	4.60	0.03	4.48E-05
106.00	97.16	0.08	1.70E-02	4.60	3.65	0.04	2.83E-05
97.16	77.18	0.32	1.26E-02	3.65	2.90	0.04	1.78E-05
77.18	61.31	0.39	7.97E-03	2.90	2.30	0.03	1.12E-05
61.31	48.70	0.38	5.03E-03	2.30	1.83	0.02	7.09E-06
48.70	38.68	0.30	3.17E-03	1.83	1.45	0.02	4.47E-06
38.68	30.73	0.23	2.00E-03	1.45	1.15	0.03	2.81E-06
30.73	24.41	0.16	1.26E-03	1.15	0.92	0.03	1.78E-06
24.41	19.39	0.11	7.97E-04	0.92	0.73	0.03	1.13E-06
19.39	15.40	0.08	5.03E-04	0.73	0.58	0.03	7.13E-07
				0.58	0.00	0.02	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

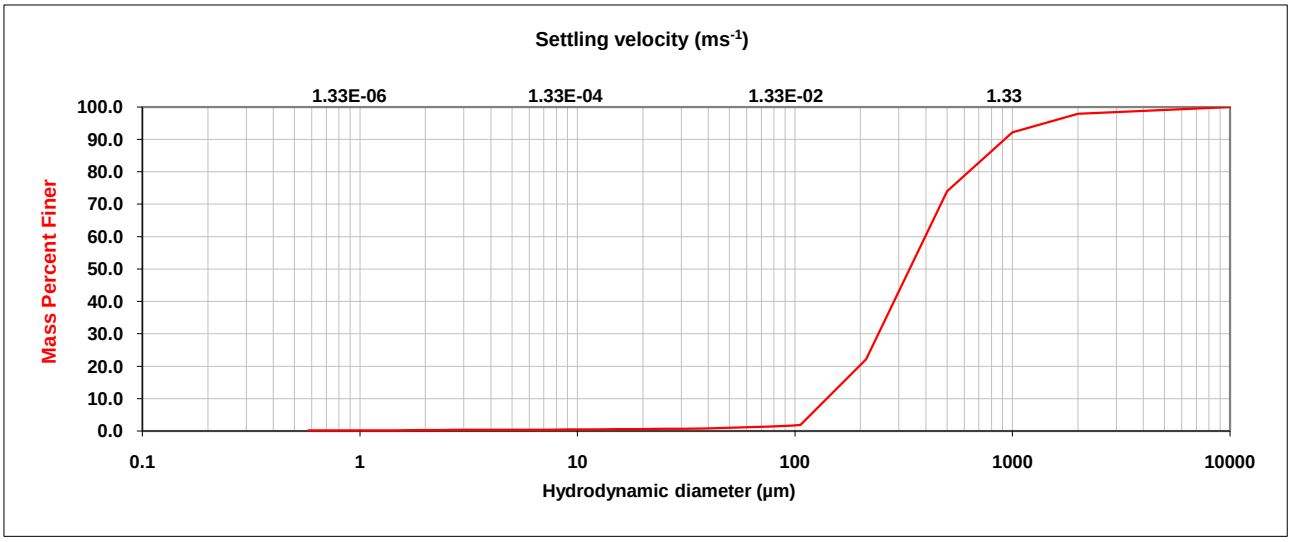
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	SC11
Job No:	11_336
Laboratory ID:	11_336_11

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	2.17	8.53E+01	15.40	12.23	0.05	3.17E-04
2000.00	1000.00	5.72	4.10E+00	12.23	9.17	0.05	1.92E-04
1000.00	500.00	18.10	1.03E+00	9.17	7.29	0.03	1.13E-04
500.00	212.00	51.83	2.42E-01	7.29	5.79	0.02	7.11E-05
212.00	106.00	20.29	4.61E-02	5.79	4.60	0.01	4.48E-05
106.00	97.16	0.22	1.70E-02	4.60	3.65	0.02	2.83E-05
97.16	77.18	0.23	1.26E-02	3.65	2.90	0.03	1.78E-05
77.18	61.31	0.25	7.97E-03	2.90	2.30	0.06	1.12E-05
61.31	48.70	0.20	5.03E-03	2.30	1.83	0.04	7.09E-06
48.70	38.68	0.15	3.17E-03	1.83	1.45	0.02	4.47E-06
38.68	30.73	0.10	2.00E-03	1.45	1.15	0.01	2.81E-06
30.73	24.41	0.07	1.26E-03	1.15	0.92	0.00	1.78E-06
24.41	19.39	0.04	7.97E-04	0.92	0.73	0.00	1.13E-06
19.39	15.40	0.04	5.03E-04	0.73	0.58	0.00	7.13E-07
				0.58	0.00	0.25	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

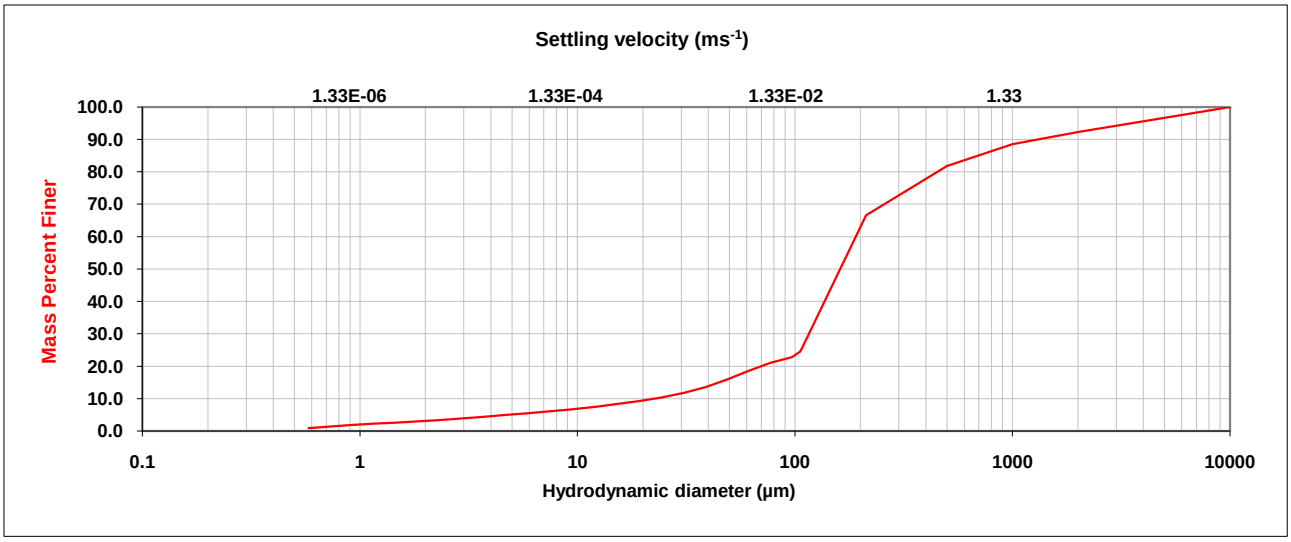
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	SC12
Job No:	11_336
Laboratory ID:	11_336_12

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	7.71	8.53E+01	15.40	12.23	0.91	3.17E-04
2000.00	1000.00	3.76	4.10E+00	12.23	9.17	0.93	1.92E-04
1000.00	500.00	6.70	1.03E+00	9.17	7.29	0.59	1.13E-04
500.00	212.00	15.29	2.42E-01	7.29	5.79	0.54	7.11E-05
212.00	106.00	41.96	4.61E-02	5.79	4.60	0.54	4.48E-05
106.00	97.16	1.72	1.70E-02	4.60	3.65	0.57	2.83E-05
97.16	77.18	1.77	1.26E-02	3.65	2.90	0.54	1.78E-05
77.18	61.31	2.48	7.97E-03	2.90	2.30	0.47	1.12E-05
61.31	48.70	2.70	5.03E-03	2.30	1.83	0.42	7.09E-06
48.70	38.68	2.34	3.17E-03	1.83	1.45	0.32	4.47E-06
38.68	30.73	1.84	2.00E-03	1.45	1.15	0.32	2.81E-06
30.73	24.41	1.38	1.26E-03	1.15	0.92	0.47	1.78E-06
24.41	19.39	1.01	7.97E-04	0.92	0.73	0.47	1.13E-06
19.39	15.40	0.88	5.03E-04	0.73	0.58	0.44	7.13E-07
				0.58	0.00	0.93	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

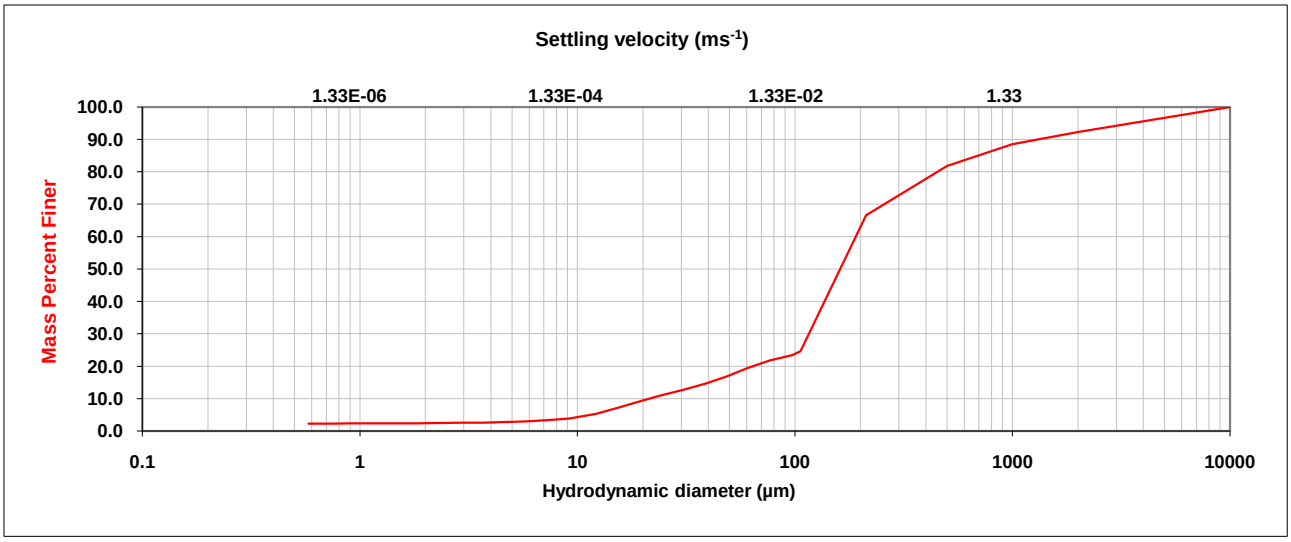
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	SC12B
Job No:	11_336
Laboratory ID:	11_336_12B

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Seawater	**Sonication:**	10 min
Additives:	None	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	1.030	g/cm^3	**Critical diameter:**	54.46 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	7.71	8.53E+01	15.40	12.23	1.84	3.17E-04
2000.00	1000.00	3.76	4.10E+00	12.23	9.17	1.47	1.92E-04
1000.00	500.00	6.70	1.03E+00	9.17	7.29	0.52	1.13E-04
500.00	212.00	15.29	2.42E-01	7.29	5.79	0.37	7.11E-05
212.00	106.00	41.96	4.61E-02	5.79	4.60	0.27	4.48E-05
106.00	97.16	1.18	1.70E-02	4.60	3.65	0.12	2.83E-05
97.16	77.18	1.57	1.26E-02	3.65	2.90	0.05	1.78E-05
77.18	61.31	2.24	7.97E-03	2.90	2.30	0.07	1.12E-05
61.31	48.70	2.65	5.03E-03	2.30	1.83	0.07	7.09E-06
48.70	38.68	2.34	3.17E-03	1.83	1.45	0.02	4.47E-06
38.68	30.73	1.87	2.00E-03	1.45	1.15	0.00	2.81E-06
30.73	24.41	1.70	1.26E-03	1.15	0.92	0.05	1.78E-06
24.41	19.39	1.84	7.97E-04	0.92	0.73	0.05	1.13E-06
19.39	15.40	1.97	5.03E-04	0.73	0.58	0.02	7.13E-07
				0.58	0.00	2.29	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

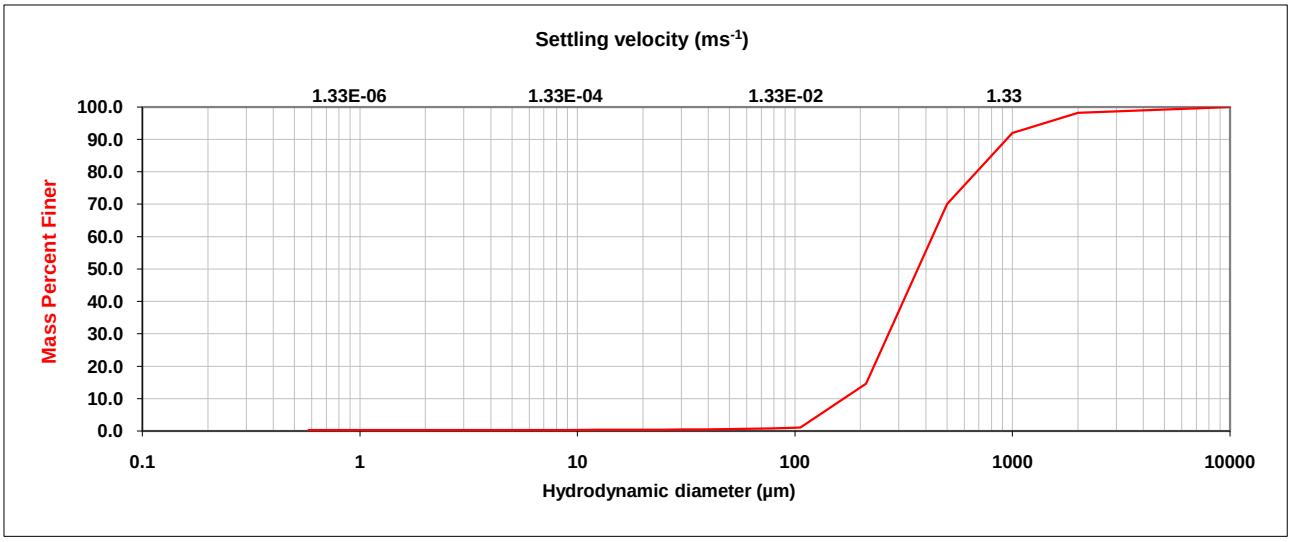
19/07/2011

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB13
Job No:	11_336
Laboratory ID:	11_336_13

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	1.79	8.53E+01	15.40	12.23	0.03	3.17E-04
2000.00	1000.00	6.27	4.10E+00	12.23	9.17	0.03	1.92E-04
1000.00	500.00	21.88	1.03E+00	9.17	7.29	0.01	1.13E-04
500.00	212.00	55.38	2.42E-01	7.29	5.79	0.01	7.11E-05
212.00	106.00	13.57	4.61E-02	5.79	4.60	0.00	4.48E-05
106.00	97.16	0.14	1.70E-02	4.60	3.65	0.00	2.83E-05
97.16	77.18	0.12	1.26E-02	3.65	2.90	0.01	1.78E-05
77.18	61.31	0.14	7.97E-03	2.90	2.30	0.01	1.12E-05
61.31	48.70	0.11	5.03E-03	2.30	1.83	0.00	7.09E-06
48.70	38.68	0.07	3.17E-03	1.83	1.45	0.00	4.47E-06
38.68	30.73	0.05	2.00E-03	1.45	1.15	0.00	2.81E-06
30.73	24.41	0.03	1.26E-03	1.15	0.92	0.01	1.78E-06
24.41	19.39	0.03	7.97E-04	0.92	0.73	0.01	1.13E-06
19.39	15.40	0.02	5.03E-04	0.73	0.58	0.01	7.13E-07
				0.58	0.00	0.28	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

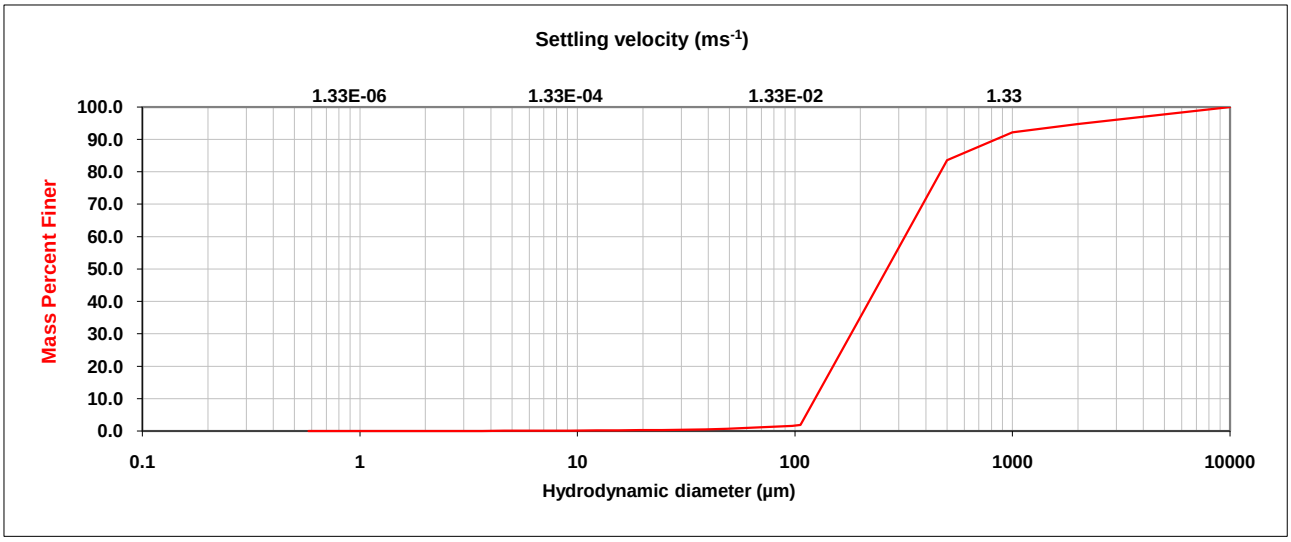
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB14
Job No:	11_336
Laboratory ID:	11_336_14

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	5.27	8.53E+01	15.40	12.23	0.06	3.17E-04
2000.00	1000.00	2.61	4.10E+00	12.23	9.17	0.05	1.92E-04
1000.00	500.00	8.51	1.03E+00	9.17	7.29	0.03	1.13E-04
500.00	212.00	45.28	2.42E-01	7.29	5.79	0.01	7.11E-05
212.00	106.00	36.43	4.61E-02	5.79	4.60	0.01	4.48E-05
106.00	97.16	0.30	1.70E-02	4.60	3.65	0.01	2.83E-05
97.16	77.18	0.28	1.26E-02	3.65	2.90	0.02	1.78E-05
77.18	61.31	0.32	7.97E-03	2.90	2.30	0.01	1.12E-05
61.31	48.70	0.27	5.03E-03	2.30	1.83	0.00	7.09E-06
48.70	38.68	0.19	3.17E-03	1.83	1.45	0.00	4.47E-06
38.68	30.73	0.12	2.00E-03	1.45	1.15	0.01	2.81E-06
30.73	24.41	0.08	1.26E-03	1.15	0.92	0.02	1.78E-06
24.41	19.39	0.06	7.97E-04	0.92	0.73	0.00	1.13E-06
19.39	15.40	0.06	5.03E-04	0.73	0.58	0.00	7.13E-07
				0.58	0.00	0.00	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

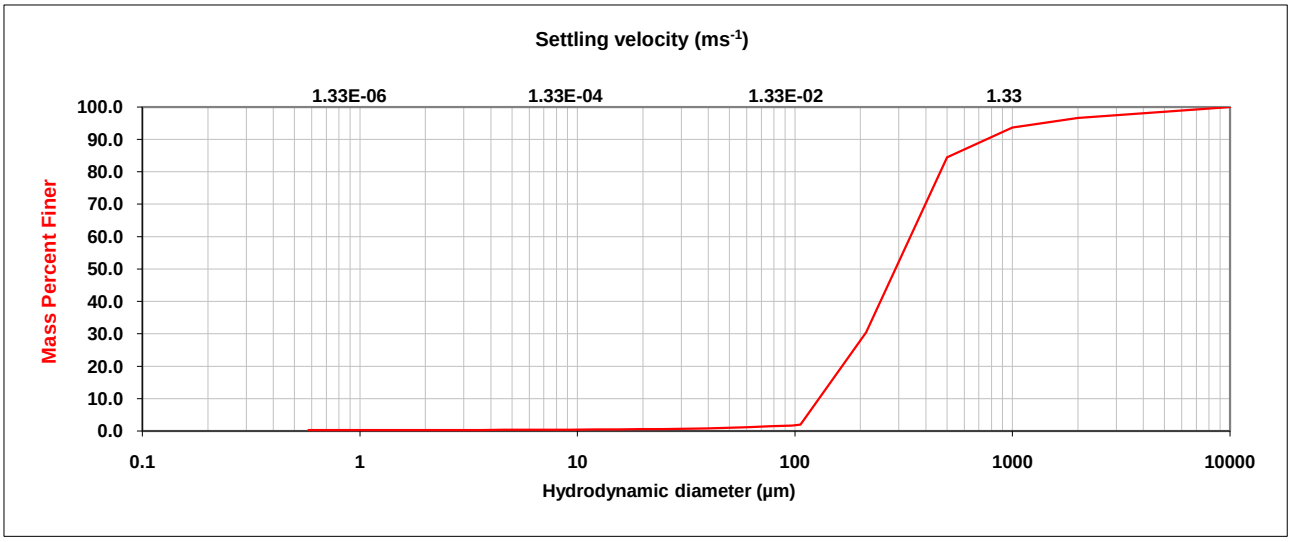
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB15
Job No:	11_336
Laboratory ID:	11_336_15

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	3.42	8.53E+01	15.40	12.23	0.04	3.17E-04
2000.00	1000.00	2.92	4.10E+00	12.23	9.17	0.05	1.92E-04
1000.00	500.00	9.17	1.03E+00	9.17	7.29	0.04	1.13E-04
500.00	212.00	54.03	2.42E-01	7.29	5.79	0.03	7.11E-05
212.00	106.00	28.46	4.61E-02	5.79	4.60	0.01	4.48E-05
106.00	97.16	0.26	1.70E-02	4.60	3.65	0.01	2.83E-05
97.16	77.18	0.24	1.26E-02	3.65	2.90	0.02	1.78E-05
77.18	61.31	0.27	7.97E-03	2.90	2.30	0.01	1.12E-05
61.31	48.70	0.24	5.03E-03	2.30	1.83	0.01	7.09E-06
48.70	38.68	0.17	3.17E-03	1.83	1.45	0.00	4.47E-06
38.68	30.73	0.11	2.00E-03	1.45	1.15	0.00	2.81E-06
30.73	24.41	0.07	1.26E-03	1.15	0.92	0.01	1.78E-06
24.41	19.39	0.06	7.97E-04	0.92	0.73	0.01	1.13E-06
19.39	15.40	0.05	5.03E-04	0.73	0.58	0.00	7.13E-07
				0.58	0.00	0.28	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

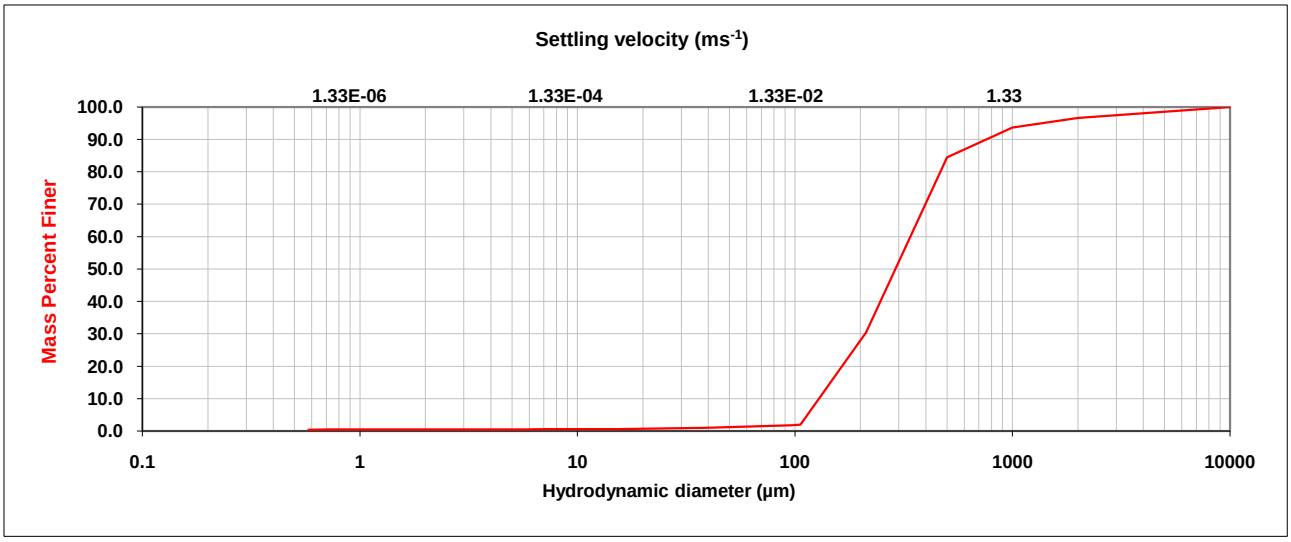
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB15B
Job No:	11_336
Laboratory ID:	11_336_15B

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Seawater	**Sonication:**	10 min
Additives:	None	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.07 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	3.42	8.53E+01	15.40	12.23	0.04	3.17E-04
2000.00	1000.00	2.92	4.10E+00	12.23	9.17	0.03	1.92E-04
1000.00	500.00	9.17	1.03E+00	9.17	7.29	0.02	1.13E-04
500.00	212.00	54.03	2.42E-01	7.29	5.79	0.02	7.11E-05
212.00	106.00	28.46	4.61E-02	5.79	4.60	0.01	4.48E-05
106.00	97.16	0.22	1.70E-02	4.60	3.65	0.01	2.83E-05
97.16	77.18	0.18	1.26E-02	3.65	2.90	0.01	1.78E-05
77.18	61.31	0.21	7.97E-03	2.90	2.30	0.01	1.12E-05
61.31	48.70	0.22	5.03E-03	2.30	1.83	0.02	7.09E-06
48.70	38.68	0.17	3.17E-03	1.83	1.45	0.00	4.47E-06
38.68	30.73	0.13	2.00E-03	1.45	1.15	-0.01	2.81E-06
30.73	24.41	0.10	1.26E-03	1.15	0.92	0.01	1.78E-06
24.41	19.39	0.07	7.97E-04	0.92	0.73	0.02	1.13E-06
19.39	15.40	0.05	5.03E-04	0.73	0.58	0.01	7.13E-07
				0.58	0.00	0.46	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

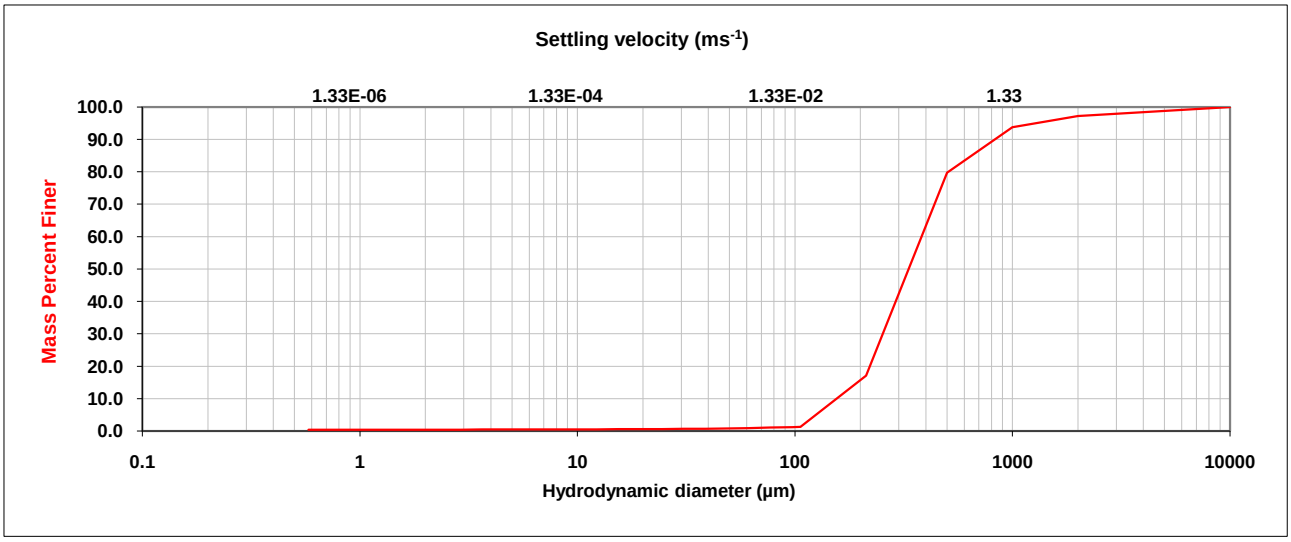
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB16
Job No:	11_336
Laboratory ID:	11_336_16

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	2.84	8.53E+01	15.40	12.23	0.03	3.17E-04
2000.00	1000.00	3.47	4.10E+00	12.23	9.17	0.03	1.92E-04
1000.00	500.00	14.00	1.03E+00	9.17	7.29	0.02	1.13E-04
500.00	212.00	62.60	2.42E-01	7.29	5.79	0.01	7.11E-05
212.00	106.00	15.81	4.61E-02	5.79	4.60	0.00	4.48E-05
106.00	97.16	0.11	1.70E-02	4.60	3.65	0.01	2.83E-05
97.16	77.18	0.10	1.26E-02	3.65	2.90	0.02	1.78E-05
77.18	61.31	0.13	7.97E-03	2.90	2.30	0.02	1.12E-05
61.31	48.70	0.12	5.03E-03	2.30	1.83	0.01	7.09E-06
48.70	38.68	0.09	3.17E-03	1.83	1.45	0.00	4.47E-06
38.68	30.73	0.06	2.00E-03	1.45	1.15	0.00	2.81E-06
30.73	24.41	0.04	1.26E-03	1.15	0.92	0.00	1.78E-06
24.41	19.39	0.03	7.97E-04	0.92	0.73	0.00	1.13E-06
19.39	15.40	0.03	5.03E-04	0.73	0.58	0.00	7.13E-07
				0.58	0.00	0.43	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

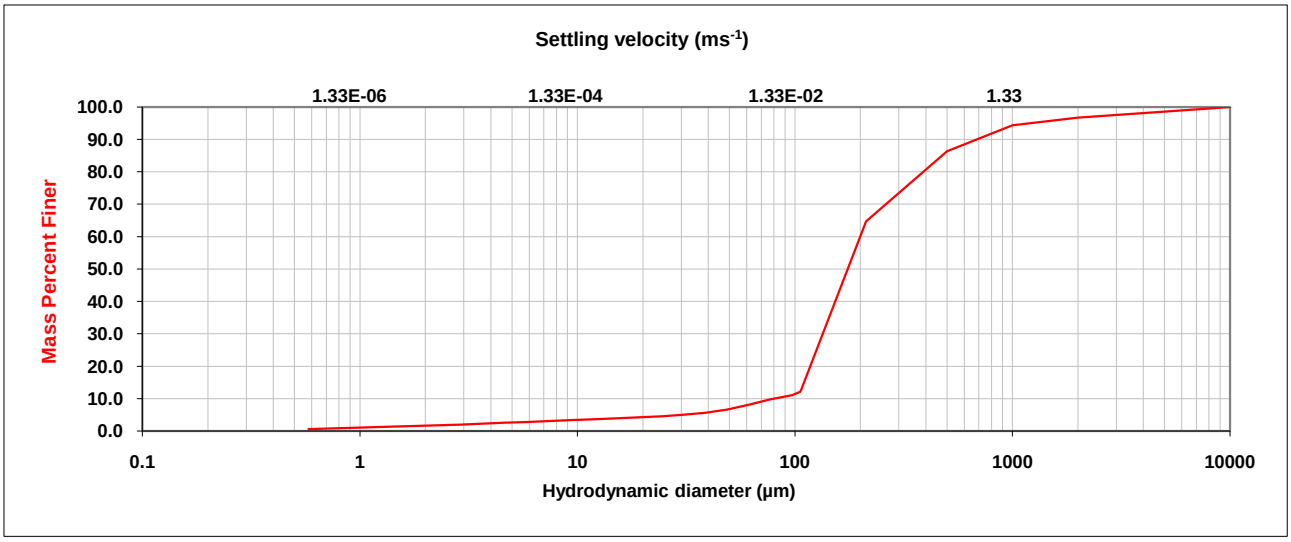
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB17
Job No:	11_336
Laboratory ID:	11_336_17

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	3.27	8.53E+01	15.40	12.23	0.32	3.17E-04
2000.00	1000.00	2.45	4.10E+00	12.23	9.17	0.34	1.92E-04
1000.00	500.00	7.98	1.03E+00	9.17	7.29	0.25	1.13E-04
500.00	212.00	21.64	2.42E-01	7.29	5.79	0.28	7.11E-05
212.00	106.00	52.52	4.61E-02	5.79	4.60	0.27	4.48E-05
106.00	97.16	1.03	1.70E-02	4.60	3.65	0.24	2.83E-05
97.16	77.18	1.36	1.26E-02	3.65	2.90	0.27	1.78E-05
77.18	61.31	1.64	7.97E-03	2.90	2.30	0.25	1.12E-05
61.31	48.70	1.44	5.03E-03	2.30	1.83	0.19	7.09E-06
48.70	38.68	1.01	3.17E-03	1.83	1.45	0.18	4.47E-06
38.68	30.73	0.64	2.00E-03	1.45	1.15	0.21	2.81E-06
30.73	24.41	0.41	1.26E-03	1.15	0.92	0.18	1.78E-06
24.41	19.39	0.30	7.97E-04	0.92	0.73	0.18	1.13E-06
19.39	15.40	0.30	5.03E-04	0.73	0.58	0.19	7.13E-07
				0.58	0.00	0.63	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

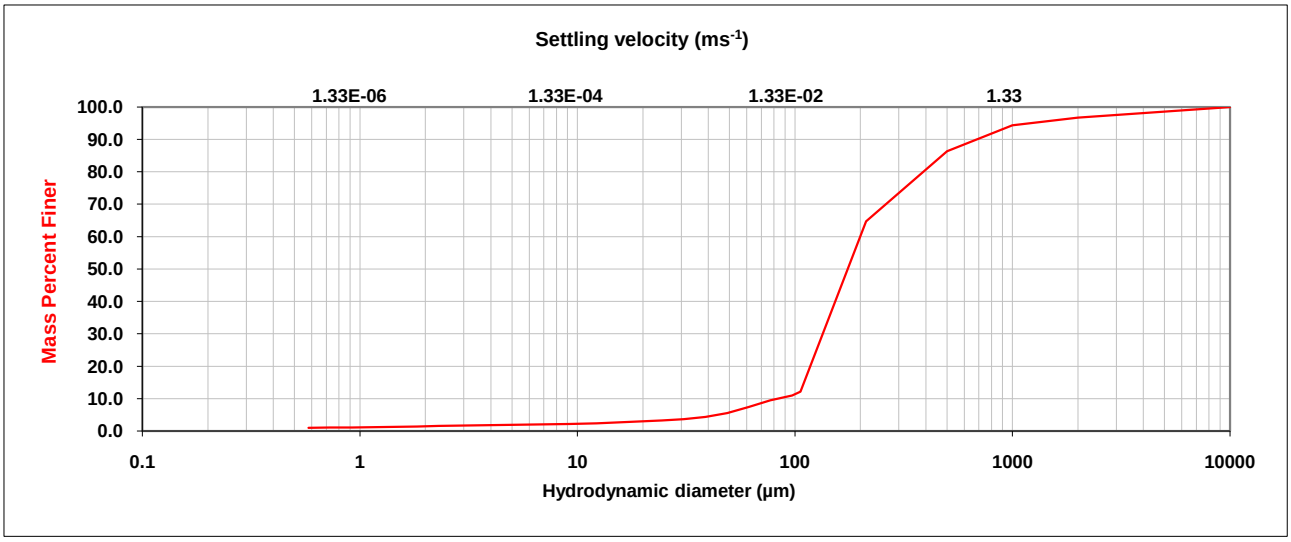
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB17B
Job No:	11_336
Laboratory ID:	11_336_17B

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Seawater	**Sonication:**	10 min
Additives:	None	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	3.27	8.53E+01	15.40	12.23	0.28	3.17E-04
2000.00	1000.00	2.45	4.10E+00	12.23	9.17	0.23	1.92E-04
1000.00	500.00	7.98	1.03E+00	9.17	7.29	0.08	1.13E-04
500.00	212.00	21.64	2.42E-01	7.29	5.79	0.08	7.11E-05
212.00	106.00	52.52	4.61E-02	5.79	4.60	0.11	4.48E-05
106.00	97.16	1.13	1.70E-02	4.60	3.65	0.10	2.83E-05
97.16	77.18	1.54	1.26E-02	3.65	2.90	0.10	1.78E-05
77.18	61.31	2.01	7.97E-03	2.90	2.30	0.15	1.12E-05
61.31	48.70	1.89	5.03E-03	2.30	1.83	0.16	7.09E-06
48.70	38.68	1.20	3.17E-03	1.83	1.45	0.13	4.47E-06
38.68	30.73	0.66	2.00E-03	1.45	1.15	0.11	2.81E-06
30.73	24.41	0.40	1.26E-03	1.15	0.92	0.07	1.78E-06
24.41	19.39	0.32	7.97E-04	0.92	0.73	0.05	1.13E-06
19.39	15.40	0.28	5.03E-04	0.73	0.58	0.04	7.13E-07
				0.58	0.00	1.02	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

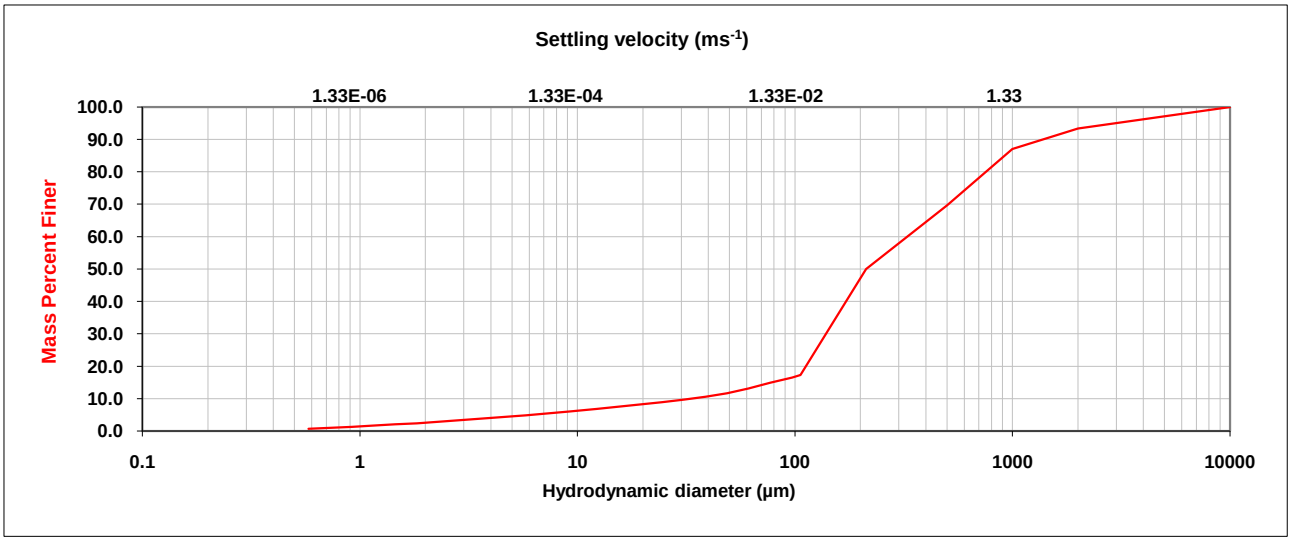
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB18
Job No:	11_336
Laboratory ID:	11_336_18

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	6.64	8.53E+01	15.40	12.23	0.73	3.17E-04
2000.00	1000.00	6.31	4.10E+00	12.23	9.17	0.78	1.92E-04
1000.00	500.00	17.37	1.03E+00	9.17	7.29	0.57	1.13E-04
500.00	212.00	19.68	2.42E-01	7.29	5.79	0.57	7.11E-05
212.00	106.00	32.70	4.61E-02	5.79	4.60	0.48	4.48E-05
106.00	97.16	0.83	1.70E-02	4.60	3.65	0.52	2.83E-05
97.16	77.18	1.56	1.26E-02	3.65	2.90	0.52	1.78E-05
77.18	61.31	1.78	7.97E-03	2.90	2.30	0.48	1.12E-05
61.31	48.70	1.49	5.03E-03	2.30	1.83	0.43	7.09E-06
48.70	38.68	1.09	3.17E-03	1.83	1.45	0.38	4.47E-06
38.68	30.73	0.86	2.00E-03	1.45	1.15	0.38	2.81E-06
30.73	24.41	0.76	1.26E-03	1.15	0.92	0.35	1.78E-06
24.41	19.39	0.71	7.97E-04	0.92	0.73	0.31	1.13E-06
19.39	15.40	0.71	5.03E-04	0.73	0.58	0.29	7.13E-07
				0.58	0.00	0.71	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

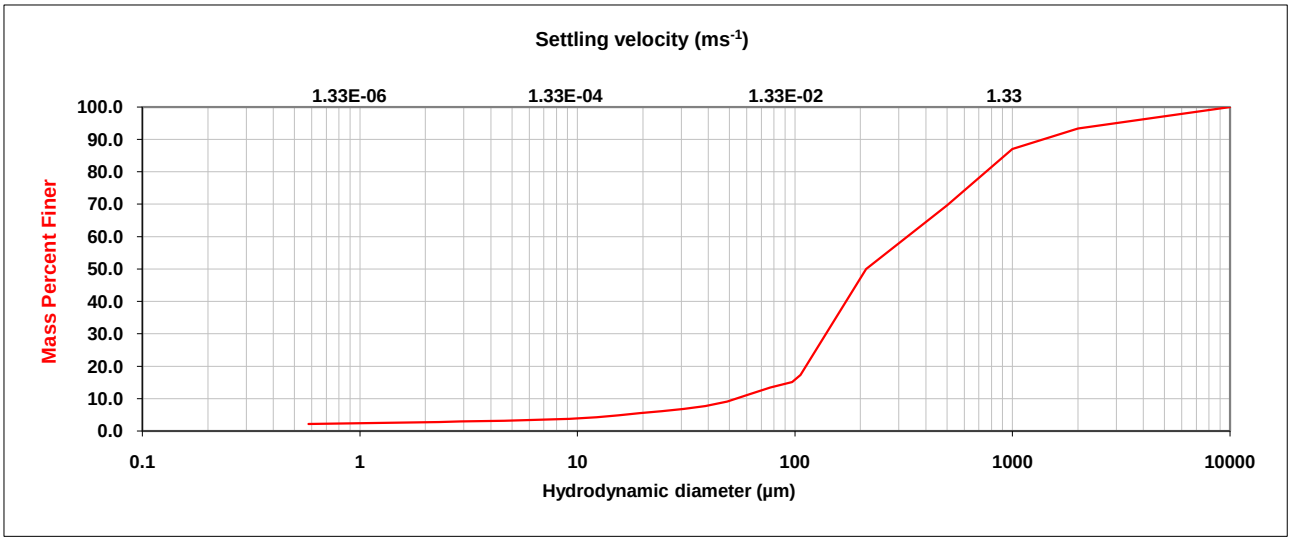
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB18B
Job No:	11_336
Laboratory ID:	11_336_18B

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Seawater	**Sonication:**	10 min
Additives:	None	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	6.64	8.53E+01	15.40	12.23	0.54	3.17E-04
2000.00	1000.00	6.31	4.10E+00	12.23	9.17	0.50	1.92E-04
1000.00	500.00	17.37	1.03E+00	9.17	7.29	0.28	1.13E-04
500.00	212.00	19.68	2.42E-01	7.29	5.79	0.19	7.11E-05
212.00	106.00	32.70	4.61E-02	5.79	4.60	0.16	4.48E-05
106.00	97.16	2.13	1.70E-02	4.60	3.65	0.16	2.83E-05
97.16	77.18	1.73	1.26E-02	3.65	2.90	0.09	1.78E-05
77.18	61.31	2.14	7.97E-03	2.90	2.30	0.14	1.12E-05
61.31	48.70	2.16	5.03E-03	2.30	1.83	0.14	7.09E-06
48.70	38.68	1.44	3.17E-03	1.83	1.45	0.10	4.47E-06
38.68	30.73	0.85	2.00E-03	1.45	1.15	0.10	2.81E-06
30.73	24.41	0.67	1.26E-03	1.15	0.92	0.10	1.78E-06
24.41	19.39	0.67	7.97E-04	0.92	0.73	0.09	1.13E-06
19.39	15.40	0.66	5.03E-04	0.73	0.58	0.05	7.13E-07
				0.58	0.00	2.21	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

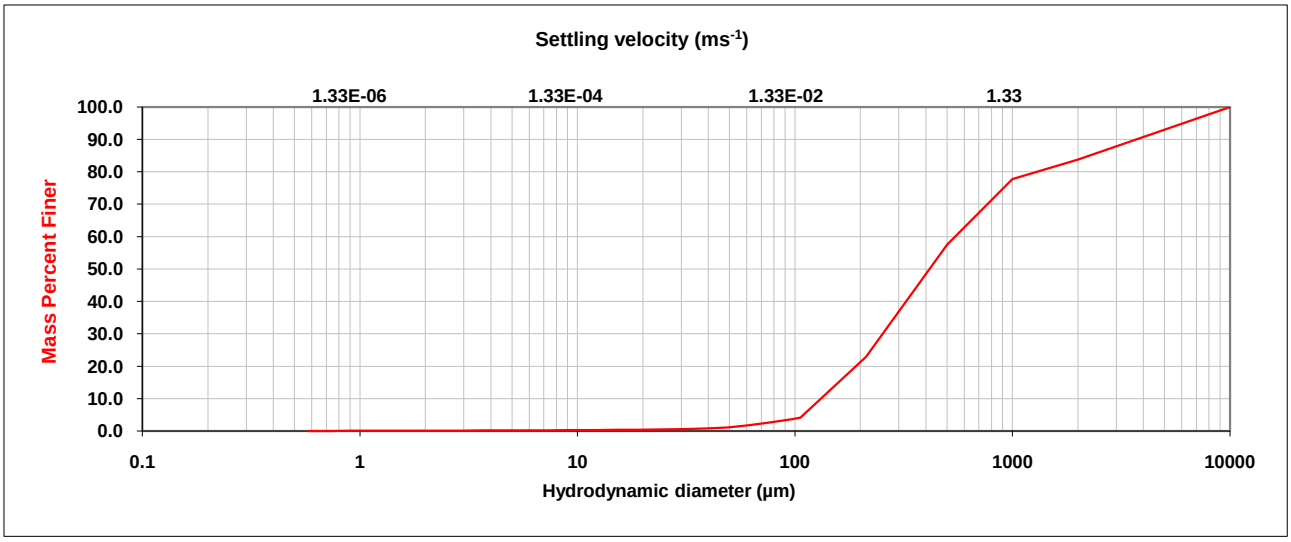
19/07/2011

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB19
Job No:	11_336
Laboratory ID:	11_336_19

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	16.27	8.53E+01	15.40	12.23	0.05	3.17E-04
2000.00	1000.00	6.01	4.10E+00	12.23	9.17	0.06	1.92E-04
1000.00	500.00	20.18	1.03E+00	9.17	7.29	0.03	1.13E-04
500.00	212.00	34.64	2.42E-01	7.29	5.79	0.02	7.11E-05
212.00	106.00	18.76	4.61E-02	5.79	4.60	0.01	4.48E-05
106.00	97.16	0.47	1.70E-02	4.60	3.65	0.03	2.83E-05
97.16	77.18	0.97	1.26E-02	3.65	2.90	0.05	1.78E-05
77.18	61.31	0.94	7.97E-03	2.90	2.30	0.03	1.12E-05
61.31	48.70	0.64	5.03E-03	2.30	1.83	0.01	7.09E-06
48.70	38.68	0.35	3.17E-03	1.83	1.45	0.00	4.47E-06
38.68	30.73	0.18	2.00E-03	1.45	1.15	0.02	2.81E-06
30.73	24.41	0.09	1.26E-03	1.15	0.92	0.01	1.78E-06
24.41	19.39	0.05	7.97E-04	0.92	0.73	0.04	1.13E-06
19.39	15.40	0.05	5.03E-04	0.73	0.58	0.03	7.13E-07
				0.58	0.00	0.00	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

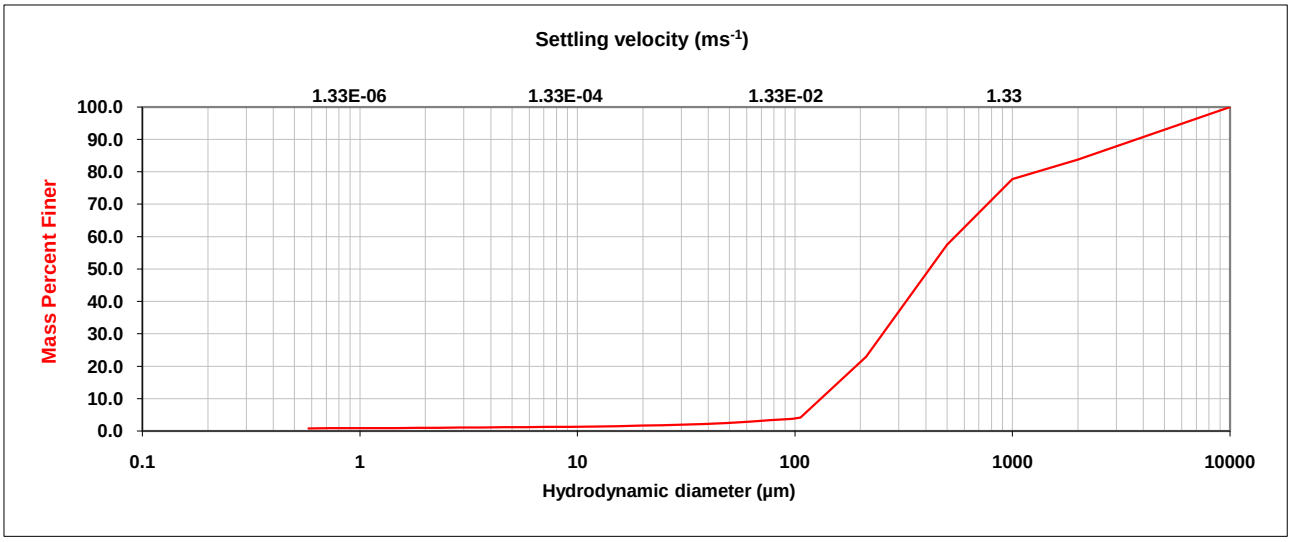
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB19B
Job No:	11_336
Laboratory ID:	11_336_19B

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Seawater	**Sonication:**	10 min
Additives:	None	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	16.27	8.53E+01	15.40	12.23	0.11	3.17E-04
2000.00	1000.00	6.01	4.10E+00	12.23	9.17	0.10	1.92E-04
1000.00	500.00	20.18	1.03E+00	9.17	7.29	0.06	1.13E-04
500.00	212.00	34.64	2.42E-01	7.29	5.79	0.05	7.11E-05
212.00	106.00	18.76	4.61E-02	5.79	4.60	0.05	4.48E-05
106.00	97.16	0.39	1.70E-02	4.60	3.65	0.03	2.83E-05
97.16	77.18	0.37	1.26E-02	3.65	2.90	0.05	1.78E-05
77.18	61.31	0.48	7.97E-03	2.90	2.30	0.07	1.12E-05
61.31	48.70	0.46	5.03E-03	2.30	1.83	0.05	7.09E-06
48.70	38.68	0.30	3.17E-03	1.83	1.45	0.03	4.47E-06
38.68	30.73	0.19	2.00E-03	1.45	1.15	0.04	2.81E-06
30.73	24.41	0.15	1.26E-03	1.15	0.92	0.02	1.78E-06
24.41	19.39	0.14	7.97E-04	0.92	0.73	0.01	1.13E-06
19.39	15.40	0.14	5.03E-04	0.73	0.58	0.01	7.13E-07
				0.58	0.00	0.85	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
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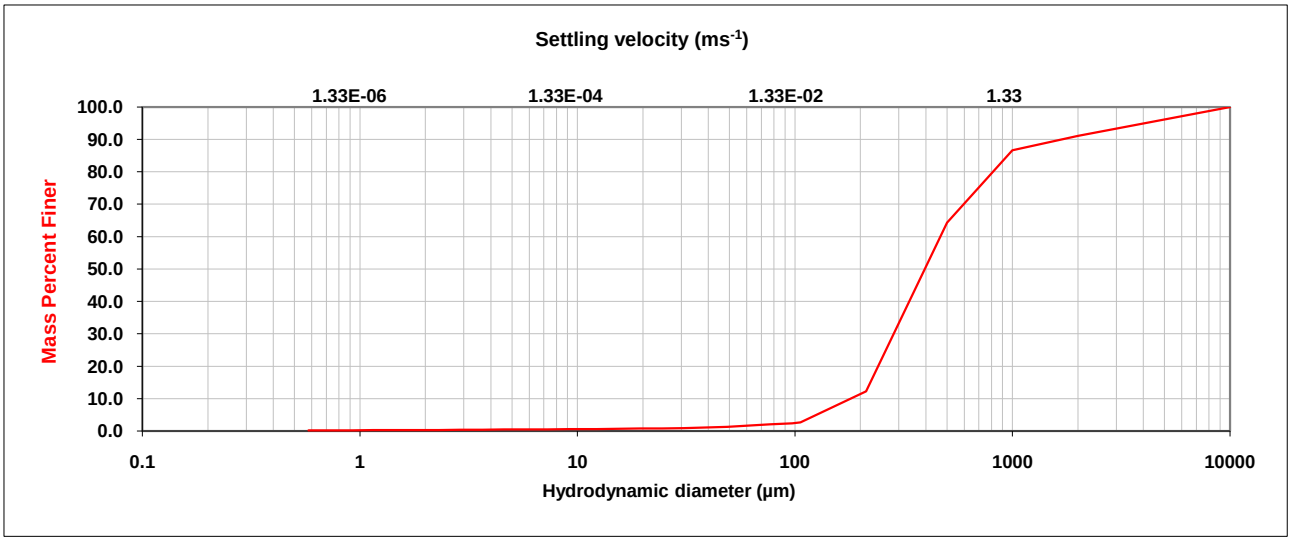
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB20
Job No:	11_336
Laboratory ID:	11_336_20

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	8.94	8.53E+01	15.40	12.23	0.05	3.17E-04
2000.00	1000.00	4.40	4.10E+00	12.23	9.17	0.07	1.92E-04
1000.00	500.00	22.35	1.03E+00	9.17	7.29	0.05	1.13E-04
500.00	212.00	52.10	2.42E-01	7.29	5.79	0.04	7.11E-05
212.00	106.00	9.51	4.61E-02	5.79	4.60	0.03	4.48E-05
106.00	97.16	0.27	1.70E-02	4.60	3.65	0.03	2.83E-05
97.16	77.18	0.35	1.26E-02	3.65	2.90	0.04	1.78E-05
77.18	61.31	0.40	7.97E-03	2.90	2.30	0.04	1.12E-05
61.31	48.70	0.34	5.03E-03	2.30	1.83	0.02	7.09E-06
48.70	38.68	0.24	3.17E-03	1.83	1.45	0.03	4.47E-06
38.68	30.73	0.15	2.00E-03	1.45	1.15	0.03	2.81E-06
30.73	24.41	0.10	1.26E-03	1.15	0.92	0.03	1.78E-06
24.41	19.39	0.08	7.97E-04	0.92	0.73	0.03	1.13E-06
19.39	15.40	0.06	5.03E-04	0.73	0.58	0.03	7.13E-07
				0.58	0.00	0.18	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
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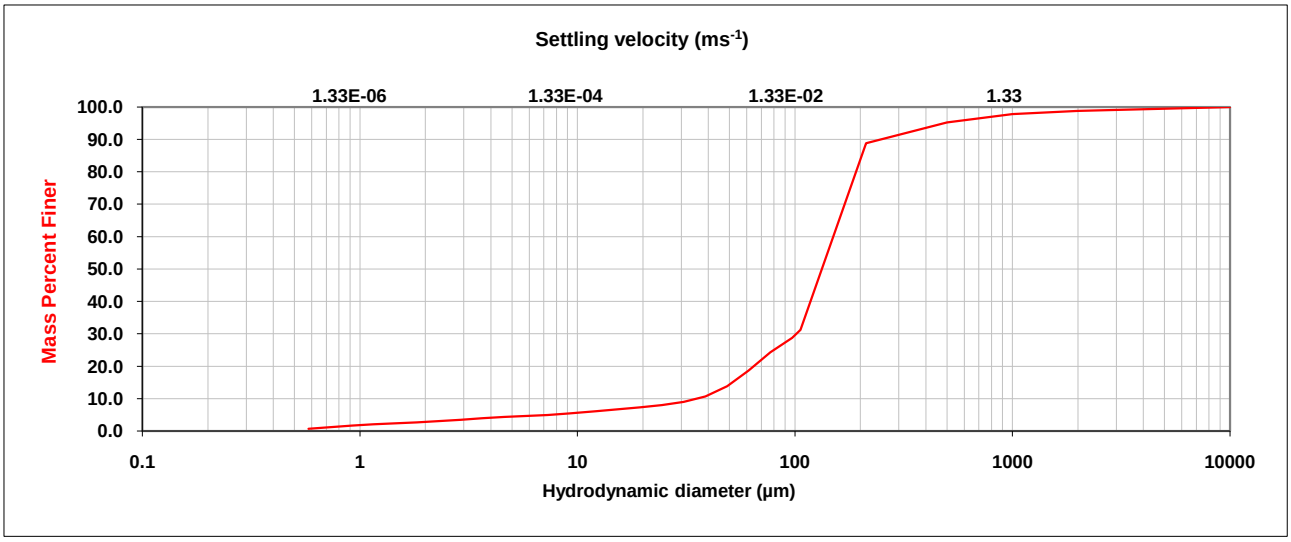
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB21
Job No:	11_336
Laboratory ID:	11_336_21

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	1.27	8.53E+01	15.40	12.23	0.56	3.17E-04
2000.00	1000.00	0.97	4.10E+00	12.23	9.17	0.69	1.92E-04
1000.00	500.00	2.59	1.03E+00	9.17	7.29	0.44	1.13E-04
500.00	212.00	6.39	2.42E-01	7.29	5.79	0.31	7.11E-05
212.00	106.00	57.52	4.61E-02	5.79	4.60	0.31	4.48E-05
106.00	97.16	2.47	1.70E-02	4.60	3.65	0.37	2.83E-05
97.16	77.18	4.50	1.26E-02	3.65	2.90	0.50	1.78E-05
77.18	61.31	5.59	7.97E-03	2.90	2.30	0.41	1.12E-05
61.31	48.70	4.87	5.03E-03	2.30	1.83	0.41	7.09E-06
48.70	38.68	3.09	3.17E-03	1.83	1.45	0.34	4.47E-06
38.68	30.73	1.72	2.00E-03	1.45	1.15	0.28	2.81E-06
30.73	24.41	0.97	1.26E-03	1.15	0.92	0.37	1.78E-06
24.41	19.39	0.72	7.97E-04	0.92	0.73	0.47	1.13E-06
19.39	15.40	0.62	5.03E-04	0.73	0.58	0.47	7.13E-07
				0.58	0.00	0.75	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

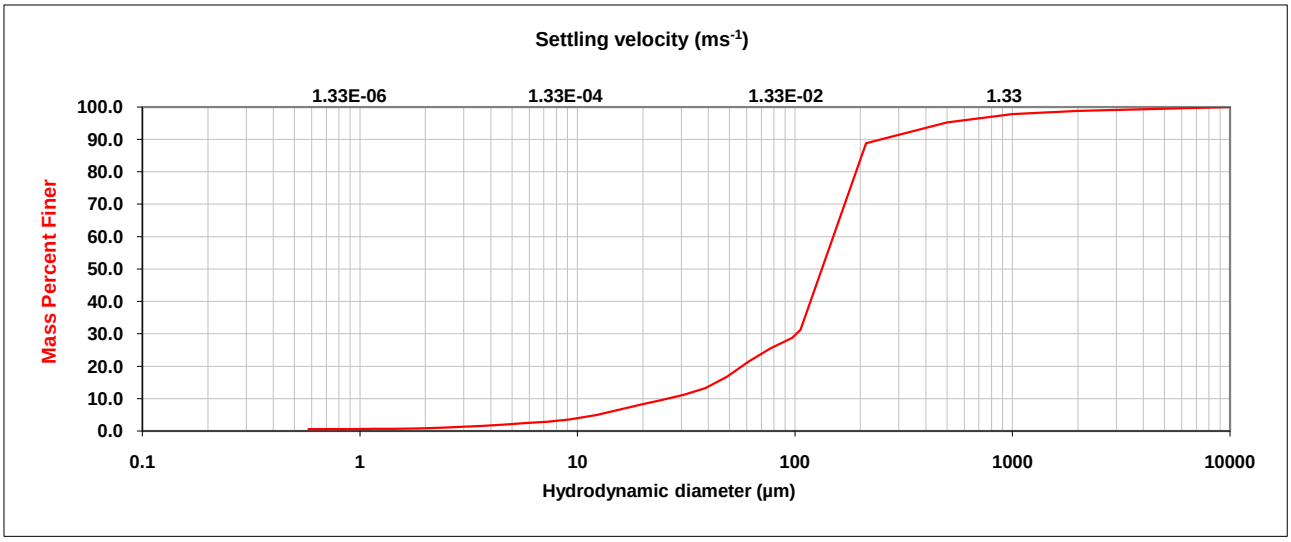
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB21B
Job No:	11_336
Laboratory ID:	11_336_21B

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Seawater	**Sonication:**	10 min
Additives:	None	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	1.27	8.53E+01	15.40	12.23	1.50	3.17E-04
2000.00	1000.00	0.97	4.10E+00	12.23	9.17	1.44	1.92E-04
1000.00	500.00	2.59	1.03E+00	9.17	7.29	0.72	1.13E-04
500.00	212.00	6.39	2.42E-01	7.29	5.79	0.41	7.11E-05
212.00	106.00	57.52	4.61E-02	5.79	4.60	0.41	4.48E-05
106.00	97.16	2.50	1.70E-02	4.60	3.65	0.44	2.83E-05
97.16	77.18	3.22	1.26E-02	3.65	2.90	0.31	1.78E-05
77.18	61.31	4.09	7.97E-03	2.90	2.30	0.28	1.12E-05
61.31	48.70	4.62	5.03E-03	2.30	1.83	0.19	7.09E-06
48.70	38.68	3.53	3.17E-03	1.83	1.45	0.06	4.47E-06
38.68	30.73	2.12	2.00E-03	1.45	1.15	0.03	2.81E-06
30.73	24.41	1.53	1.26E-03	1.15	0.92	0.09	1.78E-06
24.41	19.39	1.53	7.97E-04	0.92	0.73	0.03	1.13E-06
19.39	15.40	1.59	5.03E-04	0.73	0.58	0.00	7.13E-07
				0.58	0.00	0.59	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

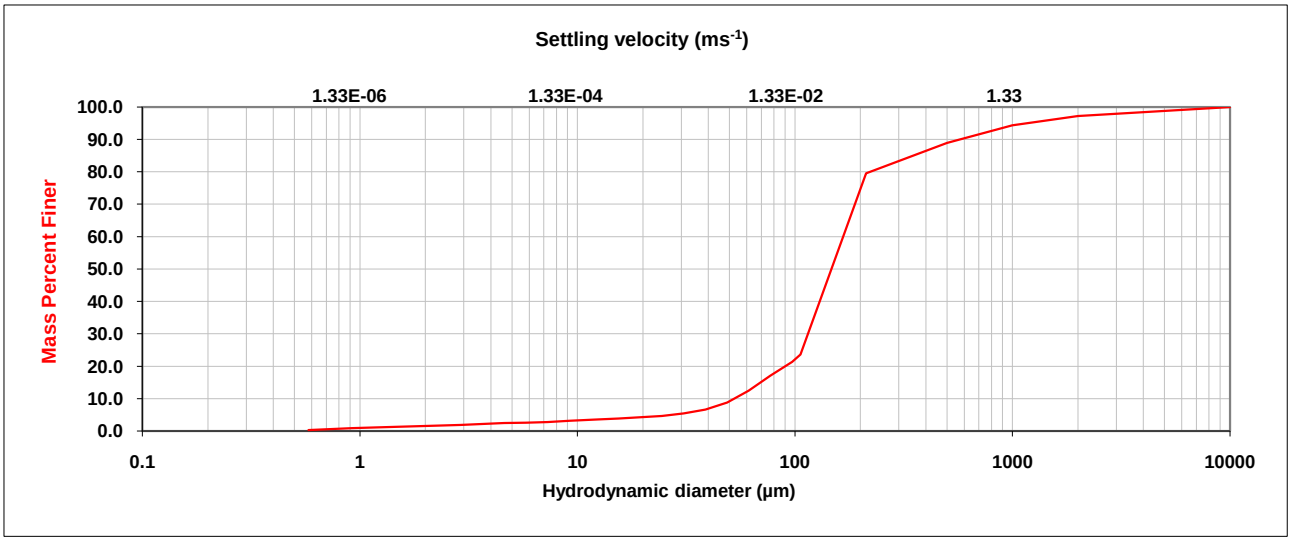
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB22
Job No:	11_336
Laboratory ID:	11_336_22

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	2.79	8.53E+01	15.40	12.23	0.35	3.17E-04
2000.00	1000.00	2.91	4.10E+00	12.23	9.17	0.38	1.92E-04
1000.00	500.00	5.43	1.03E+00	9.17	7.29	0.35	1.13E-04
500.00	212.00	9.31	2.42E-01	7.29	5.79	0.19	7.11E-05
212.00	106.00	55.92	4.61E-02	5.79	4.60	0.17	4.48E-05
106.00	97.16	2.27	1.70E-02	4.60	3.65	0.28	2.83E-05
97.16	77.18	4.26	1.26E-02	3.65	2.90	0.28	1.78E-05
77.18	61.31	4.63	7.97E-03	2.90	2.30	0.19	1.12E-05
61.31	48.70	3.66	5.03E-03	2.30	1.83	0.21	7.09E-06
48.70	38.68	2.15	3.17E-03	1.83	1.45	0.21	4.47E-06
38.68	30.73	1.25	2.00E-03	1.45	1.15	0.14	2.81E-06
30.73	24.41	0.71	1.26E-03	1.15	0.92	0.21	1.78E-06
24.41	19.39	0.43	7.97E-04	0.92	0.73	0.28	1.13E-06
19.39	15.40	0.40	5.03E-04	0.73	0.58	0.31	7.13E-07
				0.58	0.00	0.31	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

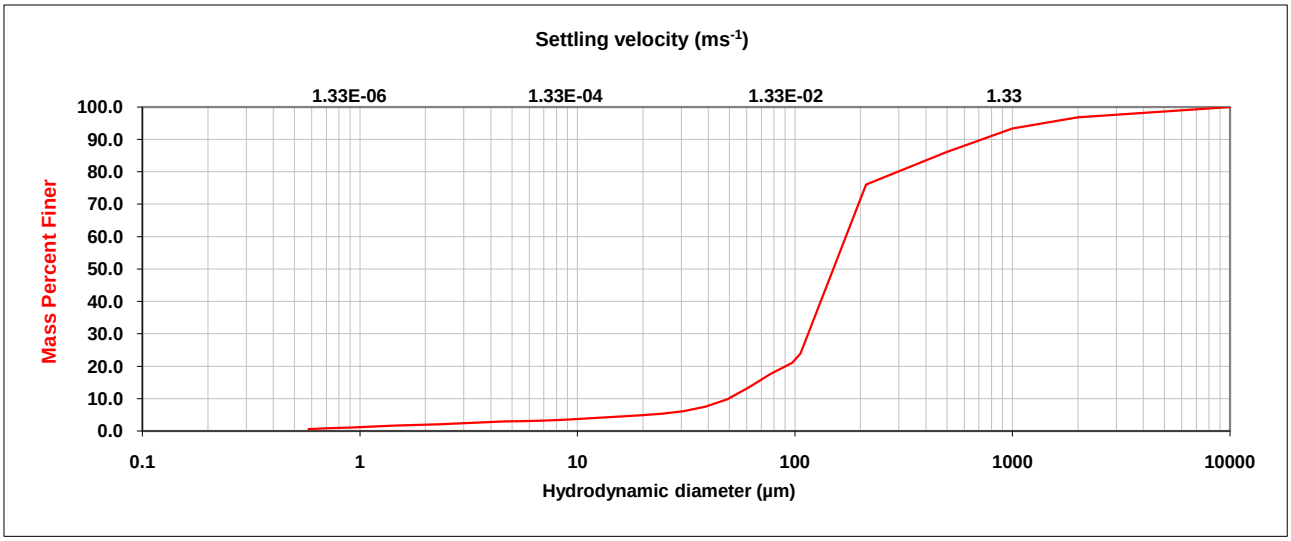
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB23
Job No:	11_336
Laboratory ID:	11_336_23

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	3.18	8.53E+01	15.40	12.23	0.38	3.17E-04
2000.00	1000.00	3.45	4.10E+00	12.23	9.17	0.43	1.92E-04
1000.00	500.00	7.27	1.03E+00	9.17	7.29	0.29	1.13E-04
500.00	212.00	10.03	2.42E-01	7.29	5.79	0.22	7.11E-05
212.00	106.00	52.17	4.61E-02	5.79	4.60	0.14	4.48E-05
106.00	97.16	2.87	1.70E-02	4.60	3.65	0.24	2.83E-05
97.16	77.18	3.39	1.26E-02	3.65	2.90	0.31	1.78E-05
77.18	61.31	4.18	7.97E-03	2.90	2.30	0.29	1.12E-05
61.31	48.70	3.66	5.03E-03	2.30	1.83	0.22	7.09E-06
48.70	38.68	2.29	3.17E-03	1.83	1.45	0.22	4.47E-06
38.68	30.73	1.34	2.00E-03	1.45	1.15	0.33	2.81E-06
30.73	24.41	0.84	1.26E-03	1.15	0.92	0.31	1.78E-06
24.41	19.39	0.53	7.97E-04	0.92	0.73	0.19	1.13E-06
19.39	15.40	0.38	5.03E-04	0.73	0.58	0.22	7.13E-07
				0.58	0.00	0.65	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

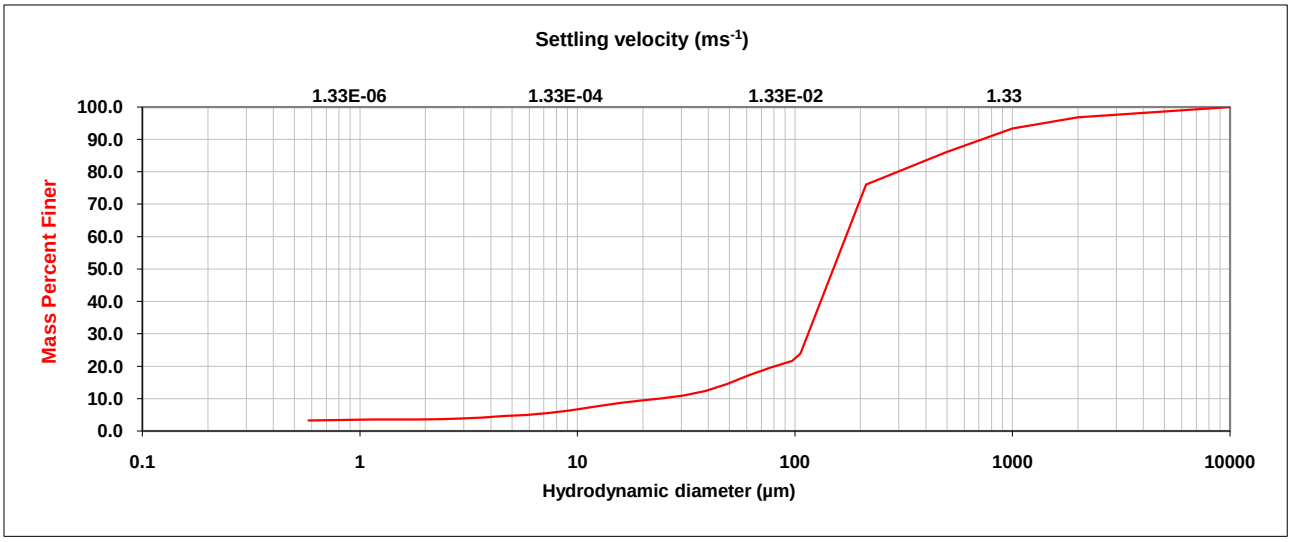
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB23B
Job No:	11_336
Laboratory ID:	11_336_23B

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Seawater	**Sonication:**	10 min
Additives:	None	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	3.18	8.53E+01	15.40	12.23	1.00	3.17E-04
2000.00	1000.00	3.45	4.10E+00	12.23	9.17	1.29	1.92E-04
1000.00	500.00	7.27	1.03E+00	9.17	7.29	0.79	1.13E-04
500.00	212.00	10.03	2.42E-01	7.29	5.79	0.50	7.11E-05
212.00	106.00	52.17	4.61E-02	5.79	4.60	0.38	4.48E-05
106.00	97.16	2.29	1.70E-02	4.60	3.65	0.41	2.83E-05
97.16	77.18	2.03	1.26E-02	3.65	2.90	0.31	1.78E-05
77.18	61.31	2.39	7.97E-03	2.90	2.30	0.19	1.12E-05
61.31	48.70	2.70	5.03E-03	2.30	1.83	0.12	7.09E-06
48.70	38.68	2.13	3.17E-03	1.83	1.45	0.00	4.47E-06
38.68	30.73	1.34	2.00E-03	1.45	1.15	0.05	2.81E-06
30.73	24.41	0.93	1.26E-03	1.15	0.92	0.10	1.78E-06
24.41	19.39	0.72	7.97E-04	0.92	0.73	0.10	1.13E-06
19.39	15.40	0.79	5.03E-04	0.73	0.58	0.05	7.13E-07
				0.58	0.00	3.30	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

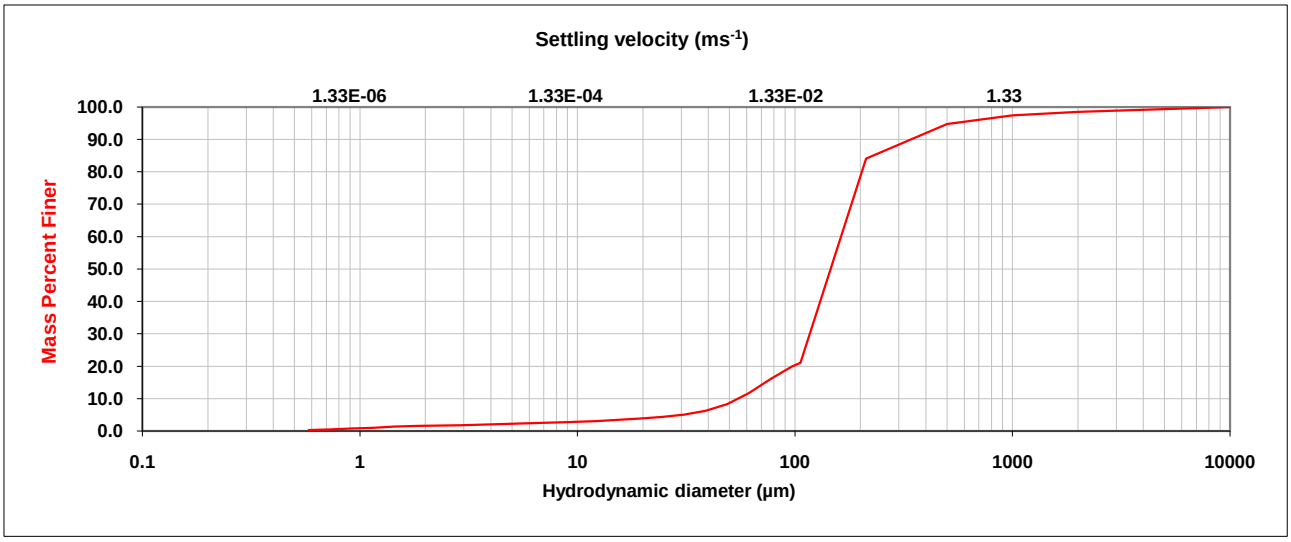
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB24
Job No:	11_336
Laboratory ID:	11_336_24

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.02 µm
Liquid viscosity:	0.712	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	1.54	8.53E+01	15.40	12.23	0.36	3.17E-04
2000.00	1000.00	1.09	4.10E+00	12.23	9.17	0.34	1.92E-04
1000.00	500.00	2.60	1.03E+00	9.17	7.29	0.23	1.13E-04
500.00	212.00	10.69	2.42E-01	7.29	5.79	0.21	7.11E-05
212.00	106.00	63.01	4.61E-02	5.79	4.60	0.17	4.48E-05
106.00	97.16	1.10	1.70E-02	4.60	3.65	0.21	2.83E-05
97.16	77.18	3.92	1.26E-02	3.65	2.90	0.17	1.78E-05
77.18	61.31	4.36	7.97E-03	2.90	2.30	0.06	1.12E-05
61.31	48.70	3.41	5.03E-03	2.30	1.83	0.11	7.09E-06
48.70	38.68	2.02	3.17E-03	1.83	1.45	0.27	4.47E-06
38.68	30.73	1.20	2.00E-03	1.45	1.15	0.34	2.81E-06
30.73	24.41	0.70	1.26E-03	1.15	0.92	0.25	1.78E-06
24.41	19.39	0.46	7.97E-04	0.92	0.73	0.21	1.13E-06
19.39	15.40	0.42	5.03E-04	0.73	0.58	0.19	7.13E-07
				0.58	0.00	0.36	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

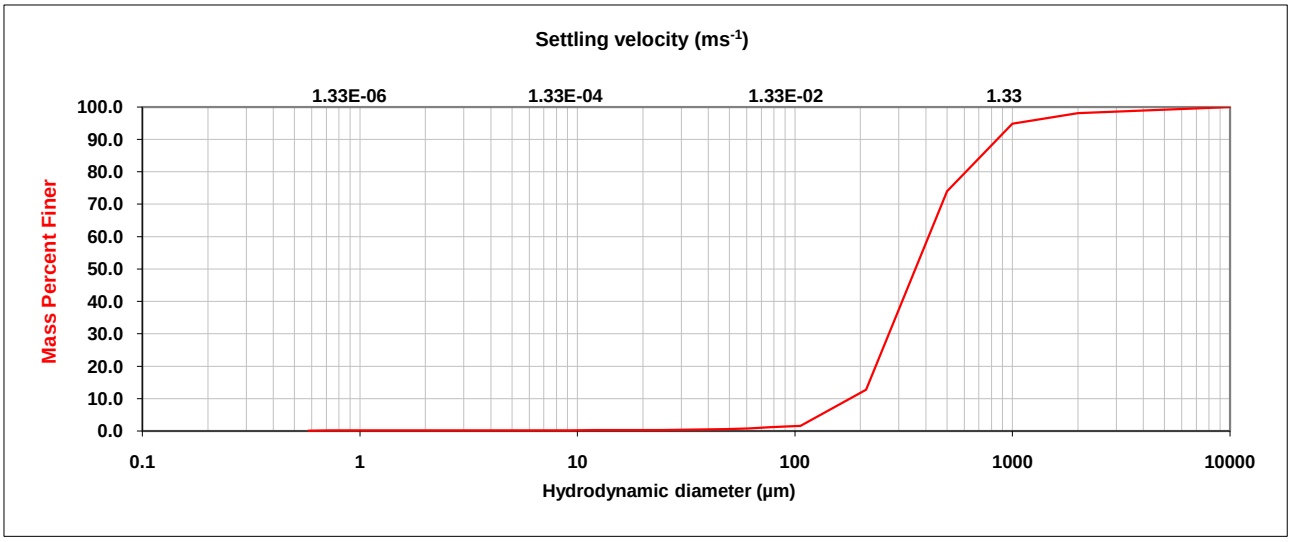
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB25
Job No:	11_336
Laboratory ID:	11_336_25

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	1.92	8.53E+01	15.40	12.23	0.02	3.17E-04
2000.00	1000.00	3.22	4.10E+00	12.23	9.17	0.02	1.92E-04
1000.00	500.00	20.88	1.03E+00	9.17	7.29	0.02	1.13E-04
500.00	212.00	61.19	2.42E-01	7.29	5.79	0.01	7.11E-05
212.00	106.00	11.19	4.61E-02	5.79	4.60	0.01	4.48E-05
106.00	97.16	0.15	1.70E-02	4.60	3.65	0.01	2.83E-05
97.16	77.18	0.29	1.26E-02	3.65	2.90	0.00	1.78E-05
77.18	61.31	0.32	7.97E-03	2.90	2.30	0.00	1.12E-05
61.31	48.70	0.23	5.03E-03	2.30	1.83	0.00	7.09E-06
48.70	38.68	0.13	3.17E-03	1.83	1.45	0.01	4.47E-06
38.68	30.73	0.08	2.00E-03	1.45	1.15	0.01	2.81E-06
30.73	24.41	0.05	1.26E-03	1.15	0.92	0.01	1.78E-06
24.41	19.39	0.03	7.97E-04	0.92	0.73	0.00	1.13E-06
19.39	15.40	0.03	5.03E-04	0.73	0.58	0.00	7.13E-07
				0.58	0.00	0.16	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

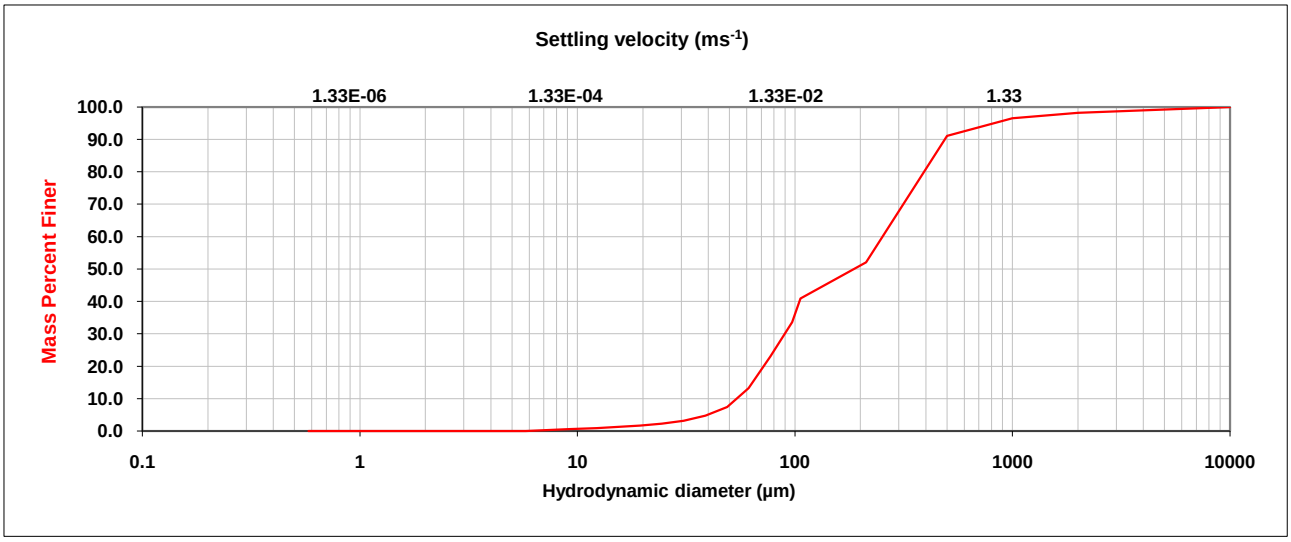
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB26
Job No:	11_336
Laboratory ID:	11_336_26

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	1.87	8.53E+01	15.40	12.23	0.41	3.17E-04
2000.00	1000.00	1.65	4.10E+00	12.23	9.17	0.29	1.92E-04
1000.00	500.00	5.40	1.03E+00	9.17	7.29	0.25	1.13E-04
500.00	212.00	38.99	2.42E-01	7.29	5.79	0.33	7.11E-05
212.00	106.00	11.19	4.61E-02	5.79	4.60	0.00	4.48E-05
106.00	97.16	7.36	1.70E-02	4.60	3.65	0.00	2.83E-05
97.16	77.18	10.55	1.26E-02	3.65	2.90	0.00	1.78E-05
77.18	61.31	9.78	7.97E-03	2.90	2.30	0.00	1.12E-05
61.31	48.70	5.77	5.03E-03	2.30	1.83	0.00	7.09E-06
48.70	38.68	2.70	3.17E-03	1.83	1.45	0.00	4.47E-06
38.68	30.73	1.55	2.00E-03	1.45	1.15	0.00	2.81E-06
30.73	24.41	0.90	1.26E-03	1.15	0.92	0.00	1.78E-06
24.41	19.39	0.57	7.97E-04	0.92	0.73	0.00	1.13E-06
19.39	15.40	0.45	5.03E-04	0.73	0.58	0.00	7.13E-07
				0.58	0.00	0.00	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

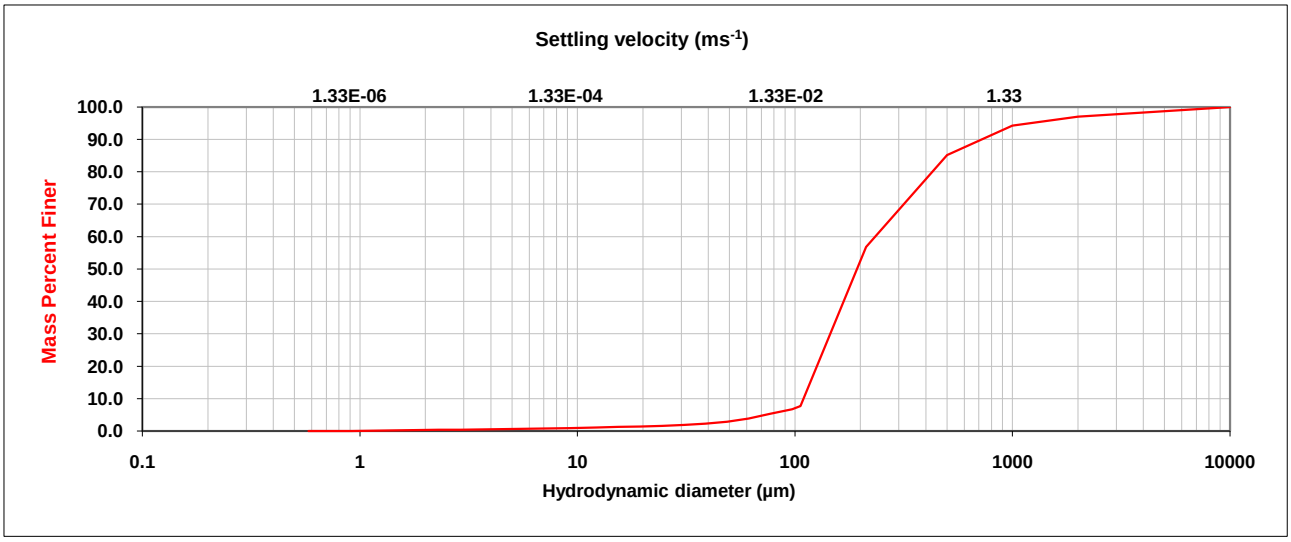
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB27
Job No:	11_336
Laboratory ID:	11_336_27

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	3.06	8.53E+01	15.40	12.23	0.15	3.17E-04
2000.00	1000.00	2.76	4.10E+00	12.23	9.17	0.18	1.92E-04
1000.00	500.00	9.05	1.03E+00	9.17	7.29	0.12	1.13E-04
500.00	212.00	28.32	2.42E-01	7.29	5.79	0.11	7.11E-05
212.00	106.00	49.12	4.61E-02	5.79	4.60	0.10	4.48E-05
106.00	97.16	0.99	1.70E-02	4.60	3.65	0.09	2.83E-05
97.16	77.18	1.38	1.26E-02	3.65	2.90	0.08	1.78E-05
77.18	61.31	1.41	7.97E-03	2.90	2.30	0.07	1.12E-05
61.31	48.70	1.01	5.03E-03	2.30	1.83	0.07	7.09E-06
48.70	38.68	0.60	3.17E-03	1.83	1.45	0.10	4.47E-06
38.68	30.73	0.41	2.00E-03	1.45	1.15	0.12	2.81E-06
30.73	24.41	0.28	1.26E-03	1.15	0.92	0.08	1.78E-06
24.41	19.39	0.18	7.97E-04	0.92	0.73	0.00	1.13E-06
19.39	15.40	0.15	5.03E-04	0.73	0.58	0.00	7.13E-07
				0.58	0.00	0.00	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

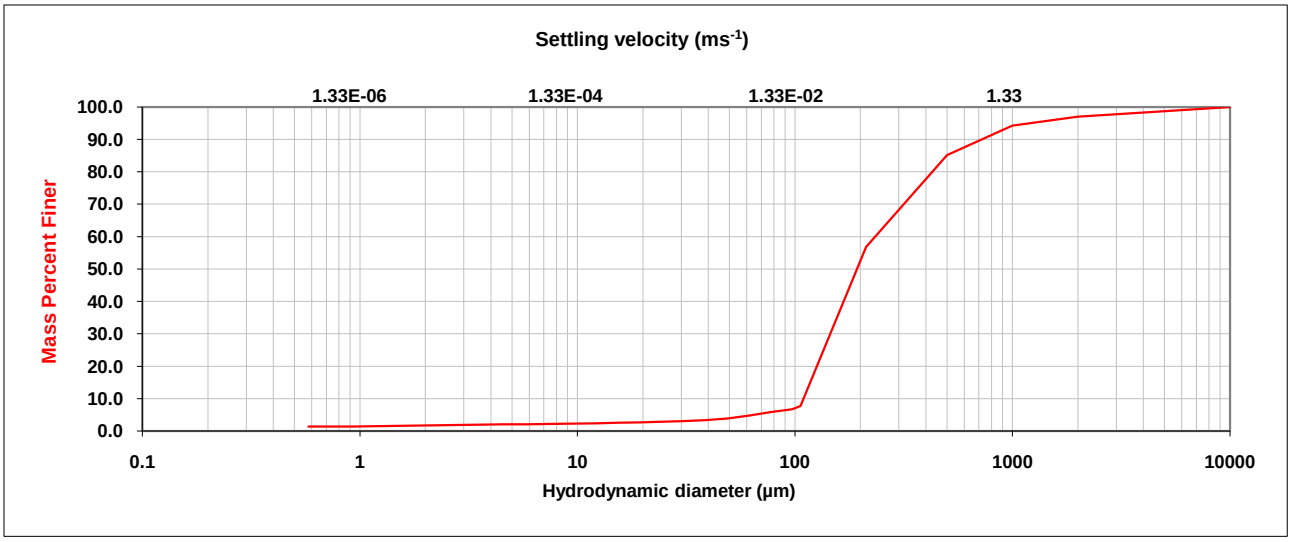
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB27B
Job No:	11_336
Laboratory ID:	11_336_27B

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Seawater	**Sonication:**	10 min
Additives:	None	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	3.06	8.53E+01	15.40	12.23	0.15	3.17E-04
2000.00	1000.00	2.76	4.10E+00	12.23	9.17	0.12	1.92E-04
1000.00	500.00	9.05	1.03E+00	9.17	7.29	0.07	1.13E-04
500.00	212.00	28.32	2.42E-01	7.29	5.79	0.07	7.11E-05
212.00	106.00	49.12	4.61E-02	5.79	4.60	0.08	4.48E-05
106.00	97.16	0.92	1.70E-02	4.60	3.65	0.08	2.83E-05
97.16	77.18	0.91	1.26E-02	3.65	2.90	0.06	1.78E-05
77.18	61.31	1.09	7.97E-03	2.90	2.30	0.10	1.12E-05
61.31	48.70	0.91	5.03E-03	2.30	1.83	0.12	7.09E-06
48.70	38.68	0.49	3.17E-03	1.83	1.45	0.10	4.47E-06
38.68	30.73	0.25	2.00E-03	1.45	1.15	0.09	2.81E-06
30.73	24.41	0.22	1.26E-03	1.15	0.92	0.05	1.78E-06
24.41	19.39	0.19	7.97E-04	0.92	0.73	0.05	1.13E-06
19.39	15.40	0.16	5.03E-04	0.73	0.58	0.02	7.13E-07
				0.58	0.00	1.37	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

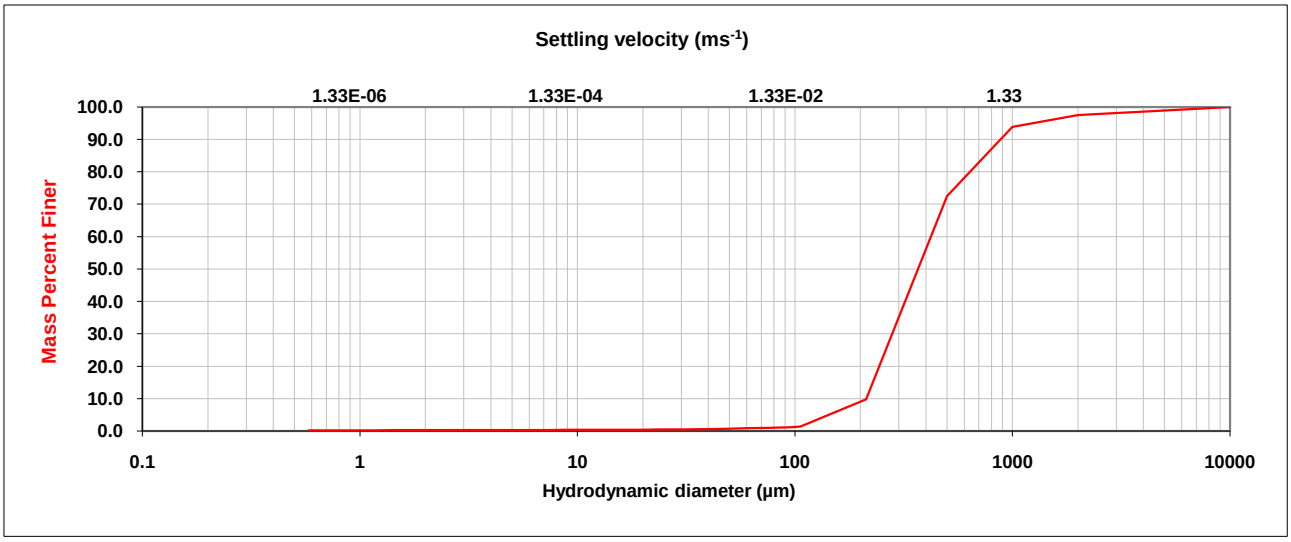
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB28
Job No:	11_336
Laboratory ID:	11_336_28

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	2.51	8.53E+01	15.40	12.23	0.03	3.17E-04
2000.00	1000.00	3.66	4.10E+00	12.23	9.17	0.03	1.92E-04
1000.00	500.00	21.35	1.03E+00	9.17	7.29	0.02	1.13E-04
500.00	212.00	62.67	2.42E-01	7.29	5.79	0.01	7.11E-05
212.00	106.00	8.45	4.61E-02	5.79	4.60	0.01	4.48E-05
106.00	97.16	0.17	1.70E-02	4.60	3.65	0.01	2.83E-05
97.16	77.18	0.15	1.26E-02	3.65	2.90	0.01	1.78E-05
77.18	61.31	0.18	7.97E-03	2.90	2.30	0.01	1.12E-05
61.31	48.70	0.15	5.03E-03	2.30	1.83	0.01	7.09E-06
48.70	38.68	0.10	3.17E-03	1.83	1.45	0.01	4.47E-06
38.68	30.73	0.07	2.00E-03	1.45	1.15	0.01	2.81E-06
30.73	24.41	0.05	1.26E-03	1.15	0.92	0.01	1.78E-06
24.41	19.39	0.04	7.97E-04	0.92	0.73	0.00	1.13E-06
19.39	15.40	0.03	5.03E-04	0.73	0.58	0.00	7.13E-07
				0.58	0.00	0.24	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

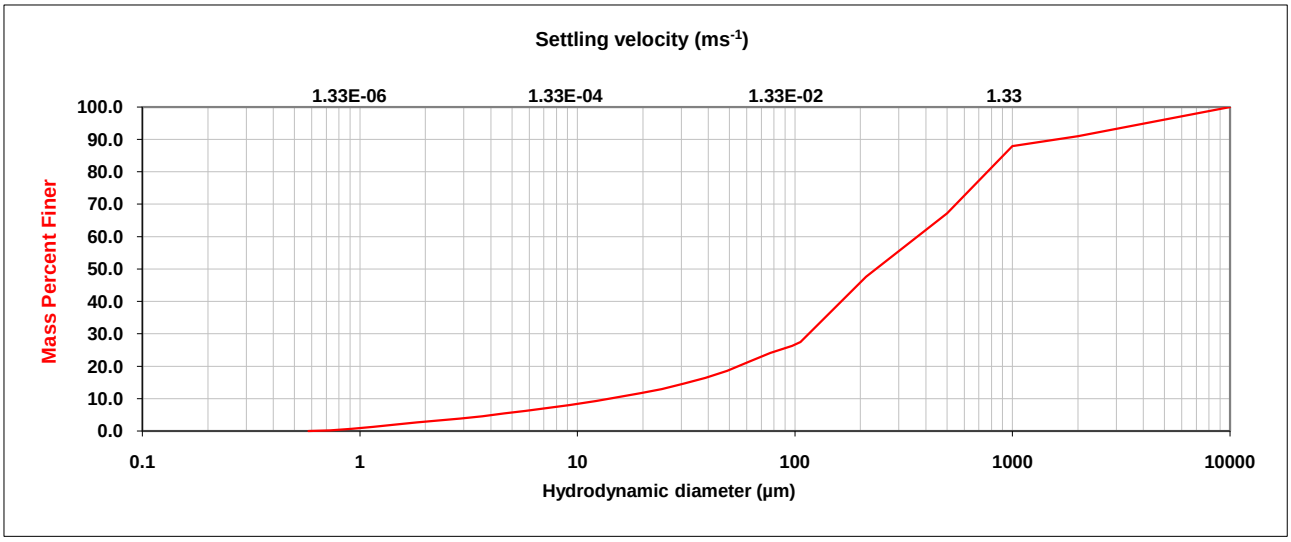
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB29
Job No:	11_336
Laboratory ID:	11_336_29

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.05 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	9.02	8.53E+01	15.40	12.23	1.15	3.17E-04
2000.00	1000.00	3.07	4.10E+00	12.23	9.17	1.35	1.92E-04
1000.00	500.00	20.74	1.03E+00	9.17	7.29	0.91	1.13E-04
500.00	212.00	19.52	2.42E-01	7.29	5.79	0.85	7.11E-05
212.00	106.00	20.19	4.61E-02	5.79	4.60	0.82	4.48E-05
106.00	97.16	1.15	1.70E-02	4.60	3.65	0.82	2.83E-05
97.16	77.18	2.17	1.26E-02	3.65	2.90	0.71	1.78E-05
77.18	61.31	2.83	7.97E-03	2.90	2.30	0.58	1.12E-05
61.31	48.70	2.75	5.03E-03	2.30	1.83	0.63	7.09E-06
48.70	38.68	2.14	3.17E-03	1.83	1.45	0.71	4.47E-06
38.68	30.73	1.79	2.00E-03	1.45	1.15	0.66	2.81E-06
30.73	24.41	1.65	1.26E-03	1.15	0.92	0.58	1.78E-06
24.41	19.39	1.37	7.97E-04	0.92	0.73	0.52	1.13E-06
19.39	15.40	1.13	5.03E-04	0.73	0.58	0.19	7.13E-07
				0.58	0.00	0.00	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

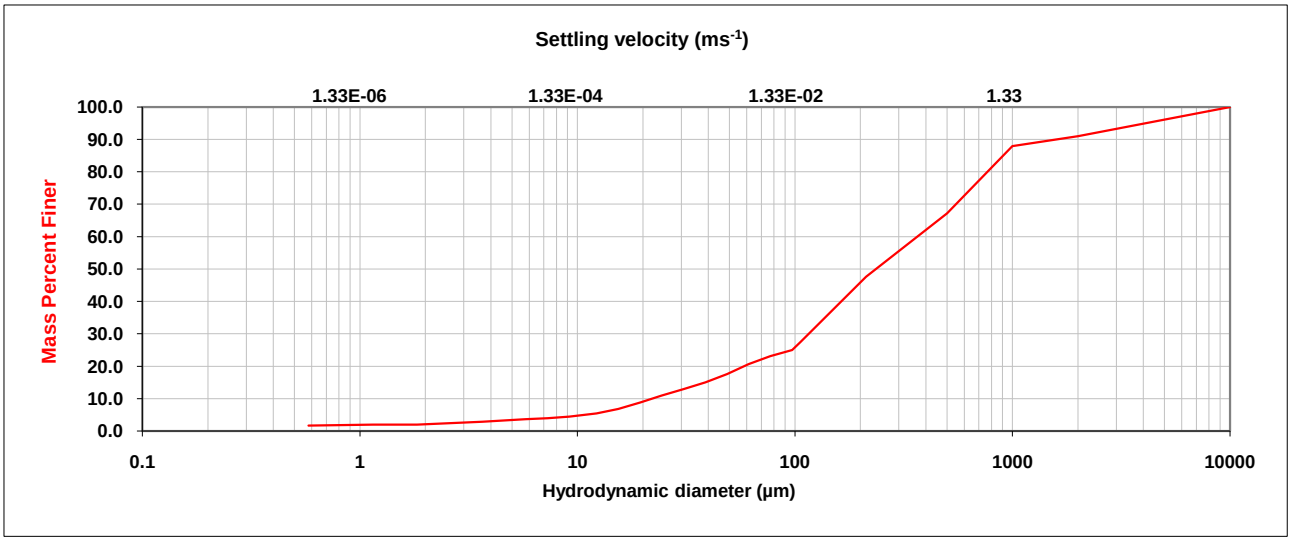
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB29B
Job No:	11_336
Laboratory ID:	11_336_29B

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Seawater	**Sonication:**	10 min
Additives:	None	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.07 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	9.02	8.53E+01	15.40	12.23	1.43	3.17E-04
2000.00	1000.00	3.07	4.10E+00	12.23	9.17	0.99	1.92E-04
1000.00	500.00	20.74	1.03E+00	9.17	7.29	0.47	1.13E-04
500.00	212.00	19.52	2.42E-01	7.29	5.79	0.33	7.11E-05
212.00	106.00	20.19	4.61E-02	5.79	4.60	0.36	4.48E-05
106.00	97.16	2.47	1.70E-02	4.60	3.65	0.38	2.83E-05
97.16	77.18	1.87	1.26E-02	3.65	2.90	0.36	1.78E-05
77.18	61.31	2.47	7.97E-03	2.90	2.30	0.30	1.12E-05
61.31	48.70	3.02	5.03E-03	2.30	1.83	0.25	7.09E-06
48.70	38.68	2.58	3.17E-03	1.83	1.45	0.03	4.47E-06
38.68	30.73	2.11	2.00E-03	1.45	1.15	0.00	2.81E-06
30.73	24.41	2.01	1.26E-03	1.15	0.92	0.11	1.78E-06
24.41	19.39	2.09	7.97E-04	0.92	0.73	0.11	1.13E-06
19.39	15.40	1.98	5.03E-04	0.73	0.58	0.08	7.13E-07
				0.58	0.00	1.68	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

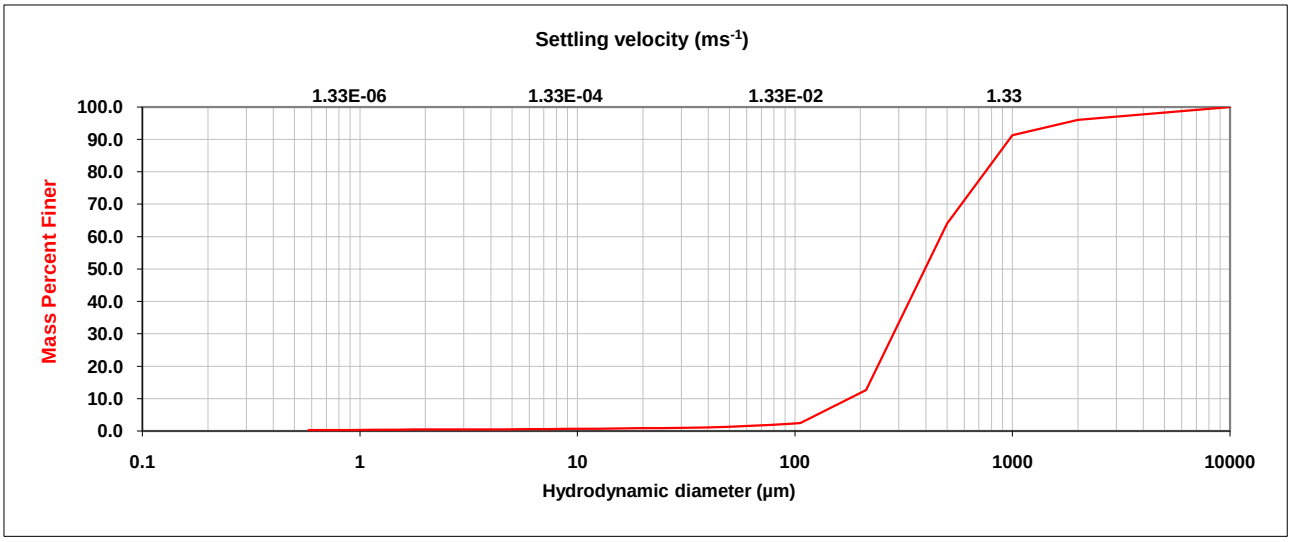
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB30
Job No:	11_336
Laboratory ID:	11_336_30

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.05 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	4.01	8.53E+01	15.40	12.23	0.05	3.17E-04
2000.00	1000.00	4.68	4.10E+00	12.23	9.17	0.05	1.92E-04
1000.00	500.00	27.27	1.03E+00	9.17	7.29	0.05	1.13E-04
500.00	212.00	51.41	2.42E-01	7.29	5.79	0.06	7.11E-05
212.00	106.00	10.10	4.61E-02	5.79	4.60	0.03	4.48E-05
106.00	97.16	0.28	1.70E-02	4.60	3.65	0.02	2.83E-05
97.16	77.18	0.32	1.26E-02	3.65	2.90	0.02	1.78E-05
77.18	61.31	0.35	7.97E-03	2.90	2.30	0.02	1.12E-05
61.31	48.70	0.26	5.03E-03	2.30	1.83	0.02	7.09E-06
48.70	38.68	0.16	3.17E-03	1.83	1.45	0.05	4.47E-06
38.68	30.73	0.12	2.00E-03	1.45	1.15	0.05	2.81E-06
30.73	24.41	0.10	1.26E-03	1.15	0.92	0.05	1.78E-06
24.41	19.39	0.08	7.97E-04	0.92	0.73	0.03	1.13E-06
19.39	15.40	0.06	5.03E-04	0.73	0.58	0.03	7.13E-07
				0.58	0.00	0.27	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

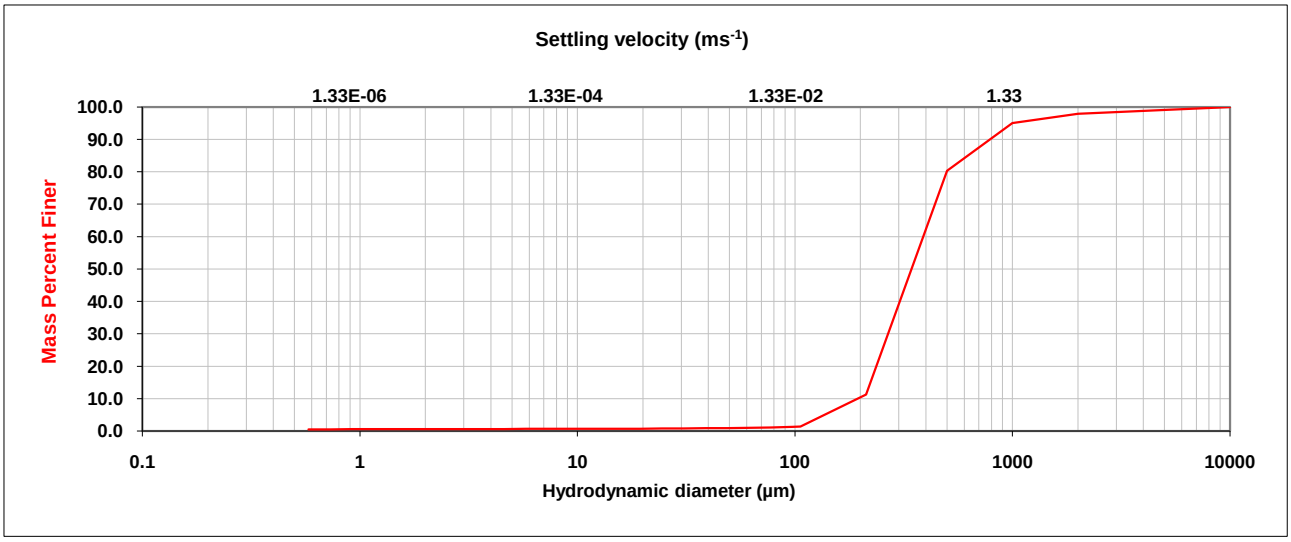
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB31
Job No:	11_336
Laboratory ID:	11_336_31

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.02 µm
Liquid viscosity:	0.711	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	2.15	8.53E+01	15.40	12.23	0.01	3.17E-04
2000.00	1000.00	2.81	4.10E+00	12.23	9.17	0.01	1.92E-04
1000.00	500.00	14.73	1.03E+00	9.17	7.29	0.02	1.13E-04
500.00	212.00	68.98	2.42E-01	7.29	5.79	0.02	7.11E-05
212.00	106.00	9.92	4.61E-02	5.79	4.60	0.03	4.48E-05
106.00	97.16	0.14	1.70E-02	4.60	3.65	0.02	2.83E-05
97.16	77.18	0.11	1.26E-02	3.65	2.90	0.00	1.78E-05
77.18	61.31	0.12	7.97E-03	2.90	2.30	0.00	1.12E-05
61.31	48.70	0.10	5.03E-03	2.30	1.83	0.00	7.09E-06
48.70	38.68	0.07	3.17E-03	1.83	1.45	0.01	4.47E-06
38.68	30.73	0.06	2.00E-03	1.45	1.15	0.02	2.81E-06
30.73	24.41	0.04	1.26E-03	1.15	0.92	0.02	1.78E-06
24.41	19.39	0.02	7.97E-04	0.92	0.73	0.02	1.13E-06
19.39	15.40	0.02	5.03E-04	0.73	0.58	0.02	7.13E-07
				0.58	0.00	0.54	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

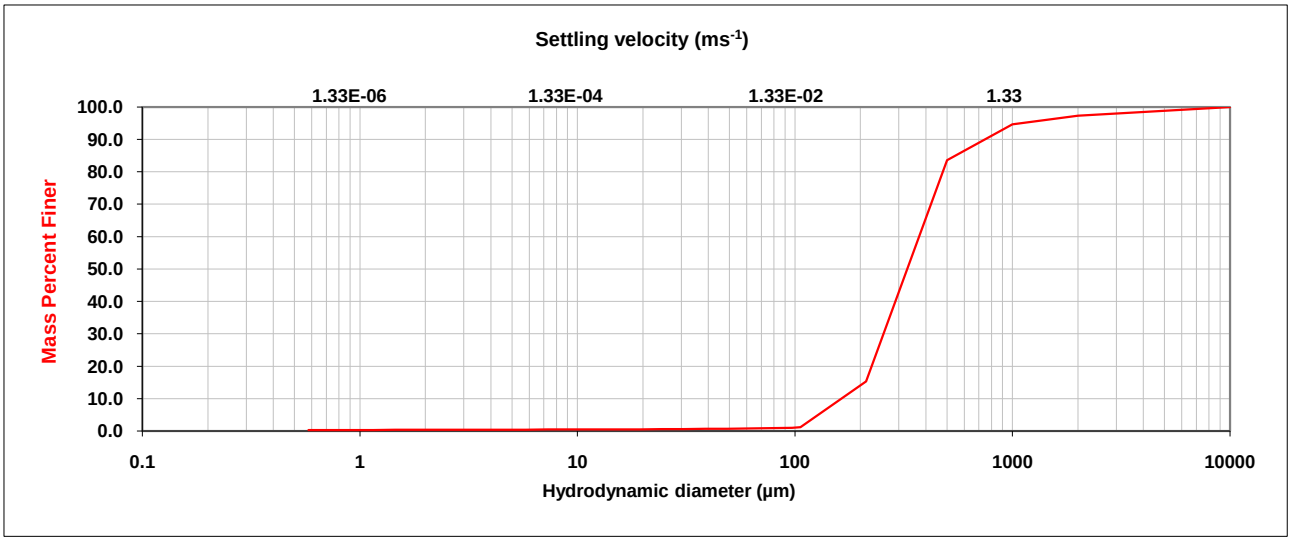
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB32
Job No:	11_336
Laboratory ID:	11_336_32

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.03 µm
Liquid viscosity:	0.712	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	2.75	8.53E+01	15.40	12.23	0.02	3.17E-04
2000.00	1000.00	2.67	4.10E+00	12.23	9.17	0.02	1.92E-04
1000.00	500.00	11.00	1.03E+00	9.17	7.29	0.02	1.13E-04
500.00	212.00	68.29	2.42E-01	7.29	5.79	0.02	7.11E-05
212.00	106.00	14.12	4.61E-02	5.79	4.60	0.03	4.48E-05
106.00	97.16	0.19	1.70E-02	4.60	3.65	0.02	2.83E-05
97.16	77.18	0.07	1.26E-02	3.65	2.90	0.01	1.78E-05
77.18	61.31	0.09	7.97E-03	2.90	2.30	0.00	1.12E-05
61.31	48.70	0.07	5.03E-03	2.30	1.83	0.01	7.09E-06
48.70	38.68	0.05	3.17E-03	1.83	1.45	0.01	4.47E-06
38.68	30.73	0.05	2.00E-03	1.45	1.15	0.02	2.81E-06
30.73	24.41	0.05	1.26E-03	1.15	0.92	0.02	1.78E-06
24.41	19.39	0.04	7.97E-04	0.92	0.73	0.02	1.13E-06
19.39	15.40	0.03	5.03E-04	0.73	0.58	0.01	7.13E-07
				0.58	0.00	0.31	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

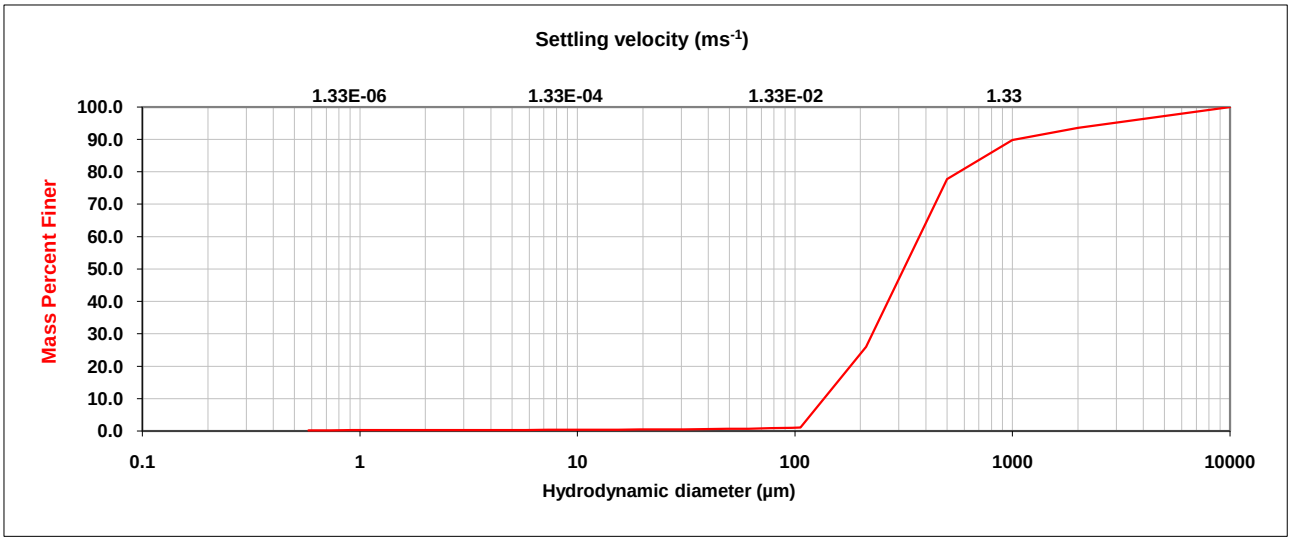
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB33
Job No:	11_336
Laboratory ID:	11_336_33

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.04 µm
Liquid viscosity:	0.712	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	6.48	8.53E+01	15.40	12.23	0.02	3.17E-04
2000.00	1000.00	3.79	4.10E+00	12.23	9.17	0.03	1.92E-04
1000.00	500.00	11.96	1.03E+00	9.17	7.29	0.02	1.13E-04
500.00	212.00	51.78	2.42E-01	7.29	5.79	0.02	7.11E-05
212.00	106.00	24.89	4.61E-02	5.79	4.60	0.01	4.48E-05
106.00	97.16	0.09	1.70E-02	4.60	3.65	0.01	2.83E-05
97.16	77.18	0.13	1.26E-02	3.65	2.90	0.01	1.78E-05
77.18	61.31	0.12	7.97E-03	2.90	2.30	0.00	1.12E-05
61.31	48.70	0.09	5.03E-03	2.30	1.83	0.01	7.09E-06
48.70	38.68	0.06	3.17E-03	1.83	1.45	0.02	4.47E-06
38.68	30.73	0.05	2.00E-03	1.45	1.15	0.02	2.81E-06
30.73	24.41	0.04	1.26E-03	1.15	0.92	0.01	1.78E-06
24.41	19.39	0.03	7.97E-04	0.92	0.73	0.01	1.13E-06
19.39	15.40	0.02	5.03E-04	0.73	0.58	0.01	7.13E-07
				0.58	0.00	0.24	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

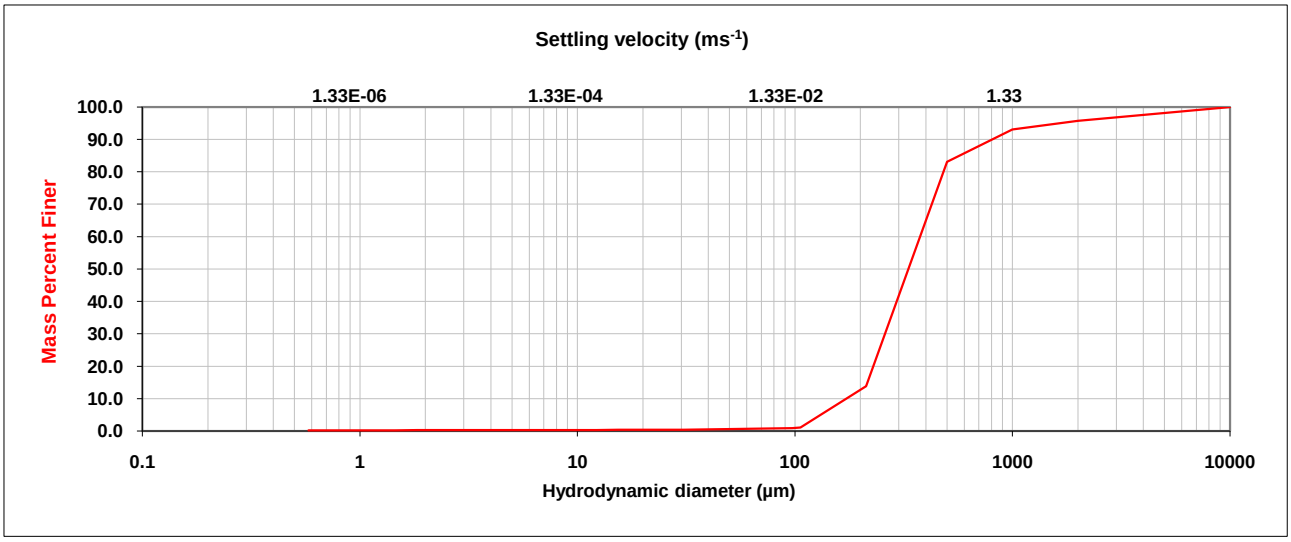
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB34
Job No:	11_336
Laboratory ID:	11_336_34

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	4.26	8.53E+01	15.40	12.23	0.02	3.17E-04
2000.00	1000.00	2.73	4.10E+00	12.23	9.17	0.02	1.92E-04
1000.00	500.00	9.95	1.03E+00	9.17	7.29	0.01	1.13E-04
500.00	212.00	69.18	2.42E-01	7.29	5.79	0.01	7.11E-05
212.00	106.00	12.82	4.61E-02	5.79	4.60	0.01	4.48E-05
106.00	97.16	0.12	1.70E-02	4.60	3.65	0.01	2.83E-05
97.16	77.18	0.11	1.26E-02	3.65	2.90	0.01	1.78E-05
77.18	61.31	0.13	7.97E-03	2.90	2.30	0.00	1.12E-05
61.31	48.70	0.11	5.03E-03	2.30	1.83	0.00	7.09E-06
48.70	38.68	0.08	3.17E-03	1.83	1.45	0.01	4.47E-06
38.68	30.73	0.05	2.00E-03	1.45	1.15	0.01	2.81E-06
30.73	24.41	0.04	1.26E-03	1.15	0.92	0.01	1.78E-06
24.41	19.39	0.02	7.97E-04	0.92	0.73	0.01	1.13E-06
19.39	15.40	0.02	5.03E-04	0.73	0.58	0.00	7.13E-07
				0.58	0.00	0.23	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

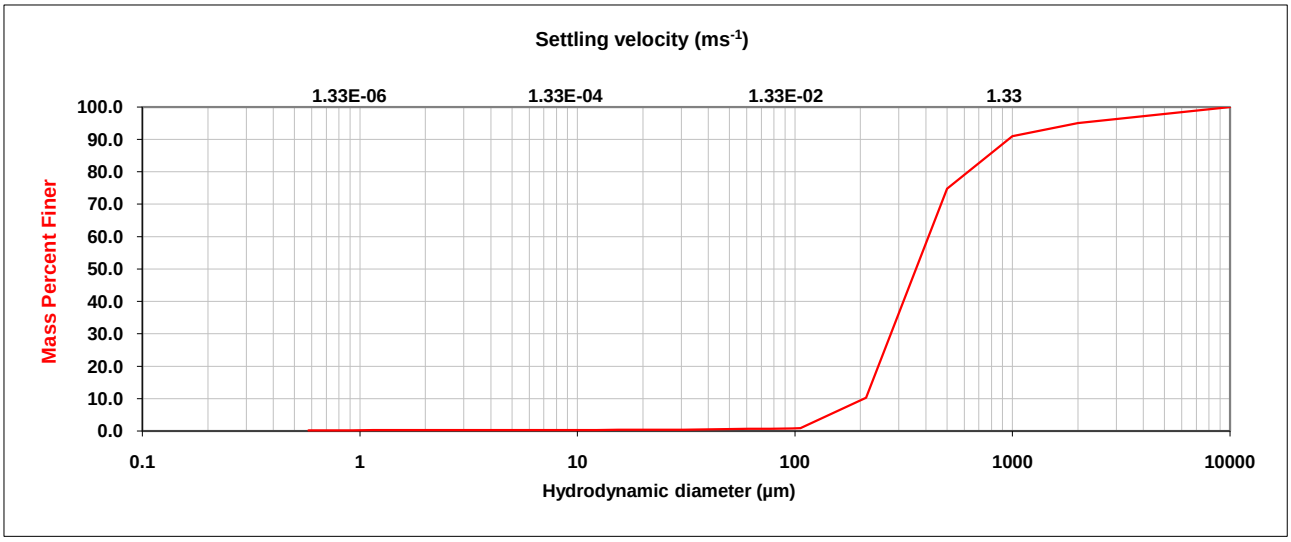
19/07/2011

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB35
Job No:	11_336
Laboratory ID:	11_336_35

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.06 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	4.98	8.53E+01	15.40	12.23	0.02	3.17E-04
2000.00	1000.00	4.00	4.10E+00	12.23	9.17	0.01	1.92E-04
1000.00	500.00	16.29	1.03E+00	9.17	7.29	0.00	1.13E-04
500.00	212.00	64.48	2.42E-01	7.29	5.79	0.01	7.11E-05
212.00	106.00	9.33	4.61E-02	5.79	4.60	0.01	4.48E-05
106.00	97.16	0.09	1.70E-02	4.60	3.65	0.01	2.83E-05
97.16	77.18	0.07	1.26E-02	3.65	2.90	0.01	1.78E-05
77.18	61.31	0.09	7.97E-03	2.90	2.30	0.00	1.12E-05
61.31	48.70	0.09	5.03E-03	2.30	1.83	0.01	7.09E-06
48.70	38.68	0.07	3.17E-03	1.83	1.45	0.01	4.47E-06
38.68	30.73	0.05	2.00E-03	1.45	1.15	0.01	2.81E-06
30.73	24.41	0.04	1.26E-03	1.15	0.92	0.00	1.78E-06
24.41	19.39	0.03	7.97E-04	0.92	0.73	0.01	1.13E-06
19.39	15.40	0.02	5.03E-04	0.73	0.58	0.01	7.13E-07
				0.58	0.00	0.24	2.76E-07

Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

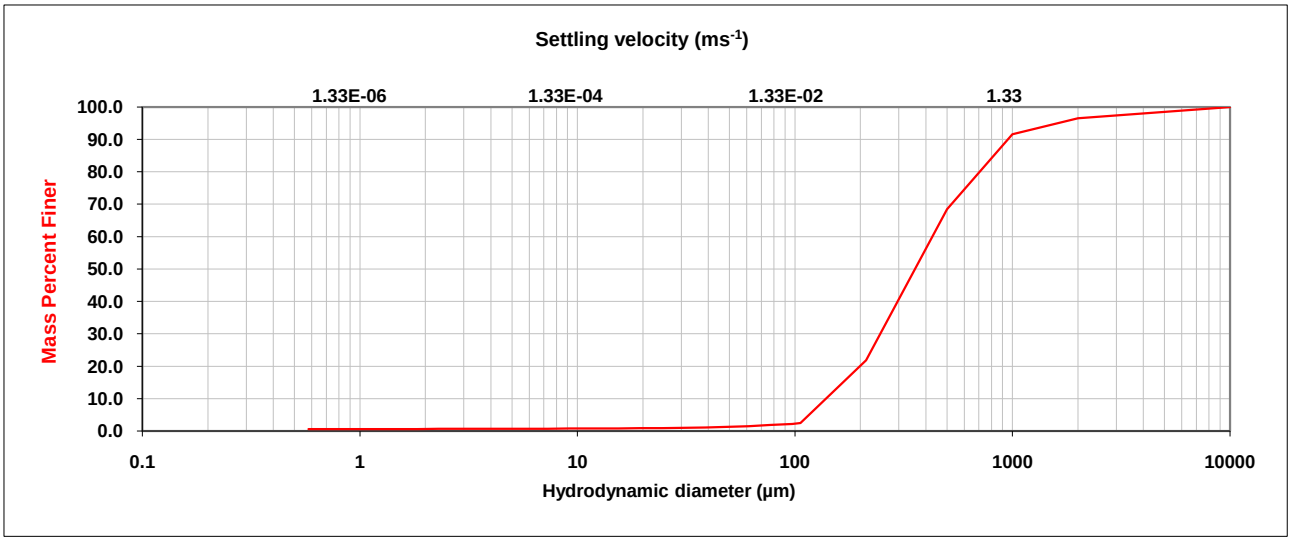
* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

Suite 6
642 Albany Hwy
Victoria Park
WA 6100

Client:	Oceanica
Client ID:	TB36
Job No:	11_336
Laboratory ID:	11_336_36

Analysis:	X-ray sedimentation by Sedigraph 5100	**Analysis temp.:**	35.7 ºC
Dispersant:	Water	**Sonication:**	10 min
Additives:	10 mL sodium hexametaphosphate	**Concentration:**	~5 % w/w

Sample density:	2.650	g/cm^3 (assumed)		
Liquid density:	0.994	g/cm^3	**Critical diameter:**	54.07 µm
Liquid viscosity:	0.713	cp		



Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)	Max size (mm)	Min size (mm)	In %	Mean settling velocity* (ms ˆ)
10000.00	2000.00	3.49	8.53E+01	15.40	12.23	0.06	3.17E-04
2000.00	1000.00	4.91	4.10E+00	12.23	9.17	0.04	1.92E-04
1000.00	500.00	23.18	1.03E+00	9.17	7.29	0.01	1.13E-04
500.00	212.00	46.60	2.42E-01	7.29	5.79	0.02	7.11E-05
212.00	106.00	19.34	4.61E-02	5.79	4.60	0.01	4.48E-05
106.00	97.16	0.30	1.70E-02	4.60	3.65	0.01	2.83E-05
97.16	77.18	0.32	1.26E-02	3.65	2.90	0.01	1.78E-05
77.18	61.31	0.33	7.97E-03	2.90	2.30	0.01	1.12E-05
61.31	48.70	0.25	5.03E-03	2.30	1.83	0.02	7.09E-06
48.70	38.68	0.15	3.17E-03	1.83	1.45	0.02	4.47E-06
38.68	30.73	0.10	2.00E-03	1.45	1.15	0.01	2.81E-06
30.73	24.41	0.07	1.26E-03	1.15	0.92	0.01	1.78E-06
24.41	19.39	0.05	7.97E-04	0.92	0.73	0.01	1.13E-06
19.39	15.40	0.04	5.03E-04	0.73	0.58	0.03	7.13E-07
				0.58	0.00	0.57	2.76E-07

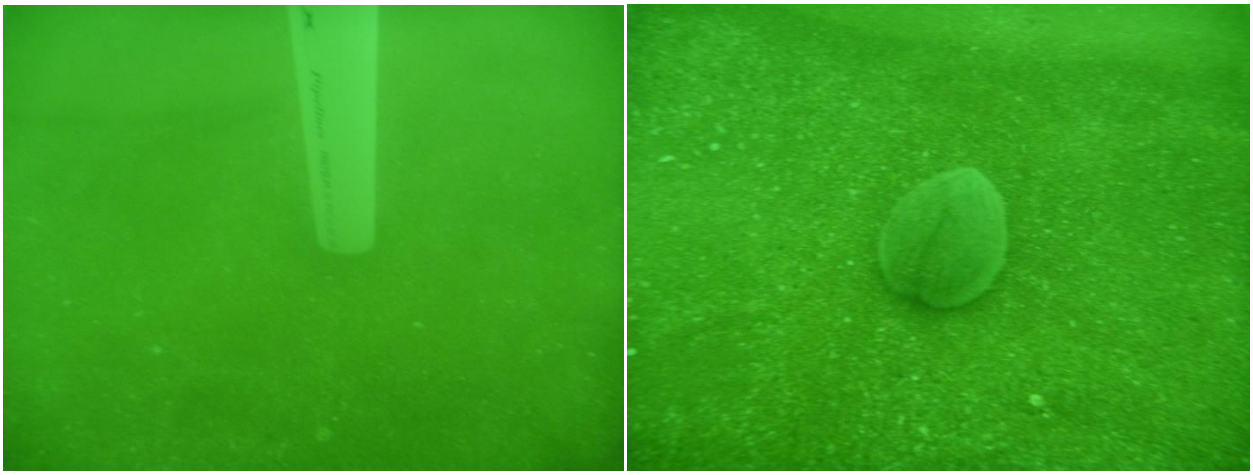
Note : Data from 106 µm to 10,000 µm by wet screening , from 0.3µm to 106 µm by Sedimentation.

* based on the mean of the size interval and on the the calculations and variables in the 'settling velocity worksheet

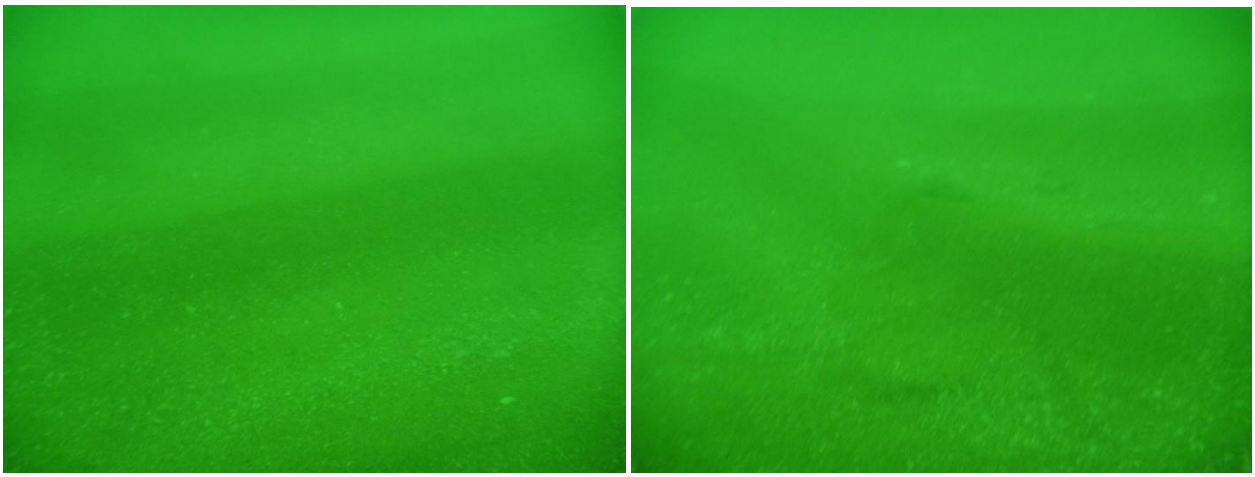
Appendix G

Seabed photographs

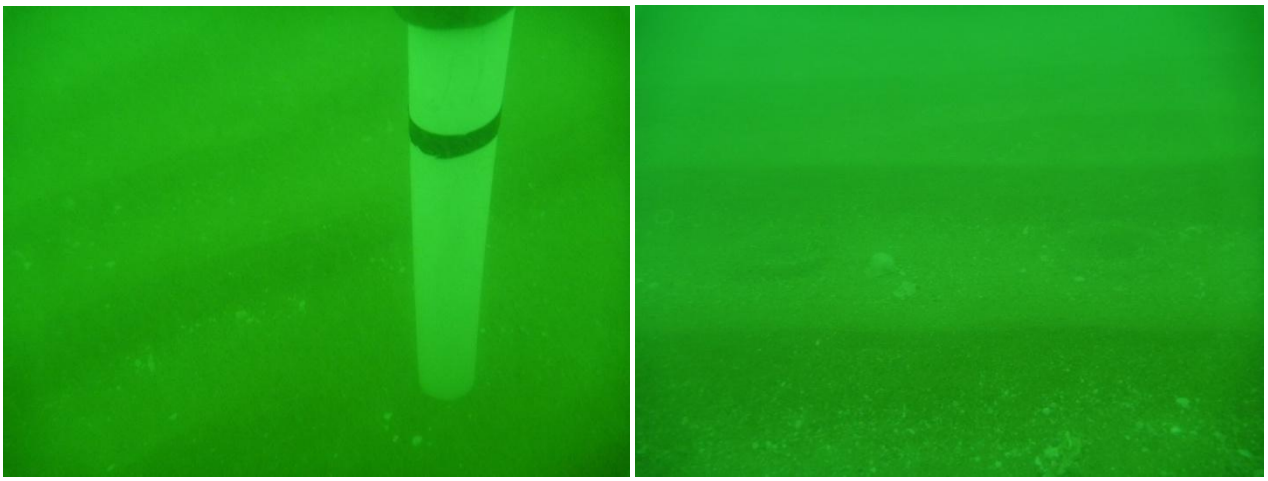
Photographs are not available for sites SC 1- 8, SC 11 – 12, and TB17 – 29 due to poor (<0.2 m) underwater visibility.



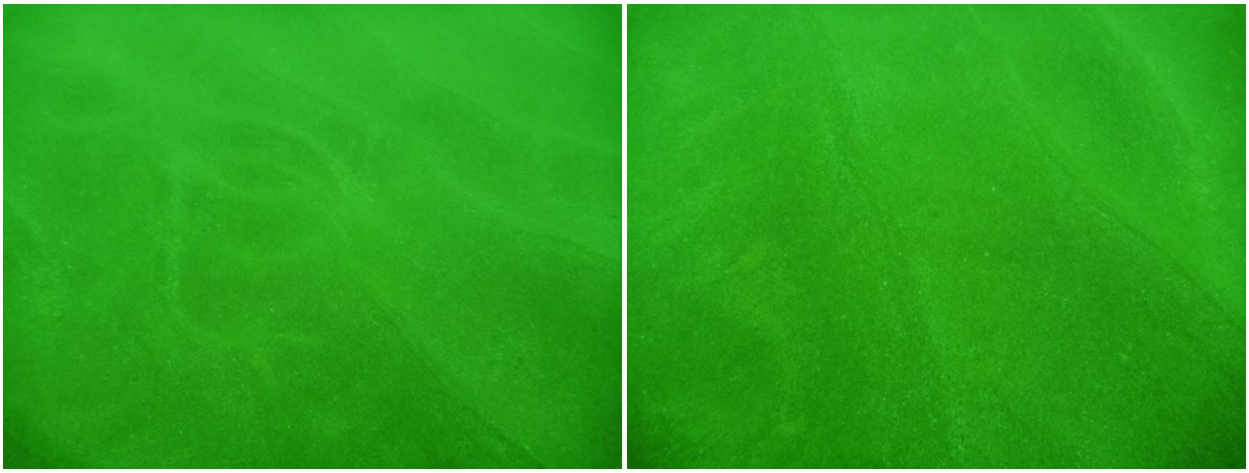
SC 9



SC10

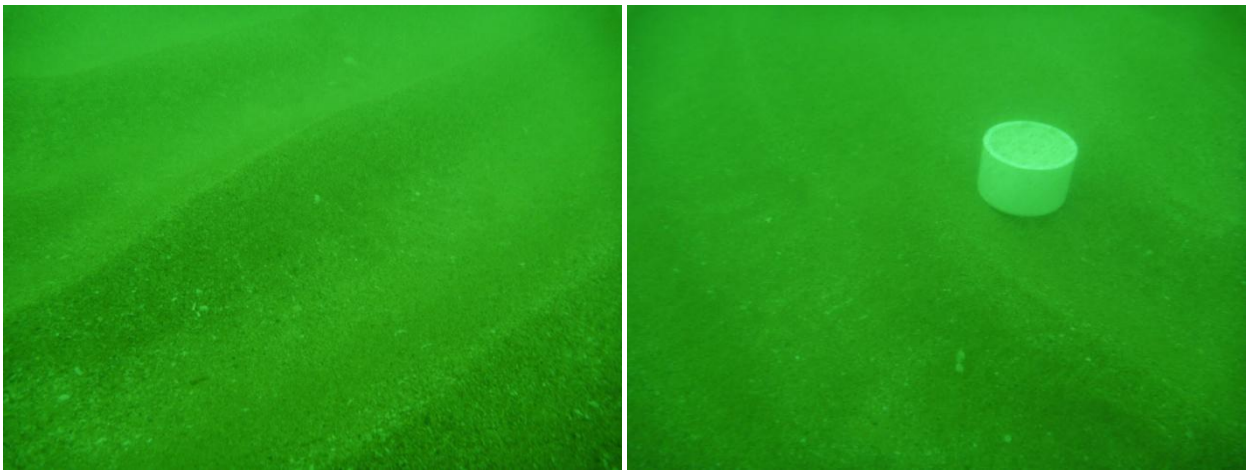


TB13

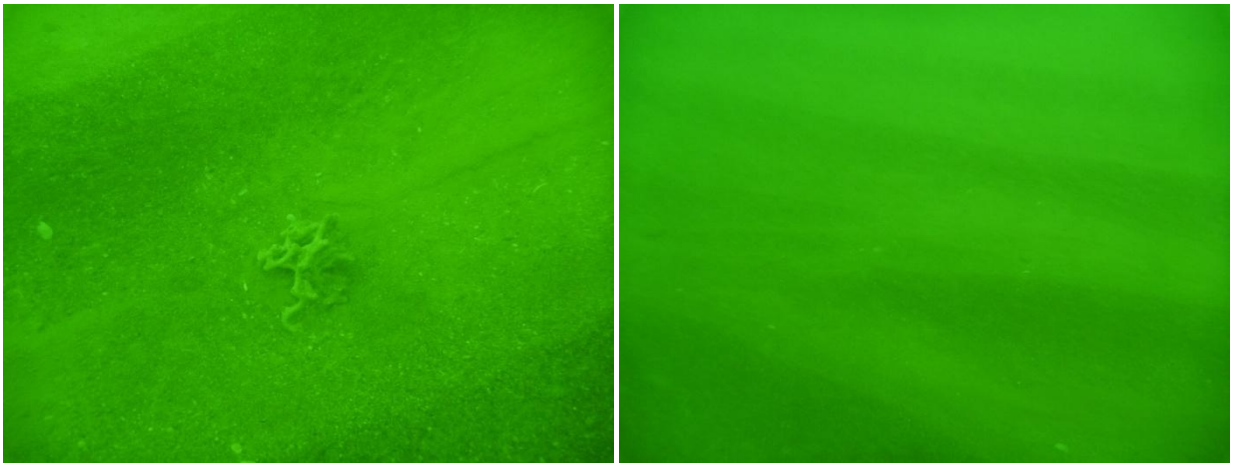


TB14

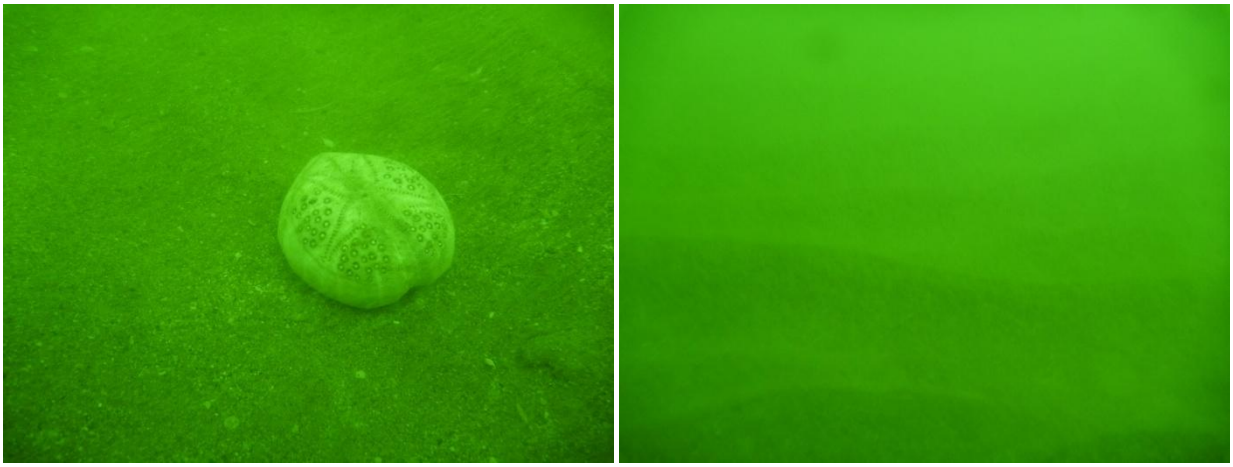
TB15



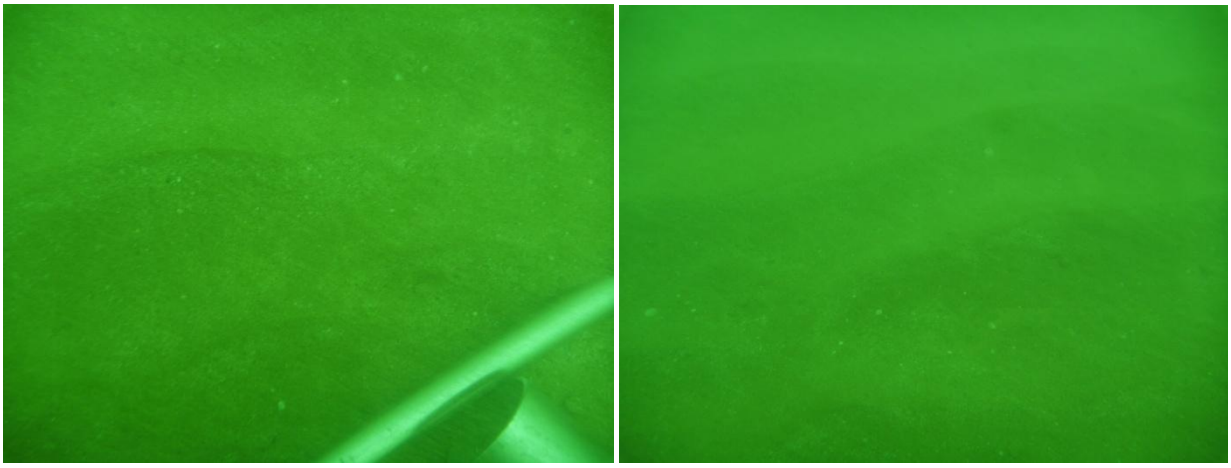
TB16



TB30



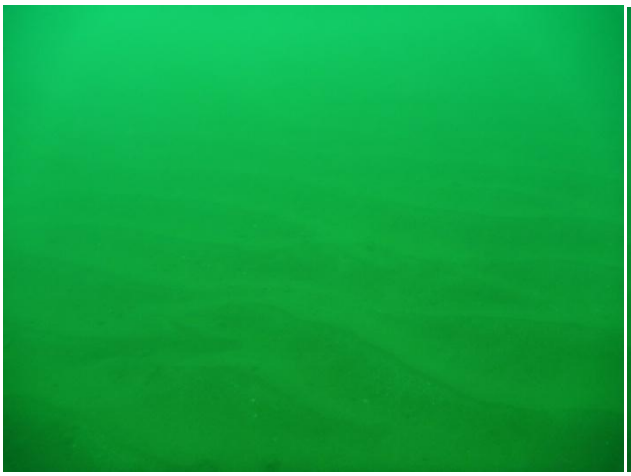
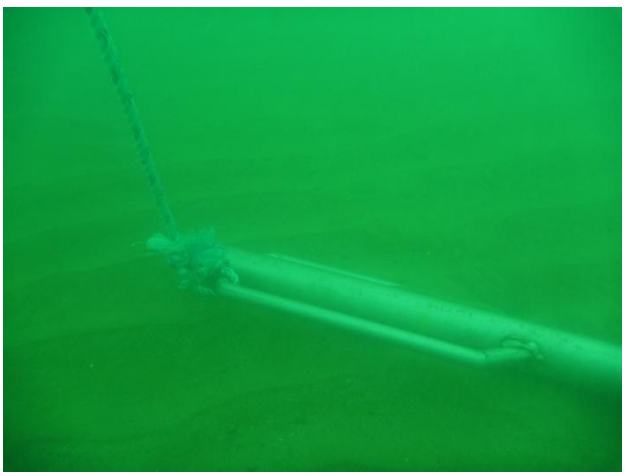
TB31



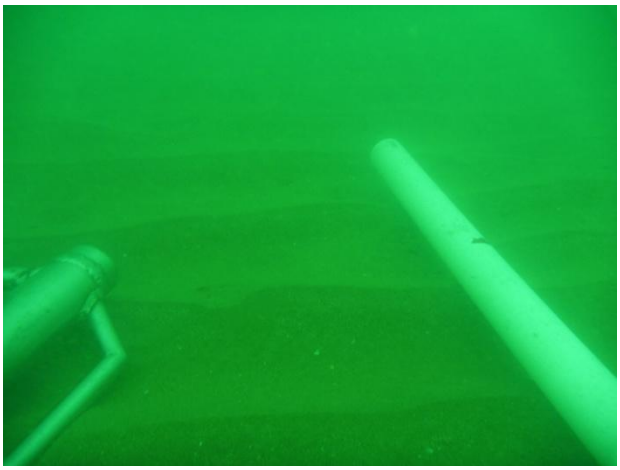
TB32


TB33


TB34

TB35




TB36

oceanica

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