Sun Fook Kong – Biwater Joint Venture

Contract No. DC/2009/10 HATS Stage 2A – Upgrading Works at Stonecutters Island Sewage Treatment Works - Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Baseline Water Quality Monitoring for Temporary Sewage Bypass

(Version 2.0)

Certified By _____

(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

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21 September 2015
By Post

Attn: Mr. Danny Tang

Dear Sir,

Agreement No. CE 8/2009(EP)
Harbour Area Treatment Scheme (HATS) Stage 2A
Independent Environmental Checker for Construction Phase – Investigation

Contract No. DC/2009/10
Upgrading Works at Stonecutters Island Sewage Treatment Works – Main Pumping Station, Sedimentation Tanks and Ancillary Facilities
Baseline Water Quality Monitoring for Temporary Sewage Bypass (Version 2.9)

I refer to the revised Baseline Water Quality Monitoring for Temporary Sewage Bypass (version 2.9) submitted by ET on 2 September 2015 via email. In accordance with Condition 4.3 of Environmental Permit No. EP-322/2008/G, I have no further comment on the captioned report.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Dr. Anne F Kerr
Independent Environmental Checker

c.c.	Ove Arup & Partners HK Ltd.	Mr. Ted Y F Tang	Fax: 2370 4377
	SBJV	Mr. Ivan Tse	By email
	Cinotech Consultants Ltd.	Dr. Priscilla Choy	By email

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1.2 The baseline water quality monitoring was conducted at 42 designated monitoring stations, at a frequency of one days per month during dry season prior to commencement of the proposed temporary sewage bypass work under the Contract No. DC/2009/10. The monitoring was conducted for a total of 3 days at mid-ebb and mid-flood tides to monitor the parameters including temperature dissolved oxygen, dissolved oxygen saturation, turbidity, salinity and *E. coli*.

1.3 During the baseline monitoring period, no marine construction works, temporary sewage bypassing and other observable pollution source were identified in the vicinity of the monitoring stations. The baseline water quality data established in this report are considered to be representative of the baseline conditions.

1.4 The baseline data were processed, reviewed and analysed using One Way Analysis of Variance (ANOVA) wherever possible to categorise the sampled data. The Action and Limit Levels for dissolved oxygen, turbidity and *E. coli* are derived for impact monitoring (**Tables I to III**).

Table I Action and Limit Levels for Water Quality Monitoring (In-situ Monitoring Parameters)

Parameter (unit)	Monitoring locations	Water Depth	Action Level	Limit Level
DO (mg/L)	All locations	Surface and Middle	***6.3***	***6.0***
		Bottom	***6.2***	***5.8***
Turbidity (NTU)	B14, B10, B11, B12, B13, B7, B8, B9	Depth average	***7.6*** or 120% of upstream control station's turbidity at the same tide of the same day	***7.9*** or 130% of upstream control station's turbidity at the same tide of the same day
	WSD5, WSD20, WSD19, WSD18, WSD6, WSD7		***10.8*** or 120% of upstream control station's turbidity at the same tide of the same day	***11.7*** or 130% of upstream control station's turbidity at the same tide of the same day
	WSD22, WSD9, WSD17, WSD10, WSD11, WSD15		***7.5*** or 120% of upstream control station's turbidity at the same tide of the same day	***9.4*** or 130% of upstream control station's turbidity at the same tide of the same day

	WSD12, WSD13, F1, B24, B25, B26		***8.0*** or 120% of upstream control station's turbidity at the same tide of the same day	***8.7*** or 130% of upstream control station's turbidity at the same tide of the same day
	F5		***11.8*** or 120% of upstream control station's turbidity at the same tide of the same day	***11.8*** or 130% of upstream control station's turbidity at the same tide of the same day

Table II Limit Levels for Water Quality Monitoring at WSD Intakes (*E. coli*)

Parameter (unit)	Water Depth	Limit Level
E. coli (cfu/100ml)	Depth average	***20,000 cfu/100ml***

Table III Action and Limit Levels for Water Quality Monitoring at Monitoring Stations Other than WSD Intakes, Gradient Stations and Control Stations (*E. coli*)

Parameter (unit)	Monitoring locations	Water Depth	Action Level	Limit Level
E. coli (cfu/100ml)	F1	Depth average (geometric mean)	***14 cfu/100ml***	***16 cfu/100ml***
	F5		***44 cfu/100ml***	***46 cfu/100ml***
	B7		***147 cfu/100ml***	***173 cfu/100ml***
	B8		***59 cfu/100ml***	***63 cfu/100ml***
	B9		***20 cfu/100ml***	***21 cfu/100ml***
	B10		***34 cfu/100ml***	***39 cfu/100ml***
	B11		***36 cfu/100ml***	***41 cfu/100ml***
	B12		***42 cfu/100ml***	***50 cfu/100ml***
	B13		***47 cfu/100ml***	***50 cfu/100ml***
	B14		***1 cfu/100ml***	***1 cfu/100ml***
	B24		***2 cfu/100ml***	***2 cfu/100ml***
	B25		***20 cfu/100ml***	***24 cfu/100ml***
	B26		***2 cfu/100ml***	***2 cfu/100ml***

2. INTRODUCTION

2.1 The Project 'HATS Stage 2A - Upgrading works at Stonecutters Island Treatment Works – Main Pumping Station, Sedimentation Tanks and Ancillary Facilities' under Contract No: DC/2009/10 mainly comprises the construction of a large underground pumping station with an internal diameter of 55 metres and a depth of more than 40 metres, the provision of additional double-tray sedimentation tanks, a new computer control system, the expansion and modification of existing installations of the SCISTW as well as the construction of other ancillary facilities. The general location plan of the Project is shown in **Figure 1**.

2.2 The Project is under Harbour Area Treatment Scheme (HATS) Stage 2A and is a designated project with Register No. : AEIAR-121/2008. The current works under the Project and other Contracts at SCISTW for HATS 2A are covered by the same Environmental Permit (Permit No. EP-322/2008/G), which was issued on 9th May 2014 by the Environmental Protection Department (hereinafter called EPD) to the Drainage Services Department (hereinafter called the DSD) as the Permit Holder.

2.3 Sun Fook Kong -Biwater Joint Venture (hereafter called the SBJV) was commissioned by the DSD to undertake the construction of the Contract No. DC/2009/10 "HATS 2A – Upgrading works at Stonecutters Island Treatment Works – Main Pumping, Sedimentation Tanks and Ancillary Facilities". The commencement date of the Project's construction was 24th February 2011.

2.4 As part of the planned construction programme, a 2-weeks duration of temporary sewage bypass is required for the construction of the interconnection between the two main pumping stations at SCISTW and other modification works to the pumping stations, which are targeted to take place during the non-bathing season(November to February) between the years 2015/16 or 2016/17. During this period the effluent will be bypassed via the HATS Stage 1 PTWs to facilitate these construction works under Contract No. DC/2009/10.

2.5 Baseline water quality monitoring was conducted on 22 November 2014, 13 December 2014 and 24 January 2015, once per month for three consecutive months at all selected monitoring stations prior to the commencement of temporary sewage bypass construction work mentioned in **Sections 2.3** and **2.4**.

Purpose of the Report

2.6 The purpose of this Baseline Water Quality Monitoring Report is to establish the baseline conditions for various water quality parameters in the vicinity of the project site. These baseline levels will be used as the basis for the impact and post-impact monitoring. This report presents the monitoring locations, equipment, period, methodology, results and observations for the water quality measurements during the baseline period.

3. WATER QUALITY MONITORING

Monitoring Requirement

3.1 The monitoring frequency will be once per month for three consecutive months at all designated monitoring stations during dry season. The monitoring stations are listed in **Table 3.1**.

3.2 Water sampling will be conducted two times per monitoring day during mid-ebb and mid-flood tides at three water depths (1 meter below surface, mid-water depth and 1 meter above seabed). Parameters such as temperature, dissolved oxygen (DO) concentration, DO saturation, turbidity, salinity, pH and *E. coli* will be monitored.

3.3 Monitoring location/position, time, water depth, sampling depth, tidal stages, weather conditions and any special phenomena or work underway nearby were recorded.

Monitoring Locations

A total of 42 monitoring stations are designated for the water quality monitoring, with the beach locations and the Fish Culture Zone being the sensitive receivers. The locations are summarized in **Table 3.1** and shown on **Figure 2-1**. The observations recorded during data sampling were summarized in **Section 4.4**.

Table 3.1 Water Quality Monitoring Station

Monitoring Station	Description	Easting	Northing	*Justification for changes to the proposed coordinates
B7	Anglers' Beach*	823867.89	825006.20	Inaccessible due to shark nets
B8	Gemini Beach	825215.29	824933.71	-
B9	Ho Mei Wan Beach*	825444.58	825102.99	Inaccessible due to shark nets
B10	Casam Beach*	825711.64	825302.00	Inaccessible due to shark nets
B11	Lido Beach*	825958.86	825353.49	Inaccessible due to shark nets / marked on the shore
B12	Ting Kau Beach	826277.40	825519.01	-
B13	Approach Beach	827237.94	825301.02	-
B14	Ma Wan Beach*	824453.65	823394.59	Inaccessible due to shark nets
B24	Big Wave Bay Beach*	843785.32	811659.26	Location marked on the shore
B25	Rocky Bay Beach*	844072.75	810378.64	Location marked on the shore
B26	Shek O Beach*	844265.64	809769.15	Inaccessible due to shark nets
F1	Tung Lung Chau Fish	847571.26	813102.00	-

Monitoring Station	Description	Easting	Northing	*Justification for changes to the proposed coordinates
	Culture Zone			
F5	Ma Wan Fish Culture Zone	823875.25	823699.48	-
WSD5	Tsing Yi flushing water intake	829862.33	823104.16	-
WSD6	Cheung Sha Wan flushing water intake	833991.16	820235.42	-
WSD7	Kowloon South flushing water intake*	833919.11	818053.71	Location marked on shore
WSD9	Tai Wan flushing water intake	837955.17	818412.01	-
WSD10	Cha Kwo Ling flushing water intake	841379.00	817859.28	-
WSD11	Yau Tong flushing water intake	842149.61	816974.14	-
WSD12	Tsueng Kwan O flushing water intake	845512.14	817421.15	-
WSD13	Siu Sai Wan flushing water intake	843904.21	814469.38	-
WSD15	Sai Wan Ho flushing water intake	841215.41	816451.38	-
WSD17	Quarry Bay flushing water intake	839685.64	817081.46	-
WSD18	Central Water Front flushing water intake	833935.18	816624.15	-
WSD19	Sheung Wan flushing water intake*	833146.17	816945.60	Blockage of ferry route
WSD20	Kennedy Town flushing water intake	830826.34	816244.46	-
WSD22	Wan Chai flushing water intake	836246.19	816134.92	-
VM12	Gradient Station	830542.34	821139.51	-
VM14	Gradient Station	829254.66	825159.72	-
VM15	Gradient Station	832707.02	818964.77	-
VM8	Gradient Station	830363.95	817092.23	-
VM7	Gradient Station	832495.44	817473.60	-
VM5	Gradient Station	836091.75	816541.13	-
VM2	Gradient Station	839713.80	817641.47	-
VM4	Gradient Station	838056.49	817637.50	-
VM1	Gradient Station	841809.43	816567.96	-
JM3	Gradient Station	844931.70	816956.95	-
EM1	Gradient Station	844379.62	815140.61	-
EM2	Gradient Station	845472.92	813712.75	-

Monitoring Station	Description	Easting	Northing	*Justification for changes to the proposed coordinates
EM3	Gradient Station	845771.79	810953.82	-
MM13	Control Station	864290.82	808693.11	-
SM17	Control Station	814115.31	801690.83	-

Remark*:

- Another HATS Stage 2A project, Contract No. DC/2009/18, had also encountered similar onsite conditions during baseline water sampling for the Temporary Flow Diversion Works in 2013. The monitoring coordinates were adjusted at the site and were subsequently addressed in its baseline report. The current monitoring had encountered similar issues and the justification for the changes to the proposed coordinates were presented in Table 3.1 above.

Monitoring Schedule

3.4 The water quality monitoring was conducted on 22 November 2014, 13 December 2014 and 24 January 2015. The monitoring schedule is shown in **Appendix A**.

Monitoring Equipment

3.5 For in-situ monitoring, a multi-parameter meter (Aquaprobe Model AP-2000) will be used to measure DO, DO saturation, turbidity, salinity, pH and temperature. The equipment used in the water quality monitoring is summarized in **Table 3.2** and the copies of calibration certificates are shown in **Appendix B**.

Table 3.2 Marine Water Quality Monitoring Equipment

Equipment	Model and Make	Qty
Water Sampler	Kahlsico Water Sampler 13SWB203	4
Multi-parameter Water Quality Probe	Aquaprobe Model AP-2000	4
Sonde Environmental Monitoring System	YSI Model 6820 C-M	1

* The YSI model was used by Route 3 monitoring team on 24 January 2015 instead of the Aquaprobe mode.

3.6 The specification of the standard electrodes of the Model AP-2000 for in-situ monitoring is summarized in **Table 3.3**

Table 3.3 In-situ parameters' measuring range

Aquaprobe Model AP-2000		
Dissolved Oxygen	Range	0 – 500.0% / 0 – 50.00 mg/L
	Accuracy	0 - 200%: ± 1% of reading. 200% - 500%: ± 10%
pH	Range	0 – 14 pH
	Accuracy	± 0.1 pH
Temperature	Range	-5˚C – +50˚C
	Accuracy	± 0.5˚C

Turbidity	Range	0 – 3000 NTU
	Accuracy	± 5% of reading
Salinity	Range	0 – 70 PSU / 0 – 70.00 ppt (g/Kg)
	Accuracy	± 1% of reading
YSI Model 6820 C-M		
Dissolved Oxygen	Range	0 to 50 mg/L
	Accuracy	0 to 20 mg/L: ± 0.2 mg/L or 2% of reading; 20 to 50 mg/L: ±6% of reading
pH	Range	0 to 14 pH
	Accuracy	±0.2 pH
Temperature	Range	5 to +50°C
	Accuracy	±0.15°C
Turbidity	Range	0 to 1,000 NTU
	Accuracy	±2% of reading or 0.3 NTU
Salinity	Range	0 to 70 ppt
	Accuracy	±1% of reading or 0.1 ppt

Notes:
- Accuracy: the qualitative concept of an agreeable closeness between the results of the measurement and the true value of the measured samples.

3.7 A portable, battery-operated and hand held echo sounder (e.g. Garmin Fishfinder 140) will be used for the determination of water depth at each designated monitoring station.

3.8 Hand-held GPS (Magellan eXplorist GC) will be used to ensure the monitoring vessel is at the correct location before taking measurements.

Monitoring Parameters and Frequency

3.9 **Table 3.4** summarizes the monitoring parameters, monitoring period and frequencies of the water quality monitoring.

Table 3.4 Water Quality Monitoring Parameters and Frequency

Parameters, unit	Depth	Frequency
In-situ Parameters: • Temperature • pH • Water depth • DO, mg/L • DO Saturation, % • Salinity, ppt • Turbidity, NTU	• 3 water depths: 1m below water surface, mid-depth and 1m above sea bed. • If the water depth is less than 3m, mid-depth sampling only. • If the water depth is between 3-6m, omit mid-depth sampling.	• Baseline monitoring: once per month for 3 consecutive months
Laboratory Testing Parameters: • *E. coli*, cfu/100ml		

Monitoring Methodology

3.10 Multi-parameter meter (e.g. Aquaprobe Model AP-2000) was used to measure the in-situ parameter. At each measurement, two consecutive measurements of pH level, DO concentration, DO saturation, salinity, turbidity and temperature will be taken. Where the difference in the value between the first and second readings of each set is more than 25% of the value of the first reading, the reading will be discarded and further readings will be taken. A single measured sample at each water depth will be collected for *E. coli* analysis.

3.11 Each water sample of about 250 ml were collected and stored in glass bottles. The sample bottles were packed into ice-box and delivered to a HOKLAS-accredited Laboratory, WELLAB Ltd., for the analysis of *E. coli* within 24 hours.

QA/QC for Laboratory Analysis

3.12 The testing laboratory implemented QA/QC measures for the analysis of water samples in order to obtain reliable data that is technically defendable, which including the followings:

Medium Quality Control

3.14 Medium quality control samples were prepared to check the signs of contamination and deterioration of the culture medium for *E. coli* growth. Test for those organisms showed different colours of colonies, such as *E. aerogenes*, *P. aeruginosa, K. pneumoniae* and *E. faecalis,* were also included in the medium quality control samples.

Method Quality Control

3.15 A laboratory blank sample was analysed under the same sample preparation and analytical procedure as the field samples. Method blank sample is to assess if there is contamination during laboratory testing.

3.16 Positive control and negative control samples were prepared to ensure colonies would show their respective colours on the culture medium.

QC laboratory sample duplicate

3.17 At least one set of QC sample was analysed for each batch of samples ≤ 20 samples. The sample duplicate test results were used to assess the precision of the analytical process.

3.18 The analysis will commence within 24 hours after collection of the water samples. The list of parameter to be analysed as well as the suggested corresponding analytical method and reporting limit are listed in **Table 3.5**.

Table 3.5 Suggested Analytical Method for Laboratory Analysis for Marine Water Samples

Parameter(s)	Analytical Method	Limit of Reporting
E. coli	In-house method SOP069 (Membrane Filtration Method by CHROMagar)	1 cfu/100ml

Maintenance and Calibration

3.19 Before each round of monitoring, a zero check in distilled water will be performed with the probes in the Model AP-2000 and the YSI 6820 C-M. The probes will be calibrated with a known standard solution.

3.20 Laboratory testing and QC reports for *E. coli* which is analysed in the HOKLAS-accredited laboratory, WELLAB Ltd, are attached in **Appendix E**.

4 RESULTS AND OBSERVATIONS

Monitoring Results

4.1 Baseline water quality monitoring was conducted on 22 November 2014, 13 December 2014 and 24 January 2015. The monitoring schedule is provided in **Appendix A**. The monitoring results and the graphical presentation are provided in **Appendices C** and **D**.

4.2 The results of DO, turbidity levels and *E. coli* for all monitoring stations at the mid-ebb and mid-flood tides are summarized in **Tables A** and **B**, which show the averages and ranges of the readings recorded.

Table A Baseline Water Quality Monitoring Results during Mid-Ebb Tide

Station	DO, surface & middle level (mg/L)		DO, bottom level (mg/L)		Turbidity, depth average (NTU)		E coli, depth average (cfu/100ml)	
	Average	Range	Average	Range	Average	Range	Geometric Mean	Range
B10	8.0	6.8-9.4	7.9	7-9.2	5.0	4.2-5.9	30	11-233
B11	7.9	6.6-9.7	-	0-0	4.3	3.5-5.3	5	1-16
B12	8.3	6.9-9.5	-	0-0	4.3	3-5.9	5	1-52
B13	7.8	6.7-9	7.6	6.5-9.1	5.7	2.4-7.8	8	3-40
B14	8.5	7.8-9.9	-	0-0	3.8	2.3-4.7	1	1-1
B24	7.4	6.2-8.1	7.3	6.3-8	3.4	1.1-5.7	1	1-2
B25	7.4	6.1-8.1	7.3	6.1-7.9	4.3	1-6.2	2	1-7
B26	7.5	6-8.2	7.7	6.7-8.2	5.2	0.8-8.8	1	1-2
B7	7.8	7.2-8.8	7.7	7-8.7	5.4	3.8-7	73	44-180
B8	7.9	7.2-9	7.9	7-9.1	5.9	4.1-7.1	76	8-865
B9	7.8	6.8-8.8	7.8	6.7-8.9	5.6	4.2-7	49	6-938
EM1	6.6	5.9-8	6.8	5.9-8.1	2.3	1-4.2	11	2-37
EM2	7.1	5.9-8.3	7.5	5.9-8.5	2.4	0.8-4.9	3	1-10
EM3	7.8	7-8.3	7.4	6.1-8.1	6.2	3.2-8.7	1	1-1
F1	7.3	6-8.1	7.2	5.8-8.2	3.3	1.3-5	1	1-2
F5	7.9	7.2-9.3	7.6	6.8-8.8	9.4	7.9-11.8	31	17-47
JM3	6.6	5.9-8	6.8	5.6-8.1	1.8	0.7-2.8	8	2-71
MM13	7.8	6.9-8.3	7.6	6.5-8.3	3.4	1-5.4	1	1-3
SM17	8.1	7.5-8.5	7.9	7.5-8.2	8.5	6.6-11.8	1	1-1
VM1	6.7	5.7-7.6	6.6	5.6-7.7	3.4	2.2-4.5	63	38-141
VM12	7.3	6.7-8.2	7.2	6.6-8.2	14.4	11.4-18.4	296	136-974
VM14	6.9	6.2-7.3	6.6	6.1-7.1	9.9	7.8-11.5	83	38-135
VM15	7.6	7.2-8.2	7.3	7-7.9	7.2	5.3-10	173	16-702
VM2	7.7	7.3-8.4	7.7	7.3-8.2	3.6	2.9-4.6	1425	544-4575
VM4	7.9	7.9-7.9	7.7	7.6-7.8	5.7	4.2-6.8	573	118-2240

VM5	7.3	6.9-7.6	7.1	6.7-7.4	6.1	3.5-8.7	559	185-1537
VM7	7.5	7-8	7.0	6.3-7.8	8.5	7.4-10.2	585	123-2109
VM8	7.8	7.1-8.3	7.8	7.4-8.1	6.5	6.5-6.6	254	130-478
WSD10	7.8	7.3-8.3	7.6	7.2-8	3.8	3-4.7	47	16-121
WSD11	6.8	6.3-7.3	6.7	6.2-7.4	3.6	2.6-4.5	54	10-163
WSD12	6.6	5.8-7.9	6.6	5.6-8.1	1.7	0.9-2.2	4	1-25
WSD13	7.2	6.1-7.9	7.3	5.9-8	3.0	0.8-5.4	81	37-156
WSD15	7.5	6.6-8.4	7.4	6.4-8.2	3.5	3.2-4.1	50	5-455
WSD17	7.2	6.7-7.9	7.4	7.2-7.8	4.6	4.2-4.9	305	114-891
WSD18	7.1	6.9-7.2	6.8	6.5-7	8.1	7-9.6	5178	3183-9117
WSD19	7.3	6.8-7.8	7.2	6.5-7.7	7.8	6.3-9.9	2134	1290-3905
WSD20	8.2	7.7-8.5	8.0	7.5-8.4	9.0	7.5-11.9	245	133-573
WSD22	6.9	6.7-7.2	6.8	6.5-7.3	7.2	3.7-10.4	608	141-1322
WSD5	7.3	6.2-8.3	7.1	6.1-8.1	10.5	9.7-11.3	34	4-124
WSD6	7.6	7-8.2	7.4	6.9-8.2	7.4	4.9-9.9	28	3-154
WSD7	7.4	7-8	7.2	6.8-7.9	6.4	6-7.3	121	81-206
WSD9	7.8	7.6-8	7.6	7.5-7.9	5.8	3.6-7.3	174	55-1087

Table B Baseline Water Quality Monitoring Results during Mid-Flood Tide

Station	DO, surface & middle level (mg/L)		DO, bottom level (mg/L)		Turbidity, depth average (NTU)		E coli, depth average (cfu/100ml)	
	Average	Range	Average	Range	Average	Range	Geometric Mean	Range
B10	7.6	7.5-7.8	7.6	7.4-7.8	5.3	3.2-7.4	3	1-40
B11	7.4	7.1-7.5	-	0-0	5.2	4.1-7.2	3	1-42
B12	7.3	7-7.5	-	0-0	5.2	4.2-7	55	1-82000
B13	7.4	6.8-7.8	7.2	6.6-7.8	6.8	5.8-7.9	5	1-50
B14	7.9	7.5-8.2	-	0-0	6.1	5.5-7.2	1	1-1
B24	7.8	7.1-8.3	7.7	7-8.2	2.8	1.5-3.8	2	1-2
B25	7.6	6.7-8.3	7.5	6.7-8.2	5.2	2-7.8	4	1-24
B26	7.8	6.8-8.4	7.6	6.7-8.2	5.2	1.3-8.5	1	1-1
B7	7.3	7.2-7.4	7.3	7.1-7.4	6.1	5.4-6.9	2	1-15
B8	7.4	7.2-7.6	7.3	7.1-7.5	5.7	4.5-7.3	3	1-38
B9	7.4	7.4-7.5	7.3	7.2-7.4	5.4	3.9-7.7	3	1-19
EM1	7.7	6.9-8.6	7.7	6.8-8.5	3.3	1.7-5.5	14	4-91
EM2	6.8	5.3-8.2	6.7	5.2-8.2	3.5	1.6-6.1	3	1-6
EM3	7.8	6.9-8.2	7.8	7-8.2	5.9	1.9-9.2	1	1-1
F1	7.5	6.7-8.3	7.4	6.5-8.9	4.2	1.7-6.2	4	1-17
F5	7.5	7.2-7.8	7.5	7.2-8	9.3	7.4-11.7	5	1-24
JM3	7.1	7.1-7.2	7.2	7-7.4	2.9	2.2-3.3	17	2-255

MM13	7.7	6.8-8.3	7.6	6.7-8.1	5.1	1.7-7.9	1	1-1
SM17	8.1	7.9-8.3	7.8	7.6-8.2	7.2	3.6-12.1	1	1-2
VM1	7.8	7.2-8.2	7.7	7.3-8.1	3.5	2.5-4.6	129	102-197
VM12	7.7	7-8.6	7.7	6.9-8.5	9.9	8.7-11.4	23	5-86
VM14	7.7	7.2-8.4	7.5	7-8.3	10.8	8.8-12	4	1-24
VM15	7.9	7.3-8.5	7.6	7.1-7.9	6.3	5.3-7.7	134	60-281
VM2	7.5	7.1-8	7.2	6.6-7.7	4.3	2.8-5.9	260	100-816
VM4	7.4	6.8-8.2	7.2	6.7-7.8	5.2	3.7-6.7	1282	828-1629
VM5	7.4	6.8-8.2	7.3	6.7-7.9	5.3	3.6-6.4	4581	3022-6364
VM7	7.6	7-8.3	7.5	6.9-8.1	7.1	5.2-8.3	154	56-358
VM8	8.4	8-8.7	8.2	7.8-8.6	8.0	6.9-9.1	39	10-225
WSD10	7.6	6.9-8.5	7.6	7.1-8.4	4.4	3.5-5.9	180	93-275
WSD11	7.6	6.8-8.5	7.5	6.7-8.3	4.5	4-5.3	177	137-220
WSD12	7.0	6.9-7.1	7.3	7.2-7.3	3.7	2.6-5.3	16	1-561
WSD13	7.1	6.9-7.6	7.4	7-7.6	3.8	2.1-6.2	10	1-65
WSD15	7.4	6.9-8.3	7.3	6.7-8.1	4.0	3.3-5.4	275	70-612
WSD17	7.2	6.4-7.9	7.2	6.3-7.8	4.6	3.6-6.1	405	183-1086
WSD18	7.6	6.7-8.5	7.3	6.5-8	6.7	4.7-7.7	130	69-330
WSD19	7.7	7-8.4	7.5	6.8-8.3	6.6	5.2-7.8	304	163-624
WSD20	8.3	7.6-8.8	8.2	7.4-8.7	6.4	3.8-7.7	129	38-361
WSD22	7.2	6.7-7.4	7.0	6.4-7.3	5.2	3.3-7.6	296	110-1317
WSD5	7.6	6.9-8.5	7.4	6.8-8.2	8.8	7.7-10.6	12	4-36
WSD6	7.2	6.4-8.4	6.9	6.1-8.1	7.7	6.7-8.8	11	1-69
WSD7	7.5	7-8.3	7.2	6.8-8	7.8	6.4-10.5	33	17-71
WSD9	7.6	7.3-7.8	7.4	7.2-7.7	5.1	3.1-7.5	164	67-514

Observations

4.3 During the baseline water quality monitoring period, no observable pollution source was identified at all the designated monitoring stations during the baseline monitoring period.

4.4 Measurements and water sampling were conducted at various water depths at all Stations according to **Table 3.4**. Some of the water sample were taken near the proposed sampling locations due to inaccessibility of the area within shark net (B7, B9, B10, B11, B14 and B26), blockage of the ferry routes (WSD 19). While some of the proposed monitoring stations were marked on the shore (B11, B25, WSD7 and B24), in which reliable water samples could not be obtained. Note that these circumstances could not be accurately determined before the commencement of the baseline monitoring. Therefore, the monitoring teams on sampling boat had taken the water samples as close to the exact locations as possible to ensure the measured data would not deviated considerably from the proposed sampling point without compromising their own safety on the vehicles. As these adjusted locations are still within about 200m of the proposed stations, they are still considered to be representative to the original monitoring locations' water samples.

4.5 Since no observable pollution activity was observed for all stations during sampling, the

baseline monitoring results are considered to be representative of the ambient water quality levels.

Statistical Analysis

4.6 Normal Distribution (95% confidence interval) analysis was conducted to identify the outliers from the monitoring results. All identified outliers will be removed before the calculation of the Action and Limit Levels for Marine Water Quality.

4.7 One way Analysis of Variance (ANOVA) was applied to test the differences of the baseline monitoring data between the 27 water quality monitoring locations (the monitoring stations other than gradient stations and control stations). The purpose of the analysis was to test the following hypothesis:

H_0: The data of the 27 monitoring stations would have no significant difference.

H_1: The data of the 27 monitoring stations would have significant difference.

4.8 The analysis results are presented in **Table 4.1** which show that there are no significant difference amongst the data of Dissolved Oxygen (for Surface/Middle and Bottom Depth).

Table 4.1 Summary of the Results of ANOVA (Dissolved Oxygen)

Monitoring locations	No. of Stations involved	Sample Size	Degree of Freedom	P-value	F-value
B10, B11, B12, B13, B14 B24, B25, B26, B7, B8, B9, F1, F5, WSD10, WSD11, WSD12, WSD13, WSD15, WSD17, WSD18, WSD19, WSD20, WSD22, WSD5, WSD6, WSD7, WSD9 (Surface & Middle depth)	27	159	26	0.5676	0.9294
B10, B13, B24, B25, B26, B7, B8, B9, F1, F5, WSD10, WSD11, WSD12, WSD13, WSD15, WSD17, WSD18, WSD19, WSD20, WSD22, WSD5, WSD6, WSD7, WSD9 (Bottom depth)	24	143	23	0.6808	0.8359

4.9 For the parameters of Turbidity, since the data of the 27 monitoring stations (the monitoring stations other than gradient stations and control stations) were found to have significant differences, a second hypothesis is proposed for the two parameters as follow:

H_0: The data of the 27 monitoring stations would have no significant difference if they are divided into groups (Shown in **Table 4.2**).

H_2: The data of the 27 monitoring stations would still have significant difference if they are divided into groups (Shown in **Table 4.2**).

4.10 The second ANOVA results shown that there are no significant differences among the data of the grouped monitoring stations. The analysis will be adopted to set the Action and Limit levels for *E. coli* (Non-WSD Intake's locations), DO and Turbidity. The analysis results for Turbidity are shown in **Table 4.2.**

Table 4.2 Summary of the Results of ANOVA (Turbidity)

The groups of Monitoring locations	No. of Stations involved	Sample Size	Degree of Freedom	P-value	F-value
B14, B10, B11, B12, B13, B7, B8, B9	8	48	7	0.6036	0.7852
WSD5, WSD20, WSD19, WSD18, WSD6, WSD7	6	35	5	0.0708	2.2997
WSD22, WSD9, WSD17, WSD10, WSD11, WSD15	6	36	5	0.0840	2.1702
WSD12, WSD13, F1, B24, B25, B26	6	36	5	0.4054	1.0532

Notes:
- Based on the result of ANOVA, since the data of F5 is significantly different from its neighbouring monitoring locations, it was not included in any monitoring groups.

4.11 For the E.coli parameter, the Action and Limit level will be established based on the result of the individual monitoring stations. The guideline for establishment of the E.coli's Action/Limit level is shown in **Table 4.4** and **4.5**.

Action and Limit Levels

4.12 Formulated on the basis of the ANOVA results, the monitoring locations with no significant difference between their sampled parameters will be grouped together for the evaluation of the Action and Limit Levels. All outliers were removed before the calculation of the Action and Limit Levels for Marine Water Quality. An exceedance will be considered to be valid when either the monitoring results exceed the established Action/Limit levels which are derived from the baseline data, or exceed 20% (Action level) or 30% (Limit level) of the monitoring results from the control stations.

4.13 The Action and Limit levels guideline are established and shown in **Tables 4.3** to **4.5**. For reference, the Water Quality Objectives established for various Water Control Zones in the EIA study (CE 43/2005, Section 6.20) indicated that the target limit for E. coli, calculated as the geometric mean of all samples collected in one calendar year, was 610 cfu/100ml for Fish Culture Subzones and Secondary Contact Recreation Subzones. The level of 610 cfu/100ml is also the criteria value in which the gazetted beaches would be closed for poor water quality if exceeded. The Dissolved Oxygen levels were set at 4 mg/l for averaged depth and 2 mg/l for bottom depth. Also noted that the

gradient station are used to assist in the identification of the source of potential impact at the sensitive receiver (e.g. beach locations) and was therefore excluded from the Action/Limit level Guidelines, along with the control stations.

Table 4.3 Guidelines for Establishment of Action and Limit Levels for In-situ Monitoring Parameters

Parameter (unit)	Water Depth	Action Level	Limit Level
DO (mg/L)	Surface and Middle	5%-ile of baseline data	4 mg/L or 1%-ile of baseline data
	Bottom	5%-ile of baseline data	2 mg/L or 1%-ile of baseline data
Turbidity (NTU)	Depth average	95%-ile of baseline data or 120% of upstream control station's turbidity at the same tide of the same day	99%-ile of baseline data or 130% of turbidity at the upstream control station at the same tide of the same day

Table 4.4 Guidelines for Establishment of Limit Levels for *E. coli* for WSD Intakes

Parameter (unit)	Water Depth	Limit Level
E. coli (cfu/100ml)	Depth average	20,000 cfu/100ml

Remark:
- The limit level is based on Water Supplies Department's criteria regarding the target limit of the flushing water.

Table 4.5 Guidelines for Establishment of Action and Limit Levels for Laboratory Testing Parameter for Monitoring Stations Other than WSD Intakes, Gradient Stations and Control Stations

Parameter (unit)	Water Depth	Action Level	Limit Level
E. coli (cfu/100ml)	Depth average	*E. coli* of 95%-ile of baseline data	*E. coli* of 99%-ile of baseline data or 610 cfu/100ml

4.14 Following the criteria as shown in **Table 4.3** to **Table 4.5**, the Action and Limit Levels for water quality impact monitoring have been established and shown in **Tables 4.6** to **4.8.**

Table 4.6 Calculated Action and Limit Levels for In-situ Monitoring Parameters

Parameter (unit)	Monitoring locations	Water Depth	Action Level	Limit Level
DO (mg/L)	All locations	Surface and Middle	***6.3***	***6.0***(1)
		Bottom	***6.2***	***5.8***(1)
Turbidity (NTU)	B14, B10, B11, B12, B13, B7, B8, B9	Depth average	***7.6*** or 120% of upstream control station's turbidity at the same tide of the same day	***7.9*** or 130% of upstream control station's turbidity at the same tide of the same day
	WSD5, WSD20, WSD19, WSD18, WSD6, WSD7		***10.8*** or 120% of upstream control station's turbidity at the same tide of the same day	***11.7*** or 130% of upstream control station's turbidity at the same tide of the same day
	WSD22, WSD9, WSD17, WSD10, WSD11, WSD15		***7.5*** or 120% of upstream control station's turbidity at the same tide of the same day	***9.4*** or 130% of upstream control station's turbidity at the same tide of the same day
	WSD12, WSD13, F1, B24, B25, B26		***8.0*** or 120% of upstream control station's turbidity at the same tide of the same day	***8.7*** or 130% of upstream control station's turbidity at the same tide of the same day
	F5		***11.8***(2) or 120% of upstream control station's turbidity at the same tide of the same day	***11.8***(2) or 130% of upstream control station's turbidity at the same tide of the same day

Notes:

1) The 1 percentile of the DO baseline data for all water depths were selected as the limit levels, since the two quantities were much higher than the recommended limit level of 4 mg/L and 2 mg/L.
2) The displayed quantities are rounded up from 11.775 and 11.795 respectively.

- For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limit levels.
- For turbidity, non-compliance of water quality limits occurs when monitoring result is higher than the limit levels.

Table 4.7 Limit Levels for *E. coli* for WSD Flushing Water Intakes

Parameter (unit)	Water Depth	Limit Level
E. coli (cfu/100ml)	Depth average	***20,000 cfu/100ml***

Notes:

- The limit level is based on the Water Supplies Department's Criteria regarding the target limit of the flushing water.

- For *E. coli*, non-compliance of water quality limits occurs when monitoring result is higher than the limit levels.

Table 4.8 Action and Limit Levels for *E. coli* at Monitoring Stations other than WSD Flushing Water Intakes, Gradient Stations and Control Stations

Parameter (unit)	Monitoring locations	Water Depth	Action Level	Limit Level
E. coli (cfu/100ml)	F1	Depth average (geometric mean)	***14 cfu/100ml***	***16 cfu/100ml***
	F5		***44 cfu/100ml***	***46 cfu/100ml***
	B7		***147 cfu/100ml***	***173 cfu/100ml***
	B8		***59 cfu/100ml***	***63 cfu/100ml***
	B9		***20 cfu/100ml***	***21 cfu/100ml***
	B10		***34 cfu/100ml***	***39 cfu/100ml***
	B11		***36 cfu/100ml***	***41 cfu/100ml***
	B12		***42 cfu/100ml***	***50 cfu/100ml***
	B13		***47 cfu/100ml***	***50 cfu/100ml***
	B14		***1 cfu/100ml***	***1 cfu/100ml***
	B24		***2 cfu/100ml***	***2 cfu/100ml***
	B25		***20 cfu/100ml***	***24 cfu/100ml***
	B26		***2 cfu/100ml***	***2 cfu/100ml***

Notes:
- For *E. coli*, non-compliance of water quality limits occurs when monitoring result is higher than the limit levels.
- The Action and Limit Level were set as 95%-tile and 99%-tile of the baseline data if they were lower than the criteria value of 610cfu/100ml.

Action Plan

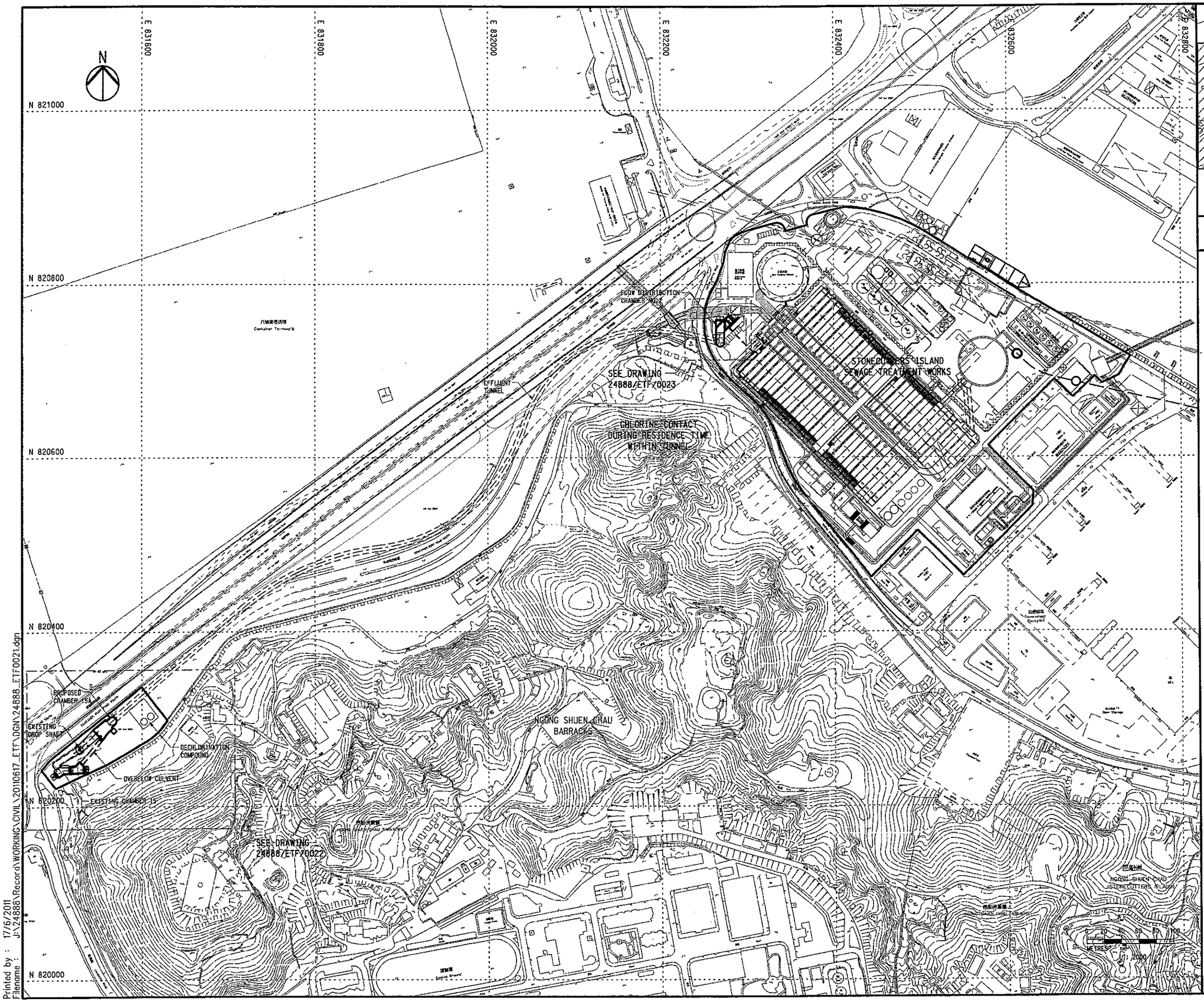
4.15 Actions prior to and during the Temporary Sewage Bypass will be carried out in accordance with the Action Plan as shown in **Appendix F**.

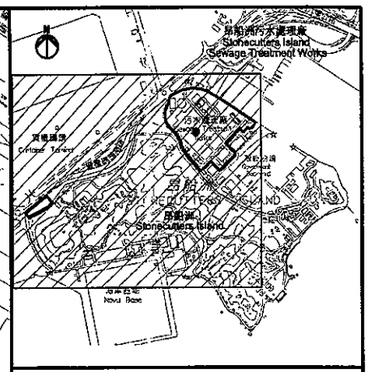
5. CONCLUSIONS

5.1 The baseline water quality monitoring was conducted at 42 monitoring stations on 22 November 2014, 13 December 2014 and 24 January 2015. The monitoring results were used to establish the Action and Limit Levels for the relevant parameters during impact monitoring and also post-project monitoring throughout the implementation of the temporary sewage bypass works.

5.2 The baseline water quality monitoring was conducted at 42 monitoring stations, no marine construction works and observable pollution source were identified in the vicinity at the stations.

FIGURES





KEY PLAN

LEGEND:

BOUNDARY OF SCISTW

ALIGNMENT OF EFFLUENT TUNNEL

Rev	Description	By	Date
0	ISSUE FOR CONSTRUCTION	PW	06/11

Consultant

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project title

Contract No. DC/2009/18
Harbour Area Treatment Scheme Stage 2A-Upgrading Works at
Stonecutters Island Sewage Treatment Works-Effluent Tunnel and Disinfection Facilities

Drawing title

GENERAL LAYOUT
(SHEET 1)

Drawing no.			Rev.
24888/ETF/0021			0
Drawn WM	Date 08/10	Checked PW	Approved DP
Scale 1:2000 @A1		Status WORKING	

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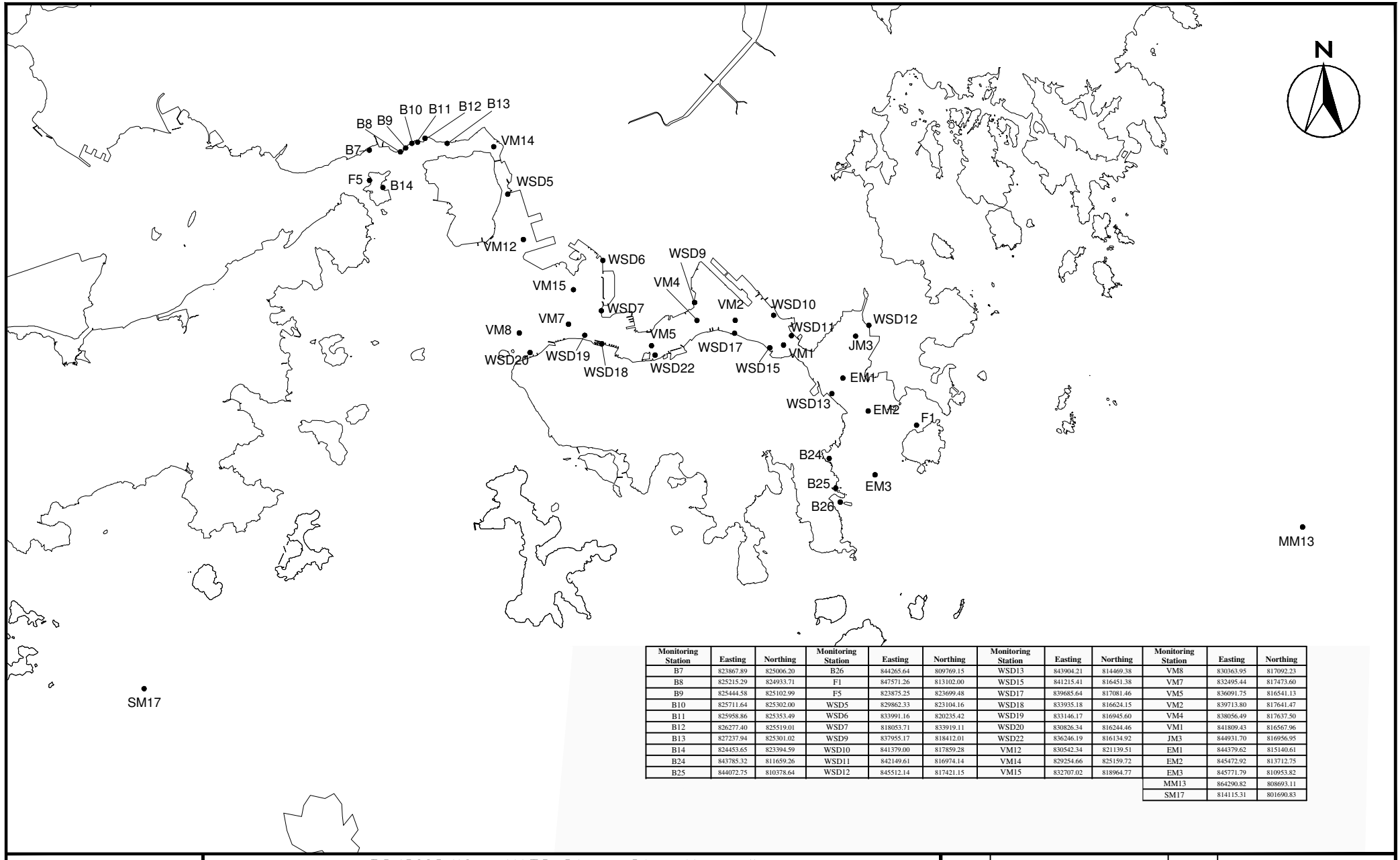

Monitoring Station	Easting	Northing	Monitoring Station	Easting	Northing	Monitoring Station	Easting	Northing	Monitoring Station	Easting	Northing
B7	823867.89	825006.20	B26	844265.64	809769.15	WSD13	843904.21	814469.38	VM8	830363.95	817092.23
B8	825215.29	824933.71	F1	847571.26	813102.00	WSD15	841215.41	816451.38	VM7	832495.44	817473.60
B9	825444.58	825102.99	F5	823875.25	823699.48	WSD17	839685.64	817081.46	VM5	836091.75	816541.13
B10	825711.64	825302.00	WSD5	829862.33	823104.16	WSD18	833935.18	816624.15	VM2	839713.80	817641.47
B11	825958.86	825353.49	WSD6	833991.16	820235.42	WSD19	833146.17	816945.60	VM4	838056.49	817637.50
B12	826277.40	825519.01	WSD7	818053.71	833919.11	WSD20	830826.34	816244.46	VM1	841809.43	816567.96
B13	827237.94	825301.02	WSD9	837955.17	818412.01	WSD22	836246.19	816134.92	JM3	844931.70	816956.95
B14	824453.65	823394.59	WSD10	841379.00	817859.28	VM12	830542.34	821139.51	EM1	844379.62	815140.61
B24	843785.32	811659.26	WSD11	842149.61	816974.14	VM14	829254.66	825159.72	EM2	845472.92	813712.75
B25	844072.75	810378.64	WSD12	845512.14	817421.15	VM15	832707.02	818964.77	EM3	845771.79	810953.82
									MM13	864290.82	808693.11
									SM17	814115.31	801690.83

CINOTECH
Cinotech Consultants Limited

DC/2009/10 - HATS Stage 2A - Upgrading Works at Stonecutters Island Sewage Treatment Works - Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Baseline Water Quality Monitoring Locations

SCALE	N.T.S	DATE	1/2015
CHECK	–	DRAWN	VW
JOB No.	MA11007	FIGURE NO. Fig 2	REV –

APPENDIX A
BASELINE WATER QUALITY MONITORING SCHEDULE

Contract No. DC/2009/10

HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works - Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Tentative Baseline Marine Water Quality Monitoring Schedule (November 2014)

.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Nov
2-Nov	3-Nov	4-Nov	5-Nov	6-Nov	7-Nov	8-Nov
9-Nov	10-Nov	11-Nov	12-Nov	13-Nov	14-Nov	15-Nov
16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov
						Route 1 (Ma Wan) Mid-Ebb 12:24 Mid-Flood 17:51 **Route 1 (Shek Pik)** Mid-Ebb 11:35 Mid-Flood 17:30 **Route 2 Kwai Chung)** Mid-Ebb 12:14 Mid-Flood 17:41 **Route 3 (Quarry Bay)** Mid-Ebb 12:35 Mid-Flood 17:52 **Route 4 (Tai Mui Wan)** Mid-Ebb 12:04 Mid-Flood 17:31
23-Nov	24-Nov	25-Nov	26-Nov	27-Nov	28-Nov	29-Nov
30-Nov						

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Route 1: B7, B8, B9, B10, B11, B12, B13, B14 ,F5 (Ma Wan) & SM17 (Shek Pik)
Route 2: VM7, VM8, VM12, VM14, VM15, WSD5, WSD6, WSD7, WSD18, WSD19, WSD20 (Kwai Chung)
Route 3: VM1, VM2, VM4, VM5, WSD9, WSD10, WSD11, WSD15, WSD17, WSD22 (Quarry Bay)
Route 4: WSD12, WSD13, B24, B25,B26, EM1, EM2, EM3, F1, JM3, MM13 (Tai Miu Wan)

Contract No. DC/2009/10

HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works - Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Tentative Baseline Marine Water Quality Monitoring Schedule (December 2014)

.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Dec	2-Dec	3-Dec	4-Dec	5-Dec	6-Dec
7-Dec	8-Dec	9-Dec	10-Dec	11-Dec	12-Dec	13-Dec
						Route 1 (Ma Wan) Mid-Flood 11:54 Mid-Ebb 17:22 **Route 1 (Shek Pik)** Mid-Flood 11:56 Mid-Ebb 17:21 **Route 2 Kwai Chung)** Mid-Flood 11:47 Mid-Ebb 17:18 **Route 3 (Quarry Bay)** Mid-Flood 11:47 Mid-Ebb 17:10 **Route 3 (Tai Mui Wan)** Mid-Flood 11:45 Mid-Ebb 17:06 **Route 4 (Tai Mui Wan)** Mid-Flood 11:45 Mid-Ebb 17:06
14-Dec	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec
21-Dec	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec
28-Dec	29-Dec	30-Dec	31-Dec			

The schedule may be changed due to unforeseen circumstances and on-site conditions (adverse weather, etc)

Route 1: B7, B8, B9, B10, B11, B12, B13, B14 ,F5 (Ma Wan) & SM17 (Shek Pik) & VM12, VM14, WSD5 (Kwai Chung)
Route 2: VM7, VM8, VM15, WSD6, WSD7, WSD18, WSD19, WSD20 (Kwai Chung) & VM4, VM5, WSD9, WSD22 (Quarry Bay)
Route 3: VM1, VM2, WSD10, WSD11, WSD15, WSD17 (Quarry Bay), EM1, EM2, F1, WSD12, WSD13,JM3 (Tai Miu Wan)
Route 4: B24, B25,B26, EM3, MM13 (Tai Miu Wan)

Contract No. DC/2009/10

HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works - Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Tentative Baseline Marine Water Quality Monitoring Schedule (January 2015)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Jan	2-Jan	3-Jan
4-Jan	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan
11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan
18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan
25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan

(Ma Wan)
Mid-Flood 9:51
Mid-Ebb 15:43

(Shek Pik)
Mid-Flood 9:47
Mid-Ebb 15:42

Kwai Chung)
Mid-Flood 9:38
Mid-Ebb 15:35

(Quarry Bay)
Mid-Flood 9:35
Mid-Ebb 15:28

(Tai Mui Wan)
Mid-Flood 9:28
Mid-Ebb 15:20

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Route 1: B7, B8, B9, B10, B11, B12, B13, B14 ,F5 (Ma Wan) & SM17 (Shek Pik) & VM12, VM14, WSD5 (Kwai Chung)
Route 2: VM7, VM8, VM15, WSD6, WSD7, WSD18, WSD19, WSD20 (Kwai Chung) & VM4, VM5, WSD9, WSD22 (Quarry Bay)
Route 3: VM1, VM2, WSD10, WSD11, WSD15, WSD17 (Quarry Bay), EM1, EM2, F1, WSD12, WSD13,JM3 (Tai Miu Wan)
Route 4: B24, B25,B26, EM3, MM13 (Tai Miu Wan)

APPENDIX B
COPIES OF CALIBRATION CERTIFICATES FOR WATER QUALITY MONITORING EQUIPMENT

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/W/150123-1
Date of Issue:	2015-01-23
Date Received:	2015-01-23
Date Tested:	2015-01-23
Date Completed:	2015-01-23
Next Due Date:	2015-04-22

ATTN: **Mr. W.K. Tang**

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	: AP-2000-D
Serial No.	:135240320
Equipment No.	: W.18.01

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 67%

Test Specifications:

Dissolved Oxygen, Conductivity & Salinity Sensor,
1. Performance check against Winkler titration
2. Conductivity performance check with Potassium Chloride standard solution
3. Salinity performance check with Sodium Chloride standard solution

Turbidity Sensor, Batch: 12213
1. Calibration check with Formazin standard solution

pH / ORP electrode, Batch: 13504
1. Calibration check with standard pH buffer
2. Redox performance check with ZoBell's standard solution

Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. Aquaprobe AP-2000 Manual
2. In-house method with reference to APHA and ISO standards
   Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
   Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B),
   pH (ISO 10523, Section 9.1 and APHA 19ed 4500-H+ B) ,
   Redox electrode (APHA 20ed 2580)

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/150123-1
Date of Issue:	2015-01-23
Date Received:	2015-01-23
Date Tested:	2015-01-23
Date Completed:	2015-01-23
Next Due Date:	2015-04-22
Page:	2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, µS/cm		Correction, µS/cm	Acceptable range
Instrument Reading	Theoretical Value		
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.0	30.0	0.0	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.1	9.1	0.0	± 0.2
Half-saturated	5.6	5.6	0.0	± 0.2
Zero	0.0	0.0	0.0	± 0.2

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5
1000	1000	0	1000 ± 100

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.00	Less than 0.02

6. Redox Meter check

Redox, mV		Acceptable range
Instrument Reading	Theoretical Value	
228	229	229±10

7. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/W/141003-1
Date of Issue:	2014-10-03
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-03
Next Due Date:	2015-01-02

ATTN: **Mr. W.K. Tang**

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	:AP-2000-D
Serial No.	:122630920
Equipment No.	: W.18.03

Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 67%

Test Specifications:

Dissolved Oxygen, Conductivity & Salinity Sensor,
1. Performance check against Winkler titration
2. Conductivity performance check with Potassium Chloride standard solution
3. Salinity performance check with Sodium Chloride standard solution

Turbidity Sensor, Batch: 11613
1. Calibration check with Formazin standard solution

pH / ORP electrode, Batch: 11613
1. Calibration check with standard pH buffer
2. Redox performance check with ZoBell's standard solution

Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. Aquaprobe AP-2000 Manual
2. In-house method with reference to APHA and ISO standards
   Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
   Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B),
   pH (ISO 10523, Section 9.1 and APHA 19ed 4500-H+ B) ,
   Redox electrode (APHA 20ed 2580)

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/141003-1
Date of Issue:	2014-10-03
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-03
Next Due Date:	2015-01-02
Page:	2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, µS/cm		Correction, µS/cm	Acceptable range
Instrument Reading	Theoretical Value		
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.0	30.0	0.0	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.1	9.1	0.0	± 0.2
Half-saturated	5.6	5.6	0.0	± 0.2
Zero	0.0	0.0	0.0	± 0.2

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5
1000	1000	0	1000 ± 100

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.00	Less than 0.02

6. Redox Meter check

Redox, mV		Acceptable range
Instrument Reading	Theoretical Value	
228	229	229±10

7. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/W/150123-2
Date of Issue:	2015-01-23
Date Received:	2015-01-23
Date Tested:	2015-01-23
Date Completed:	2015-01-23
Next Due Date:	2015-04-22
Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	:AP-2000-D
Serial No.	:128240320
Equipment No.	: W.18.03

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 67%

Test Specifications:

Dissolved Oxygen, Conductivity & Salinity Sensor,
1. Performance check against Winkler titration
2. Conductivity performance check with Potassium Chloride standard solution
3. Salinity performance check with Sodium Chloride standard solution

Turbidity Sensor, Batch: 12213
1. Calibration check with Formazin standard solution

pH / ORP electrode
1. Calibration check with standard pH buffer
2. Redox performance check with ZoBell's standard solution

Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. Aquaprobe AP-2000 Manual
2. In-house method with reference to APHA and ISO standards
   Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
   Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B),
   pH (ISO 10523, Section 9.1 and APHA 19ed 4500-H+ B) ,
   Redox electrode (APHA 20ed 2580)

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/150123-2
Date of Issue:	2015-01-23
Date Received:	2015-01-23
Date Tested:	2015-01-23
Date Completed:	2015-01-23
Next Due Date:	2015-04-22
Page:	2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, µS/cm		Correction, µS/cm	Acceptable range
Instrument Reading	Theoretical Value		
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.0	30.0	0.0	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.1	9.1	0.0	± 0.2
Half-saturated	5.6	5.6	0.0	± 0.2
Zero	0.0	0.0	0.0	± 0.2

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5
1000	1000	0	1000 ± 100

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.00	Less than 0.02

6. Redox Meter check

Redox, mV		Acceptable range
Instrument Reading	Theoretical Value	
228	229	229±10

7. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/W/150123-3
Date of Issue:	2015-01-23
Date Received:	2015-01-23
Date Tested:	2015-01-23
Date Completed:	2015-01-23
Next Due Date:	2015-04-22
Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	:AP-2000-D
Serial No.	:135240520
Equipment No.	: W.18.04

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 67%

Test Specifications:

Dissolved Oxygen, Conductivity & Salinity Sensor,
1. Performance check against Winkler titration
2. Conductivity performance check with Potassium Chloride standard solution
3. Salinity performance check with Sodium Chloride standard solution

Turbidity Sensor, Batch: 12213
1. Calibration check with Formazin standard solution

pH / ORP electrode, Batch: 13504
1. Calibration check with standard pH buffer
2. Redox performance check with ZoBell's standard solution

Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. Aquaprobe AP-2000 Manual
2. In-house method with reference to APHA and ISO standards
   Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
   Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B),
   pH (ISO 10523, Section 9.1 and APHA 19ed 4500-H+ B) ,
   Redox electrode (APHA 20ed 2580)

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/150123-3
Date of Issue:	2015-01-23
Date Received:	2015-01-23
Date Tested:	2015-01-23
Date Completed:	2015-01-23
Next Due Date:	2015-04-22
Page:	2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, µS/cm		Correction, µS/cm	Acceptable range
Instrument Reading	Theoretical Value		
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.0	30.0	0.0	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.1	9.1	0.0	± 0.2
Half-saturated	5.6	5.6	0.0	± 0.2
Zero	0.0	0.0	0.0	± 0.2

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5
1000	1000	0	1000 ± 100

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.00	Less than 0.02

6. Redox Meter check

Redox, mV		Acceptable range
Instrument Reading	Theoretical Value	
228	229	229±10

7. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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Shatin, NT, Hong Kong

Test Report No.:	C/W/140912-1
Date of Issue:	2014-09-12
Date Received:	2014-09-12
Date Tested:	2014-09-12
Date Completed:	2014-09-12
Next Due Date:	2014-12-11

ATTN: **Mr. W.K. Tang**

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	:AP-2000-D
Serial No.	:122430420
Equipment No.	: W.18.05

Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 62%

Test Specifications:

Dissolved Oxygen, Conductivity & Salinity Sensor,
1. Performance check against Winkler titration
2. Conductivity performance check with Potassium Chloride standard solution
3. Salinity performance check with Sodium Chloride standard solution

Turbidity Sensor, Batch: 12213
1. Calibration check with Formazin standard solution

pH / ORP electrode, Batch: 11933
1. Calibration check with standard pH buffer
2. Redox performance check with ZoBell's standard solution

Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. Aquaprobe AP-2000 Manual
2. In-house method with reference to APHA and ISO standards
   Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
   Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B),
   pH (ISO 10523, Section 9.1 and APHA 19ed 4500-H+ B) ,
   Redox electrode (APHA 20ed 2580)

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/140912-1
Date of Issue:	2014-09-12
Date Received:	2014-09-12
Date Tested:	2014-09-12
Date Completed:	2014-09-12
Next Due Date:	2014-12-11
Page:	2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, µS/cm		Correction, µS/cm	Acceptable range
Instrument Reading	Theoretical Value		
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.0	30.0	0.0	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.1	9.1	0.0	± 0.2
Half-saturated	5.6	5.6	0.0	± 0.2
Zero	0.0	0.0	0.0	± 0.2

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5
1000	1000	0	1000 ± 100

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.00	Less than 0.02

6. Redox Meter check

Redox, mV		Acceptable range
Instrument Reading	Theoretical Value	
228	229	229±10

7. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/W/141205-1
Date of Issue:	2014-12-05
Date Received:	2014-12-05
Date Tested:	2014-12-05
Date Completed:	2014-12-05
Next Due Date:	2015-03-04
Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	:AP-2000-D
Serial No.	:122430420
Equipment No.	: W.18.05

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Dissolved Oxygen, Conductivity & Salinity Sensor,
1. Performance check against Winkler titration
2. Conductivity performance check with Potassium Chloride standard solution
3. Salinity performance check with Sodium Chloride standard solution

Turbidity Sensor, Batch: 12213
1. Calibration check with Formazin standard solution

pH / ORP electrode, Batch: 11933
1. Calibration check with standard pH buffer
2. Redox performance check with ZoBell's standard solution

Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. Aquaprobe AP-2000 Manual
2. In-house method with reference to APHA and ISO standards
   Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
   Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B),
   pH (ISO 10523, Section 9.1 and APHA 19ed 4500-H+ B) ,
   Redox electrode (APHA 20ed 2580)

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse
PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/141205-1
Date of Issue:	2014-12-05
Date Received:	2014-12-05
Date Tested:	2014-12-05
Date Completed:	2014-12-05
Next Due Date:	2015-03-04
Page:	2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, µS/cm		Correction, µS/cm	Acceptable range
Instrument Reading	Theoretical Value		
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.0	30.0	0.0	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.1	9.1	0.0	± 0.2
Half-saturated	5.6	5.6	0.0	± 0.2
Zero	0.0	0.0	0.0	± 0.2

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5
1000	1000	0	1000 ± 100

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.00	Less than 0.02

6. Redox Meter check

Redox, mV		Acceptable range
Instrument Reading	Theoretical Value	
228	229	229±10

7. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

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Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/W/141121-1_v1
Date of Issue:	2014-12-15
Date Received:	2014-11-21
Date Tested:	2014-11-21
Date Completed:	2014-11-21
Next Due Date:	2015-02-20
Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	:AP-2000-D
Serial No.	:122630720
Equipment No.	: W.18.06

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 64%

Test Specifications:

Dissolved Oxygen, Conductivity & Salinity Sensor,
1. Performance check against Winkler titration
2. Conductivity performance check with Potassium Chloride standard solution
3. Salinity performance check with Sodium Chloride standard solution

Turbidity Sensor, Batch: 12213
1. Calibration check with Formazin standard solution

pH / ORP electrode, Batch: 11933
1. Calibration check with standard pH buffer
2. Redox performance check with ZoBell's standard solution

Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. Aquaprobe AP-2000 Manual
2. In-house method with reference to APHA and ISO standards
   Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
   Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B),
   pH (ISO 10523, Section 9.1 and APHA 19ed 4500-H+ B) ,
   Redox electrode (APHA 20ed 2580)

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

Test Report No.:	C/W/141121-1_v1
Date of Issue:	2014-12-15
Date Received:	2014-11-21
Date Tested:	2014-11-21
Date Completed:	2014-11-21
Next Due Date:	2015-02-20
Page:	2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, µS/cm		Correction, µS/cm	Acceptable range
Instrument Reading	Theoretical Value		
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.0	30.0	0.0	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.1	9.1	0.0	± 0.2
Half-saturated	5.6	5.6	0.0	± 0.2
Zero	0.0	0.0	0.0	± 0.2

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5
1000	1000	0	1000 ± 100

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.00	Less than 0.02

6. Redox Meter check

Redox, mV		Acceptable range
Instrument Reading	Theoretical Value	
228	229	229±10

7. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/W/141121-3
Date of Issue:	2014-11-21
Date Received:	2014-11-21
Date Tested:	2014-11-21
Date Completed:	2014-11-21
Next Due Date:	2015-02-20
Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	:AP-2000-D
Serial No.	: 122430520
Equipment No.	: W.18.08

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 64%

Test Specifications:

Dissolved Oxygen, Conductivity & Salinity Sensor,
1. Performance check against Winkler titration
2. Conductivity performance check with Potassium Chloride standard solution
3. Salinity performance check with Sodium Chloride standard solution

Turbidity Sensor, Batch: 12213
1. Calibration check with Formazin standard solution

pH / ORP electrode, Batch: 11933
1. Calibration check with standard pH buffer
2. Redox performance check with ZoBell's standard solution

Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. Aquaprobe AP-2000 Manual
2. In-house method with reference to APHA and ISO standards
   Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
   Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B),
   pH (ISO 10523, Section 9.1 and APHA 19ed 4500-H+ B) ,
   Redox electrode (APHA 20ed 2580)

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/141121-3
Date of Issue:	2014-11-21
Date Received:	2014-11-21
Date Tested:	2014-11-21
Date Completed:	2014-11-21
Next Due Date:	2015-02-20
Page:	2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, µS/cm		Correction, µS/cm	Acceptable range
Instrument Reading	Theoretical Value		
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.0	30.0	0.0	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.1	9.1	0.0	± 0.2
Half-saturated	5.6	5.6	0.0	± 0.2
Zero	0.0	0.0	0.0	± 0.2

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5
1000	1000	0	1000 ± 100

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.00	Less than 0.02

6. Redox Meter check

Redox, mV		Acceptable range
Instrument Reading	Theoretical Value	
228	229	229±10

7. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/W/150123-4
Date of Issue:	2015-01-23
Date Received:	2015-01-23
Date Tested:	2015-01-23
Date Completed:	2015-01-23
Next Due Date:	2015-04-22
Page:	1 of 2

ATTN: **Mr. W.K. Tang**

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	: AP-2000-D
Serial No.	:128041320
Equipment No.	: W.18.09

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 67%

Test Specifications:

Dissolved Oxygen, Conductivity & Salinity Sensor,
1. Performance check against Winkler titration
2. Conductivity performance check with Potassium Chloride standard solution
3. Salinity performance check with Sodium Chloride standard solution

Turbidity Sensor, Batch: 12213
1. Calibration check with Formazin standard solution

pH / ORP electrode
1. Calibration check with standard pH buffer
2. Redox performance check with ZoBell's standard solution

Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. Aquaprobe AP-2000 Manual
2. In-house method with reference to APHA and ISO standards
   Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
   Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B),
   pH (ISO 10523, Section 9.1 and APHA 19ed 4500-H+ B) ,
   Redox electrode (APHA 20ed 2580)

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/150123-4
Date of Issue:	2015-01-23
Date Received:	2015-01-23
Date Tested:	2015-01-23
Date Completed:	2015-01-23
Next Due Date:	2015-04-22
Page:	2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, µS/cm		Correction, µS/cm	Acceptable range
Instrument Reading	Theoretical Value		
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.0	30.0	0.0	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.1	9.1	0.0	± 0.2
Half-saturated	5.6	5.6	0.0	± 0.2
Zero	0.0	0.0	0.0	± 0.2

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5
1000	1000	0	1000 ± 100

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.00	Less than 0.02

6. Redox Meter check

Redox, mV		Acceptable range
Instrument Reading	Theoretical Value	
228	229	229±10

7. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/W/150123-5
Date of Issue:	2015-01-23
Date Received:	2015-01-23
Date Tested:	2015-01-23
Date Completed:	2015-01-23
Next Due Date:	2015-04-22
Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Multiparameter Water Quality Probe
Manufacturer	: Aquaread Ltd
Model No.	: AP-2000-D
Serial No.	:135240420
Equipment No.	: W.18.10

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 67%

Test Specifications:

Dissolved Oxygen, Conductivity & Salinity Sensor,
1. Performance check against Winkler titration
2. Conductivity performance check with Potassium Chloride standard solution
3. Salinity performance check with Sodium Chloride standard solution

Turbidity Sensor, Batch: 13364
1. Calibration check with Formazin standard solution

pH / ORP electrode, Batch: 13504
1. Calibration check with standard pH buffer
2. Redox performance check with ZoBell's standard solution

Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. Aquaprobe AP-2000 Manual
2. In-house method with reference to APHA and ISO standards
   Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
   Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B),
   pH (ISO 10523, Section 9.1 and APHA 19ed 4500-H+ B) ,
   Redox electrode (APHA 20ed 2580)

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/150123-5
Date of Issue:	2015-01-23
Date Received:	2015-01-23
Date Tested:	2015-01-23
Date Completed:	2015-01-23
Next Due Date:	2015-04-22
Page:	2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, µS/cm		Correction, µS/cm	Acceptable range
Instrument Reading	Theoretical Value		
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.0	30.0	0.0	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.1	9.1	0.0	± 0.2
Half-saturated	5.6	5.6	0.0	± 0.2
Zero	0.0	0.0	0.0	± 0.2

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5
1000	1000	0	1000 ± 100

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.00	Less than 0.02

6. Redox Meter check

Redox, mV		Acceptable range
Instrument Reading	Theoretical Value	
228	229	229±10

7. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/W/150123-6
Date of Issue:	2015-01-23
Date Received:	2015-01-23
Date Tested:	2015-01-23
Date Completed:	2015-01-23
Next Due Date:	2015-04-22
Page:	1 of 2

ATTN: **Mr. W.K. Tang**

Certificate of Calibration

Item for calibration:

Description	: Sonde Environmental Monitoring System
Manufacturer	: YSI
Model No.	: 6820-C-M
Serial No.	: 04F11451AC
Equipment No.	: W.03.05

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 67%

Test Specifications:

Conductivity & Salinity Sensor, Model: 6560, L/N: 11J100023
1. Conductivity performance check with Potassium Chloride standard solution
2. Salinity performance check with Sodium Chloride standard solution

Dissolved Oxygen Sensor, Model: 6562, L/N: 07E100029
1. Performance check against Winkler titration

Turbidity Sensor, Model: 6136, S/N: 14L101696
1. Calibration check with Formazin standard solution

pH Meter, Model: 6589, L/N: 14M
1. Calibration check with standard pH buffer

Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. YSI 6-Series Sonde Environmental Monitoring System Instruction Manual
2. In-house method with reference to APHA and ISO standards
   Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
   Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B),
   pH (APHA 19th 4500-H+ B)

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse
PATRICK TSE
Laboratory Manager

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TEST REPORT

Test Report No.:	C/W/150123-6
Date of Issue:	2015-01-23
Date Received:	2015-01-23
Date Tested:	2015-01-23
Date Completed:	2015-01-23
Next Due Date:	2015-04-22
Page:	2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, µS/cm		Correction, µS/cm	Acceptable range
Salinity Meter (C1)	Theoretical Value (C2)	D = C1 - C2	
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.1	30.0	0.1	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.1	9.1	0.0	± 0.2
Half-saturated	5.6	5.6	0.0	± 0.2
Zero	0.0	0.0	0.0	± 0.2

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5
1000	1000	0	1000 ± 100

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.00	Less than 0.02

6. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

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APPENDIX C
BASELINE WATER QUALITY MONITORING RESULTS (IN-SITU PARAMETERS)

Contract No. DC/2009/10
HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works
- Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Water Quality Monitoring Results on 22 November 2014 (Mid-Ebb Tide)

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
B10	Cloudy	Moderate	11:17	Surface	1	24.9 24.9	24.9	8.3 8.3	8.3	32.1 32.2	32.2	136.3 136.3	136.3	9.4 9.4	9.4	9.4	3.9 3.8	3.9	4.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.6	24.8 24.7	24.8	8.3 8.3	8.3	32.3 32.4	32.4	133.6 133.1	133.4	9.2 9.2	9.2	9.2	4.2 4.5	4.4	
B11	Cloudy	Moderate	11:12	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	9.7	- -	-	3.5
				Middle	1.3	24.8 24.8	24.8	8.3 8.3	8.3	32.1 32.1	32.1	139.5 140.0	139.8	9.6 9.7	9.7		3.4 3.6	3.5	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B12	Cloudy	Moderate	11:07	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	9.5	- -	-	3.0
				Middle	0.9	24.9 24.9	24.9	8.3 8.3	8.3	31.7 31.7	31.7	137.1 137.7	137.4	9.5 9.5	9.5		2.7 3.2	3.0	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B13	Cloudy	Moderate	10:58	Surface	1	24.8 24.8	24.8	8.1 8.2	8.2	31.6 31.7	31.7	130.1 130.2	130.2	9.0 9.0	9.0	9.0	2.1 2.2	2.2	2.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	4.5	24.7 24.7	24.7	8.2 8.2	8.2	31.9 32.0	32.0	130.9 130.8	130.9	9.1 9.1	9.1	9.1	2.5 2.4	2.5	
B14	Cloudy	Moderate	11:52	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	9.9	- -	-	4.4
				Middle	1.1	24.9 24.9	24.9	8.1 8.1	8.1	32.6 32.7	32.7	144.1 143.7	143.9	9.9 9.9	9.9		4.3 4.5	4.4	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B24	Cloudy	Moderate	12:39	Surface	1	23.4 23.4	23.4	8.2 8.2	8.2	31.8 31.8	31.8	88.8 89.4	89.1	6.3 6.3	6.3	6.2	1.5 1.5	1.5	1.1
				Middle	4.5	23.4 23.4	23.4	8.1 8.1	8.1	31.8 31.8	31.8	86.2 85.0	85.6	6.1 6.0	6.1		0.9 0.9	0.9	
				Bottom	8	23.5 23.4	23.5	8.1 8.1	8.1	31.8 31.8	31.8	87.6 88.8	88.2	6.2 6.3	6.3	6.3	0.8 0.8	0.8	
B25	Cloudy	Moderate	12:25	Surface	1	23.4 23.4	23.4	8.2 8.2	8.2	31.7 31.6	31.7	85.5 85.9	85.7	6.1 6.1	6.1	6.1	0.9 0.9	0.9	1.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	4	23.3 23.3	23.3	8.2 8.2	8.2	31.7 31.7	31.7	85.3 83.9	84.6	6.1 6.0	6.1	6.1	0.9 1.0	1.0	
B26	Cloudy	Moderate	12:09	Surface	1	23.5 23.6	23.6	8.0 8.0	8.0	31.6 31.6	31.6	84.2 84.0	84.1	6.0 5.9	6.0	6.0	0.7 0.7	0.7	0.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	4.3	23.6 23.6	23.6	8.0 8.0	8.0	31.8 31.8	31.8	94.1 93.4	93.8	6.7 6.6	6.7	6.7	0.8 0.9	0.9	

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Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
B7	Cloudy	Moderate	11:41	Surface	1	24.8 24.8	24.8	8.2 8.2	8.2	32.2 32.2	32.2	126.7 126.0	126.4	8.8 8.7	8.8	8.8	3.8 3.4	3.6	3.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.7	24.6 24.6	24.6	8.2 8.2	8.2	32.5 32.5	32.5	126.4 126.2	126.3	8.7 8.7	8.7	8.7	3.9 3.8	3.9	
B8	Cloudy	Moderate	11:32	Surface	1	24.8 24.8	24.8	8.2 8.2	8.2	32.0 32.1	32.1	129.5 130.0	129.8	9.0 9.0	9.0	9.0	3.9 3.7	3.8	4.1
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.6	24.8 24.8	24.8	8.2 8.2	8.2	32.3 32.3	32.3	131.0 131.1	131.1	9.0 9.1	9.1	9.1	4.2 4.6	4.4	
B9	Cloudy	Moderate	11:23	Surface	1	24.8 24.7	24.8	8.2 8.2	8.2	32.0 32.2	32.1	126.4 127.1	126.8	8.7 8.8	8.8	8.8	3.7 3.6	3.7	4.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.9	24.7 24.7	24.7	8.2 8.2	8.2	32.4 32.4	32.4	127.8 128.4	128.1	8.8 8.9	8.9	8.9	4.5 4.7	4.6	
EM1	Cloudy	Moderate	13:24	Surface	1	23.8 23.8	23.8	8.3 8.3	8.3	32.0 32.0	32.0	85.0 84.3	84.7	6.0 5.9	6.0	5.9	1.0 0.9	1.0	1.0
				Middle	9.5	23.7 23.7	23.7	8.3 8.3	8.3	32.0 32.0	32.0	81.4 82.3	81.9	5.7 5.8	5.8		0.9 0.9	0.9	
				Bottom	18	23.6 23.7	23.7	8.3 8.3	8.3	32.0 32.0	32.0	83.7 83.5	83.6	5.9 5.9	5.9	5.9	1.0 1.0	1.0	
EM2	Cloudy	Moderate	13:06	Surface	1	23.7 23.7	23.7	8.3 8.3	8.3	32.0 32.0	32.0	83.3 84.4	83.9	5.9 6.0	6.0	5.9	0.7 0.7	0.7	0.8
				Middle	10.5	23.5 23.5	23.5	8.3 8.3	8.3	31.9 31.9	31.9	80.2 80.7	80.5	5.7 5.7	5.7		0.9 0.9	0.9	
				Bottom	20	23.5 23.5	23.5	8.4 8.4	8.4	32.0 32.0	32.0	82.2 83.4	82.8	5.8 5.9	5.9	5.9	0.8 1.0	0.9	
EM3	Cloudy	Moderate	11:57	Surface	1	22.8 22.8	22.8	8.1 8.1	8.1	31.6 31.6	31.6	97.6 98.1	97.9	7.0 7.0	7.0	7.0	3.1 3.1	3.1	3.2
				Middle	13	22.8 22.8	22.8	8.1 8.1	8.1	31.6 31.6	31.6	97.1 96.5	96.8	7.0 6.9	7.0		3.0 3.0	3.0	
				Bottom	25	23.6 23.7	23.7	7.8 7.8	7.8	31.9 31.9	31.9	84.7 85.8	85.3	6.0 6.1	6.1	6.1	3.5 3.6	3.6	
F1	Cloudy	Moderate	12:54	Surface	1	23.4 23.4	23.4	8.2 8.2	8.2	31.8 31.8	31.8	84.1 83.4	83.8	6.0 5.9	6.0	6.0	0.9 0.9	0.9	1.3
				Middle	6	23.3 23.3	23.3	8.2 8.2	8.2	31.8 31.8	31.8	84.6 83.6	84.1	6.0 5.9	6.0		0.8 0.9	0.9	
				Bottom	11	23.4 23.4	23.4	8.2 8.2	8.2	31.9 31.9	31.9	81.4 80.1	80.8	5.8 5.7	5.8	5.8	1.8 2.1	2.0	
F5	Cloudy	Moderate	12:01	Surface	1	24.6 24.7	24.7	8.1 8.1	8.1	32.3 32.3	32.3	135.6 135.8	135.7	9.4 9.4	9.4	9.3	5.7 5.9	5.8	7.9
				Middle	4.5	24.6 24.6	24.6	8.0 8.0	8.0	32.6 32.6	32.6	131.2 130.5	130.9	9.1 9.0	9.1		7.8 7.6	7.7	
				Bottom	8	24.6 24.6	24.6	8.0 8.0	8.0	32.7 32.8	32.8	126.2 126.8	126.5	8.7 8.8	8.8	8.8	9.9 10.3	10.1	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
JM3	Cloudy	Moderate	11:58	Surface	1	24.0 23.9	24.0	8.2 8.2	8.2	32.0 32.0	32.0	80.2 81.3	80.8	5.6 5.7	5.7	6.0	0.9 0.8	0.9	0.7
				Middle	6	23.7 23.7	23.7	8.2 8.2	8.2	32.0 32.0	32.0	87.2 89.1	88.2	6.2 6.3	6.3		0.7 0.6	0.7	
				Bottom	11	23.6 23.6	23.6	8.2 8.2	8.2	32.0 32.0	32.0	97.0 95.1	96.1	6.8 6.7	6.8	6.8	0.4 0.5	0.5	
MM13	Cloudy	Moderate	10:40	Surface	1	23.3 23.3	23.3	8.1 8.1	8.1	31.6 31.6	31.6	97.5 96.9	97.2	6.9 6.9	6.9	6.9	0.7 0.7	0.7	1.0
				Middle	16	23.3 23.3	23.3	8.0 8.0	8.0	31.7 31.7	31.7	95.4 96.4	95.9	6.8 6.9	6.9		0.8 0.7	0.8	
				Bottom	31	23.3 23.3	23.3	8.0 8.0	8.0	31.7 31.7	31.7	92.3 90.2	91.3	6.6 6.4	6.5	6.5	1.5 1.4	1.5	
SM17	Cloudy	Moderate	12:56	Surface	1	24.1 24.1	24.1	8.2 8.2	8.2	31.8 31.8	31.8	121.2 121.0	121.1	8.5 8.5	8.5	8.5	4.7 4.8	4.8	7.1
				Middle	8.5	24.1 24.1	24.1	8.2 8.2	8.2	32.0 32.0	32.0	120.6 120.8	120.7	8.4 8.5	8.5		6.7 6.9	6.8	
				Bottom	16	24.1 24.1	24.1	8.2 8.2	8.2	31.6 31.4	31.5	117.0 116.5	116.8	8.2 8.2	8.2	8.2	9.8 9.7	9.8	
VM1	Cloudy	Moderate	12:35	Surface	1	24.0 24.1	24.1	8.4 8.4	8.4	33.1 33.1	33.1	87.5 87.6	87.6	6.6 6.7	6.7	6.7	3.0 3.3	3.2	4.5
				Middle	22.5	24.0 24.1	24.1	8.4 8.4	8.4	33.3 33.2	33.3	87.2 87.5	87.4	6.6 6.6	6.6		3.6 3.4	3.5	
				Bottom	44	24.1 24.0	24.1	8.4 8.4	8.4	33.5 33.6	33.6	85.9 86.3	86.1	6.5 6.6	6.6	6.6	6.6 6.8	6.7	
VM12	Cloudy	Moderate	11:04	Surface	1	24.3 24.3	24.3	7.9 7.9	7.9	32.1 32.2	32.2	117.2 117.2	117.2	8.2 8.2	8.2	8.2	14.0 15.7	14.9	18.4
				Middle	10.5	24.3 24.3	24.3	7.9 7.9	7.9	32.2 32.3	32.3	117.2 117.2	117.2	8.2 8.2	8.2		20.2 19.8	20.0	
				Bottom	20	24.2 24.3	24.3	7.9 7.9	7.9	32.3 32.3	32.3	117.3 117.2	117.3	8.2 8.2	8.2	8.2	19.6 21.2	20.4	
VM14	Cloudy	Moderate	13:12	Surface	1	24.6 24.6	24.6	8.0 8.0	8.0	30.1 31.6	30.9	105.1 106.0	105.6	7.4 7.4	7.4	7.2	8.0 7.5	7.8	7.8
				Middle	6	24.5 24.5	24.5	7.9 7.9	7.9	31.4 31.5	31.5	97.3 101.3	99.3	6.8 7.1	7.0		7.2 8.1	7.7	
				Bottom	11	24.4 24.4	24.4	8.0 7.9	8.0	31.6 31.8	31.7	95.3 96.4	95.9	6.7 6.7	6.7	6.7	7.3 8.2	7.8	
VM15	Cloudy	Moderate	11:21	Surface	1	23.6 24.2	23.9	7.9 7.9	7.9	32.1 32.1	32.1	119.1 117.6	118.4	8.4 8.2	8.3	8.2	4.8 5.2	5.0	6.3
				Middle	6.5	24.0 24.2	24.1	7.9 8.0	8.0	32.2 32.2	32.2	114.2 115.1	114.7	8.0 8.0	8.0		7.1 5.8	6.5	
				Bottom	12	24.1 24.2	24.2	7.9 7.9	7.9	32.2 32.3	32.3	111.0 114.4	112.7	7.8 8.0	7.9	7.9	7.3 7.5	7.4	
VM2	Cloudy	Moderate	13:09	Surface	1	23.7 24.2	24.0	8.4 8.4	8.4	30.9 31.1	31.0	111.0 110.0	110.5	8.4 8.4	8.4	8.4	2.5 2.6	2.6	3.3
				Middle	5.5	24.1 24.2	24.2	8.4 8.4	8.4	33.4 33.4	33.4	110.4 109.2	109.8	8.4 8.3	8.4		2.1 2.0	2.1	
				Bottom	10	24.2 24.2	24.2	8.4 8.4	8.4	33.4 33.4	33.4	108.2 108.2	108.2	8.2 8.2	8.2	8.2	5.4 5.0	5.2	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
VM4	Cloudy	Moderate	13:46	Surface	1	24.3 24.4	24.4	8.4 8.4	8.4	33.4 33.6	33.5	104.8 105.0	104.9	8.0 8.0	8.0	7.9	1.8 1.8	1.8	4.2
				Middle	7	24.2 24.2	24.2	8.4 8.4	8.4	33.6 33.7	33.7	102.5 102.6	102.6	7.8 7.8	7.8		4.1 3.3	3.7	
				Bottom	13	24.1 24.0	24.1	8.4 8.4	8.4	33.8 33.8	33.8	100.8 100.1	100.5	7.7 7.6	7.7	7.7	7.1 7.2	7.2	
VM5	Cloudy	Moderate	13:33	Surface	1	24.3 24.3	24.3	8.4 8.4	8.4	33.6 33.6	33.6	100.5 100.0	100.3	7.6 7.6	7.6	7.6	2.5 2.7	2.6	3.5
				Middle	6.5	24.3 24.3	24.3	8.4 8.4	8.4	33.6 33.7	33.7	99.1 98.6	98.9	7.5 7.5	7.5		3.0 3.0	3.0	
				Bottom	12	24.3 24.3	24.3	8.3 8.3	8.3	33.7 33.7	33.7	97.0 97.2	97.1	7.4 7.4	7.4	7.4	5.3 4.5	4.9	
VM7	Cloudy	Moderate	12:29	Surface	1	24.5 24.2	24.4	8.0 8.0	8.0	31.1 31.5	31.3	112.9 113.5	113.2	7.9 8.0	8.0	8.0	5.8 5.4	5.6	7.4
				Middle	6	24.3 24.2	24.3	7.9 8.0	8.0	31.5 31.7	31.6	113.4 113.2	113.3	7.9 7.9	7.9		7.4 6.0	6.7	
				Bottom	11	24.1 24.2	24.2	7.9 7.9	7.9	31.7 31.8	31.8	110.2 112.2	111.2	7.7 7.9	7.8	7.8	9.2 10.7	10.0	
VM8	Cloudy	Moderate	12:52	Surface	1	24.3 24.4	24.4	8.0 8.0	8.0	31.7 31.5	31.6	120.1 118.8	119.5	8.4 8.3	8.4	8.3	5.5 5.4	5.5	6.6
				Middle	6	24.3 24.4	24.4	8.0 8.0	8.0	31.8 31.6	31.7	117.9 117.3	117.6	8.2 8.2	8.2		6.9 6.9	6.9	
				Bottom	11	24.3 24.3	24.3	8.0 8.0	8.0	31.9 31.9	31.9	115.1 115.9	115.5	8.0 8.1	8.1	8.1	7.4 7.1	7.3	
WSD10	Cloudy	Moderate	11:05	Surface	1	24.3 24.1	24.2	8.4 8.4	8.4	32.7 33.1	32.9	109.1 109.9	109.5	8.3 8.3	8.3	8.3	3.4 3.5	3.5	3.7
				Middle	7.5	24.1 24.1	24.1	8.4 8.4	8.4	33.3 33.3	33.3	106.6 109.0	107.8	8.1 8.3	8.2		1.3 1.5	1.4	
				Bottom	14	24.0 24.0	24.0	8.4 8.4	8.4	33.3 33.3	33.3	105.0 105.2	105.1	8.0 8.0	8.0	8.0	6.1 6.0	6.1	
WSD11	Cloudy	Moderate	11:21	Surface	1	24.4 24.1	24.3	8.3 8.4	8.4	33.2 33.1	33.2	88.7 88.9	88.8	6.7 6.8	6.8	6.7	2.9 2.7	2.8	3.7
				Middle	8.5	24.1 24.1	24.1	8.4 8.4	8.4	33.3 33.3	33.3	87.2 87.4	87.3	6.6 6.6	6.6		2.8 2.8	2.8	
				Bottom	16	24.1 24.1	24.1	8.4 8.4	8.4	33.5 33.5	33.5	86.4 86.6	86.5	6.6 6.6	6.6	6.6	5.4 5.8	5.6	
WSD12	Cloudy	Moderate	11:47	Surface	1	24.1 24.1	24.1	8.1 8.1	8.1	31.9 31.9	31.9	84.7 86.2	85.5	5.9 6.0	6.0	6.1	0.6 0.6	0.6	0.9
				Middle	3.5	23.8 23.8	23.8	8.2 8.2	8.2	32.0 32.0	32.0	86.9 88.3	87.6	6.1 6.2	6.2		0.7 0.8	0.8	
				Bottom	6	23.7 23.7	23.7	8.2 8.2	8.2	32.0 27.5	29.8	84.1 82.3	83.2	5.9 6.0	6.0	6.0	1.3 1.2	1.3	
WSD13	Cloudy	Moderate	12:18	Surface	1	23.8 23.8	23.8	8.1 8.1	8.1	32.0 32.0	32.0	84.0 84.8	84.4	5.9 6.0	6.0	6.1	0.9 0.9	0.9	0.8
				Middle	6.5	23.8 23.8	23.8	8.2 8.2	8.2	32.0 32.0	32.0	86.2 88.3	87.3	6.1 6.2	6.2		0.8 0.8	0.8	
				Bottom	12	23.8 23.8	23.8	8.2 8.2	8.2	31.9 32.0	32.0	83.1 84.5	83.8	5.9 5.9	5.9	5.9	0.7 0.7	0.7	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
WSD15	Cloudy	Moderate	12:47	Surface	1	24.2 24.1	24.2	8.4 8.4	8.4	33.1 33.2	33.2	111.2 111.0	111.1	8.4 8.4	8.4	8.4	2.5 2.3	2.4	3.3
				Middle	6.5	24.2 24.1	24.2	8.4 8.4	8.4	33.2 33.3	33.3	110.3 110.6	110.5	8.4 8.4	8.4		1.9 1.9	1.9	
				Bottom	12	24.1 24.1	24.1	8.4 8.4	8.4	33.3 33.3	33.3	107.8 108.1	108.0	8.2 8.2	8.2	8.2	5.7 5.6	5.7	
WSD17	Cloudy	Moderate	13:00	Surface	1	23.5 24.1	23.8	8.4 8.4	8.4	33.4 33.0	33.2	105.8 105.5	105.7	8.0 8.0	8.0	7.9	2.8 3.5	3.2	4.6
				Middle	5.5	23.9 24.1	24.0	8.4 8.4	8.4	33.4 33.4	33.4	101.6 102.1	101.9	7.7 7.8	7.8		4.0 4.2	4.1	
				Bottom	10	24.0 24.1	24.1	8.4 8.4	8.4	33.6 33.5	33.6	102.8 102.4	102.6	7.8 7.8	7.8	7.8	6.7 6.3	6.5	
WSD18	Cloudy	Moderate	11:59	Surface	1	24.2 24.2	24.2	7.9 7.9	7.9	31.6 31.5	31.6	103.1 102.2	102.7	7.2 7.2	7.2	7.2	6.5 6.7	6.6	7.0
				Middle	5.5	24.2 24.2	24.2	7.9 7.9	7.9	31.8 31.9	31.9	100.4 101.3	100.9	7.0 7.1	7.1		6.9 7.5	7.2	
				Bottom	10	24.0 24.2	24.1	7.9 7.9	7.9	32.4 32.9	32.7	99.5 100.7	100.1	7.0 7.0	7.0	7.0	7.0 7.6	7.3	
WSD19	Cloudy	Moderate	12:10	Surface	1	24.3 24.3	24.3	7.9 7.9	7.9	32.0 31.7	31.9	109.7 111.1	110.4	7.7 7.8	7.8	7.8	8.4 6.9	7.7	7.3
				Middle	6.5	24.2 24.2	24.2	7.9 7.9	7.9	32.0 31.9	32.0	109.9 110.6	110.3	7.7 7.7	7.7		8.1 6.7	7.4	
				Bottom	12	24.2 24.3	24.3	7.9 7.9	7.9	32.0 31.8	31.9	109.4 109.6	109.5	7.6 7.7	7.7	7.7	7.0 6.7	6.9	
WSD20	Cloudy	Moderate	12:42	Surface	1	24.3 24.3	24.3	8.0 8.0	8.0	31.6 31.8	31.7	121.2 121.5	121.4	8.5 8.5	8.5	8.5	6.7 7.5	7.1	7.6
				Middle	5.5	24.3 24.2	24.3	8.0 8.0	8.0	31.7 31.9	31.8	120.7 120.6	120.7	8.4 8.4	8.4		7.0 8.4	7.7	
				Bottom	10	24.2 24.2	24.2	8.0 8.0	8.0	31.9 32.1	32.0	120.0 118.4	119.2	8.4 8.3	8.4	8.4	7.7 8.3	8.0	
WSD22	Cloudy	Moderate	13:25	Surface	1	24.0 24.3	24.2	8.3 8.3	8.3	33.8 33.4	33.6	89.5 90.0	89.8	6.8 6.8	6.8	6.8	2.9 2.6	2.8	3.7
				Middle	4.5	24.2 24.3	24.3	8.3 8.3	8.3	33.9 33.8	33.9	88.7 87.1	87.9	6.7 6.6	6.7		2.8 2.7	2.8	
				Bottom	8	24.2 24.3	24.3	8.3 8.2	8.3	33.9 33.6	33.8	85.1 85.4	85.3	6.5 6.5	6.5	6.5	5.7 5.4	5.6	
WSD5	Cloudy	Moderate	10:46	Surface	1	24.5 24.3	24.4	7.8 7.8	7.8	31.4 31.9	31.7	117.9 119.0	118.5	8.2 8.3	8.3	8.3	8.2 8.5	8.4	9.7
				Middle	8	24.4 24.3	24.4	7.8 7.8	7.8	32.0 32.2	32.1	118.6 118.2	118.4	8.3 8.2	8.3		9.9 10.5	10.2	
				Bottom	15	24.3 24.3	24.3	7.8 7.8	7.8	32.2 32.3	32.3	116.9 116.4	116.7	8.1 8.1	8.1	8.1	9.9 11.0	10.5	
WSD6	Cloudy	Moderate	11:35	Surface	1	24.7 24.6	24.7	7.9 7.9	7.9	31.7 31.5	31.6	117.5 117.6	117.6	8.2 8.2	8.2	8.2	13.3 13.9	13.6	9.9
				Middle	3.5	24.5 24.5	24.5	7.9 7.9	7.9	31.8 31.5	31.7	116.6 116.8	116.7	8.1 8.1	8.1		8.2 8.9	8.6	
				Bottom	6	24.3 24.3	24.3	7.9 7.9	7.9	32.1 31.7	31.9	117.1 117.6	117.4	8.2 8.2	8.2	8.2	7.5 7.3	7.4	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

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- Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Water Quality Monitoring Results on 22 November 2014 (Mid-Ebb Tide)

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
WSD7	Cloudy	Moderate	11:49	Surface	1	24.4 24.3	24.4	7.9 7.9	7.9	31.3 31.9	31.6	113.6 114.3	114.0	7.9 8.0	8.0	8.0	7.2 6.9	7.1	7.3
				Middle	4	24.3 24.3	24.3	7.9 7.9	7.9	31.8 31.9	31.9	114.4 113.3	113.9	8.0 7.9	8.0		6.2 7.7	7.0	
				Bottom	7	24.3 24.3	24.3	7.9 7.9	7.9	31.9 32.0	32.0	112.8 112.4	112.6	7.9 7.8	7.9	7.9	7.8 8.0	7.9	
WSD9	Cloudy	Moderate	14:02	Surface	1	24.8 24.3	24.6	8.4 8.4	8.4	30.5 30.7	30.6	102.8 102.6	102.7	7.8 7.8	7.8	7.8	3.1 3.7	3.4	3.6
				Middle	5	24.5 24.2	24.4	8.4 8.4	8.4	33.0 33.4	33.2	100.3 100.9	100.6	7.6 7.7	7.7		2.0 2.3	2.2	
				Bottom	9	24.2 24.2	24.2	8.4 8.4	8.4	33.4 33.5	33.5	98.6 98.2	98.4	7.5 7.5	7.5	7.5	5.8 4.7	5.3	

Remarks: *DA: Depth-Averaged
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HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works
- Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Water Quality Monitoring Results on 22 November 2014 (Mid-Flood Tide)

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
B10	Cloudy	Moderate	17:39	Surface	1	24.6 24.6	24.6	8.2 8.2	8.2	31.9 31.9	31.9	112.4 111.4	111.9	7.8 7.7	7.8	7.8	4.8 4.8	4.8	5.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	3	24.6 24.7	24.7	8.2 8.2	8.2	32.2 32.2	32.2	113.1 112.2	112.7	7.8 7.8	7.8	7.8	6.1 5.2	5.7	
B11	Cloudy	Moderate	17:44	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.1	- -	-	4.3
				Middle	1.3	24.5 24.7	24.6	8.2 8.2	8.2	32.0 32.0	32.0	102.2 102.7	102.5	7.1 7.1	7.1		4.3 4.2	4.3	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B12	Cloudy	Moderate	17:47	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.0	- -	-	4.2
				Middle	0.9	24.5 24.6	24.6	8.1 8.1	8.1	31.9 31.9	31.9	101.1 100.7	100.9	7.0 7.0	7.0		4.2 4.2	4.2	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B13	Cloudy	Moderate	17:54	Surface	1	24.7 24.8	24.8	8.1 8.1	8.1	31.8 31.8	31.8	99.1 98.7	98.9	6.9 6.8	6.9	6.8	6.1 6.3	6.2	7.9
				Middle	3.5	24.8 24.8	24.8	8.1 8.2	8.2	31.9 32.0	32.0	97.2 96.5	96.9	6.7 6.7	6.7		7.5 7.9	7.7	
				Bottom	6	24.8 24.8	24.8	8.2 8.2	8.2	32.3 32.3	32.3	96.8 94.8	95.8	6.7 6.5	6.6	6.6	9.6 9.9	9.8	
B14	Cloudy	Moderate	17:04	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	8.0	- -	-	5.6
				Middle	0.9	25.6 25.6	25.6	8.1 8.1	8.1	31.7 31.7	31.7	116.8 116.4	116.6	8.0 8.0	8.0		5.4 5.8	5.6	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B24	Cloudy	Moderate	17:58	Surface	1	25.5 25.5	25.5	8.2 8.2	8.2	31.7 31.8	31.8	100.3 101.9	101.1	6.9 7.0	7.0	7.1	1.3 1.2	1.3	1.5
				Middle	5	25.5 25.5	25.5	8.2 8.2	8.2	31.8 31.8	31.8	106.6 104.4	105.5	7.3 7.1	7.2		1.2 1.3	1.3	
				Bottom	9	25.5 25.5	25.5	8.2 8.2	8.2	31.8 31.8	31.8	101.9 102.1	102.0	7.0 7.0	7.0	7.0	1.9 1.6	1.8	
B25	Cloudy	Moderate	17:48	Surface	1	25.6 25.6	25.6	8.2 8.2	8.2	31.6 31.6	31.6	97.6 96.0	96.8	6.7 6.6	6.7	6.7	2.5 2.7	2.6	2.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	3.2	25.5 25.5	25.5	8.3 8.3	8.3	31.9 31.9	31.9	98.6 97.1	97.9	6.7 6.6	6.7	6.7	1.4 1.2	1.3	
B26	Cloudy	Moderate	17:39	Surface	1	25.2 25.2	25.2	8.0 8.0	8.0	31.6 31.6	31.6	99.0 98.5	98.8	6.8 6.8	6.8	6.8	1.0 1.0	1.0	1.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	3.8	25.1 25.2	25.2	8.0 8.0	8.0	31.6 31.6	31.6	97.8 96.1	97.0	6.7 6.6	6.7	6.7	1.6 1.6	1.6	

Remarks: *DA: Depth-Averaged
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HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works
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Water Quality Monitoring Results on 22 November 2014 (Mid-Flood Tide)

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
B7	Cloudy	Moderate	17:22	Surface	1	24.6 24.6	24.6	8.1 8.1	8.1	31.9 31.9	31.9	105.7 106.1	105.9	7.3 7.4	7.4	7.4	4.8 5.2	5.0	5.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	3.2	24.7 24.7	24.7	8.1 8.1	8.1	32.1 32.1	32.1	105.3 105.6	105.5	7.3 7.3	7.3	7.3	5.7 5.9	5.8	
B8	Cloudy	Moderate	17:29	Surface	1	24.6 24.6	24.6	8.1 8.1	8.1	32.1 32.1	32.1	107.7 105.4	106.6	7.5 7.3	7.4	7.4	4.3 4.8	4.6	5.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.5	24.7 24.7	24.7	8.1 8.1	8.1	32.4 32.4	32.4	103.5 103.0	103.3	7.2 7.1	7.2	7.2	5.7 5.9	5.8	
B9	Cloudy	Moderate	17:34	Surface	1	24.6 24.7	24.7	8.1 8.1	8.1	32.0 32.0	32.0	106.4 107.2	106.8	7.4 7.4	7.4	7.4	4.6 4.3	4.5	4.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	3	24.7 24.8	24.8	8.2 8.2	8.2	32.3 32.3	32.3	104.0 103.8	103.9	7.2 7.2	7.2	7.2	4.9 4.9	4.9	
EM1	Cloudy	Moderate	18:39	Surface	1	25.5 25.6	25.6	8.3 8.3	8.3	31.0 30.9	31.0	99.1 98.8	99.0	6.8 6.8	6.8	6.9	2.7 2.5	2.6	2.7
				Middle	10	25.5 25.6	25.6	8.3 8.3	8.3	31.7 31.2	31.5	101.9 101.5	101.7	7.0 7.0	7.0		2.4 2.6	2.5	
				Bottom	19	25.6 25.6	25.6	8.3 8.3	8.3	31.1 31.1	31.1	99.1 99.4	99.3	6.8 6.8	6.8	6.8	3.2 3.0	3.1	
EM2	Cloudy	Moderate	18:23	Surface	1	25.0 25.1	25.1	8.2 8.2	8.2	31.0 30.8	30.9	98.7 98.0	98.4	6.8 6.8	6.8	6.8	2.3 2.1	2.2	2.7
				Middle	11	25.4 25.4	25.4	8.2 8.2	8.2	30.7 30.6	30.7	98.1 98.6	98.4	6.8 6.8	6.8		2.7 2.4	2.6	
				Bottom	21	25.5 25.5	25.5	8.3 8.2	8.3	30.8 30.8	30.8	97.7 97.7	97.7	6.7 6.7	6.7	6.7	3.4 2.9	3.2	
EM3	Cloudy	Moderate	17:24	Surface	1	25.3 25.6	25.5	8.2 8.2	8.2	31.7 31.4	31.6	101.7 99.7	100.7	7.0 6.8	6.9	6.9	1.5 1.4	1.5	1.9
				Middle	13	25.7 25.7	25.7	8.3 8.2	8.3	31.3 31.3	31.3	101.4 101.4	101.4	6.9 6.9	6.9		1.8 2.0	1.9	
				Bottom	25	25.7 26.0	25.9	8.3 8.3	8.3	31.9 31.8	31.9	102.5 101.3	101.9	7.0 6.9	7.0	7.0	2.3 2.2	2.3	
F1	Cloudy	Moderate	18:12	Surface	1	25.3 25.4	25.4	8.0 8.0	8.0	32.1 31.5	31.8	97.8 97.9	97.9	6.7 6.7	6.7	6.7	1.7 1.5	1.6	1.7
				Middle	6	25.3 25.4	25.4	8.1 8.1	8.1	31.4 31.3	31.4	97.9 97.7	97.8	6.7 6.7	6.7		1.5 1.3	1.4	
				Bottom	11	25.5 25.5	25.5	8.2 8.2	8.2	30.8 30.8	30.8	97.1 97.3	97.2	6.7 6.7	6.7	6.7	1.9 2.0	2.0	
F5	Cloudy	Moderate	17:13	Surface	1	24.7 24.7	24.7	8.0 8.1	8.1	31.8 31.8	31.8	111.5 111.2	111.4	7.7 7.7	7.7	7.5	6.2 6.4	6.3	8.7
				Middle	4.5	24.7 24.7	24.7	8.1 8.1	8.1	31.9 32.0	32.0	105.5 105.0	105.3	7.3 7.3	7.3		7.9 8.3	8.1	
				Bottom	8	24.7 24.7	24.7	8.1 8.1	8.1	32.3 32.4	32.4	103.9 103.9	103.9	7.2 7.2	7.2	7.2	11.6 12.0	11.8	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
JM3	Cloudy	Moderate	18:33	Surface	1	25.5 25.6	25.6	8.3 8.3	8.3	32.0 31.9	32.0	93.3 92.8	93.1	7.1 7.0	7.1	7.1	2.7 2.6	2.7	3.3
				Middle	6.5	25.8 25.9	25.9	8.3 8.3	8.3	32.2 32.0	32.1	92.7 92.0	92.4	7.0 7.0	7.0		3.6 3.1	3.4	
				Bottom	12	25.8 25.8	25.8	8.3 8.3	8.3	32.2 32.1	32.2	93.1 92.8	93.0	7.0 7.0	7.0	7.0	3.9 3.7	3.8	
MM13	Cloudy	Moderate	16:03	Surface	1	25.8 25.8	25.8	8.3 8.3	8.3	31.5 31.5	31.5	99.3 99.8	99.6	6.8 6.8	6.8	6.8	1.3 1.2	1.3	1.7
				Middle	16	25.9 26.0	26.0	8.3 8.3	8.3	31.8 31.7	31.8	99.2 98.9	99.1	6.7 6.7	6.7		1.5 1.8	1.7	
				Bottom	31	25.9 26.0	26.0	8.3 8.3	8.3	31.6 31.5	31.6	98.4 98.2	98.3	6.7 6.7	6.7	6.7	1.9 2.3	2.1	
SM17	Cloudy	Moderate	16:11	Surface	1	24.2 24.2	24.2	8.1 8.1	8.1	32.0 32.0	32.0	115.1 114.2	114.7	8.0 8.0	8.0	8.0	2.8 2.7	2.8	3.6
				Middle	8.5	24.2 24.2	24.2	8.2 8.2	8.2	32.2 32.3	32.3	112.5 112.2	112.4	7.9 7.8	7.9		3.0 2.9	3.0	
				Bottom	16	24.2 24.2	24.2	8.2 8.2	8.2	32.0 31.8	31.9	109.0 108.4	108.7	7.6 7.6	7.6	7.6	5.2 4.9	5.1	
VM1	Cloudy	Moderate	17:59	Surface	1	23.9 24.1	24.0	8.4 8.4	8.4	33.7 33.7	33.7	108.1 109.1	108.6	8.2 8.3	8.3	8.2	3.8 3.6	3.7	4.6
				Middle	22	24.0 24.1	24.1	8.4 8.4	8.4	33.8 33.8	33.8	107.1 107.1	107.1	8.1 8.1	8.1		3.3 3.2	3.3	
				Bottom	43	24.0 24.1	24.1	8.4 8.4	8.4	33.8 33.8	33.8	105.9 106.1	106.0	8.0 8.1	8.1	8.1	6.6 6.7	6.7	
VM12	Cloudy	Moderate	18:07	Surface	1	24.5 24.4	24.5	8.0 8.0	8.0	31.8 31.8	31.8	123.0 122.9	123.0	8.6 8.6	8.6	8.6	4.9 5.1	5.0	8.7
				Middle	11	24.4 24.4	24.4	8.1 8.1	8.1	31.9 31.9	31.9	123.2 123.2	123.2	8.6 8.6	8.6		6.8 8.2	7.5	
				Bottom	21	24.2 24.2	24.2	8.2 8.1	8.2	31.9 31.9	31.9	121.9 122.0	122.0	8.5 8.5	8.5	8.5	12.9 14.0	13.5	
VM14	Cloudy	Moderate	18:39	Surface	1	24.1 24.2	24.2	8.1 8.1	8.1	31.0 31.7	31.4	121.4 120.9	121.2	8.5 8.5	8.5	8.4	3.7 4.0	3.9	8.8
				Middle	6	24.2 24.1	24.2	8.2 8.1	8.2	31.8 31.8	31.8	119.3 118.9	119.1	8.3 8.3	8.3		7.1 7.8	7.5	
				Bottom	11	24.3 24.2	24.3	8.2 8.2	8.2	32.0 32.1	32.1	119.1 118.9	119.0	8.3 8.3	8.3	8.3	14.5 15.5	15.0	
VM15	Cloudy	Moderate	17:50	Surface	1	24.5 24.3	24.4	8.0 8.0	8.0	31.7 31.8	31.8	122.6 123.5	123.1	8.5 8.6	8.6	8.5	7.0 7.0	7.0	7.7
				Middle	6.5	24.3 24.3	24.3	8.2 8.2	8.2	31.8 31.9	31.9	117.9 120.1	119.0	8.2 8.4	8.3		7.5 8.5	8.0	
				Bottom	12	24.4 24.5	24.5	8.2 8.3	8.3	32.0 32.3	32.2	112.8 113.9	113.4	7.9 7.9	7.9	7.9	7.8 8.1	8.0	
VM2	Cloudy	Moderate	17:23	Surface	1	24.0 24.2	24.1	8.4 8.4	8.4	33.5 33.4	33.5	105.5 105.3	105.4	8.0 8.0	8.0	8.0	3.3 3.5	3.4	4.1
				Middle	7	24.1 24.2	24.2	8.4 8.4	8.4	33.6 33.4	33.5	103.4 103.8	103.6	7.9 7.9	7.9		3.4 3.4	3.4	
				Bottom	13	24.0 24.2	24.1	8.4 8.4	8.4	33.7 33.7	33.7	101.3 101.6	101.5	7.7 7.7	7.7	7.7	5.7 5.0	5.4	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
VM4	Cloudy	Moderate	16:46	Surface	1	23.8 24.3	24.1	8.3 8.3	8.3	31.7 33.2	32.5	97.4 96.5	97.0	7.4 7.3	7.4	7.3	3.1 2.9	3.0	3.7
				Middle	7.5	24.1 24.3	24.2	8.3 8.3	8.3	33.5 33.3	33.4	95.4 94.6	95.0	7.2 7.2	7.2		2.7 2.8	2.8	
				Bottom	14	24.3 24.3	24.3	8.3 8.3	8.3	33.4 33.4	33.4	93.7 93.8	93.8	7.1 7.1	7.1	7.1	5.0 5.5	5.3	
VM5	Cloudy	Moderate	16:57	Surface	1	23.4 24.3	23.9	8.4 8.4	8.4	30.3 30.0	30.2	111.0 110.0	110.5	8.4 8.4	8.4	8.2	2.5 2.3	2.4	3.6
				Middle	7.5	24.1 24.4	24.3	8.4 8.4	8.4	33.3 33.2	33.3	104.8 104.9	104.9	8.0 8.0	8.0		2.9 3.1	3.0	
				Bottom	14	24.3 24.4	24.4	8.4 8.4	8.4	33.3 33.3	33.3	103.2 104.1	103.7	7.8 7.9	7.9	7.9	5.4 5.2	5.3	
VM7	Cloudy	Moderate	16:37	Surface	1	24.1 24.2	24.2	8.0 8.0	8.0	31.6 31.6	31.6	118.8 119.2	119.0	8.3 8.4	8.4	8.3	6.4 6.3	6.4	7.9
				Middle	6	24.4 24.4	24.4	8.1 8.1	8.1	31.7 31.7	31.7	116.8 117.9	117.4	8.1 8.2	8.2		8.5 7.6	8.1	
				Bottom	11	24.4 24.4	24.4	8.2 8.2	8.2	31.9 32.0	32.0	114.9 116.0	115.5	8.0 8.1	8.1	8.1	9.1 9.3	9.2	
VM8	Cloudy	Moderate	16:16	Surface	1	25.4 25.3	25.4	7.9 8.0	8.0	31.7 31.7	31.7	123.9 124.4	124.2	8.5 8.5	8.5	8.5	6.6 6.8	6.7	7.9
				Middle	6.5	24.9 24.7	24.8	8.0 8.0	8.0	32.0 32.3	32.2	121.4 120.8	121.1	8.4 8.4	8.4		8.7 7.3	8.0	
				Bottom	12	24.6 24.5	24.6	8.1 8.1	8.1	32.4 32.5	32.5	119.5 119.5	119.5	8.3 8.3	8.3	8.3	8.8 9.4	9.1	
WSD10	Cloudy	Moderate	19:16	Surface	1	24.1 24.2	24.2	8.4 8.4	8.4	33.6 33.8	33.7	111.9 112.0	112.0	8.5 8.5	8.5	8.5	2.9 2.8	2.9	3.9
				Middle	6	24.1 24.2	24.2	8.4 8.4	8.4	33.7 33.6	33.7	110.8 110.4	110.6	8.4 8.4	8.4		3.3 3.0	3.2	
				Bottom	11	24.2 24.2	24.2	8.4 8.4	8.4	33.6 33.6	33.6	110.4 109.9	110.2	8.4 8.3	8.4	8.4	5.8 5.6	5.7	
WSD11	Cloudy	Moderate	19:04	Surface	1	24.0 24.2	24.1	8.4 8.4	8.4	33.8 32.2	33.0	111.3 111.1	111.2	8.5 8.4	8.5	8.5	2.9 3.0	3.0	4.2
				Middle	9.5	24.0 24.2	24.1	8.4 8.4	8.4	33.9 33.7	33.8	110.7 110.6	110.7	8.4 8.4	8.4		3.4 3.4	3.4	
				Bottom	18	24.2 24.2	24.2	8.4 8.4	8.4	33.7 33.7	33.7	109.9 109.9	109.9	8.3 8.3	8.3	8.3	6.3 6.2	6.3	
WSD12	Cloudy	Moderate	18:42	Surface	1	25.8 25.8	25.8	8.3 8.3	8.3	32.1 32.0	32.1	92.6 93.0	92.8	7.0 7.0	7.0	7.1	4.6 4.8	4.7	5.3
				Middle	4	25.8 25.8	25.8	8.3 8.3	8.3	32.1 32.2	32.2	93.0 93.6	93.3	7.0 7.1	7.1		5.0 5.0	5.0	
				Bottom	7	25.8 25.8	25.8	8.3 8.3	8.3	30.3 30.3	30.3	94.3 94.5	94.4	7.1 7.2	7.2	7.2	6.1 6.5	6.3	
WSD13	Cloudy	Moderate	18:24	Surface	1	24.9 25.2	25.1	8.2 8.2	8.2	32.7 32.4	32.6	92.3 90.2	91.3	7.0 6.8	6.9	6.9	2.0 1.8	1.9	3.0
				Middle	7	25.3 25.3	25.3	8.3 8.2	8.3	32.3 32.3	32.3	91.6 91.6	91.6	6.9 6.9	6.9		3.6 3.4	3.5	
				Bottom	13	25.3 25.6	25.5	8.3 8.3	8.3	29.9 29.8	29.9	92.3 90.8	91.6	7.0 6.9	7.0	7.0	3.8 3.5	3.7	

Remarks: *DA: Depth-Averaged

**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Contract No. DC/2009/10
HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works
- Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Water Quality Monitoring Results on 22 November 2014 (Mid-Flood Tide)

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
WSD15	Cloudy	Moderate	17:47	Surface	1	24.0 24.1	24.1	8.4 8.4	8.4	33.8 33.7	33.8	108.6 108.8	108.7	8.2 8.3	8.3	8.3	2.1 2.5	2.3	3.4
				Middle	7.5	24.0 24.1	24.1	8.4 8.4	8.4	33.9 33.8	33.9	107.7 107.7	107.7	8.2 8.2	8.2		2.2 2.6	2.4	
				Bottom	14	24.0 24.1	24.1	8.4 8.4	8.4	33.9 33.9	33.9	105.8 106.6	106.2	8.0 8.1	8.1	8.1	5.8 5.1	5.5	
WSD17	Cloudy	Moderate	17:35	Surface	1	24.1 24.2	24.2	8.4 8.4	8.4	33.7 33.6	33.7	104.5 104.2	104.4	7.9 7.9	7.9	7.9	2.7 3.0	2.9	4.1
				Middle	6	24.1 24.2	24.2	8.4 8.4	8.4	33.8 33.7	33.8	104.5 104.5	104.5	7.9 7.9	7.9		3.8 3.7	3.8	
				Bottom	11	24.2 24.2	24.2	8.4 8.4	8.4	33.7 33.7	33.7	102.8 103.2	103.0	7.8 7.8	7.8	7.8	5.6 5.5	5.6	
WSD18	Cloudy	Moderate	17:07	Surface	1	24.3 24.3	24.3	8.1 8.1	8.1	30.8 30.9	30.9	119.9 120.5	120.2	8.4 8.5	8.5	8.5	6.4 6.7	6.6	7.7
				Middle	5.5	24.3 24.3	24.3	8.1 8.2	8.2	31.1 31.2	31.2	121.0 120.9	121.0	8.5 8.5	8.5		7.9 7.9	7.9	
				Bottom	10	24.2 24.2	24.2	8.2 8.2	8.2	31.4 31.4	31.4	113.5 113.2	113.4	8.0 7.9	8.0	8.0	8.3 8.7	8.5	
WSD19	Cloudy	Moderate	16:57	Surface	1	24.3 24.4	24.4	8.2 8.2	8.2	31.6 32.0	31.8	120.1 120.7	120.4	8.4 8.4	8.4	8.4	6.8 7.4	7.1	7.8
				Middle	6.5	24.4 24.4	24.4	8.2 8.2	8.2	32.1 32.2	32.2	119.0 119.5	119.3	8.3 8.3	8.3		7.4 8.0	7.7	
				Bottom	12	24.4 24.4	24.4	8.2 8.2	8.2	32.2 32.2	32.2	118.7 118.2	118.5	8.3 8.2	8.3	8.3	8.4 8.5	8.5	
WSD20	Cloudy	Moderate	16:26	Surface	1	24.5 24.5	24.5	8.1 8.1	8.1	32.4 32.4	32.4	122.5 122.5	122.5	8.5 8.5	8.5	8.5	8.1 8.5	8.3	7.7
				Middle	5.5	24.4 24.4	24.4	8.1 8.1	8.1	32.5 32.5	32.5	122.4 122.3	122.4	8.5 8.5	8.5		7.6 7.6	7.6	
				Bottom	10	24.4 24.4	24.4	8.2 8.2	8.2	32.5 32.5	32.5	122.2 122.2	122.2	8.5 8.5	8.5	8.5	7.3 7.3	7.3	
WSD22	Cloudy	Moderate	17:09	Surface	1	24.0 24.4	24.2	8.3 8.3	8.3	29.4 28.6	29.0	97.8 98.0	97.9	7.4 7.4	7.4	7.4	3.2 3.1	3.2	3.3
				Middle	4.5	24.3 24.4	24.4	8.3 8.3	8.3	33.3 33.2	33.3	96.3 96.7	96.5	7.3 7.3	7.3		1.9 1.9	1.9	
				Bottom	8	24.4 24.4	24.4	8.3 8.3	8.3	33.3 33.2	33.3	95.1 94.5	94.8	7.2 7.2	7.2	7.2	4.8 4.5	4.7	
WSD5	Cloudy	Moderate	18:27	Surface	1	24.4 24.4	24.4	8.1 8.2	8.2	31.8 31.8	31.8	121.3 121.3	121.3	8.5 8.5	8.5	8.5	2.8 3.3	3.1	7.7
				Middle	8	24.4 24.4	24.4	8.2 8.2	8.2	31.8 31.9	31.9	120.3 119.0	119.7	8.4 8.3	8.4		7.9 8.0	8.0	
				Bottom	15	24.4 24.4	24.4	8.2 8.2	8.2	31.9 31.9	31.9	118.3 118.0	118.2	8.2 8.2	8.2	8.2	11.3 12.5	11.9	
WSD6	Cloudy	Moderate	17:36	Surface	1	24.5 24.5	24.5	8.0 8.1	8.1	31.4 31.5	31.5	120.9 119.1	120.0	8.4 8.3	8.4	8.4	4.9 6.1	5.5	8.8
				Middle	3	24.5 24.5	24.5	8.0 8.1	8.1	31.7 31.8	31.8	118.8 117.4	118.1	8.3 8.2	8.3		8.3 7.7	8.0	
				Bottom	5	24.3 24.3	24.3	8.1 8.2	8.2	31.9 31.9	31.9	116.4 115.0	115.7	8.1 8.0	8.1	8.1	13.6 12.3	13.0	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

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Water Quality Monitoring Results on 22 November 2014 (Mid-Flood Tide)

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
WSD7	Cloudy	Moderate	17:20	Surface	1	24.3 24.3	24.3	8.1 8.1	8.1	31.4 31.8	31.6	119.7 119.0	119.4	8.4 8.3	8.4	8.3	8.0 7.6	7.8	10.5
				Middle	4.5	24.3 24.3	24.3	8.1 8.1	8.1	31.8 31.8	31.8	117.6 116.5	117.1	8.2 8.1	8.2		7.8 8.1	8.0	
				Bottom	8	24.3 24.3	24.3	8.1 8.2	8.2	32.0 32.0	32.0	114.8 114.6	114.7	8.0 8.0	8.0	8.0	16.6 14.7	15.7	
WSD9	Cloudy	Moderate	16:34	Surface	1	24.4 24.4	24.4	8.3 8.4	8.4	32.6 32.6	32.6	103.0 102.4	102.7	7.8 7.8	7.8	7.7	1.9 1.7	1.8	3.1
				Middle	4.5	24.4 24.4	24.4	8.3 8.4	8.4	32.9 33.0	33.0	99.5 100.0	99.8	7.6 7.6	7.6		2.0 1.7	1.9	
				Bottom	8	24.4 24.4	24.4	8.3 8.4	8.4	32.9 33.1	33.0	94.3 94.7	94.5	7.2 7.2	7.2	7.2	5.8 5.5	5.7	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Contract No. DC/2009/10
HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works
- Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Water Quality Monitoring Results on 13 December 2014 (Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
B10	Fine	Moderate	17:51	Surface	1	21.6 21.8	21.7	8.1 8.2	8.2	33.4 33.0	33.2	94.9 92.7	93.8	6.9 6.7	6.8	6.8	5.9 5.6	5.8	5.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.5	21.7 22.0	21.9	8.2 8.2	8.2	33.1 32.9	33.0	97.2 95.7	96.5	7.1 6.9	7.0	7.0	6.1 5.8	6.0	
B11	Fine	Moderate	17:56	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.6	- -	-	5.3
				Middle	1.1	21.7 21.9	21.8	8.1 8.1	8.1	33.2 33.0	33.1	93.0 90.0	91.5	6.7 6.5	6.6		5.4 5.2	5.3	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B12	Fine	Moderate	18:00	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.9	- -	-	5.9
				Middle	1.1	21.4 21.8	21.6	8.1 8.1	8.1	32.8 32.9	32.9	96.0 93.5	94.8	7.0 6.8	6.9		5.9 5.9	5.9	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B13	Fine	Moderate	18:06	Surface	1	21.8 21.9	21.9	8.1 8.1	8.1	31.0 31.3	31.2	91.4 91.0	91.2	6.7 6.7	6.7	6.7	6.8 6.7	6.8	7.8
				Middle	3	21.8 22.0	21.9	8.1 8.1	8.1	33.0 33.0	33.0	92.5 90.2	91.4	6.7 6.5	6.6		7.6 7.1	7.4	
				Bottom	5	21.8 22.0	21.9	8.1 8.1	8.1	33.5 33.7	33.6	91.6 88.7	90.2	6.6 6.4	6.5	6.5	8.9 9.3	9.1	
B14	Fine	Moderate	17:15	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.8	- -	-	4.7
				Middle	1	21.4 21.5	21.5	8.2 8.2	8.2	32.0 31.9	32.0	106.0 105.7	105.9	7.8 7.8	7.8		4.8 4.5	4.7	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B24	Fine	Moderate	17:16	Surface	1	20.2 20.1	20.2	8.2 8.2	8.2	30.1 30.1	30.1	103.6 102.8	103.2	7.9 7.8	7.9	7.9	3.7 4.0	3.9	5.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	4.6	19.9 19.1	19.5	8.2 8.2	8.2	30.2 30.7	30.5	99.3 96.8	98.1	7.6 7.5	7.6	7.6	7.1 7.8	7.5	
B25	Fine	Moderate	17:04	Surface	1	20.2 20.1	20.2	8.1 8.0	8.1	30.0 30.1	30.1	105.5 103.7	104.6	8.0 7.9	8.0	8.0	2.8 3.3	3.1	5.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	4.1	19.9 19.3	19.6	8.0 8.1	8.1	30.4 30.6	30.5	103.1 101.7	102.4	7.9 7.8	7.9	7.9	7.9 8.0	8.0	
B26	Fine	Moderate	16:52	Surface	1	19.3 20.3	19.8	8.1 8.2	8.2	29.7 29.8	29.8	106.3 108.0	107.2	8.2 8.2	8.2	8.2	4.9 6.1	5.5	8.8
				Middle	4	19.7 20.3	20.0	8.2 8.2	8.2	30.1 30.2	30.2	107.0 107.9	107.5	8.2 8.2	8.2		8.3 7.7	8.0	
				Bottom	7	20.0 20.3	20.2	8.1 8.2	8.2	30.2 30.0	30.1	107.3 108.0	107.7	8.2 8.2	8.2	8.2	13.6 12.3	13.0	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

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Water Quality Monitoring Results on 13 December 2014 (Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
B7	Fine	Moderate	17:33	Surface	1	20.6 21.2	20.9	8.1 8.1	8.1	33.6 33.2	33.4	99.3 96.0	97.7	7.3 7.0	7.2	7.2	7.5 7.2	7.4	7.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.5	21.5 21.6	21.6	8.2 8.2	8.2	33.1 32.9	33.0	95.6 94.6	95.1	7.0 6.9	7.0	7.0	6.4 6.6	6.5	
B8	Fine	Moderate	17:42	Surface	1	20.7 20.9	20.8	8.2 8.2	8.2	33.1 32.9	33.0	97.0 95.7	96.4	7.2 7.1	7.2	7.2	6.8 6.9	6.9	7.1
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.5	21.2 21.4	21.3	8.2 8.2	8.2	33.3 33.2	33.3	95.7 94.9	95.3	7.0 6.9	7.0	7.0	7.2 7.2	7.2	
B9	Fine	Moderate	17:47	Surface	1	21.6 21.7	21.7	8.2 8.2	8.2	32.6 32.8	32.7	94.3 91.2	92.8	6.9 6.6	6.8	6.8	6.8 6.7	6.8	7.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.5	21.7 21.8	21.8	8.2 8.2	8.2	33.4 33.5	33.5	93.1 91.1	92.1	6.7 6.6	6.7	6.7	7.1 7.0	7.1	
EM1	Fine	Moderate	16:38	Surface	1	20.1 20.7	20.4	8.0 8.3	8.2	30.4 30.0	30.2	76.6 82.7	79.7	5.8 6.2	6.0	5.9	3.5 3.5	3.5	4.2
				Middle	9.5	20.1 20.3	20.2	8.1 8.3	8.2	32.8 33.2	33.0	74.1 82.3	78.2	5.5 6.1	5.8		4.5 4.8	4.7	
				Bottom	18	19.2 19.9	19.6	8.3 8.3	8.3	33.1 33.7	33.4	82.2 83.7	83.0	6.2 6.3	6.3	6.3	4.3 4.6	4.5	
EM2	Fine	Moderate	16:48	Surface	1	20.4 20.7	20.6	8.3 8.3	8.3	31.0 31.0	31.0	83.0 82.2	82.6	6.2 6.2	6.2	7.1	4.0 3.9	4.0	4.9
				Middle	10.5	20.1 20.6	20.4	8.3 8.3	8.3	32.2 32.1	32.2	105.6 104.5	105.1	7.9 7.8	7.9		7.5 7.0	7.3	
				Bottom	20	20.9 20.2	20.6	8.3 8.3	8.3	32.9 32.3	32.6	109.1 107.1	108.1	8.0 8.0	8.0	8.0	3.2 3.3	3.3	
EM3	Fine	Moderate	16:37	Surface	1	20.3 20.3	20.3	8.2 8.2	8.2	28.9 29.1	29.0	108.3 109.1	108.7	8.3 8.3	8.3	8.3	4.9 5.1	5.0	8.7
				Middle	15	20.3 20.2	20.3	8.1 8.1	8.1	29.4 29.8	29.6	107.6 107.2	107.4	8.2 8.2	8.2		6.8 8.2	7.5	
				Bottom	29	20.0 19.3	19.7	8.2 8.2	8.2	30.0 30.3	30.2	106.7 105.6	106.2	8.1 8.1	8.1	8.1	12.9 14.0	13.5	
F1	Fine	Moderate	16:55	Surface	1	20.3 20.2	20.3	8.3 8.3	8.3	31.1 31.4	31.3	106.2 97.1	101.7	8.0 7.3	7.7	7.7	3.5 3.4	3.5	5.0
				Middle	6	20.3 21.8	21.1	8.3 8.3	8.3	31.8 32.9	32.4	104.0 102.1	103.1	7.8 7.4	7.6		7.1 7.0	7.1	
				Bottom	11	21.8 21.9	21.9	8.2 8.3	8.3	32.0 32.0	32.0	104.7 104.6	104.7	7.6 7.6	7.6	7.6	4.1 4.8	4.5	
F5	Fine	Moderate	17:22	Surface	1	20.8 21.2	21.0	8.1 8.1	8.1	33.2 33.0	33.1	100.3 97.0	98.7	7.4 7.1	7.3	7.2	9.8 10.1	10.0	11.8
				Middle	5	21.4 21.7	21.6	8.1 8.1	8.1	33.4 33.4	33.4	97.0 93.2	95.1	7.1 6.8	7.0		12.5 12.7	12.6	
				Bottom	9	21.6 21.8	21.7	8.2 8.2	8.2	33.6 33.5	33.6	95.0 91.9	93.5	6.9 6.6	6.8	6.8	12.8 12.6	12.7	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Contract No. DC/2009/10

HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works

- Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Water Quality Monitoring Results on 13 December 2014 (Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
JM3	Fine	Moderate	16:30	Surface	1	20.6 20.8	20.7	8.1 8.0	8.1	30.4 32.7	31.6	78.2 76.6	77.4	5.9 5.7	5.8	5.9	1.9 2.1	2.0	2.0
				Middle	6	20.2 20.7	20.5	8.1 8.1	8.1	31.5 30.1	30.8	83.9 72.5	78.2	6.3 5.5	5.9		1.8 2.0	1.9	
				Bottom	11	20.6 20.6	20.6	8.0 8.0	8.0	30.8 31.4	31.1	73.5 74.4	74.0	5.5 5.6	5.6	5.6	2.2 2.2	2.2	
MM13	Fine	Moderate	15:55	Surface	1	20.0 20.0	20.0	8.2 8.1	8.2	28.9 29.2	29.1	107.0 107.2	107.1	8.2 8.2	8.2	8.2	2.2 2.1	2.2	5.4
				Middle	17	20.0 19.8	19.9	8.2 8.2	8.2	29.7 29.9	29.8	106.3 106.5	106.4	8.1 8.2	8.2		4.0 4.2	4.1	
				Bottom	33	20.0 19.1	19.6	8.2 8.2	8.2	30.0 30.1	30.1	106.3 104.2	105.3	8.1 8.1	8.1	8.1	9.0 11.0	10.0	
SM17	Fine	Moderate	16:01	Surface	1	20.8 20.8	20.8	8.2 8.2	8.2	33.0 33.3	33.2	102.0 98.9	100.5	7.5 7.3	7.4	7.5	5.2 5.4	5.3	6.6
				Middle	8.5	20.7 20.8	20.8	8.2 8.2	8.2	33.5 33.6	33.6	101.2 100.0	100.6	7.5 7.4	7.5		6.1 6.0	6.1	
				Bottom	16	20.9 20.8	20.9	8.2 8.2	8.2	33.8 33.4	33.6	101.1 101.2	101.2	7.4 7.5	7.5	7.5	8.2 8.3	8.3	
VM1	Fine	Moderate	16:12	Surface	1	20.2 21.0	20.6	8.0 8.0	8.0	31.5 32.5	32.0	73.5 76.5	75.0	5.5 5.6	5.6	5.7	1.9 1.9	1.9	2.2
				Middle	22	20.6 20.9	20.8	8.0 8.0	8.0	33.1 32.9	33.0	77.3 79.0	78.2	5.7 5.8	5.8		2.0 2.1	2.1	
				Bottom	43	20.8 20.8	20.8	8.0 8.0	8.0	33.0 32.6	32.8	75.0 75.2	75.1	5.5 5.6	5.6	5.6	2.6 2.5	2.6	
VM12	Fine	Moderate	18:30	Surface	1	21.9 21.8	21.9	8.2 8.2	8.2	32.9 33.0	33.0	92.1 91.8	92.0	6.7 6.7	6.7	6.7	9.2 8.9	9.1	11.4
				Middle	10	21.9 22.2	22.1	8.1 8.2	8.2	33.2 33.0	33.1	93.0 90.2	91.6	6.7 6.5	6.6		12.4 11.9	12.2	
				Bottom	19	22.0 22.1	22.1	8.1 8.2	8.2	33.3 33.2	33.3	91.6 90.6	91.1	6.6 6.5	6.6	6.6	12.8 12.8	12.8	
VM14	Fine	Moderate	18:14	Surface	1	21.7 21.8	21.8	8.1 8.1	8.1	32.9 33.1	33.0	88.1 87.0	87.6	6.4 6.3	6.4	6.2	10.4 10.9	10.7	11.5
				Middle	6	22.1 22.1	22.1	8.1 8.1	8.1	33.2 33.2	33.2	83.9 83.8	83.9	6.0 6.0	6.0		11.6 11.4	11.5	
				Bottom	11	22.0 22.1	22.1	8.1 8.1	8.1	33.4 33.4	33.4	85.5 83.6	84.6	6.2 6.0	6.1	6.1	12.3 12.0	12.2	
VM15	Fine	Moderate	17:55	Surface	1	21.1 21.0	21.1	8.1 8.2	8.2	32.7 29.9	31.3	98.4 95.5	97.0	7.2 7.2	7.2	7.2	4.9 5.2	5.1	5.3
				Middle	6	21.0 21.1	21.1	8.2 8.2	8.2	32.6 32.4	32.5	96.4 95.8	96.1	7.1 7.1	7.1		4.8 5.3	5.1	
				Bottom	11	21.0 21.1	21.1	8.1 8.1	8.1	32.6 32.5	32.6	96.3 95.5	95.9	7.1 7.0	7.1	7.1	5.3 6.2	5.8	
VM2	Fine	Moderate	17:33	Surface	1	21.8 21.1	21.5	8.2 8.3	8.3	31.3 31.5	31.4	96.8 99.7	98.3	7.1 7.4	7.3	7.3	4.8 4.8	4.8	4.6
				Middle	6	21.6 21.0	21.3	8.2 8.3	8.3	30.1 29.9	30.0	94.4 96.8	95.6	7.0 7.3	7.2		6.3 6.2	6.3	
				Bottom	11	21.0 21.0	21.0	8.3 8.3	8.3	32.1 31.6	31.9	102.2 102.2	102.2	7.6 7.6	7.6	7.6	2.7 2.8	2.8	

Remarks: *DA: Depth-Averaged

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Water Quality Monitoring Results on 13 December 2014 (Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
VM4	Fine	Moderate	16:36	Surface	1	20.3 20.9	20.6	8.2 8.2	8.2	31.9 32.6	32.3	110.7 104.9	107.8	8.3 7.7	8.0	7.9	5.7 6.9	6.3	6.2
				Middle	7	20.4 20.9	20.7	8.3 8.2	8.3	33.3 32.6	33.0	105.0 104.8	104.9	7.8 7.7	7.8		6.0 6.7	6.4	
				Bottom	13	20.8 20.9	20.9	8.2 8.2	8.2	32.9 32.6	32.8	103.5 103.4	103.5	7.6 7.6	7.6	7.6	6.1 5.7	5.9	
VM5	Fine	Moderate	16:49	Surface	1	20.0 21.1	20.6	8.2 8.1	8.2	33.3 31.1	32.2	97.3 91.5	94.4	7.3 6.8	7.1	6.9	5.2 5.1	5.2	6.0
				Middle	7	20.7 21.1	20.9	8.2 8.2	8.2	33.1 32.6	32.9	91.4 90.2	90.8	6.8 6.6	6.7		6.2 6.3	6.3	
				Bottom	13	20.9 21.1	21.0	8.2 8.2	8.2	33.0 32.6	32.8	91.4 91.4	91.4	6.7 6.7	6.7	6.7	6.0 6.7	6.4	
VM7	Fine	Moderate	17:45	Surface	1	21.1 21.0	21.1	8.1 8.1	8.1	32.3 30.2	31.3	103.2 90.1	96.7	7.6 6.7	7.2	7.0	8.3 7.5	7.9	8.0
				Middle	6.5	20.6 21.0	20.8	8.1 8.2	8.2	33.5 32.9	33.2	91.6 90.1	90.9	6.8 6.6	6.7		8.2 8.2	8.2	
				Bottom	12	21.0 21.1	21.1	7.7 7.8	7.8	33.2 32.6	32.9	83.4 87.3	85.4	6.1 6.4	6.3	6.3	7.6 8.2	7.9	
VM8	Fine	Moderate	17:34	Surface	1	21.2 20.9	21.1	8.2 8.1	8.2	32.2 33.0	32.6	115.0 106.2	110.6	8.5 7.8	8.2	8.1	4.4 4.3	4.4	6.5
				Middle	6.5	20.2 20.9	20.6	8.1 8.1	8.1	33.7 33.0	33.4	108.3 106.2	107.3	8.0 7.8	7.9		7.8 6.5	7.2	
				Bottom	12	20.8 20.9	20.9	8.1 8.2	8.2	33.3 33.0	33.2	106.9 106.4	106.7	7.9 7.8	7.9	7.9	8.0 7.5	7.8	
WSD10	Fine	Moderate	15:54	Surface	1	20.6 21.0	20.8	8.3 8.3	8.3	32.4 30.0	31.2	106.1 106.2	106.2	7.9 7.9	7.9	7.9	3.9 3.8	3.9	4.7
				Middle	7	20.8 21.0	20.9	8.3 8.3	8.3	32.4 33.0	32.7	103.9 107.1	105.5	7.7 7.9	7.8		2.6 2.8	2.7	
				Bottom	13	20.9 21.0	21.0	8.3 8.3	8.3	32.5 32.9	32.7	102.5 103.0	102.8	7.6 7.6	7.6	7.6	7.4 7.3	7.4	
WSD11	Fine	Moderate	16:00	Surface	1	20.7 20.2	20.5	8.1 8.3	8.2	30.4 30.2	30.3	84.4 83.8	84.1	6.3 6.4	6.4	6.3	3.4 3.5	3.5	4.5
				Middle	8.5	20.4 20.6	20.5	8.2 8.3	8.3	31.3 31.4	31.4	82.9 83.4	83.2	6.2 6.2	6.2		2.8 2.8	2.8	
				Bottom	16	21.9 21.6	21.8	8.3 8.3	8.3	32.1 33.1	32.6	84.7 84.9	84.8	6.2 6.2	6.2	6.2	7.0 7.3	7.2	
WSD12	Fine	Moderate	16:23	Surface	1	20.2 20.7	20.5	8.1 8.1	8.1	31.8 30.2	31.0	69.5 85.7	77.6	5.2 6.4	5.8	5.8	2.2 2.2	2.2	2.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	4.9	20.4 20.7	20.6	8.1 8.1	8.1	31.5 31.1	31.3	76.7 70.9	73.8	5.8 5.3	5.6	5.6	2.0 2.1	2.1	
WSD13	Fine	Moderate	17:07	Surface	1	20.2 20.5	20.4	8.3 8.3	8.3	30.4 30.2	30.3	97.1 105.8	101.5	7.4 8.0	7.7	7.7	3.8 4.0	3.9	5.4
				Middle	6.5	20.8 20.7	20.8	8.3 8.3	8.3	32.7 31.1	31.9	99.7 104.5	102.1	7.4 7.8	7.6		7.6 7.7	7.7	
				Bottom	12	21.4 21.9	21.7	8.3 8.3	8.3	34.0 34.0	34.0	110.5 110.6	110.6	8.0 8.0	8.0	8.0	4.5 4.4	4.5	

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Water Quality Monitoring Results on 13 December 2014 (Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
WSD15	Fine	Moderate	17:19	Surface	1	21.3 20.8	21.1	8.3 8.2	8.3	31.9 30.9	31.4	93.7 89.7	91.7	6.9 6.7	6.8	6.6	2.8 2.6	2.7	4.1
				Middle	6.5	20.4 20.6	20.5	8.3 8.2	8.3	30.6 30.5	30.6	83.7 84.7	84.2	6.3 6.4	6.4		6.6 6.4	6.5	
				Bottom	12	21.8 21.7	21.8	8.2 8.2	8.2	32.6 31.6	32.1	88.0 87.9	88.0	6.4 6.4	6.4	6.4	3.1 3.1	3.1	
WSD17	Fine	Moderate	17:27	Surface	1	20.4 20.5	20.5	8.2 8.2	8.2	30.8 31.4	31.1	82.5 95.1	88.8	6.2 7.1	6.7	6.7	3.7 4.3	4.0	4.9
				Middle	5.5	20.4 20.1	20.3	8.1 8.2	8.2	32.8 32.2	32.5	81.7 92.7	87.2	6.1 7.0	6.6		6.7 6.6	6.7	
				Bottom	10	18.8 19.2	19.0	8.2 8.2	8.2	31.4 33.8	32.6	93.5 95.1	94.3	7.2 7.2	7.2	7.2	3.8 4.0	3.9	
WSD18	Fine	Moderate	17:05	Surface	1	20.9 21.0	21.0	8.1 8.1	8.1	30.4 30.3	30.4	107.5 87.7	97.6	8.0 6.6	7.3	6.9	5.9 6.1	6.0	7.6
				Middle	6	20.6 21.1	20.9	8.2 8.2	8.2	33.2 32.7	33.0	89.1 87.6	88.4	6.6 6.4	6.5		6.6 7.1	6.9	
				Bottom	11	20.9 21.1	21.0	8.2 8.2	8.2	33.0 32.7	32.9	88.3 87.4	87.9	6.5 6.4	6.5	6.5	9.9 9.6	9.8	
WSD19	Fine	Moderate	17:14	Surface	1	20.9 21.0	21.0	8.1 8.1	8.1	33.1 30.2	31.7	96.9 88.9	92.9	7.1 6.6	6.9	6.8	5.8 6.1	6.0	6.3
				Middle	7	20.8 21.0	20.9	8.2 8.1	8.2	33.2 32.7	33.0	89.3 89.2	89.3	6.6 6.6	6.6		6.2 6.6	6.4	
				Bottom	13	21.0 21.0	21.0	8.2 8.1	8.2	33.1 32.9	33.0	87.9 86.7	87.3	6.5 6.4	6.5	6.5	6.2 6.7	6.5	
WSD20	Fine	Moderate	17:25	Surface	1	20.0 20.9	20.5	8.2 8.2	8.2	34.0 30.4	32.2	104.4 101.0	102.7	7.8 7.6	7.7	7.7	7.3 7.9	7.6	7.5
				Middle	5.5	20.6 20.9	20.8	8.4 8.4	8.4	33.6 33.0	33.3	102.6 101.7	102.2	7.6 7.5	7.6		7.4 7.6	7.5	
				Bottom	10	20.9 20.9	20.9	8.4 8.4	8.4	33.3 33.1	33.2	101.4 100.4	100.9	7.5 7.4	7.5	7.5	7.4 7.5	7.5	
WSD22	Fine	Moderate	16:56	Surface	1	20.2 21.0	20.6	8.1 8.2	8.2	32.0 30.1	31.1	92.2 87.8	90.0	6.9 6.6	6.8	6.7	7.0 7.3	7.2	7.4
				Middle	4.5	20.7 21.0	20.9	8.2 8.3	8.3	32.9 32.7	32.8	89.3 87.9	88.6	6.6 6.5	6.6		7.6 7.8	7.7	
				Bottom	8	20.9 21.0	21.0	8.2 8.3	8.3	33.0 32.7	32.9	88.9 88.4	88.7	6.6 6.5	6.6	6.6	6.9 7.8	7.4	
WSD5	Fine	Moderate	18:22	Surface	1	21.2 21.5	21.4	8.1 8.1	8.1	33.1 33.0	33.1	86.6 85.1	85.9	6.3 6.2	6.3	6.2	8.7 8.6	8.7	11.3
				Middle	7.5	21.8 22.0	21.9	8.1 8.1	8.1	33.0 33.0	33.0	85.2 83.1	84.2	6.2 6.0	6.1		11.4 11.2	11.3	
				Bottom	14	22.0 22.1	22.1	8.1 8.1	8.1	33.2 33.2	33.2	84.3 82.6	83.5	6.1 6.0	6.1	6.1	13.6 14.3	14.0	
WSD6	Fine	Moderate	15:52	Surface	1	21.3 21.2	21.3	8.1 8.1	8.1	32.7 32.9	32.8	103.2 101.0	102.1	7.6 7.4	7.5	7.5	7.8 7.6	7.7	7.3
				Middle	3	21.3 21.2	21.3	8.1 8.0	8.1	32.7 32.9	32.8	101.9 101.3	101.6	7.5 7.4	7.5		6.6 7.1	6.9	
				Bottom	5	21.1 21.2	21.2	8.0 8.0	8.0	33.1 32.8	33.0	93.6 98.3	96.0	6.9 7.2	7.1	7.1	6.7 7.8	7.3	

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Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
WSD7	Fine	Moderate	16:08	Surface	1	20.4 21.1	20.8	8.1 8.1	8.1	33.3 32.9	33.1	97.4 93.9	95.7	7.2 6.9	7.1	7.1	6.2 6.2	6.2	6.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	4.8	21.0 21.1	21.1	8.1 8.1	8.1	33.2 32.9	33.1	93.1 92.2	92.7	6.8 6.8	6.8	6.8	5.7 5.6	5.7	
WSD9	Fine	Moderate	16:26	Surface	1	20.5 20.9	20.7	8.1 8.1	8.1	33.2 30.3	31.8	103.2 101.3	102.3	7.6 7.6	7.6	7.6	5.5 5.5	5.5	7.3
				Middle	4.5	20.8 20.9	20.9	8.2 8.2	8.2	33.1 32.8	33.0	102.7 102.0	102.4	7.6 7.5	7.6		5.4 6.2	5.8	
				Bottom	8	20.9 20.9	20.9	8.2 8.2	8.2	33.1 32.8	33.0	101.9 100.9	101.4	7.5 7.4	7.5	7.5	10.7 10.2	10.5	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

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Water Quality Monitoring Results on 13 December 2014 (Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
B10	Fine	Moderate	11:17	Surface	1	20.3 20.6	20.5	8.1 8.1	8.1	33.6 33.4	33.5	102.7 101.9	102.3	7.6 7.5	7.6	7.6	7.4 7.2	7.3	7.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.5	20.8 20.9	20.9	8.2 8.2	8.2	32.8 32.8	32.8	101.0 99.7	100.4	7.5 7.4	7.5	7.5	7.5 7.5	7.5	
B11	Fine	Moderate	11:12	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.5	- -	-	7.2
				Middle	1.1	20.7 20.9	20.8	8.1 8.2	8.2	33.2 33.2	33.2	101.3 101.1	101.2	7.5 7.4	7.5		7.1 7.3	7.2	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B12	Fine	Moderate	11:02	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.4	- -	-	7.0
				Middle	1.1	19.4 19.7	19.6	8.0 8.0	8.0	32.8 32.7	32.8	97.9 97.9	97.9	7.4 7.4	7.4		6.9 7.1	7.0	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B13	Fine	Moderate	10:54	Surface	1	20.3 20.6	20.5	8.1 8.1	8.1	33.1 33.2	33.2	105.5 103.2	104.4	7.9 7.6	7.8	7.8	6.7 6.8	6.8	6.6
				Middle	3.5	20.7 20.9	20.8	8.1 8.1	8.1	33.0 32.7	32.9	104.5 103.2	103.9	7.7 7.6	7.7		6.5 6.4	6.5	
				Bottom	6	20.7 20.8	20.8	8.1 8.1	8.1	33.4 33.2	33.3	105.1 104.0	104.6	7.8 7.7	7.8	7.8	6.5 6.5	6.5	
B14	Fine	Moderate	11:50	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	8.2	- -	-	5.5
				Middle	1	19.9 20.2	20.1	8.2 8.2	8.2	33.8 33.3	33.6	110.4 108.4	109.4	8.2 8.1	8.2		5.5 5.4	5.5	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B24	Fine	Moderate	10:01	Surface	1	19.6 20.0	19.8	8.2 8.2	8.2	31.0 30.9	31.0	108.3 108.2	108.3	8.3 8.2	8.3	8.3	2.0 2.5	2.3	3.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	4.6	19.9 19.9	19.9	8.2 8.2	8.2	31.0 31.0	31.0	108.2 108.5	108.4	8.2 8.2	8.2	8.2	5.5 4.8	5.2	
B25	Fine	Moderate	10:12	Surface	1	19.6 19.6	19.6	8.2 8.2	8.2	30.7 30.8	30.8	108.6 108.4	108.5	8.3 8.3	8.3	8.3	5.2 5.2	5.2	7.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	4	19.5 19.1	19.3	8.1 8.1	8.1	31.0 31.1	31.1	107.5 106.4	107.0	8.2 8.2	8.2	8.2	10.2 10.5	10.4	
B26	Fine	Moderate	10:24	Surface	1	19.5 20.1	19.8	8.1 8.2	8.2	31.0 30.7	30.9	109.6 109.2	109.4	8.4 8.3	8.4	8.4	2.7 2.8	2.8	8.5
				Middle	3.5	19.9 20.1	20.0	8.2 8.2	8.2	30.9 30.7	30.8	108.8 108.2	108.5	8.3 8.2	8.3		7.5 7.3	7.4	
				Bottom	6	19.9 20.0	20.0	8.2 8.2	8.2	30.8 30.8	30.8	107.7 108.0	107.9	8.2 8.2	8.2	8.2	15.5 15.1	15.3	

Remarks: *DA: Depth-Averaged
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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
B7	Fine	Moderate	11:37	Surface	1	20.6 20.8	20.7	8.1 8.2	8.2	33.7 33.3	33.5	98.2 97.7	98.0	7.2 7.2	7.2	7.2	6.9 6.6	6.8	6.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.5	20.8 21.0	20.9	8.1 8.2	8.2	33.3 33.1	33.2	96.3 95.6	96.0	7.1 7.0	7.1	7.1	6.9 7.1	7.0	
B8	Fine	Moderate	11:31	Surface	1	20.7 21.0	20.9	8.1 8.1	8.1	33.2 33.1	33.2	97.7 97.3	97.5	7.2 7.2	7.2	7.2	7.4 7.2	7.3	7.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.5	20.8 21.0	20.9	8.1 8.1	8.1	33.1 32.9	33.0	96.9 97.0	97.0	7.1 7.1	7.1	7.1	7.1 7.3	7.2	
B9	Fine	Moderate	11:23	Surface	1	20.7 20.9	20.8	8.1 8.1	8.1	33.6 33.5	33.6	100.9 100.3	100.6	7.4 7.4	7.4	7.4	7.1 7.6	7.4	7.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.5	21.0 21.0	21.0	8.1 8.1	8.1	32.8 32.8	32.8	99.6 99.5	99.6	7.3 7.3	7.3	7.3	7.9 8.1	8.0	
EM1	Fine	Moderate	11:31	Surface	1	20.7 20.9	20.8	7.9 8.2	8.1	28.5 30.9	29.7	112.8 113.2	113.0	8.6 8.4	8.5	8.6	4.7 4.4	4.6	5.5
				Middle	9.5	20.8 20.8	20.8	7.9 8.2	8.1	28.3 30.9	29.6	115.1 114.6	114.9	8.7 8.6	8.7		6.1 6.2	6.2	
				Bottom	18	20.9 20.9	20.9	8.2 8.2	8.2	30.9 30.9	30.9	114.6 113.2	113.9	8.5 8.4	8.5	8.5	5.5 5.8	5.7	
EM2	Fine	Moderate	11:42	Surface	1	20.7 20.7	20.7	8.2 8.2	8.2	29.3 29.9	29.6	70.8 69.1	70.0	5.4 5.2	5.3	5.3	5.0 5.1	5.1	6.1
				Middle	10.5	20.7 20.7	20.7	8.2 8.2	8.2	30.9 30.2	30.6	69.9 68.7	69.3	5.2 5.2	5.2		9.3 8.2	8.8	
				Bottom	20	20.7 20.7	20.7	8.2 8.2	8.2	30.4 30.4	30.4	69.0 68.2	68.6	5.2 5.1	5.2	5.2	4.0 4.8	4.4	
EM3	Fine	Moderate	10:38	Surface	1	20.1 20.2	20.2	8.2 8.2	8.2	30.5 30.6	30.6	108.7 108.3	108.5	8.2 8.2	8.2	8.2	3.5 3.6	3.6	9.2
				Middle	12.5	20.2 20.2	20.2	8.1 8.1	8.1	30.8 30.7	30.8	108.4 108.4	108.4	8.2 8.2	8.2		9.4 10.8	10.1	
				Bottom	24	20.2 20.2	20.2	8.3 8.3	8.3	31.0 30.8	30.9	108.4 107.9	108.2	8.2 8.2	8.2	8.2	14.8 13.2	14.0	
F1	Fine	Moderate	11:53	Surface	1	20.4 20.4	20.4	8.2 8.2	8.2	29.8 30.2	30.0	101.2 101.0	101.1	7.7 7.6	7.7	7.4	5.1 5.0	5.1	6.2
				Middle	6	20.5 20.6	20.6	8.2 8.2	8.2	30.3 31.2	30.8	92.0 93.0	92.5	6.9 7.0	7.0		7.3 8.2	7.8	
				Bottom	11	20.4 20.4	20.4	8.1 8.1	8.1	30.2 30.2	30.2	85.9 85.6	85.8	6.5 6.5	6.5	6.5	5.3 6.0	5.7	
F5	Fine	Moderate	11:41	Surface	1	20.9 21.0	21.0	8.2 8.2	8.2	34.4 34.4	34.4	99.1 98.2	98.7	7.2 7.2	7.2	7.2	11.8 12.1	12.0	11.7
				Middle	5	21.1 21.1	21.1	8.2 8.2	8.2	33.7 32.7	33.2	97.0 97.1	97.1	7.1 7.1	7.1		10.7 10.4	10.6	
				Bottom	9	20.6 20.6	20.6	8.2 8.2	8.2	33.3 33.4	33.4	107.4 108.6	108.0	7.9 8.0	8.0	8.0	12.3 12.5	12.4	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
JM3	Fine	Moderate	11:21	Surface	1	20.7 20.7	20.7	8.0 7.9	8.0	30.8 31.0	30.9	95.8 96.1	96.0	7.2 7.2	7.2	7.2	3.1 3.3	3.2	3.2
				Middle	6	20.7 20.7	20.7	8.0 7.9	8.0	30.8 30.9	30.9	95.9 96.3	96.1	7.2 7.2	7.2		3.0 3.2	3.1	
				Bottom	11	20.7 20.7	20.7	7.9 7.9	7.9	30.8 30.8	30.8	94.7 93.9	94.3	7.1 7.0	7.1	7.1	3.4 3.4	3.4	
MM13	Fine	Moderate	11:48	Surface	1	19.3 19.9	19.6	8.1 8.2	8.2	29.8 29.9	29.9	109.3 109.5	109.4	8.5 8.4	8.5	8.3	4.2 4.4	4.3	7.9
				Middle	15.5	20.0 20.2	20.1	8.2 8.2	8.2	30.0 30.2	30.1	105.4 107.1	106.3	8.0 8.1	8.1		5.7 7.1	6.4	
				Bottom	30	20.2 20.9	20.6	8.2 8.2	8.2	30.0 30.9	30.5	105.0 108.0	106.5	8.0 8.1	8.1	8.1	12.6 13.5	13.1	
SM17	Fine	Moderate	12:33	Surface	1	20.6 20.6	20.6	8.2 8.2	8.2	33.3 33.4	33.4	107.4 108.6	108.0	7.9 8.0	8.0	7.9	4.6 4.7	4.7	5.8
				Middle	8.5	20.6 20.7	20.7	8.2 8.2	8.2	33.5 33.4	33.5	105.4 105.0	105.2	7.8 7.7	7.8		5.9 5.4	5.7	
				Bottom	16	20.6 20.5	20.6	8.2 8.2	8.2	33.0 33.1	33.1	102.4 101.9	102.2	7.6 7.6	7.6	7.6	6.8 6.9	6.9	
VM1	Fine	Moderate	10:57	Surface	1	20.5 21.0	20.8	7.9 7.9	7.9	32.5 28.8	30.7	103.1 103.9	103.5	7.7 7.8	7.8	7.9	3.1 3.1	3.1	3.4
				Middle	21.5	20.4 20.9	20.7	7.9 7.9	7.9	32.8 31.9	32.4	106.6 104.8	105.7	7.9 7.8	7.9		3.2 3.3	3.3	
				Bottom	42	20.9 20.9	20.9	7.9 7.9	7.9	31.9 31.9	31.9	104.8 104.8	104.8	7.8 7.8	7.8	7.8	3.8 3.7	3.8	
VM12	Fine	Moderate	10:19	Surface	1	20.7 20.8	20.8	8.0 8.1	8.1	33.1 33.1	33.1	103.2 102.9	103.1	7.6 7.6	7.6	7.6	6.9 7.2	7.1	9.5
				Middle	10	20.8 20.8	20.8	8.1 8.1	8.1	32.9 33.5	33.2	103.3 102.5	102.9	7.6 7.5	7.6		9.6 9.9	9.8	
				Bottom	19	20.9 20.9	20.9	8.1 8.1	8.1	33.1 33.4	33.3	103.2 102.8	103.0	7.6 7.6	7.6	7.6	11.4 11.5	11.5	
VM14	Fine	Moderate	10:44	Surface	1	20.6 20.7	20.7	8.0 8.0	8.0	33.5 33.5	33.5	98.2 97.5	97.9	7.3 7.2	7.3	7.2	11.4 11.6	11.5	11.6
				Middle	6	21.0 21.0	21.0	8.0 8.1	8.1	33.7 34.0	33.9	96.6 95.7	96.2	7.1 7.0	7.1		12.3 12.4	12.4	
				Bottom	11	21.0 21.0	21.0	8.1 8.1	8.1	33.4 33.4	33.4	95.3 95.1	95.2	7.0 7.0	7.0	7.0	11.0 10.8	10.9	
VM15	Fine	Moderate	12:14	Surface	1	20.4 21.0	20.7	8.1 8.0	8.1	32.6 32.3	32.5	106.3 107.8	107.1	7.9 8.0	8.0	7.9	5.7 5.9	5.8	6.0
				Middle	6	20.7 21.0	20.9	8.1 8.1	8.1	32.5 32.3	32.4	105.8 106.2	106.0	7.8 7.8	7.8		5.6 6.0	5.8	
				Bottom	11	20.9 21.0	21.0	8.1 8.2	8.2	32.5 32.4	32.5	105.3 105.3	105.3	7.8 7.8	7.8	7.8	6.0 6.7	6.4	
VM2	Fine	Moderate	12:40	Surface	1	21.0 21.0	21.0	8.1 8.2	8.2	30.0 31.0	30.5	97.9 96.1	97.0	7.3 7.2	7.3	7.1	5.5 6.6	6.1	5.9
				Middle	5.5	21.0 21.0	21.0	8.1 8.2	8.2	31.9 31.1	31.5	93.0 93.0	93.0	6.9 6.9	6.9		7.0 8.1	7.6	
				Bottom	10	21.0 21.0	21.0	8.2 8.2	8.2	31.2 31.2	31.2	87.8 88.5	88.2	6.5 6.6	6.6	6.6	3.6 4.3	4.0	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
VM4	Fine	Moderate	10:57	Surface	1	20.9 21.0	21.0	8.1 8.1	8.1	32.4 32.5	32.5	90.8 91.7	91.3	6.7 6.8	6.8	6.8	6.3 7.2	6.8	6.7
				Middle	8	21.0 21.0	21.0	8.2 8.2	8.2	32.5 32.4	32.5	90.2 90.8	90.5	6.7 6.7	6.7		6.5 7.1	6.8	
				Bottom	15	21.0 21.0	21.0	8.3 8.3	8.3	32.5 32.5	32.5	90.0 90.9	90.5	6.6 6.7	6.7	6.7	6.6 6.3	6.5	
VM5	Fine	Moderate	11:06	Surface	1	19.6 20.9	20.3	8.1 8.1	8.1	30.4 32.5	31.5	88.8 92.2	90.5	6.8 6.8	6.8	6.8	5.8 5.8	5.8	6.4
				Middle	7	20.3 21.0	20.7	8.1 8.2	8.2	32.9 32.4	32.7	91.7 91.5	91.6	6.8 6.8	6.8		6.5 6.7	6.6	
				Bottom	13	20.8 21.0	20.9	8.2 8.2	8.2	32.7 32.4	32.6	90.4 90.0	90.2	6.7 6.6	6.7	6.7	6.8 6.9	6.9	
VM7	Fine	Moderate	12:03	Surface	1	20.7 21.0	20.9	8.1 8.2	8.2	32.9 32.3	32.6	94.8 94.2	94.5	7.0 7.0	7.0	7.0	8.3 7.7	8.0	8.3
				Middle	7	21.0 21.1	21.1	8.2 8.2	8.2	32.9 32.6	32.8	93.7 93.7	93.7	6.9 6.9	6.9		8.2 9.7	9.0	
				Bottom	13	21.0 21.0	21.0	8.3 8.2	8.3	32.9 32.7	32.8	93.6 93.7	93.7	6.9 6.9	6.9	6.9	7.8 8.2	8.0	
VM8	Fine	Moderate	11:52	Surface	1	20.7 20.9	20.8	8.3 8.2	8.3	30.1 30.3	30.2	106.4 107.5	107.0	8.0 8.0	8.0	8.0	5.3 5.2	5.3	6.9
				Middle	6.5	20.4 20.9	20.7	8.4 8.3	8.4	33.1 32.8	33.0	106.9 106.2	106.6	7.9 7.8	7.9		7.9 6.9	7.4	
				Bottom	12	20.7 20.9	20.8	8.5 8.3	8.4	33.1 32.9	33.0	105.9 105.3	105.6	7.8 7.8	7.8	7.8	8.1 7.7	7.9	
WSD10	Fine	Moderate	10:24	Surface	1	21.1 21.1	21.1	8.2 8.2	8.2	31.0 32.7	31.9	98.1 99.2	98.7	7.3 7.3	7.3	7.3	5.5 5.1	5.3	5.9
				Middle	7	21.1 21.1	21.1	8.2 8.2	8.2	32.5 32.7	32.6	99.1 98.5	98.8	7.3 7.2	7.3		3.8 4.0	3.9	
				Bottom	13	21.1 21.1	21.1	8.2 8.2	8.2	32.7 32.9	32.8	101.3 101.2	101.3	7.4 7.4	7.4	7.4	8.6 8.5	8.6	
WSD11	Fine	Moderate	10:51	Surface	1	21.1 21.1	21.1	8.0 8.2	8.1	32.7 30.1	31.4	101.6 101.7	101.7	7.5 7.6	7.6	7.6	4.5 4.6	4.6	5.3
				Middle	8.5	21.1 21.1	21.1	8.1 8.2	8.2	32.6 30.1	31.4	101.6 101.6	101.6	7.5 7.6	7.6		3.6 3.1	3.4	
				Bottom	16	21.1 21.0	21.1	8.2 8.2	8.2	32.8 32.7	32.8	101.7 102.1	101.9	7.5 7.5	7.5	7.5	7.5 8.5	8.0	
WSD12	Fine	Moderate	11:13	Surface	1	20.5 20.3	20.4	7.9 8.0	8.0	31.7 32.4	32.1	93.5 91.3	92.4	7.0 6.8	6.9	6.9	3.4 2.9	3.2	3.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	4.8	20.8 20.5	20.7	8.0 7.9	8.0	33.1 32.2	32.7	98.6 96.0	97.3	7.3 7.2	7.3	7.3	3.2 3.3	3.3	
WSD13	Fine	Moderate	12:07	Surface	1	20.7 20.8	20.8	8.2 8.2	8.2	30.1 30.2	30.2	91.6 95.2	93.4	6.9 7.1	7.0	6.9	4.7 5.2	5.0	6.2
				Middle	6.5	20.8 20.8	20.8	8.2 8.2	8.2	31.6 31.3	31.5	90.2 90.1	90.2	6.7 6.7	6.7		8.8 7.9	8.4	
				Bottom	12	20.8 20.7	20.8	8.2 8.2	8.2	31.3 31.9	31.6	98.9 100.6	99.8	7.4 7.5	7.5	7.5	4.5 5.6	5.1	

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Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
WSD15	Fine	Moderate	12:22	Surface	1	20.7 21.0	20.9	8.2 8.1	8.2	32.9 31.5	32.2	93.7 94.7	94.2	6.9 7.0	7.0	6.9	3.8 3.7	3.8	5.4
				Middle	6.5	20.8 20.9	20.9	8.2 8.1	8.2	32.6 31.9	32.3	92.4 91.5	92.0	6.8 6.8	6.8		7.5 8.2	7.9	
				Bottom	12	20.9 20.9	20.9	8.1 8.1	8.1	31.7 31.7	31.7	89.8 90.3	90.1	6.7 6.7	6.7	6.7	4.6 4.5	4.6	
WSD17	Fine	Moderate	12:30	Surface	1	20.9 21.1	21.0	8.1 8.1	8.1	32.6 32.5	32.6	84.1 89.8	87.0	6.2 6.6	6.4	6.4	4.9 5.5	5.2	6.1
				Middle	5.5	21.0 21.0	21.0	8.0 8.1	8.1	32.4 32.1	32.3	83.9 87.3	85.6	6.2 6.5	6.4		7.9 7.8	7.9	
				Bottom	10	21.0 21.0	21.0	8.1 8.1	8.1	32.2 32.2	32.2	84.9 85.1	85.0	6.3 6.3	6.3	6.3	5.0 5.2	5.1	
WSD18	Fine	Moderate	11:26	Surface	1	18.6 20.9	19.8	8.1 8.1	8.1	26.3 32.1	29.2	83.6 90.6	87.1	6.7 6.7	6.7	6.7	6.4 6.6	6.5	7.6
				Middle	6	19.5 21.0	20.3	8.2 8.2	8.2	30.9 32.1	31.5	86.3 89.7	88.0	6.6 6.6	6.6		9.3 9.5	9.4	
				Bottom	11	20.2 21.0	20.6	8.2 8.3	8.3	32.3 32.2	32.3	87.0 88.4	87.7	6.5 6.5	6.5	6.5	6.8 6.8	6.8	
WSD19	Fine	Moderate	11:32	Surface	1	20.6 21.0	20.8	8.2 8.1	8.2	31.7 32.3	32.0	93.1 94.2	93.7	7.0 7.0	7.0	7.0	6.4 6.6	6.5	6.8
				Middle	7	20.8 21.0	20.9	8.2 8.2	8.2	32.2 32.3	32.3	92.4 92.7	92.6	6.9 6.8	6.9		6.7 7.0	6.9	
				Bottom	13	20.9 21.0	21.0	8.3 8.2	8.3	32.4 32.4	32.4	91.9 91.4	91.7	6.8 6.7	6.8	6.8	6.7 7.1	6.9	
WSD20	Fine	Moderate	11:43	Surface	1	20.7 20.8	20.8	8.2 8.2	8.2	30.9 32.7	31.8	103.1 104.1	103.6	7.7 7.7	7.7	7.6	7.5 8.0	7.8	7.7
				Middle	6	20.6 20.8	20.7	8.2 8.2	8.2	33.0 32.7	32.9	100.5 99.5	100.0	7.4 7.4	7.4		7.6 7.8	7.7	
				Bottom	11	20.8 20.8	20.8	8.3 8.3	8.3	32.9 32.7	32.8	99.5 99.6	99.6	7.3 7.4	7.4	7.4	7.6 7.7	7.7	
WSD22	Fine	Moderate	11:13	Surface	1	20.5 21.0	20.8	8.1 8.1	8.1	32.4 32.1	32.3	92.5 92.6	92.6	6.9 6.8	6.9	6.7	7.3 7.5	7.4	7.6
				Middle	4.5	20.9 21.0	21.0	8.1 8.2	8.2	32.2 32.1	32.2	87.2 86.9	87.1	6.5 6.4	6.5		7.8 7.9	7.9	
				Bottom	8	20.9 21.0	21.0	8.2 8.3	8.3	32.3 32.2	32.3	87.0 86.7	86.9	6.4 6.4	6.4	6.4	7.2 7.9	7.6	
WSD5	Fine	Moderate	10:33	Surface	1	20.8 21.1	21.0	8.0 8.0	8.0	32.5 32.9	32.7	102.0 100.3	101.2	7.6 7.4	7.5	7.5	8.7 8.5	8.6	10.6
				Middle	7.5	20.9 21.0	21.0	8.1 8.1	8.1	32.7 33.0	32.9	99.4 100.0	99.7	7.3 7.4	7.4		10.4 10.8	10.6	
				Bottom	14	21.2 21.2	21.2	8.1 8.1	8.1	33.2 33.3	33.3	98.7 98.2	98.5	7.2 7.2	7.2	7.2	12.4 12.9	12.7	
WSD6	Fine	Moderate	10:19	Surface	1	21.0 20.9	21.0	8.0 8.0	8.0	32.7 31.9	32.3	89.5 88.9	89.2	6.6 6.6	6.6	6.4	7.1 8.5	7.8	7.5
				Middle	3.5	20.8 21.0	20.9	8.0 8.0	8.0	32.3 31.8	32.1	83.2 83.7	83.5	6.2 6.2	6.2		7.0 7.4	7.2	
				Bottom	6	20.9 21.0	21.0	8.1 8.1	8.1	32.2 31.8	32.0	82.7 82.7	82.7	6.1 6.1	6.1	6.1	7.1 7.9	7.5	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

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- Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Water Quality Monitoring Results on 13 December 2014 (Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
WSD7	Fine	Moderate	10:32	Surface	1	20.4 21.0	20.7	8.0 8.0	8.0	31.4 31.1	31.3	93.5 95.2	94.4	7.0 7.1	7.1	7.0	6.7 6.2	6.5	6.4
				Middle	4	20.8 21.0	20.9	8.1 8.1	8.1	31.3 31.1	31.2	92.1 91.4	91.8	6.9 6.8	6.9		6.3 6.3	6.3	
				Bottom	7	21.0 21.0	21.0	8.1 8.2	8.2	31.4 31.3	31.4	91.2 91.2	91.2	6.8 6.8	6.8	6.8	6.3 6.3	6.3	
WSD9	Fine	Moderate	10:49	Surface	1	20.6 20.9	20.8	8.0 8.1	8.1	32.9 32.3	32.6	98.0 98.1	98.1	7.3 7.3	7.3	7.3	5.6 5.7	5.7	7.5
				Middle	5	20.9 20.9	20.9	8.1 8.2	8.2	32.6 32.4	32.5	97.8 97.2	97.5	7.2 7.2	7.2		6.1 6.7	6.4	
				Bottom	9	20.9 20.8	20.9	8.1 8.2	8.2	32.6 32.4	32.5	97.3 96.0	96.7	7.2 7.1	7.2	7.2	10.9 9.8	10.4	

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Water Quality Monitoring Results on 24 January 2015 (Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
B10	Cloudy	Rough	15:40	Surface	1	17.2 17.2	17.2	8.3 8.3	8.3	27.9 28.6	28.3	95.9 95.8	95.9	7.8 7.8	7.8	7.8	4.4 4.2	4.3	4.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.7	17.1 17.1	17.1	8.3 8.3	8.3	28.4 28.5	28.5	92.7 92.9	92.8	7.5 7.6	7.6	7.6	5.7 5.3	5.5	
B11	Cloudy	Rough	15:46	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.5	- -	-	4.2
				Middle	1.2	17.0 17.0	17.0	8.3 8.3	8.3	30.0 30.1	30.1	93.1 92.0	92.6	7.5 7.4	7.5		4.1 4.3	4.2	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B12	Cloudy	Rough	15:51	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	8.5	- -	-	4.0
				Middle	1.2	17.8 17.8	17.8	8.3 8.3	8.3	29.0 29.0	29.0	105.8 105.3	105.6	8.5 8.4	8.5		4.2 3.8	4.0	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B13	Cloudy	Rough	15:56	Surface	1	17.1 17.1	17.1	8.3 8.3	8.3	28.2 28.6	28.4	93.8 93.8	93.8	7.6 7.6	7.6	7.6	5.4 5.6	5.5	6.9
				Middle	3	17.1 17.1	17.1	8.3 8.3	8.3	28.6 28.5	28.6	92.2 92.2	92.2	7.5 7.5	7.5		7.2 7.5	7.4	
				Bottom	5	17.0 16.9	17.0	8.3 8.3	8.3	31.0 31.1	31.1	90.5 90.5	90.5	7.3 7.3	7.3	7.3	7.9 7.5	7.7	
B14	Cloudy	Rough	15:02	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.8	- -	-	2.3
				Middle	1.2	17.1 17.2	17.2	8.2 8.2	8.2	32.6 32.6	32.6	98.4 98.3	98.4	7.8 7.8	7.8		2.1 2.4	2.3	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B24	Cloudy	Rough	15:48	Surface	1	17.7 17.7	17.7	8.2 8.2	8.2	30.8 30.7	30.8	102.8 102.8	102.8	8.1 8.1	8.1	8.1	3.0 3.2	3.1	3.4
				Middle	6	17.7 17.6	17.7	8.2 8.2	8.2	30.8 30.9	30.9	100.8 100.6	100.7	8.0 8.0	8.0		4.7 5.1	4.9	
				Bottom	11	17.7 17.4	17.6	8.3 8.3	8.3	31.0 35.7	33.4	100.5 102.4	101.5	8.0 7.9	8.0	8.0	2.1 2.4	2.3	
B25	Cloudy	Rough	15:38	Surface	1	17.1 17.6	17.4	8.2 8.2	8.2	30.4 30.5	30.5	103.5 104.3	103.9	8.3 8.3	8.3	8.1	5.1 5.2	5.2	6.2
				Middle	3	17.2 17.6	17.4	8.2 8.2	8.2	30.6 30.8	30.7	97.8 98.7	98.3	7.8 7.8	7.8		5.5 5.8	5.7	
				Bottom	5	17.6 17.7	17.7	8.2 8.2	8.2	30.0 30.7	30.4	97.5 98.1	97.8	7.8 7.8	7.8	7.8	7.7 7.4	7.6	
B26	Cloudy	Rough	15:26	Surface	1	17.3 17.5	17.4	8.2 8.2	8.2	31.1 30.9	31.0	103.1 102.4	102.8	8.2 8.1	8.2	8.2	3.3 4.0	3.7	5.9
				Middle	3	17.5 17.5	17.5	8.2 8.2	8.2	31.0 31.0	31.0	102.4 102.4	102.4	8.1 8.1	8.1		5.9 5.6	5.8	
				Bottom	5	17.5 17.5	17.5	8.3 8.3	8.3	31.0 31.0	31.0	101.6 101.4	101.5	8.1 8.1	8.1	8.1	8.4 7.7	8.1	

Remarks: *DA: Depth-Averaged
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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
B7	Cloudy	Rough	15:21	Surface	1	17.0 17.0	17.0	8.3 8.3	8.3	31.0 30.8	30.9	93.1 93.1	93.1	7.5 7.5	7.5	7.5	5.2 5.4	5.3	5.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.1	17.0 17.0	17.0	8.3 8.3	8.3	29.2 29.2	29.2	92.0 92.1	92.1	7.5 7.5	7.5	7.5	5.8 5.5	5.7	
B8	Cloudy	Rough	15:29	Surface	1	17.0 17.0	17.0	8.3 8.3	8.3	29.7 29.5	29.6	93.2 93.4	93.3	7.5 7.6	7.6	7.6	6.1 6.2	6.2	6.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.6	17.0 17.0	17.0	8.3 8.3	8.3	29.0 29.0	29.0	92.3 92.4	92.4	7.5 7.5	7.5	7.5	6.9 7.1	7.0	
B9	Cloudy	Rough	15:35	Surface	1	17.2 17.2	17.2	8.3 8.3	8.3	29.6 29.6	29.6	97.5 97.5	97.5	7.9 7.9	7.9	7.9	5.6 5.4	5.5	5.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.8	17.2 17.2	17.2	8.3 8.3	8.3	30.3 30.3	30.3	96.9 96.8	96.9	7.8 7.8	7.8	7.8	5.8 6.0	5.9	
EM1	Cloudy	Rough	14:50	Surface	1	16.7 16.7	16.7	8.2 8.2	8.2	30.6 30.6	30.6	94.0 99.3	96.7	7.6 8.0	7.8	8.0	1.6 1.7	1.7	1.8
				Middle	9.5	16.6 16.6	16.6	8.2 8.3	8.3	30.7 30.7	30.7	99.3 99.9	99.6	8.0 8.1	8.1		1.1 1.2	1.2	
				Bottom	18	16.6 16.6	16.6	8.3 8.3	8.3	30.7 30.7	30.7	99.5 100.4	100.0	8.1 8.1	8.1	8.1	2.5 2.5	2.5	
EM2	Cloudy	Rough	15:03	Surface	1	16.6 16.6	16.6	8.3 8.3	8.3	30.7 30.7	30.7	100.1 101.5	100.8	8.1 8.2	8.2	8.3	1.1 0.9	1.0	1.5
				Middle	10.5	16.5 16.5	16.5	8.3 8.3	8.3	30.7 30.7	30.7	102.0 101.3	101.7	8.3 8.2	8.3		0.9 0.9	0.9	
				Bottom	20	16.4 16.4	16.4	8.2 8.3	8.3	30.8 30.8	30.8	103.9 105.7	104.8	8.4 8.6	8.5	8.5	2.6 2.5	2.6	
EM3	Cloudy	Rough	15:14	Surface	1	17.3 17.6	17.5	8.2 8.2	8.2	32.2 32.2	32.2	101.0 101.2	101.1	8.0 8.0	8.0	8.0	4.7 4.8	4.8	6.6
				Middle	13.5	17.4 17.6	17.5	8.2 8.2	8.2	30.8 30.8	30.8	100.7 101.0	100.9	8.0 8.0	8.0		5.7 6.5	6.1	
				Bottom	26	17.6 17.5	17.6	8.2 8.2	8.2	30.8 31.0	30.9	101.1 101.4	101.3	8.0 8.1	8.1	8.1	8.7 8.8	8.8	
F1	Cloudy	Rough	15:02	Surface	1	17.3 17.6	17.5	8.2 8.2	8.2	31.2 30.8	31.0	100.1 99.3	99.7	8.0 7.9	8.0	8.1	2.6 2.5	2.6	3.6
				Middle	5.5	17.6 17.5	17.6	8.3 8.2	8.3	30.9 30.9	30.9	102.3 102.1	102.2	8.1 8.1	8.1		4.6 4.6	4.6	
				Bottom	10	17.6 17.5	17.6	8.3 8.3	8.3	31.1 31.0	31.1	103.3 103.1	103.2	8.2 8.2	8.2	8.2	3.4 4.0	3.7	
F5	Cloudy	Rough	15:10	Surface	1	17.1 17.1	17.1	8.3 8.3	8.3	30.4 30.3	30.4	91.0 91.4	91.2	7.3 7.3	7.3	7.3	7.3 7.6	7.5	8.5
				Middle	4.5	16.9 16.9	16.9	8.3 8.3	8.3	31.1 31.0	31.1	91.2 91.2	91.2	7.3 7.3	7.3		8.4 8.9	8.7	
				Bottom	8	16.9 16.9	16.9	8.4 8.3	8.4	32.1 32.1	32.1	90.9 90.8	90.9	7.3 7.3	7.3	7.3	9.2 9.1	9.2	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
JM3	Cloudy	Rough	14:37	Surface	1	16.7 16.7	16.7	8.2 8.2	8.2	30.6 30.6	30.6	95.0 96.8	95.9	7.7 7.8	7.8	8.0	2.1 2.0	2.1	2.8
				Middle	7	16.6 16.6	16.6	8.3 8.3	8.3	30.7 30.7	30.7	98.1 100.0	99.1	8.0 8.1	8.1		1.6 1.6	1.6	
				Bottom	13	16.6 16.6	16.6	8.3 8.3	8.3	30.7 30.7	30.7	100.3 100.5	100.4	8.1 8.1	8.1	8.1	4.7 4.7	4.7	
MM13	Cloudy	Rough	13:57	Surface	1	17.5 17.5	17.5	8.3 8.3	8.3	31.1 31.1	31.1	104.2 104.2	104.2	8.3 8.3	8.3	8.3	1.7 1.6	1.7	3.8
				Middle	16	17.5 17.5	17.5	8.3 8.3	8.3	31.1 31.1	31.1	104.2 104.2	104.2	8.3 8.3	8.3		2.8 2.9	2.9	
				Bottom	31	17.5 17.5	17.5	8.3 8.3	8.3	30.9 30.9	30.9	104.1 104.1	104.1	8.3 8.3	8.3	8.3	6.1 7.2	6.7	
SM17	Cloudy	Rough	14:16	Surface	1	16.3 16.4	16.4	8.3 8.4	8.4	30.8 30.7	30.8	103.4 103.0	103.2	8.4 8.4	8.4	8.3	7.4 7.2	7.3	11.8
				Middle	8.5	16.6 16.6	16.6	8.3 8.4	8.4	31.7 31.5	31.6	100.8 100.8	100.8	8.1 8.1	8.1		12.5 12.2	12.4	
				Bottom	16	16.5 16.5	16.5	8.4 8.4	8.4	31.8 31.8	31.8	100.8 100.7	100.8	8.1 8.1	8.1	8.1	15.9 15.4	15.7	
VM1	Cloudy	Rough	15:34	Surface	1	16.8 16.8	16.8	8.2 8.2	8.2	30.5 30.5	30.5	93.8 95.3	94.6	7.6 7.7	7.7	7.6	2.0 2.1	2.1	3.5
				Middle	21	16.7 16.7	16.7	8.2 8.2	8.2	30.6 30.6	30.6	92.7 92.9	92.8	7.5 7.5	7.5		5.6 5.7	5.7	
				Bottom	41	16.7 16.7	16.7	8.2 8.2	8.2	30.6 27.1	28.9	93.5 93.7	93.6	7.6 7.7	7.7	7.7	2.5 2.6	2.6	
VM12	Cloudy	Rough	16:28	Surface	1	16.9 16.9	16.9	8.2 8.2	8.2	28.9 28.8	28.9	86.7 86.7	86.7	7.1 7.1	7.1	7.0	12.5 12.2	12.4	13.4
				Middle	9.5	16.9 16.9	16.9	8.2 8.2	8.2	32.4 32.3	32.4	86.3 86.2	86.3	6.9 6.9	6.9		11.4 12.1	11.8	
				Bottom	18	16.9 16.9	16.9	8.2 8.2	8.2	32.3 32.2	32.3	85.7 85.7	85.7	6.8 6.8	6.8	6.8	16.3 15.8	16.1	
VM14	Cloudy	Rough	16:06	Surface	1	17.2 17.2	17.2	8.3 8.3	8.3	28.6 28.7	28.7	91.5 91.2	91.4	7.4 7.4	7.4	7.3	9.7 9.5	9.6	10.3
				Middle	6	17.0 17.0	17.0	8.3 8.3	8.3	29.4 29.3	29.4	88.9 88.9	88.9	7.2 7.2	7.2		10.2 9.8	10.0	
				Bottom	11	17.0 17.0	17.0	8.2 8.2	8.2	30.8 30.7	30.8	87.9 87.8	87.9	7.1 7.1	7.1	7.1	11.5 11.3	11.4	
VM15	Cloudy	Rough	16:15	Surface	1	16.9 17.0	17.0	8.3 8.3	8.3	33.1 33.0	33.1	94.4 93.4	93.9	7.5 7.4	7.5	7.4	6.7 7.1	6.9	10.0
				Middle	6	17.3 17.4	17.4	8.3 8.3	8.3	32.0 32.1	32.1	90.5 89.8	90.2	7.2 7.1	7.2		9.6 9.7	9.7	
				Bottom	11	17.3 17.3	17.3	8.3 8.3	8.3	31.4 31.5	31.5	88.6 88.6	88.6	7.0 7.0	7.0	7.0	13.4 13.1	13.3	
VM2	Cloudy	Rough	16:11	Surface	1	16.8 16.9	16.9	8.2 8.2	8.2	30.5 30.5	30.5	90.2 91.5	90.9	7.3 7.4	7.4	7.4	2.8 2.5	2.7	2.9
				Middle	7	16.8 16.8	16.8	8.2 8.2	8.2	30.5 30.5	30.5	90.3 91.2	90.8	7.3 7.4	7.4		2.8 2.8	2.8	
				Bottom	13	16.8 16.8	16.8	8.2 8.2	8.2	30.5 30.6	30.6	89.7 90.2	90.0	7.2 7.3	7.3	7.3	3.0 3.3	3.2	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
VM4	Cloudy	Rough	14:41	Surface	1	16.9 16.9	16.9	8.3 8.3	8.3	31.4 31.3	31.4	98.4 98.1	98.3	7.9 7.9	7.9	7.9	3.7 4.5	4.1	6.8
				Middle	7.5	17.0 17.1	17.1	8.3 8.3	8.3	30.1 30.6	30.4	97.4 97.0	97.2	7.9 7.8	7.9		5.6 5.9	5.8	
				Bottom	14	17.0 17.0	17.0	8.3 8.3	8.3	30.0 30.2	30.1	96.9 96.5	96.7	7.8 7.8	7.8	7.8	10.1 11.0	10.6	
VM5	Cloudy	Rough	15:02	Surface	1	17.2 17.2	17.2	8.3 8.3	8.3	32.2 32.3	32.3	91.2 91.1	91.2	7.2 7.2	7.2	7.3	3.2 3.7	3.5	8.7
				Middle	7	17.2 17.2	17.2	8.3 8.3	8.3	30.9 31.7	31.3	90.8 91.0	90.9	7.3 7.2	7.3		5.7 6.1	5.9	
				Bottom	13	17.2 17.2	17.2	8.3 8.3	8.3	30.7 31.3	31.0	90.7 90.6	90.7	7.3 7.2	7.3	7.3	16.4 16.9	16.7	
VM7	Cloudy	Rough	16:04	Surface	1	17.0 17.1	17.1	8.3 8.3	8.3	33.3 33.2	33.3	96.9 96.5	96.7	7.7 7.6	7.7	7.5	5.7 5.6	5.7	10.2
				Middle	7.5	17.3 17.3	17.3	8.3 8.3	8.3	31.9 31.8	31.9	90.2 89.8	90.0	7.2 7.1	7.2		10.3 11.5	10.9	
				Bottom	14	17.2 17.2	17.2	8.3 8.3	8.3	31.6 31.6	31.6	87.0 86.6	86.8	6.9 6.9	6.9	6.9	13.6 14.1	13.9	
VM8	Cloudy	Rough	15:52	Surface	1	17.4 17.4	17.4	8.3 8.3	8.3	33.1 33.1	33.1	90.5 90.4	90.5	7.1 7.1	7.1	7.1	4.8 4.7	4.8	6.5
				Middle	6.5	17.4 17.4	17.4	8.3 8.3	8.3	32.5 32.4	32.5	89.8 89.8	89.8	7.1 7.1	7.1		5.3 5.7	5.5	
				Bottom	12	17.4 17.3	17.4	8.3 8.3	8.3	32.0 31.9	32.0	92.3 93.4	92.9	7.3 7.4	7.4	7.4	9.3 9.0	9.2	
WSD10	Cloudy	Rough	13:59	Surface	1	16.8 16.9	16.9	8.2 8.2	8.2	30.2 30.3	30.3	90.0 88.9	89.5	7.3 7.2	7.3	7.3	3.7 3.5	3.6	3.0
				Middle	6	16.7 16.7	16.7	8.2 8.2	8.2	30.5 30.5	30.5	89.9 89.2	89.6	7.3 7.2	7.3		2.2 2.3	2.3	
				Bottom	11	16.7 16.7	16.7	8.2 8.2	8.2	30.4 30.4	30.4	88.4 88.9	88.7	7.2 7.2	7.2	7.2	3.3 3.1	3.2	
WSD11	Cloudy	Rough	14:11	Surface	1	16.8 16.8	16.8	8.2 8.2	8.2	30.5 30.5	30.5	87.9 89.8	88.9	7.1 7.3	7.2	7.3	2.6 2.8	2.7	2.6
				Middle	8.5	16.7 16.8	16.8	8.2 8.2	8.2	30.6 30.5	30.6	89.3 90.6	90.0	7.2 7.3	7.3		2.2 2.5	2.4	
				Bottom	16	16.7 16.7	16.7	8.2 8.2	8.2	30.6 30.6	30.6	90.9 91.1	91.0	7.4 7.4	7.4	7.4	3.1 2.5	2.8	
WSD12	Cloudy	Rough	14:28	Surface	1	16.8 16.8	16.8	8.2 8.2	8.2	30.6 30.6	30.6	97.1 98.3	97.7	7.8 7.9	7.9	7.9	1.9 2.1	2.0	2.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	3.1	16.7 16.7	16.7	8.2 8.2	8.2	30.6 27.8	29.2	98.8 98.8	98.8	8.0 8.1	8.1	8.1	1.9 1.9	1.9	
WSD13	Cloudy	Rough	15:18	Surface	1	16.7 16.7	16.7	8.2 8.2	8.2	30.6 30.6	30.6	96.8 97.7	97.3	7.8 7.9	7.9	7.9	1.8 1.8	1.8	2.7
				Middle	6.5	16.7 16.7	16.7	8.2 8.2	8.2	30.6 30.6	30.6	97.3 97.6	97.5	7.9 7.9	7.9		1.8 1.9	1.9	
				Bottom	12	16.7 16.7	16.7	8.2 8.2	8.2	30.6 30.6	30.6	97.1 97.3	97.2	7.9 7.9	7.9	7.9	4.2 4.3	4.3	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
WSD15	Cloudy	Rough	15:48	Surface	1	16.8 16.8	16.8	8.2 8.2	8.2	30.5 30.5	30.5	91.3 91.2	91.3	7.4 7.4	7.4	7.5	2.9 2.5	2.7	3.2
				Middle	7	16.8 16.8	16.8	8.2 8.2	8.2	26.9 27.0	27.0	91.9 92.6	92.3	7.6 7.6	7.6		3.4 3.5	3.5	
				Bottom	13	16.8 16.8	16.8	8.2 8.2	8.2	30.6 30.6	30.6	92.3 92.9	92.6	7.5 7.5	7.5	7.5	3.3 3.6	3.5	
WSD17	Cloudy	Rough	15:58	Surface	1	16.8 16.8	16.8	8.2 8.2	8.2	30.4 30.4	30.4	86.2 87.7	87.0	7.0 7.1	7.1	7.1	3.5 3.8	3.7	4.2
				Middle	5.5	16.8 16.8	16.8	8.2 8.2	8.2	30.5 30.5	30.5	86.8 88.3	87.6	7.0 7.1	7.1		4.3 3.9	4.1	
				Bottom	10	16.8 16.8	16.8	8.2 8.2	8.2	30.5 30.5	30.5	87.9 88.7	88.3	7.1 7.2	7.2	7.2	4.9 4.7	4.8	
WSD18	Cloudy	Rough	15:14	Surface	1	17.2 17.2	17.2	8.2 8.2	8.2	32.7 32.7	32.7	89.8 89.6	89.7	7.1 7.1	7.1	7.1	4.7 5.6	5.2	9.6
				Middle	6.5	17.3 17.3	17.3	8.2 8.2	8.2	31.9 31.8	31.9	88.2 88.1	88.2	7.0 7.0	7.0		7.6 8.4	8.0	
				Bottom	12	17.3 17.3	17.3	8.2 8.2	8.2	31.3 31.2	31.3	88.1 87.9	88.0	7.0 7.0	7.0	7.0	15.5 15.4	15.5	
WSD19	Cloudy	Rough	15:24	Surface	1	17.3 17.3	17.3	8.3 8.3	8.3	33.0 32.8	32.9	93.1 93.4	93.3	7.3 7.4	7.4	7.4	6.2 5.9	6.1	9.9
				Middle	7	17.3 17.3	17.3	8.3 8.3	8.3	32.0 32.5	32.3	93.2 94.2	93.7	7.4 7.4	7.4		8.9 9.7	9.3	
				Bottom	13	17.3 17.3	17.3	8.3 8.3	8.3	31.6 31.9	31.8	92.7 94.0	93.4	7.4 7.5	7.5	7.5	14.1 14.5	14.3	
WSD20	Cloudy	Rough	15:38	Surface	1	17.2 17.2	17.2	8.4 8.4	8.4	33.3 33.4	33.4	106.2 105.9	106.1	8.4 8.3	8.4	8.4	7.8 8.1	8.0	11.9
				Middle	6.5	17.3 17.3	17.3	8.4 8.4	8.4	32.6 32.5	32.6	104.9 105.0	105.0	8.3 8.3	8.3		9.6 9.5	9.6	
				Bottom	12	17.3 17.3	17.3	8.4 8.4	8.4	31.8 32.0	31.9	102.2 102.8	102.5	8.1 8.1	8.1	8.1	18.3 17.8	18.1	
WSD22	Cloudy	Rough	14:53	Surface	1	17.3 17.3	17.3	8.3 8.3	8.3	32.0 31.9	32.0	90.2 90.3	90.3	7.2 7.2	7.2	7.2	8.3 8.7	8.5	10.4
				Middle	5	17.3 17.2	17.3	8.3 8.3	8.3	31.1 31.0	31.1	89.7 89.9	89.8	7.2 7.2	7.2		9.7 9.4	9.6	
				Bottom	9	17.1 17.2	17.2	8.3 8.3	8.3	30.5 31.0	30.8	90.9 90.3	90.6	7.3 7.2	7.3	7.3	13.0 13.1	13.1	
WSD5	Cloudy	Rough	16:14	Surface	1	17.0 17.0	17.0	8.3 8.3	8.3	28.6 28.6	28.6	89.5 89.5	89.5	7.3 7.3	7.3	7.3	8.9 9.2	9.1	10.5
				Middle	7.5	17.0 17.0	17.0	8.3 8.2	8.3	29.6 31.7	30.7	88.8 88.9	88.9	7.2 7.1	7.2		10.4 10.8	10.6	
				Bottom	14	17.0 17.0	17.0	8.2 8.2	8.2	32.1 32.0	32.1	88.8 88.7	88.8	7.1 7.1	7.1	7.1	11.6 11.9	11.8	
WSD6	Cloudy	Rough	14:06	Surface	1	17.8 17.5	17.7	8.0 8.1	8.1	29.8 30.0	29.9	88.9 85.9	87.4	7.1 6.9	7.0	7.0	3.3 3.6	3.5	4.9
				Middle	3	17.5 17.5	17.5	8.1 8.1	8.1	29.8 30.0	29.9	86.3 85.6	86.0	6.9 6.8	6.9		4.5 5.0	4.8	
				Bottom	5	17.4 17.4	17.4	8.1 8.1	8.1	29.5 29.5	29.5	85.7 85.5	85.6	6.9 6.9	6.9	6.9	6.1 6.7	6.4	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
WSD7	Cloudy	Rough	14:18	Surface	1	17.4 17.4	17.4	8.2 8.2	8.2	30.4 30.4	30.4	86.4 86.4	86.4	6.9 6.9	6.9	7.0	4.2 4.5	4.4	6.0
				Middle	3	17.3 17.3	17.3	8.2 8.2	8.2	30.3 30.3	30.3	86.6 86.9	86.8	6.9 7.0	7.0		6.3 6.1	6.2	
				Bottom	5	17.3 17.3	17.3	8.2 8.2	8.2	29.7 29.9	29.8	86.6 86.9	86.8	7.0 7.0	7.0	7.0	7.2 7.5	7.4	
WSD9	Cloudy	Rough	14:33	Surface	1	16.9 16.9	16.9	8.3 8.3	8.3	31.1 31.1	31.1	99.9 99.3	99.6	8.0 8.0	8.0	8.0	4.6 4.8	4.7	6.4
				Middle	4	17.1 17.1	17.1	8.3 8.3	8.3	30.3 30.9	30.6	98.2 98.0	98.1	7.9 7.9	7.9		5.9 6.3	6.1	
				Bottom	7	17.1 17.1	17.1	8.3 8.3	8.3	30.0 30.1	30.1	97.9 97.6	97.8	7.9 7.9	7.9	7.9	8.6 8.0	8.3	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
B10	Cloudy	Rough	09:03	Surface	1	16.9 16.9	16.9	8.3 8.3	8.3	30.8 30.7	30.8	93.3 93.2	93.3	7.5 7.5	7.5	7.5	3.1 2.7	2.9	3.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.7	16.9 16.9	16.9	8.3 8.3	8.3	30.7 30.7	30.7	92.5 92.3	92.4	7.4 7.4	7.4	7.4	3.4 3.6	3.5	
B11	Cloudy	Rough	08:59	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.5	- -	-	4.1
				Middle	1.2	16.9 16.9	16.9	8.3 8.3	8.3	30.4 30.6	30.5	93.2 92.9	93.1	7.5 7.5	7.5		4.1 4.0	4.1	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B12	Cloudy	Rough	08:55	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.5	- -	-	4.3
				Middle	1	16.8 16.8	16.8	8.2 8.2	8.2	29.6 29.7	29.7	92.1 91.6	91.9	7.5 7.4	7.5		4.3 4.2	4.3	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B13	Cloudy	Rough	08:48	Surface	1	16.8 16.8	16.8	8.2 8.2	8.2	32.3 32.2	32.3	93.7 93.4	93.6	7.5 7.5	7.5	7.5	5.6 5.4	5.5	5.8
				Middle	3	16.9 16.9	16.9	8.3 8.3	8.3	31.5 31.1	31.3	91.7 91.7	91.7	7.3 7.4	7.4		5.7 5.4	5.6	
				Bottom	5	16.8 16.8	16.8	8.3 8.3	8.3	31.3 31.3	31.3	91.1 91.1	91.1	7.3 7.3	7.3	7.3	6.1 6.2	6.2	
B14	Cloudy	Rough	09:35	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.5	- -	-	7.2
				Middle	0.9	16.8 16.8	16.8	8.2 8.2	8.2	29.4 29.4	29.4	92.6 92.4	92.5	7.5 7.5	7.5		6.9 7.4	7.2	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	
B24	Cloudy	Rough	10:49	Surface	1	17.1 17.6	17.4	8.2 8.2	8.2	36.0 31.2	33.6	104.1 102.0	103.1	8.1 8.1	8.1	8.1	1.9 2.2	2.1	3.0
				Middle	5.5	17.4 17.7	17.6	8.2 8.2	8.2	31.2 31.2	31.2	101.5 102.3	101.9	8.1 8.1	8.1		2.9 3.0	3.0	
				Bottom	10	17.6 17.7	17.7	8.2 8.2	8.2	31.4 31.4	31.4	100.9 100.9	100.9	8.0 8.0	8.0	8.0	4.3 3.7	4.0	
B25	Cloudy	Rough	10:39	Surface	1	17.4 17.6	17.5	8.2 8.2	8.2	31.1 31.0	31.1	97.3 97.0	97.2	7.7 7.7	7.7	7.7	4.5 4.6	4.6	5.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	4.3	17.5 17.6	17.6	8.2 8.2	8.2	30.9 30.9	30.9	96.0 96.5	96.3	7.6 7.7	7.7	7.7	6.8 6.8	6.8	
B26	Cloudy	Rough	10:23	Surface	1	17.5 17.6	17.6	8.2 8.2	8.2	30.4 30.3	30.4	101.6 101.1	101.4	8.1 8.0	8.1	8.1	2.2 2.2	2.2	5.8
				Middle	3	17.5 17.5	17.5	8.2 8.2	8.2	30.8 30.8	30.8	100.0 100.1	100.1	8.0 8.0	8.0		5.2 5.1	5.2	
				Bottom	5	17.6 17.5	17.6	8.2 8.2	8.2	30.8 30.8	30.8	100.7 100.5	100.6	8.0 8.0	8.0	8.0	10.0 9.7	9.9	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
B7	Cloudy	Rough	09:18	Surface	1	16.9 16.9	16.9	8.3 8.3	8.3	30.7 30.0	30.4	91.7 91.6	91.7	7.4 7.4	7.4	7.4	4.3 4.2	4.3	6.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.4	16.9 16.9	16.9	8.3 8.3	8.3	29.6 29.6	29.6	91.5 91.5	91.5	7.4 7.4	7.4	7.4	7.6 7.5	7.6	
B8	Cloudy	Rough	09:11	Surface	1	16.9 16.9	16.9	8.3 8.3	8.3	30.0 29.9	30.0	93.4 93.4	93.4	7.6 7.6	7.6	7.6	4.2 4.2	4.2	4.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.6	16.9 16.9	16.9	8.3 8.3	8.3	29.8 29.8	29.8	93.1 93.0	93.1	7.5 7.5	7.5	7.5	4.7 4.9	4.8	
B9	Cloudy	Rough	09:07	Surface	1	16.9 16.9	16.9	8.3 8.3	8.3	30.7 30.6	30.7	92.4 92.5	92.5	7.4 7.5	7.5	7.5	3.4 3.5	3.5	3.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	2.6	16.9 16.9	16.9	8.3 8.3	8.3	31.3 31.2	31.3	92.3 92.4	92.4	7.4 7.4	7.4	7.4	4.1 4.3	4.2	
EM1	Cloudy	Rough	09:49	Surface	1	16.6 16.6	16.6	8.2 8.2	8.2	30.6 30.6	30.6	90.9 93.4	92.2	7.4 7.6	7.5	7.6	1.7 1.4	1.6	1.7
				Middle	9.5	16.6 16.6	16.6	8.2 8.2	8.2	30.7 30.7	30.7	93.1 93.5	93.3	7.5 7.6	7.6		1.7 1.6	1.7	
				Bottom	18	16.6 16.5	16.6	8.3 8.3	8.3	30.7 30.7	30.7	94.3 94.7	94.5	7.6 7.7	7.7	7.7	1.9 1.8	1.9	
EM2	Cloudy	Rough	10:02	Surface	1	16.5 16.5	16.5	8.3 8.3	8.3	30.7 30.7	30.7	99.5 98.6	99.1	8.1 8.0	8.1	8.2	1.0 1.0	1.0	1.6
				Middle	11	16.4 16.4	16.4	8.3 8.3	8.3	30.8 30.8	30.8	100.7 99.4	100.1	8.2 8.1	8.2		1.8 1.6	1.7	
				Bottom	21	16.4 16.4	16.4	8.3 8.3	8.3	30.8 30.7	30.8	100.5 99.3	99.9	8.2 8.1	8.2	8.2	2.1 2.1	2.1	
EM3	Cloudy	Rough	10:00	Surface	1	17.4 17.4	17.4	8.3 8.3	8.3	30.3 30.3	30.3	102.5 102.4	102.5	8.2 8.2	8.2	8.2	2.9 2.9	2.9	6.5
				Middle	13	17.4 17.4	17.4	8.3 8.3	8.3	30.7 30.7	30.7	103.0 103.2	103.1	8.2 8.2	8.2		6.5 7.5	7.0	
				Bottom	25	17.4 17.4	17.4	8.3 8.3	8.3	30.7 30.7	30.7	102.8 102.6	102.7	8.2 8.2	8.2	8.2	10.0 9.0	9.5	
F1	Cloudy	Rough	09:43	Surface	1	17.3 17.5	17.4	8.2 8.2	8.2	31.0 30.8	30.9	101.9 101.2	101.6	8.1 8.0	8.1	8.3	4.0 3.8	3.9	4.6
				Middle	5.5	17.5 17.5	17.5	8.2 8.2	8.2	30.8 30.8	30.8	106.9 107.1	107.0	8.5 8.5	8.5		5.1 5.5	5.3	
				Bottom	10	17.5 17.5	17.5	8.3 8.3	8.3	29.8 30.3	30.1	111.4 111.6	111.5	8.9 8.9	8.9	8.9	4.2 4.7	4.5	
F5	Cloudy	Rough	09:24	Surface	1	16.9 16.9	16.9	8.3 8.3	8.3	28.6 28.6	28.6	95.1 95.1	95.1	7.8 7.8	7.8	7.8	6.4 6.1	6.3	7.4
				Middle	4.5	16.9 16.9	16.9	8.3 8.3	8.3	29.7 29.7	29.7	95.1 95.0	95.1	7.7 7.7	7.7		7.2 7.5	7.4	
				Bottom	8	16.9 16.9	16.9	8.3 8.3	8.3	30.5 30.5	30.5	91.1 91.1	91.1	7.3 7.3	7.3	7.3	8.8 8.3	8.6	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
JM3	Cloudy	Rough	09:33	Surface	1	16.8 16.8	16.8	8.2 8.2	8.2	30.5 30.5	30.5	87.3 87.5	87.4	7.1 7.1	7.1	7.1	2.3 2.4	2.4	2.2
				Middle	6	16.8 16.8	16.8	8.2 8.2	8.2	30.5 30.5	30.5	87.4 88.4	87.9	7.1 7.1	7.1		1.9 1.8	1.9	
				Bottom	11	16.7 16.7	16.7	8.2 8.2	8.2	30.6 30.6	30.6	90.7 91.1	90.9	7.3 7.4	7.4	7.4	2.2 2.2	2.2	
MM13	Cloudy	Rough	08:49	Surface	1	17.2 17.2	17.2	8.3 8.3	8.3	30.8 30.8	30.8	100.1 99.9	100.0	8.0 8.0	8.0	8.0	3.2 3.3	3.3	5.6
				Middle	15.5	17.2 17.2	17.2	8.3 8.3	8.3	31.0 31.0	31.0	100.7 100.7	100.7	8.0 8.0	8.0		4.2 5.2	4.7	
				Bottom	30	17.2 17.2	17.2	8.3 8.3	8.3	31.0 31.1	31.1	100.6 100.5	100.6	8.0 8.0	8.0	8.0	8.4 9.2	8.8	
SM17	Cloudy	Rough	10:19	Surface	1	16.6 16.6	16.6	8.2 8.3	8.3	31.3 31.3	31.3	103.3 103.3	103.3	8.3 8.3	8.3	8.3	8.3 8.5	8.4	12.1
				Middle	8.5	16.6 16.6	16.6	8.3 8.4	8.4	31.5 31.7	31.6	103.4 103.4	103.4	8.3 8.3	8.3		11.6 11.2	11.4	
				Bottom	16	16.6 16.6	16.6	8.4 8.4	8.4	31.4 31.5	31.5	102.3 102.3	102.3	8.2 8.2	8.2	8.2	16.6 16.4	16.5	
VM1	Cloudy	Rough	10:28	Surface	1	16.7 16.7	16.7	8.2 8.2	8.2	30.6 30.5	30.6	88.1 88.3	88.2	7.1 7.1	7.1	7.2	2.7 2.4	2.6	2.5
				Middle	21.5	16.7 16.7	16.7	8.2 8.2	8.2	30.5 30.5	30.5	88.4 88.4	88.4	7.2 7.2	7.2		2.7 2.2	2.5	
				Bottom	42	16.7 16.7	16.7	8.2 8.2	8.2	30.6 30.6	30.6	90.4 89.9	90.2	7.3 7.3	7.3	7.3	2.2 2.3	2.3	
VM12	Cloudy	Rough	08:09	Surface	1	17.0 17.0	17.0	7.9 8.0	8.0	31.5 31.4	31.5	89.0 88.8	88.9	7.1 7.1	7.1	7.0	9.6 9.4	9.5	11.4
				Middle	10	16.9 16.9	16.9	8.2 8.2	8.2	30.9 30.9	30.9	85.8 85.9	85.9	6.9 6.9	6.9		10.3 10.4	10.4	
				Bottom	19	16.9 16.9	16.9	8.2 8.2	8.2	31.8 32.0	31.9	85.7 85.8	85.8	6.9 6.9	6.9	6.9	14.2 14.6	14.4	
VM14	Cloudy	Rough	08:34	Surface	1	16.8 16.8	16.8	8.3 8.3	8.3	30.0 30.1	30.1	91.0 90.9	91.0	7.4 7.4	7.4	7.4	10.3 10.1	10.2	12.0
				Middle	6	16.9 16.9	16.9	8.3 8.3	8.3	30.2 30.2	30.2	89.7 89.8	89.8	7.2 7.3	7.3		11.4 12.5	12.0	
				Bottom	11	16.9 16.9	16.9	8.3 8.3	8.3	29.7 29.8	29.8	89.1 89.0	89.1	7.2 7.2	7.2	7.2	13.6 14.1	13.9	
VM15	Cloudy	Rough	08:27	Surface	1	16.7 16.8	16.8	8.0 8.0	8.0	30.1 30.0	30.1	89.9 89.3	89.6	7.3 7.2	7.3	7.3	2.5 2.8	2.7	5.3
				Middle	5.5	16.8 16.8	16.8	8.0 8.0	8.0	29.1 29.4	29.3	88.2 88.1	88.2	7.2 7.2	7.2		4.3 4.7	4.5	
				Bottom	10	16.8 16.8	16.8	8.0 8.0	8.0	27.5 27.6	27.6	85.5 86.1	85.8	7.0 7.1	7.1	7.1	8.9 8.7	8.8	
VM2	Cloudy	Rough	10:56	Surface	1	16.7 16.7	16.7	8.2 8.2	8.2	30.5 30.6	30.6	92.1 92.5	92.3	7.5 7.5	7.5	7.5	2.6 2.9	2.8	2.8
				Middle	7	16.7 16.7	16.7	8.2 8.2	8.2	30.5 30.6	30.6	93.3 91.7	92.5	7.5 7.4	7.5		2.7 2.8	2.8	
				Bottom	13	16.7 16.7	16.7	8.2 8.2	8.2	30.5 30.5	30.5	92.0 91.4	91.7	7.4 7.4	7.4	7.4	2.8 2.9	2.9	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
VM4	Cloudy	Rough	09:27	Surface	1	16.9 16.9	16.9	8.2 8.2	8.2	26.8 26.8	26.8	102.1 101.2	101.7	8.4 8.3	8.4	8.2	4.1 4.6	4.4	5.2
				Middle	7.5	17.1 17.1	17.1	8.2 8.3	8.3	27.4 27.3	27.4	98.4 98.3	98.4	8.0 8.0	8.0		5.0 5.9	5.5	
				Bottom	14	17.1 17.1	17.1	8.3 8.3	8.3	34.6 35.0	34.8	99.8 99.6	99.7	7.8 7.8	7.8	7.8	5.6 5.9	5.8	
VM5	Cloudy	Rough	09:44	Surface	1	17.2 17.2	17.2	8.2 8.2	8.2	32.6 32.6	32.6	92.6 92.4	92.5	7.3 7.3	7.3	7.3	6.1 4.9	5.5	5.8
				Middle	7	17.2 17.2	17.2	8.2 8.2	8.2	31.8 31.6	31.7	92.0 91.9	92.0	7.3 7.3	7.3		6.7 6.0	6.4	
				Bottom	13	17.2 17.2	17.2	8.2 8.2	8.2	30.4 30.1	30.3	91.4 91.4	91.4	7.3 7.3	7.3	7.3	5.5 5.4	5.5	
VM7	Cloudy	Rough	10:31	Surface	1	17.1 17.2	17.2	8.2 8.2	8.2	31.4 31.3	31.4	95.5 95.2	95.4	7.6 7.6	7.6	7.6	5.2 4.5	4.9	5.2
				Middle	7.5	17.2 17.2	17.2	8.2 8.2	8.2	30.8 30.8	30.8	94.2 93.9	94.1	7.5 7.5	7.5		4.5 4.2	4.4	
				Bottom	14	17.2 17.2	17.2	8.2 8.2	8.2	30.7 30.8	30.8	93.5 93.8	93.7	7.5 7.5	7.5	7.5	5.9 6.4	6.2	
VM8	Cloudy	Rough	10:44	Surface	1	17.2 17.2	17.2	8.3 8.3	8.3	31.4 31.4	31.4	109.1 109.0	109.1	8.7 8.7	8.7	8.7	4.9 4.8	4.9	9.1
				Middle	7	17.3 17.3	17.3	8.3 8.3	8.3	31.3 31.3	31.3	108.3 108.4	108.4	8.6 8.6	8.6		4.8 4.8	4.8	
				Bottom	13	17.3 17.3	17.3	8.3 8.4	8.4	31.2 31.3	31.3	108.3 108.2	108.3	8.6 8.6	8.6	8.6	17.9 17.3	17.6	
WSD10	Cloudy	Rough	09:00	Surface	1	16.9 16.9	16.9	8.1 8.1	8.1	30.3 30.4	30.4	82.7 83.3	83.0	6.7 6.7	6.7	6.9	3.1 3.1	3.1	3.5
				Middle	5.5	16.8 16.8	16.8	8.1 8.1	8.1	30.4 30.4	30.4	87.1 85.6	86.4	7.0 6.9	7.0		3.6 3.3	3.5	
				Bottom	10	16.7 16.8	16.8	8.1 8.1	8.1	30.5 30.5	30.5	88.5 86.6	87.6	7.2 7.0	7.1	7.1	3.9 3.7	3.8	
WSD11	Cloudy	Rough	09:12	Surface	1	16.8 16.8	16.8	8.1 8.1	8.1	30.5 30.4	30.5	83.8 83.6	83.7	6.8 6.8	6.8	6.8	4.3 4.3	4.3	4.0
				Middle	8	16.8 16.8	16.8	8.1 8.1	8.1	30.5 30.5	30.5	83.5 83.6	83.6	6.7 6.8	6.8		3.8 3.9	3.9	
				Bottom	15	16.8 16.8	16.8	8.1 8.1	8.1	30.5 30.5	30.5	83.2 82.6	82.9	6.7 6.7	6.7	6.7	3.7 3.9	3.8	
WSD12	Cloudy	Rough	09:25	Surface	1	16.7 16.7	16.7	8.2 8.2	8.2	30.5 30.5	30.5	86.8 88.5	87.7	7.0 7.2	7.1	7.1	2.8 3.1	3.0	2.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	4.2	16.7 16.6	16.7	8.2 8.2	8.2	30.5 30.6	30.6	87.7 91.1	89.4	7.1 7.4	7.3	7.3	2.2 2.2	2.2	
WSD13	Cloudy	Rough	10:14	Surface	1	16.6 16.6	16.6	8.2 8.2	8.2	30.6 30.6	30.6	92.2 93.1	92.7	7.5 7.5	7.5	7.6	1.6 1.4	1.5	2.1
				Middle	6	16.6 16.6	16.6	8.2 8.2	8.2	30.6 30.7	30.7	92.7 93.4	93.1	7.5 7.6	7.6		1.9 2.0	2.0	
				Bottom	11	16.6 16.6	16.6	8.2 8.2	8.2	30.6 30.6	30.6	93.1 93.7	93.4	7.5 7.6	7.6	7.6	2.6 2.7	2.7	

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						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
WSD15	Cloudy	Rough	10:38	Surface	1	16.8 16.7	16.8	8.2 8.2	8.2	30.4 30.5	30.5	85.6 86.9	86.3	6.9 7.0	7.0	7.1	3.3 3.3	3.3	3.3
				Middle	7	16.7 16.7	16.7	8.2 8.2	8.2	30.5 30.5	30.5	87.0 87.3	87.2	7.0 7.1	7.1		3.1 3.2	3.2	
				Bottom	13	16.7 16.7	16.7	8.2 8.2	8.2	30.5 30.6	30.6	87.3 87.5	87.4	7.1 7.1	7.1	7.1	3.2 3.4	3.3	
WSD17	Cloudy	Rough	10:49	Surface	1	16.7 16.7	16.7	8.2 8.2	8.2	30.5 30.5	30.5	90.9 89.2	90.1	7.4 7.2	7.3	7.4	3.4 3.1	3.3	3.6
				Middle	5.5	16.7 16.7	16.7	8.2 8.2	8.2	30.5 30.6	30.6	91.1 91.4	91.3	7.4 7.4	7.4		3.5 4.3	3.9	
				Bottom	10	16.7 16.7	16.7	8.2 8.2	8.2	30.5 30.6	30.6	91.1 91.8	91.5	7.4 7.4	7.4	7.4	4.0 3.4	3.7	
WSD18	Cloudy	Rough	10:05	Surface	1	17.1 17.1	17.1	8.2 8.2	8.2	31.9 31.9	31.9	95.8 95.3	95.6	7.6 7.6	7.6	7.6	5.5 4.5	5.0	4.7
				Middle	6.5	17.3 17.3	17.3	8.2 8.2	8.2	31.0 31.0	31.0	93.9 93.7	93.8	7.5 7.5	7.5		4.4 4.5	4.5	
				Bottom	12	17.3 17.3	17.3	8.2 8.2	8.2	30.6 30.5	30.6	93.6 93.5	93.6	7.5 7.5	7.5	7.5	4.6 4.5	4.6	
WSD19	Cloudy	Rough	10:22	Surface	1	17.2 17.2	17.2	8.2 8.2	8.2	31.7 31.7	31.7	95.3 95.0	95.2	7.6 7.6	7.6	7.6	5.3 5.0	5.2	5.2
				Middle	7	17.2 17.2	17.2	8.2 8.2	8.2	31.4 31.3	31.4	94.0 93.9	94.0	7.5 7.5	7.5		4.6 3.9	4.3	
				Bottom	13	17.2 17.2	17.2	8.2 8.2	8.2	31.1 31.1	31.1	93.0 93.0	93.0	7.4 7.4	7.4	7.4	5.8 6.1	6.0	
WSD20	Cloudy	Rough	11:01	Surface	1	17.1 17.1	17.1	8.3 8.3	8.3	32.5 32.5	32.5	110.4 110.0	110.2	8.8 8.7	8.8	8.8	4.6 5.1	4.9	3.8
				Middle	6.5	17.3 17.2	17.3	8.4 8.4	8.4	32.3 32.3	32.3	109.2 109.3	109.3	8.6 8.7	8.7		2.8 2.9	2.9	
				Bottom	12	17.2 17.2	17.2	8.4 8.4	8.4	32.4 32.5	32.5	109.3 109.2	109.3	8.7 8.6	8.7	8.7	3.7 3.6	3.7	
WSD22	Cloudy	Rough	09:54	Surface	1	17.1 17.2	17.2	8.2 8.2	8.2	32.6 32.5	32.6	92.8 92.8	92.8	7.4 7.3	7.4	7.4	5.2 5.1	5.2	4.7
				Middle	5	17.2 17.2	17.2	8.2 8.2	8.2	32.2 32.1	32.2	91.7 91.7	91.7	7.3 7.3	7.3		4.2 4.8	4.5	
				Bottom	9	17.2 17.2	17.2	8.2 8.2	8.2	32.0 32.0	32.0	92.5 92.5	92.5	7.3 7.3	7.3	7.3	4.4 4.4	4.4	
WSD5	Cloudy	Rough	08:24	Surface	1	16.9 16.9	16.9	8.2 8.2	8.2	30.6 30.6	30.6	85.9 86.0	86.0	6.9 6.9	6.9	6.9	8.4 8.5	8.5	8.2
				Middle	7.5	16.9 16.9	16.9	8.2 8.2	8.2	32.1 32.5	32.3	85.5 85.4	85.5	6.8 6.8	6.8		7.2 7.1	7.2	
				Bottom	14	16.9 16.9	16.9	8.2 8.2	8.2	32.4 32.1	32.3	85.3 85.2	85.3	6.8 6.8	6.8	6.8	8.8 8.9	8.9	
WSD6	Cloudy	Rough	08:44	Surface	1	16.7 16.9	16.8	8.0 8.0	8.0	30.6 30.4	30.5	84.6 81.0	82.8	6.8 6.5	6.7	6.7	6.2 5.8	6.0	6.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	4.6	16.9 16.9	16.9	8.0 8.0	8.0	29.7 29.6	29.7	81.5 81.6	81.6	6.6 6.6	6.6	6.6	6.9 7.8	7.4	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

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Water Quality Monitoring Results on 24 January 2015 (Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*
WSD7	Cloudy	Rough	08:55	Surface	1	16.7 16.7	16.7	8.0 8.0	8.0	29.8 29.8	29.8	87.6 86.4	87.0	7.1 7.0	7.1	7.1	5.8 5.1	5.5	6.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	
				Bottom	4.9	16.8 16.8	16.8	8.0 8.0	8.0	29.6 29.6	29.6	84.4 84.3	84.4	6.9 6.8	6.9	6.9	7.4 7.6	7.5	
WSD9	Cloudy	Rough	09:16	Surface	1	17.1 17.1	17.1	8.0 8.0	8.0	25.9 26.0	26.0	94.5 94.6	94.6	7.8 7.8	7.8	7.8	3.3 3.5	3.4	4.8
				Middle	4	17.1 17.1	17.1	8.0 7.9	8.0	26.8 27.0	26.9	94.0 93.8	93.9	7.7 7.7	7.7		4.1 4.0	4.1	
				Bottom	7	17.1 17.1	17.1	8.0 8.0	8.0	27.0 26.9	27.0	93.8 93.7	93.8	7.7 7.7	7.7	7.7	6.8 7.2	7.0	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

APPENDIX D
BASELINE WATER QUALITY MONITORING RESULTS (*E. COLI*)

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HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works
- Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Water Quality Monitoring Results (E. Coli)

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	B7	S	Mid-Ebb	38	44
	B7	B	Mid-Ebb	50	
	B7	S	Mid-Flood	18	15
	B7	B	Mid-Flood	12	
13/12/2014	B7	S	Mid-Ebb	190	180
	B7	B	Mid-Ebb	170	
	B7	S	Mid-Flood	<1	1
	B7	B	Mid-Flood	<1	
24/01/2015	B7	S	Mid-Ebb	38	49
	B7	B	Mid-Ebb	62	
	B7	S	Mid-Flood	<1	1
	B7	B	Mid-Flood	<1	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	B8	S	Mid-Ebb	6	8
	B8	B	Mid-Ebb	12	
	B8	S	Mid-Flood	40	38
	B8	B	Mid-Flood	36	
13/12/2014	B8	S	Mid-Ebb	680	865
	B8	B	Mid-Ebb	1100	
	B8	S	Mid-Flood	<1	1
	B8	B	Mid-Flood	<1	
24/01/2015	B8	S	Mid-Ebb	50	64
	B8	B	Mid-Ebb	82	
	B8	S	Mid-Flood	<1	1
	B8	B	Mid-Flood	<1	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	B9	S	Mid-Ebb	24	21
	B9	B	Mid-Ebb	18	
	B9	S	Mid-Flood	18	19
	B9	B	Mid-Flood	20	
13/12/2014	B9	S	Mid-Ebb	1000	938
	B9	B	Mid-Ebb	880	
	B9	S	Mid-Flood	2	1
	B9	B	Mid-Flood	<1	
24/01/2015	B9	S	Mid-Ebb	6	6
	B9	B	Mid-Ebb	6	
	B9	S	Mid-Flood	1	1
	B9	B	Mid-Flood	<1	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	B10	S	Mid-Ebb	16	11
	B10	B	Mid-Ebb	8	
	B10	S	Mid-Flood	54	40
	B10	B	Mid-Flood	30	
13/12/2014	B10	S	Mid-Ebb	160	233
	B10	B	Mid-Ebb	340	
	B10	S	Mid-Flood	<1	1
	B10	B	Mid-Flood	<1	
24/01/2015	B10	S	Mid-Ebb	10	11
	B10	B	Mid-Ebb	12	
	B10	S	Mid-Flood	<1	1
	B10	B	Mid-Flood	<1	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	B11	M	Mid-Ebb	<1	1
	B11	M	Mid-Flood	42	42
13/12/2014	B11	M	Mid-Ebb	16	16
	B11	M	Mid-Flood	<1	1
24/01/2015	B11	M	Mid-Ebb	10	10
	B11	M	Mid-Flood	<1	1

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	B12	M	Mid-Ebb	2	2
	B12	M	Mid-Flood	82,000	82000
13/12/2014	B12	M	Mid-Ebb	52	52
	B12	M	Mid-Flood	<1	1
24/01/2015	B12	M	Mid-Ebb	<1	1
	B12	M	Mid-Flood	2	2

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	B13	S	Mid-Ebb	2	3
	B13	B	Mid-Ebb	4	
	B13	S	Mid-Flood	98	50
	B13	M	Mid-Flood	32	
	B13	B	Mid-Flood	40	
13/12/2014	B13	S	Mid-Ebb	4	4
	B13	M	Mid-Ebb	6	
	B13	B	Mid-Ebb	2	
	B13	S	Mid-Flood	<1	1
	B13	M	Mid-Flood	<1	
	B13	B	Mid-Flood	<1	
24/01/2015	B13	S	Mid-Ebb	32	40
	B13	M	Mid-Ebb	28	
	B13	B	Mid-Ebb	70	
	B13	S	Mid-Flood	<1	2
	B13	M	Mid-Flood	2	
	B13	B	Mid-Flood	6	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	B14	M	Mid-Ebb	<1	1
	B14	M	Mid-Flood	<1	1
13/12/2014	B14	M	Mid-Ebb	<1	1
	B14	M	Mid-Flood	1	1
24/01/2015	B14	M	Mid-Ebb	<1	1
	B14	M	Mid-Flood	<1	1

: The reporting limit for E.coli is 1 cfu/100ml. For the results below the reporting limit, the level will be taken as 1 cfu/100ml.

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Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	B24	S	Mid-Ebb	<1	1
	B24	M	Mid-Ebb	<1	
	B24	B	Mid-Ebb	<1	
	B24	S	Mid-Flood	<1	2
	B24	M	Mid-Flood	<1	
	B24	B	Mid-Flood	4	
13/12/2014	B24	S	Mid-Ebb	<1	1
	B24	B	Mid-Ebb	<1	
	B24	S	Mid-Flood	2	1
	B24	B	Mid-Flood	<1	
24/01/2015	B24	S	Mid-Ebb	2	2
	B24	M	Mid-Ebb	<1	
	B24	B	Mid-Ebb	2	
	B24	S	Mid-Flood	<1	2
	B24	M	Mid-Flood	4	
	B24	B	Mid-Flood	2	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	B25	S	Mid-Ebb	<1	1
	B25	B	Mid-Ebb	<1	
	B25	S	Mid-Flood	4	2
	B25	B	Mid-Flood	<1	
13/12/2014	B25	S	Mid-Ebb	6	2
	B25	B	Mid-Ebb	<1	
	B25	S	Mid-Flood	<1	1
	B25	B	Mid-Flood	<1	
24/01/2015	B25	S	Mid-Ebb	8	7
	B25	M	Mid-Ebb	2	
	B25	B	Mid-Ebb	18	
	B25	S	Mid-Flood	30	24
	B25	B	Mid-Flood	20	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	B26	S	Mid-Ebb	<1	1
	B26	B	Mid-Ebb	<1	
	B26	S	Mid-Flood	<1	1
	B26	B	Mid-Flood	<1	
13/12/2014	B26	S	Mid-Ebb	<1	1
	B26	M	Mid-Ebb	<1	
	B26	B	Mid-Ebb	<1	
	B26	S	Mid-Flood	1	1
	B26	M	Mid-Flood	<1	
	B26	B	Mid-Flood	3	
24/01/2015	B26	S	Mid-Ebb	2	2
	B26	M	Mid-Ebb	4	
	B26	B	Mid-Ebb	<1	
	B26	S	Mid-Flood	<1	1
	B26	M	Mid-Flood	<1	
	B26	B	Mid-Flood	2	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	F1	S	Mid-Ebb	<1	1
	F1	M	Mid-Ebb	<1	
	F1	B	Mid-Ebb	<1	
	F1	S	Mid-Flood	4	4
	F1	M	Mid-Flood	6	
	F1	B	Mid-Flood	2	
13/12/2014	F1	S	Mid-Ebb	<1	1
	F1	M	Mid-Ebb	<1	
	F1	B	Mid-Ebb	<1	
	F1	S	Mid-Flood	<1	1
	F1	M	Mid-Flood	<1	
	F1	B	Mid-Flood	<1	
24/01/2015	F1	S	Mid-Ebb	6	2
	F1	M	Mid-Ebb	2	
	F1	B	Mid-Ebb	<1	
	F1	S	Mid-Flood	20	17
	F1	M	Mid-Flood	20	
	F1	B	Mid-Flood	12	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	F5	S	Mid-Ebb	16	47
	F5	M	Mid-Ebb	74	
	F5	B	Mid-Ebb	86	
	F5	S	Mid-Flood	24	24
	F5	M	Mid-Flood	16	
	F5	B	Mid-Flood	36	
13/12/2014	F5	S	Mid-Ebb	11	17
	F5	M	Mid-Ebb	12	
	F5	B	Mid-Ebb	38	
	F5	S	Mid-Flood	2	4
	F5	M	Mid-Flood	4	
	F5	B	Mid-Flood	8	
24/01/2015	F5	S	Mid-Ebb	20	37
	F5	M	Mid-Ebb	46	
	F5	B	Mid-Ebb	56	
	F5	S	Mid-Flood	<1	1
	F5	M	Mid-Flood	<1	
	F5	B	Mid-Flood	<1	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	WSD5	S	Mid-Ebb	2	4
	WSD5	M	Mid-Ebb	2	
	WSD5	B	Mid-Ebb	12	
	WSD5	S	Mid-Flood	50	36
	WSD5	M	Mid-Flood	26	
	WSD5	B	Mid-Flood	36	
13/12/2014	WSD5	S	Mid-Ebb	150	124
	WSD5	M	Mid-Ebb	130	
	WSD5	B	Mid-Ebb	98	
	WSD5	S	Mid-Flood	6	11
	WSD5	M	Mid-Flood	10	
	WSD5	B	Mid-Flood	20	
24/01/2015	WSD5	S	Mid-Ebb	96	80
	WSD5	M	Mid-Ebb	92	
	WSD5	B	Mid-Ebb	58	
	WSD5	S	Mid-Flood	1	4
	WSD5	M	Mid-Flood	3	
	WSD5	B	Mid-Flood	20	

: The reporting limit for E.coli is 1 cfu/100ml. For the results below the reporting limit, the level will be taken as 1 cfu/100ml.

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Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	WSD6	S	Mid-Ebb	8	3
	WSD6	M	Mid-Ebb	2	
	WSD6	B	Mid-Ebb	<1	
	WSD6	S	Mid-Flood	94	69
	WSD6	M	Mid-Flood	48	
	WSD6	B	Mid-Flood	74	
13/12/2014	WSD6	S	Mid-Ebb	100	49
	WSD6	M	Mid-Ebb	66	
	WSD6	B	Mid-Ebb	18	
	WSD6	S	Mid-Flood	<1	1
	WSD6	M	Mid-Flood	2	
	WSD6	B	Mid-Flood	1	
24/01/2015	WSD6	S	Mid-Ebb	120	154
	WSD6	M	Mid-Ebb	180	
	WSD6	B	Mid-Ebb	170	
	WSD6	S	Mid-Flood	40	20
	WSD6	B	Mid-Flood	10	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	WSD7	S	Mid-Ebb	150	105
	WSD7	M	Mid-Ebb	96	
	WSD7	B	Mid-Ebb	81	
	WSD7	S	Mid-Flood	54	71
	WSD7	M	Mid-Flood	92	
	WSD7	B	Mid-Flood	72	
13/12/2014	WSD7	S	Mid-Ebb	72	81
	WSD7	B	Mid-Ebb	92	
	WSD7	S	Mid-Flood	22	17
	WSD7	M	Mid-Flood	12	
	WSD7	B	Mid-Flood	20	
24/01/2015	WSD7	S	Mid-Ebb	230	206
	WSD7	M	Mid-Ebb	180	
	WSD7	B	Mid-Ebb	210	
	WSD7	S	Mid-Flood	62	29
	WSD7	B	Mid-Flood	14	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	WSD9	S	Mid-Ebb	24	55
	WSD9	M	Mid-Ebb	82	
	WSD9	B	Mid-Ebb	83	
	WSD9	S	Mid-Flood	44	67
	WSD9	M	Mid-Flood	83	
	WSD9	B	Mid-Flood	84	
13/12/2014	WSD9	S	Mid-Ebb	62	88
	WSD9	M	Mid-Ebb	74	
	WSD9	B	Mid-Ebb	150	
	WSD9	S	Mid-Flood	110	129
	WSD9	M	Mid-Flood	150	
	WSD9	B	Mid-Flood	130	
24/01/2015	WSD9	S	Mid-Ebb	540	1087
	WSD9	M	Mid-Ebb	1700	
	WSD9	B	Mid-Ebb	1400	
	WSD9	S	Mid-Flood	540	514
	WSD9	M	Mid-Flood	600	
	WSD9	B	Mid-Flood	420	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	WSD10	S	Mid-Ebb	12	16
	WSD10	M	Mid-Ebb	16	
	WSD10	B	Mid-Ebb	22	
	WSD10	S	Mid-Flood	230	228
	WSD10	M	Mid-Flood	320	
	WSD10	B	Mid-Flood	160	
13/12/2014	WSD10	S	Mid-Ebb	26	55
	WSD10	M	Mid-Ebb	66	
	WSD10	B	Mid-Ebb	96	
	WSD10	S	Mid-Flood	68	93
	WSD10	M	Mid-Flood	120	
	WSD10	B	Mid-Flood	100	
24/01/2015	WSD10	S	Mid-Ebb	98	121
	WSD10	M	Mid-Ebb	120	
	WSD10	B	Mid-Ebb	150	
	WSD10	S	Mid-Flood	210	275
	WSD10	M	Mid-Flood	380	
	WSD10	B	Mid-Flood	260	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	WSD11	S	Mid-Ebb	6	10
	WSD11	M	Mid-Ebb	8	
	WSD11	B	Mid-Ebb	20	
	WSD11	S	Mid-Flood	130	137
	WSD11	M	Mid-Flood	140	
	WSD11	B	Mid-Flood	140	
13/12/2014	WSD11	S	Mid-Ebb	82	98
	WSD11	M	Mid-Ebb	96	
	WSD11	B	Mid-Ebb	120	
	WSD11	S	Mid-Flood	110	185
	WSD11	M	Mid-Flood	250	
	WSD11	B	Mid-Flood	230	
24/01/2015	WSD11	S	Mid-Ebb	160	163
	WSD11	M	Mid-Ebb	170	
	WSD11	B	Mid-Ebb	160	
	WSD11	S	Mid-Flood	210	220
	WSD11	M	Mid-Flood	220	
	WSD11	B	Mid-Flood	230	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	WSD12	S	Mid-Ebb	6	3
	WSD12	M	Mid-Ebb	4	
	WSD12	B	Mid-Ebb	<1	
	WSD12	S	Mid-Flood	7	7
	WSD12	M	Mid-Flood	10	
	WSD12	B	Mid-Flood	4	
13/12/2014	WSD12	S	Mid-Ebb	2	1
	WSD12	B	Mid-Ebb	<1	
	WSD12	S	Mid-Flood	<1	1
	WSD12	B	Mid-Flood	<1	
24/01/2015	WSD12	S	Mid-Ebb	38	25
	WSD12	B	Mid-Ebb	16	
	WSD12	S	Mid-Flood	210	561
	WSD12	B	Mid-Flood	1500	

: The reporting limit for E.coli is 1 cfu/100ml. For the results below the reporting limit, the level will be taken as 1 cfu/100ml.

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Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*	Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*	Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	WSD13	S	Mid-Ebb	84	37	22/11/2014	WSD15	S	Mid-Ebb	6	5	22/11/2014	WSD17	S	Mid-Ebb	140	114
	WSD13	M	Mid-Ebb	24			WSD15	M	Mid-Ebb	<1			WSD17	M	Mid-Ebb	82	
	WSD13	B	Mid-Ebb	26			WSD15	B	Mid-Ebb	16			WSD17	B	Mid-Ebb	130	
	WSD13	S	Mid-Flood	18	17		WSD15	S	Mid-Flood	600	612		WSD17	S	Mid-Flood	580	1086
	WSD13	M	Mid-Flood	18			WSD15	M	Mid-Flood	780			WSD17	M	Mid-Flood	1,700	
	WSD13	B	Mid-Flood	16			WSD15	B	Mid-Flood	490			WSD17	B	Mid-Flood	1,300	
13/12/2014	WSD13	S	Mid-Ebb	66	92	13/12/2014	WSD15	S	Mid-Ebb	62	54	13/12/2014	WSD17	S	Mid-Ebb	200	279
	WSD13	M	Mid-Ebb	130			WSD15	M	Mid-Ebb	54			WSD17	M	Mid-Ebb	320	
	WSD13	B	Mid-Ebb	92			WSD15	B	Mid-Ebb	48			WSD17	B	Mid-Ebb	340	
	WSD13	S	Mid-Flood	<1	1		WSD15	S	Mid-Flood	76	70		WSD17	S	Mid-Flood	100	183
	WSD13	M	Mid-Flood	<1			WSD15	M	Mid-Flood	120			WSD17	M	Mid-Flood	320	
	WSD13	B	Mid-Flood	<1			WSD15	B	Mid-Flood	38			WSD17	B	Mid-Flood	190	
24/01/2015	WSD13	S	Mid-Ebb	72	156	24/01/2015	WSD15	S	Mid-Ebb	680	455	24/01/2015	WSD17	S	Mid-Ebb	260	891
	WSD13	M	Mid-Ebb	220			WSD15	M	Mid-Ebb	660			WSD17	M	Mid-Ebb	1700	
	WSD13	B	Mid-Ebb	240			WSD15	B	Mid-Ebb	210			WSD17	B	Mid-Ebb	1600	
	WSD13	S	Mid-Flood	34	65		WSD15	S	Mid-Flood	1200	487		WSD17	S	Mid-Flood	460	335
	WSD13	M	Mid-Flood	110			WSD15	M	Mid-Flood	300			WSD17	M	Mid-Flood	370	
	WSD13	B	Mid-Flood	74			WSD15	B	Mid-Flood	320			WSD17	B	Mid-Flood	220	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*	Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*	Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	WSD18	S	Mid-Ebb	3,200	3183	22/11/2014	WSD19	S	Mid-Ebb	1,100	1290	22/11/2014	WSD20	S	Mid-Ebb	120	133
	WSD18	M	Mid-Ebb	2,400			WSD19	M	Mid-Ebb	2,100			WSD20	M	Mid-Ebb	140	
	WSD18	B	Mid-Ebb	4,200			WSD19	B	Mid-Ebb	930			WSD20	B	Mid-Ebb	140	
	WSD18	S	Mid-Flood	520	330		WSD19	S	Mid-Flood	510	624		WSD20	S	Mid-Flood	560	361
	WSD18	M	Mid-Flood	720			WSD19	M	Mid-Flood	690			WSD20	M	Mid-Flood	400	
	WSD18	B	Mid-Flood	96			WSD19	B	Mid-Flood	690			WSD20	B	Mid-Flood	210	
13/12/2014	WSD18	S	Mid-Ebb	8200	9117	13/12/2014	WSD19	S	Mid-Ebb	3500	3905	13/12/2014	WSD20	S	Mid-Ebb	600	573
	WSD18	M	Mid-Ebb	11000			WSD19	M	Mid-Ebb	4600			WSD20	M	Mid-Ebb	540	
	WSD18	B	Mid-Ebb	8400			WSD19	B	Mid-Ebb	3700			WSD20	B	Mid-Ebb	580	
	WSD18	S	Mid-Flood	96	96		WSD19	S	Mid-Flood	140	163		WSD20	S	Mid-Flood	180	158
	WSD18	M	Mid-Flood	99			WSD19	M	Mid-Flood	140			WSD20	M	Mid-Flood	110	
	WSD18	B	Mid-Flood	92			WSD19	B	Mid-Flood	220			WSD20	B	Mid-Flood	200	
24/01/2015	WSD18	S	Mid-Ebb	5500	4783	24/01/2015	WSD19	S	Mid-Ebb	2900	1928	24/01/2015	WSD20	S	Mid-Ebb	130	193
	WSD18	M	Mid-Ebb	3900			WSD19	M	Mid-Ebb	1900			WSD20	M	Mid-Ebb	190	
	WSD18	B	Mid-Ebb	5100			WSD19	B	Mid-Ebb	1300			WSD20	B	Mid-Ebb	290	
	WSD18	S	Mid-Flood	190	69		WSD19	S	Mid-Flood	190	277		WSD20	S	Mid-Flood	38	38
	WSD18	M	Mid-Flood	8			WSD19	M	Mid-Flood	1400			WSD20	M	Mid-Flood	58	
	WSD18	B	Mid-Flood	220			WSD19	B	Mid-Flood	80			WSD20	B	Mid-Flood	24	

: The reporting limit for E.coli is 1 cfu/100ml. For the results below the reporting limit, the level will be taken as 1 cfu/100ml.

Contract No. DC/2009/10
HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works
- Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Water Quality Monitoring Results (E. Coli)

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*	Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*	Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	WSD22	S	Mid-Ebb	170	141	22/11/2014	VM1	S	Mid-Ebb	50	38	22/11/2014	VM2	S	Mid-Ebb	1,400	544
	WSD22	M	Mid-Ebb	98			VM1	M	Mid-Ebb	62			VM2	M	Mid-Ebb	500	
	WSD22	B	Mid-Ebb	170			VM1	B	Mid-Ebb	18			VM2	B	Mid-Ebb	230	
	WSD22	S	Mid-Flood	640	1,317		VM1	S	Mid-Flood	84	107		VM2	S	Mid-Flood	130	816
	WSD22	M	Mid-Flood	1,700			VM1	M	Mid-Flood	160			VM2	M	Mid-Flood	1,900	
	WSD22	B	Mid-Flood	2,100			VM1	B	Mid-Flood	92			VM2	B	Mid-Flood	2,200	
13/12/2014	WSD22	S	Mid-Ebb	1000	1,207	13/12/2014	VM1	S	Mid-Ebb	46	46	13/12/2014	VM2	S	Mid-Ebb	7000	4,575
	WSD22	M	Mid-Ebb	1100			VM1	M	Mid-Ebb	43			VM2	M	Mid-Ebb	3600	
	WSD22	B	Mid-Ebb	1600			VM1	B	Mid-Ebb	48			VM2	B	Mid-Ebb	3800	
	WSD22	S	Mid-Flood	180	179		VM1	S	Mid-Flood	82	102		VM2	S	Mid-Flood	84	100
	WSD22	M	Mid-Flood	200			VM1	M	Mid-Flood	130			VM2	M	Mid-Flood	100	
	WSD22	B	Mid-Flood	160			VM1	B	Mid-Flood	100			VM2	B	Mid-Flood	120	
24/01/2015	WSD22	S	Mid-Ebb	1200	1322	24/01/2015	VM1	S	Mid-Ebb	80	141	24/01/2015	VM2	S	Mid-Ebb	1300	1163
	WSD22	M	Mid-Ebb	740			VM1	M	Mid-Ebb	130			VM2	M	Mid-Ebb	1100	
	WSD22	B	Mid-Ebb	2600			VM1	B	Mid-Ebb	270			VM2	B	Mid-Ebb	1100	
	WSD22	S	Mid-Flood	160	110		VM1	S	Mid-Flood	170	197		VM2	S	Mid-Flood	190	216
	WSD22	M	Mid-Flood	130			VM1	M	Mid-Flood	160			VM2	M	Mid-Flood	240	
	WSD22	B	Mid-Flood	64			VM1	B	Mid-Flood	280			VM2	B	Mid-Flood	220	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*	Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*	Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	VM4	S	Mid-Ebb	74	118	22/11/2014	VM5	S	Mid-Ebb	170	185	22/11/2014	VM7	S	Mid-Ebb	96	123
	VM4	M	Mid-Ebb	100			VM5	M	Mid-Ebb	170			VM7	M	Mid-Ebb	140	
	VM4	B	Mid-Ebb	220			VM5	B	Mid-Ebb	220			VM7	B	Mid-Ebb	140	
	VM4	S	Mid-Flood	540	1,561		VM5	S	Mid-Flood	7,800	6,364		VM7	S	Mid-Flood	40	56
	VM4	M	Mid-Flood	2,200			VM5	M	Mid-Flood	5,900			VM7	M	Mid-Flood	66	
	VM4	B	Mid-Flood	3,200			VM5	B	Mid-Flood	5,600			VM7	B	Mid-Flood	66	
13/12/2014	VM4	S	Mid-Ebb	350	713	13/12/2014	VM5	S	Mid-Ebb	1100	1,537	13/12/2014	VM7	S	Mid-Ebb	2400	2,109
	VM4	M	Mid-Ebb	740			VM5	M	Mid-Ebb	1500			VM7	M	Mid-Ebb	2300	
	VM4	B	Mid-Ebb	1400			VM5	B	Mid-Ebb	2200			VM7	B	Mid-Ebb	1700	
	VM4	S	Mid-Flood	1200	1,629		VM5	S	Mid-Flood	4200	5,000		VM7	S	Mid-Flood	440	182
	VM4	M	Mid-Flood	2000			VM5	M	Mid-Flood	6200			VM7	M	Mid-Flood	320	
	VM4	B	Mid-Flood	1800			VM5	B	Mid-Flood	4800			VM7	B	Mid-Flood	43	
24/01/2015	VM4	S	Mid-Ebb	2400	2240	24/01/2015	VM5	S	Mid-Ebb	520	615	24/01/2015	VM7	S	Mid-Ebb	780	771
	VM4	M	Mid-Ebb	1800			VM5	M	Mid-Ebb	320			VM7	M	Mid-Ebb	980	
	VM4	B	Mid-Ebb	2600			VM5	B	Mid-Ebb	1400			VM7	B	Mid-Ebb	600	
	VM4	S	Mid-Flood	1000	828		VM5	S	Mid-Flood	5000	3022		VM7	S	Mid-Flood	420	358
	VM4	M	Mid-Flood	580			VM5	M	Mid-Flood	2400			VM7	M	Mid-Flood	320	
	VM4	B	Mid-Flood	980			VM5	B	Mid-Flood	2300			VM7	B	Mid-Flood	340	

: The reporting limit for E.coli is 1 cfu/100ml. For the results below the reporting limit, the level will be taken as 1 cfu/100ml.

Contract No. DC/2009/10
HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works
- Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Water Quality Monitoring Results (E. Coli)

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*	Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*	Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	VM8	S	Mid-Ebb	110	130	22/11/2014	VM12	S	Mid-Ebb	88	136	22/11/2014	VM14	S	Mid-Ebb	80	38
	VM8	M	Mid-Ebb	240			VM12	M	Mid-Ebb	180			VM14	M	Mid-Ebb	16	
	VM8	B	Mid-Ebb	84			VM12	B	Mid-Ebb	160			VM14	B	Mid-Ebb	44	
	VM8	S	Mid-Flood	160	225		VM12	S	Mid-Flood	78	86		VM14	S	Mid-Flood	46	24
	VM8	M	Mid-Flood	310			VM12	M	Mid-Flood	86			VM14	M	Mid-Flood	16	
	VM8	B	Mid-Flood	230			VM12	B	Mid-Flood	94			VM14	B	Mid-Flood	18	
13/12/2014	VM8	S	Mid-Ebb	230	264	13/12/2014	VM12	S	Mid-Ebb	820	974	13/12/2014	VM14	S	Mid-Ebb	78	135
	VM8	M	Mid-Ebb	200			VM12	M	Mid-Ebb	1200			VM14	M	Mid-Ebb	260	
	VM8	B	Mid-Ebb	400			VM12	B	Mid-Ebb	940			VM14	B	Mid-Ebb	120	
	VM8	S	Mid-Flood	22	26		VM12	S	Mid-Flood	16	28		VM14	S	Mid-Flood	2	2
	VM8	M	Mid-Flood	20			VM12	M	Mid-Flood	27			VM14	M	Mid-Flood	4	
	VM8	B	Mid-Flood	39			VM12	B	Mid-Flood	50			VM14	B	Mid-Flood	<1	
24/01/2015	VM8	S	Mid-Ebb	540	478	24/01/2015	VM12	S	Mid-Ebb	170	196	24/01/2015	VM14	S	Mid-Ebb	160	113
	VM8	M	Mid-Ebb	440			VM12	M	Mid-Ebb	200			VM14	M	Mid-Ebb	82	
	VM8	B	Mid-Ebb	460			VM12	B	Mid-Ebb	220			VM14	B	Mid-Ebb	110	
	VM8	S	Mid-Flood	4	10		VM12	S	Mid-Flood	22	5		VM14	S	Mid-Flood	<1	1
	VM8	M	Mid-Flood	28			VM12	M	Mid-Flood	6			VM14	M	Mid-Flood	<1	
	VM8	B	Mid-Flood	10			VM12	B	Mid-Flood	<1			VM14	B	Mid-Flood	<1	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*	Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*	Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	VM15	S	Mid-Ebb	10	16	22/11/2014	JM3	S	Mid-Ebb	<1	4	22/11/2014	EM1	S	Mid-Ebb	10	17
	VM15	M	Mid-Ebb	18			JM3	M	Mid-Ebb	4			EM1	M	Mid-Ebb	26	
	VM15	B	Mid-Ebb	24			JM3	B	Mid-Ebb	18			EM1	B	Mid-Ebb	20	
	VM15	S	Mid-Flood	84	144		JM3	S	Mid-Flood	8	10		EM1	S	Mid-Flood	1	8
	VM15	M	Mid-Flood	210			JM3	M	Mid-Flood	14			EM1	M	Mid-Flood	16	
	VM15	B	Mid-Flood	170			JM3	B	Mid-Flood	8			EM1	B	Mid-Flood	34	
13/12/2014	VM15	S	Mid-Ebb	600	702	13/12/2014	JM3	S	Mid-Ebb	<1	2	13/12/2014	EM1	S	Mid-Ebb	<1	2
	VM15	M	Mid-Ebb	800			JM3	M	Mid-Ebb	6			EM1	M	Mid-Ebb	12	
	VM15	B	Mid-Ebb	720			JM3	B	Mid-Ebb	<1			EM1	B	Mid-Ebb	<1	
	VM15	S	Mid-Flood	160	281		JM3	S	Mid-Flood	<1	2		EM1	S	Mid-Flood	4	4
	VM15	M	Mid-Flood	410			JM3	M	Mid-Flood	<1			EM1	M	Mid-Flood	9	
	VM15	B	Mid-Flood	340			JM3	B	Mid-Flood	4			EM1	B	Mid-Flood	2	
24/01/2015	VM15	S	Mid-Ebb	560	464	24/01/2015	JM3	S	Mid-Ebb	64	71	24/01/2015	EM1	S	Mid-Ebb	54	37
	VM15	M	Mid-Ebb	270			JM3	M	Mid-Ebb	120			EM1	M	Mid-Ebb	30	
	VM15	B	Mid-Ebb	660			JM3	B	Mid-Ebb	46			EM1	B	Mid-Ebb	32	
	VM15	S	Mid-Flood	36	60		JM3	S	Mid-Flood	220	255		EM1	S	Mid-Flood	110	91
	VM15	M	Mid-Flood	80			JM3	M	Mid-Flood	250			EM1	M	Mid-Flood	110	
	VM15	B	Mid-Flood	74			JM3	B	Mid-Flood	300			EM1	B	Mid-Flood	62	

: The reporting limit for E.coli is 1 cfu/100ml. For the results below the reporting limit, the level will be taken as 1 cfu/100ml.

Contract No. DC/2009/10
HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works
- Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Water Quality Monitoring Results (E. Coli)

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*	Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*	Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	EM2	S	Mid-Ebb	<1	4	22/11/2014	EM3	S	Mid-Ebb	<1	1	22/11/2014	MM13	S	Mid-Ebb	<1	3
	EM2	M	Mid-Ebb	6			EM3	M	Mid-Ebb	<1			MM13	M	Mid-Ebb	4	
	EM2	B	Mid-Ebb	8			EM3	B	Mid-Ebb	<1			MM13	B	Mid-Ebb	6	
	EM2	S	Mid-Flood	22	6		EM3	S	Mid-Flood	<1	1		MM13	S	Mid-Flood	2	1
	EM2	M	Mid-Flood	10			EM3	M	Mid-Flood	<1			MM13	M	Mid-Flood	<1	
	EM2	B	Mid-Flood	<1			EM3	B	Mid-Flood	<1			MM13	B	Mid-Flood	<1	
13/12/2014	EM2	S	Mid-Ebb	<1	1	13/12/2014	EM3	S	Mid-Ebb	<1	1	13/12/2014	MM13	S	Mid-Ebb	<1	1
	EM2	M	Mid-Ebb	<1			EM3	M	Mid-Ebb	<1			MM13	M	Mid-Ebb	<1	
	EM2	B	Mid-Ebb	<1			EM3	B	Mid-Ebb	<1			MM13	B	Mid-Ebb	<1	
	EM2	S	Mid-Flood	<1	1		EM3	S	Mid-Flood	<1	1		MM13	S	Mid-Flood	<1	1
	EM2	M	Mid-Flood	<1			EM3	M	Mid-Flood	<1			MM13	M	Mid-Flood	<1	
	EM2	B	Mid-Flood	<1			EM3	B	Mid-Flood	<1			MM13	B	Mid-Flood	<1	
24/01/2015	EM2	S	Mid-Ebb	14	10	24/01/2015	EM3	S	Mid-Ebb	2	1	24/01/2015	MM13	S	Mid-Ebb	<1	1
	EM2	M	Mid-Ebb	20			EM3	M	Mid-Ebb	<1			MM13	M	Mid-Ebb	<1	
	EM2	B	Mid-Ebb	4			EM3	B	Mid-Ebb	<1			MM13	B	Mid-Ebb	<1	
	EM2	S	Mid-Flood	18	6		EM3	S	Mid-Flood	<1	1		MM13	S	Mid-Flood	<1	1
	EM2	M	Mid-Flood	10			EM3	M	Mid-Flood	<1			MM13	M	Mid-Flood	<1	
	EM2	B	Mid-Flood	<1			EM3	B	Mid-Flood	<1			MM13	B	Mid-Flood	<1	

Sampling Date	Sampling Station	Sampling Depth	Tide	*E. coli*, cfu/100mL	*Depth Average*
22/11/2014	SM17	S	Mid-Ebb	1	1
	SM17	M	Mid-Ebb	3	
	SM17	B	Mid-Ebb	<1	
	SM17	S	Mid-Flood	<1	2
	SM17	M	Mid-Flood	<1	
	SM17	B	Mid-Flood	5	
13/12/2014	SM17	S	Mid-Ebb	<1	1
	SM17	M	Mid-Ebb	<1	
	SM17	B	Mid-Ebb	<1	
	SM17	S	Mid-Flood	<1	1
	SM17	M	Mid-Flood	<1	
	SM17	B	Mid-Flood	<1	
24/01/2015	SM17	S	Mid-Ebb	<1	1
	SM17	M	Mid-Ebb	<1	
	SM17	B	Mid-Ebb	<1	
	SM17	S	Mid-Flood	<1	1
	SM17	M	Mid-Flood	<1	
	SM17	B	Mid-Flood	<1	

: The reporting limit for E.coli is 1 cfu/100ml. For the results below the reporting limit, the level will be taken as 1 cfu/100ml.

APPENDIX E
LABORATORY TESTING AND QC REPORTS FOR *E. COLI*

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
1710, Technology Park,
18 On Lai Street,
Shatin, N.T.

ATTN: **Ms. Mei Ling Tang**

Laboratory No.:	21484
Date of Issue:	2014-11-25
Date Received:	2014-11-22
Date Tested:	2014-11-22
Date Completed:	2014-11-25
Page:	1 of 11

Sample Description : 240 liquid samples as received from client said to be water
Project No. MA11007
Project Name : Contract No. DC/2009/10
HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works – Main Pumping Station, Sedimentation Tanks and Ancillary Facilities
Custody No. : MA11007/141122
Sampling Date : 2014-11-22

Tests Requested & Methodology:

Item	Parameters	Ref. Method	Limit of reporting
1	*E. coli*	Environmental Microbiology Laboratory Test Method Manual TM09/EC/10/98 Issue 3 Environmental Protection Department, HK	1 cfu/100mL

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
B7	21484-1	S	Mid-Ebb	38
B7	21484-3	B	Mid-Ebb	50
B8	21484-4	S	Mid-Ebb	6
B8	21484-6	B	Mid-Ebb	12
B9	21484-7	S	Mid-Ebb	24
B9	21484-9	B	Mid-Ebb	18

Remarks: 1) < = less than
2) S = Surface, M = Middle, B = Bottom

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Dr. Priscilla Choy
Laboratory Director

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WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

Laboratory No.:	21484
Date of Issue:	2014-11-25
Date Received:	2014-11-22
Date Tested:	2014-11-22
Date Completed:	2014-11-25

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
B10	21484-10	S	Mid-Ebb	16
B10	21484-12	B	Mid-Ebb	8
B11	21484-14	M	Mid-Ebb	<1
B12	21484-17	M	Mid-Ebb	2
B13	21484-19	S	Mid-Ebb	2
B13	21484-21	B	Mid-Ebb	4
B14	21484-23	M	Mid-Ebb	<1
B24	21484-25	S	Mid-Ebb	<1
B24	21484-26	M	Mid-Ebb	<1
B24	21484-27	B	Mid-Ebb	<1
B25	21484-28	S	Mid-Ebb	<1
B25	21484-30	B	Mid-Ebb	<1
B26	21484-31	S	Mid-Ebb	<1
B26	21484-33	B	Mid-Ebb	<1
F1	21484-34	S	Mid-Ebb	<1
F1	21484-35	M	Mid-Ebb	<1
F1	21484-36	B	Mid-Ebb	<1
F5	21484-37	S	Mid-Ebb	16
F5	21484-38	M	Mid-Ebb	74
F5	21484-39	B	Mid-Ebb	86
WSD5	21484-40	S	Mid-Ebb	2
WSD5	21484-41	M	Mid-Ebb	2
WSD5	21484-42	B	Mid-Ebb	12
WSD6	21484-43	S	Mid-Ebb	8

Remarks: 1) < = less than

2) S = Surface, M = Middle, B = Bottom

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Website: www.wellab.com.hk

TEST REPORT

Laboratory No.:	21484
Date of Issue:	2014-11-25
Date Received:	2014-11-22
Date Tested:	2014-11-22
Date Completed:	2014-11-25

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
WSD6	21484-44	M	Mid-Ebb	2
WSD6	21484-45	B	Mid-Ebb	<1
WSD7	21484-46	S	Mid-Ebb	150
WSD7	21484-47	M	Mid-Ebb	96
WSD7	21484-48	B	Mid-Ebb	81
WSD9	21484-49	S	Mid-Ebb	24
WSD9	21484-50	M	Mid-Ebb	82
WSD9	21484-51	B	Mid-Ebb	83
WSD10	21484-52	S	Mid-Ebb	12
WSD10	21484-53	M	Mid-Ebb	16
WSD10	21484-54	B	Mid-Ebb	22
WSD11	21484-55	S	Mid-Ebb	6
WSD11	21484-56	M	Mid-Ebb	8
WSD11	21484-57	B	Mid-Ebb	20
WSD12	21484-58	S	Mid-Ebb	6
WSD12	21484-59	M	Mid-Ebb	4
WSD12	21484-60	B	Mid-Ebb	<1
WSD13	21484-61	S	Mid-Ebb	84
WSD13	21484-62	M	Mid-Ebb	24
WSD13	21484-63	B	Mid-Ebb	26
WSD15	21484-64	S	Mid-Ebb	6
WSD15	21484-65	M	Mid-Ebb	<1
WSD15	21484-66	B	Mid-Ebb	16
WSD17	21484-67	S	Mid-Ebb	140

Remarks: 1) < = less than

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Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

Laboratory No.:	21484
Date of Issue:	2014-11-25
Date Received:	2014-11-22
Date Tested:	2014-11-22
Date Completed:	2014-11-25

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
WSD17	21484-68	M	Mid-Ebb	82
WSD17	21484-69	B	Mid-Ebb	130
WSD18	21484-70	S	Mid-Ebb	3,200
WSD18	21484-71	M	Mid-Ebb	2,400
WSD18	21484-72	B	Mid-Ebb	4,200
WSD19	21484-73	S	Mid-Ebb	1,100
WSD19	21484-74	M	Mid-Ebb	2,100
WSD19	21484-75	B	Mid-Ebb	930
WSD20	21484-76	S	Mid-Ebb	120
WSD20	21484-77	M	Mid-Ebb	140
WSD20	21484-78	B	Mid-Ebb	140
WSD22	21484-79	S	Mid-Ebb	170
WSD22	21484-80	M	Mid-Ebb	98
WSD22	21484-81	B	Mid-Ebb	170
VM1	21484-82	S	Mid-Ebb	50
VM1	21484-83	M	Mid-Ebb	62
VM1	21484-84	B	Mid-Ebb	18
VM2	21484-85	S	Mid-Ebb	1,400
VM2	21484-86	M	Mid-Ebb	500
VM2	21484-87	B	Mid-Ebb	230
VM4	21484-88	S	Mid-Ebb	74
VM4	21484-89	M	Mid-Ebb	100
VM4	21484-90	B	Mid-Ebb	220
VM5	21484-91	S	Mid-Ebb	170

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TEST REPORT

Laboratory No.:	21484
Date of Issue:	2014-11-25
Date Received:	2014-11-22
Date Tested:	2014-11-22
Date Completed:	2014-11-25

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
VM5	21484-92	M	Mid-Ebb	170
VM5	21484-93	B	Mid-Ebb	220
VM7	21484-94	S	Mid-Ebb	96
VM7	21484-95	M	Mid-Ebb	140
VM7	21484-96	B	Mid-Ebb	140
VM8	21484-97	S	Mid-Ebb	110
VM8	21484-98	M	Mid-Ebb	240
VM8	21484-99	B	Mid-Ebb	84
VM12	21484-100	S	Mid-Ebb	88
VM12	21484-101	M	Mid-Ebb	180
VM12	21484-102	B	Mid-Ebb	160
VM14	21484-103	S	Mid-Ebb	80
VM14	21484-104	M	Mid-Ebb	16
VM14	21484-105	B	Mid-Ebb	44
VM15	21484-106	S	Mid-Ebb	10
VM15	21484-107	M	Mid-Ebb	18
VM15	21484-108	B	Mid-Ebb	24
JM3	21484-109	S	Mid-Ebb	<1
JM3	21484-110	M	Mid-Ebb	4
JM3	21484-111	B	Mid-Ebb	18
EM1	21484-112	S	Mid-Ebb	10
EM1	21484-113	M	Mid-Ebb	26
EM1	21484-114	B	Mid-Ebb	20
EM2	21484-115	S	Mid-Ebb	<1

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TEST REPORT

Laboratory No.:	21484
Date of Issue:	2014-11-25
Date Received:	2014-11-22
Date Tested:	2014-11-22
Date Completed:	2014-11-25

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
EM2	21484-116	M	Mid-Ebb	6
EM2	21484-117	B	Mid-Ebb	8
EM3	21484-118	S	Mid-Ebb	<1
EM3	21484-119	M	Mid-Ebb	<1
EM3	21484-120	B	Mid-Ebb	<1
MM13	21484-121	S	Mid-Ebb	<1
MM13	21484-122	M	Mid-Ebb	4
MM13	21484-123	B	Mid-Ebb	6
SM17	21484-124	S	Mid-Ebb	1
SM17	21484-125	M	Mid-Ebb	3
SM17	21484-126	B	Mid-Ebb	<1
B7	21484-127	S	Mid-Flood	18
B7	21484-129	B	Mid-Flood	12
B8	21484-130	S	Mid-Flood	40
B8	21484-132	B	Mid-Flood	36
B9	21484-133	S	Mid-Flood	18
B9	21484-135	B	Mid-Flood	20
B10	21484-136	S	Mid-Flood	54
B10	21484-138	B	Mid-Flood	30
B11	21484-140	M	Mid-Flood	42
B12	21484-143	M	Mid-Flood	82,000
B13	21484-145	S	Mid-Flood	98
B13	21484-146	M	Mid-Flood	32
B13	21484-147	B	Mid-Flood	40

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TEST REPORT

Laboratory No.:	21484
Date of Issue:	2014-11-25
Date Received:	2014-11-22
Date Tested:	2014-11-22
Date Completed:	2014-11-25
Page:	7 of 11

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
B14	21484-149	M	Mid-Flood	<1
B24	21484-151	S	Mid-Flood	<1
B24	21484-152	M	Mid-Flood	<1
B24	21484-153	B	Mid-Flood	4
B25	21484-154	S	Mid-Flood	4
B25	21484-156	B	Mid-Flood	<1
B26	21484-157	S	Mid-Flood	<1
B26	21484-159	B	Mid-Flood	<1
F1	21484-160	S	Mid-Flood	4
F1	21484-161	M	Mid-Flood	6
F1	21484-162	B	Mid-Flood	2
F5	21484-163	S	Mid-Flood	24
F5	21484-164	M	Mid-Flood	16
F5	21484-165	B	Mid-Flood	36
WSD5	21484-166	S	Mid-Flood	50
WSD5	21484-167	M	Mid-Flood	26
WSD5	21484-168	B	Mid-Flood	36
WSD6	21484-169	S	Mid-Flood	94
WSD6	21484-170	M	Mid-Flood	48
WSD6	21484-171	B	Mid-Flood	74
WSD7	21484-172	S	Mid-Flood	54
WSD7	21484-173	M	Mid-Flood	92
WSD7	21484-174	B	Mid-Flood	72
WSD9	21484-175	S	Mid-Flood	44

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TEST REPORT

Laboratory No.:	21484
Date of Issue:	2014-11-25
Date Received:	2014-11-22
Date Tested:	2014-11-22
Date Completed:	2014-11-25

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
WSD9	21484-176	M	Mid-Flood	83
WSD9	21484-177	B	Mid-Flood	84
WSD10	21484-178	S	Mid-Flood	230
WSD10	21484-179	M	Mid-Flood	320
WSD10	21484-180	B	Mid-Flood	160
WSD11	21484-181	S	Mid-Flood	130
WSD11	21484-182	M	Mid-Flood	140
WSD11	21484-183	B	Mid-Flood	140
WSD12	21484-184	S	Mid-Flood	7
WSD12	21484-185	M	Mid-Flood	10
WSD12	21484-186	B	Mid-Flood	4
WSD13	21484-187	S	Mid-Flood	18
WSD13	21484-188	M	Mid-Flood	18
WSD13	21484-189	B	Mid-Flood	16
WSD15	21484-190	S	Mid-Flood	600
WSD15	21484-191	M	Mid-Flood	780
WSD15	21484-192	B	Mid-Flood	490
WSD17	21484-193	S	Mid-Flood	580
WSD17	21484-194	M	Mid-Flood	1,700
WSD17	21484-195	B	Mid-Flood	1,300
WSD18	21484-196	S	Mid-Flood	520
WSD18	21484-197	M	Mid-Flood	720
WSD18	21484-198	B	Mid-Flood	96
WSD19	21484-199	S	Mid-Flood	510

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TEST REPORT

Laboratory No.:	21484
Date of Issue:	2014-11-25
Date Received:	2014-11-22
Date Tested:	2014-11-22
Date Completed:	2014-11-25

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
WSD19	21484-200	M	Mid-Flood	690
WSD19	21484-201	B	Mid-Flood	690
WSD20	21484-202	S	Mid-Flood	560
WSD20	21484-203	M	Mid-Flood	400
WSD20	21484-204	B	Mid-Flood	210
WSD22	21484-205	S	Mid-Flood	640
WSD22	21484-206	M	Mid-Flood	1,700
WSD22	21484-207	B	Mid-Flood	2,100
VM1	21484-208	S	Mid-Flood	84
VM1	21484-209	M	Mid-Flood	160
VM1	21484-210	B	Mid-Flood	92
VM2	21484-211	S	Mid-Flood	130
VM2	21484-212	M	Mid-Flood	1,900
VM2	21484-213	B	Mid-Flood	2,200
VM4	21484-214	S	Mid-Flood	540
VM4	21484-215	M	Mid-Flood	2,200
VM4	21484-216	B	Mid-Flood	3,200
VM5	21484-217	S	Mid-Flood	7,800
VM5	21484-218	M	Mid-Flood	5,900
VM5	21484-219	B	Mid-Flood	5,600
VM7	21484-220	S	Mid-Flood	40
VM7	21484-221	M	Mid-Flood	66
VM7	21484-222	B	Mid-Flood	66
VM8	21484-223	S	Mid-Flood	160

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TEST REPORT

Laboratory No.:	21484
Date of Issue:	2014-11-25
Date Received:	2014-11-22
Date Tested:	2014-11-22
Date Completed:	2014-11-25

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
VM8	21484-224	M	Mid-Flood	310
VM8	21484-225	B	Mid-Flood	230
VM12	21484-226	S	Mid-Flood	78
VM12	21484-227	M	Mid-Flood	86
VM12	21484-228	B	Mid-Flood	94
VM14	21484-229	S	Mid-Flood	46
VM14	21484-230	M	Mid-Flood	16
VM14	21484-231	B	Mid-Flood	18
VM15	21484-232	S	Mid-Flood	84
VM15	21484-233	M	Mid-Flood	210
VM15	21484-234	B	Mid-Flood	170
JM3	21484-235	S	Mid-Flood	8
JM3	21484-236	M	Mid-Flood	14
JM3	21484-237	B	Mid-Flood	8
EM1	21484-238	S	Mid-Flood	1
EM1	21484-239	M	Mid-Flood	16
EM1	21484-240	B	Mid-Flood	34
EM2	21484-241	S	Mid-Flood	22
EM2	21484-242	M	Mid-Flood	10
EM2	21484-243	B	Mid-Flood	<1
EM3	21484-244	S	Mid-Flood	<1
EM3	21484-245	M	Mid-Flood	<1
EM3	21484-246	B	Mid-Flood	<1
MM13	21484-247	S	Mid-Flood	2

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TEST REPORT

Laboratory No.:	21484
Date of Issue:	2014-11-25
Date Received:	2014-11-22
Date Tested:	2014-11-22
Date Completed:	2014-11-25

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
MM13	21484-248	M	Mid-Flood	<1
MM13	21484-249	B	Mid-Flood	<1
SM17	21484-250	S	Mid-Flood	<1
SM17	21484-251	M	Mid-Flood	<1
SM17	21484-252	B	Mid-Flood	5
Field replicate (WSD12)	21484-253	S	Mid-Ebb	6
Field replicate (WSD12)	21484-254	S	Mid-Flood	6
Field replicate (SM17)	21484-255	S	Mid-Ebb	3
Field replicate (SM17)	21484-256	M	Mid-Ebb	5
Field replicate (SM17)	21484-257	M	Mid-Flood	2
Field replicate (SM17)	21484-258	B	Mid-Flood	7
Field replicate (WSD19)	21484-259	S	Mid-Ebb	1,300
Field replicate (WSD19)	21484-260	M	Mid-Ebb	1,900
Field replicate (WSD19)	21484-261	B	Mid-Ebb	810
Field replicate (WSD9)	21484-262	S	Mid-Ebb	30
Field replicate (WSD9)	21484-263	M	Mid-Ebb	74
Field replicate (WSD9)	21484-264	M	Mid-Flood	75
Field replicate (WSD9)	21484-265	B	Mid-Flood	86

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**********END OF REPORT**********

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
1710, Technology Park,
18 On Lai Street,
Shatin, N.T.

ATTN: **Ms. Mei Ling Tang**

Laboratory No.:	21617
Date of Issue:	2014-12-18
Date Received:	2014-12-13
Date Tested:	2014-12-13
Date Completed:	2014-12-18
Page:	1 of 11

Sample Description : 234 liquid samples as received from client said to be water
Project No. MA11007
Project Name : Contract No. DC/2009/10
HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works – Main Pumping Station, Sedimentation Tanks and Ancillary Facilities
Custody No. : MA11007/141213
Sampling Date : 2014-12-13

Tests Requested & Methodology:

Item	Parameters	Ref. Method	Limit of reporting
1	*E. coli*	Environmental Microbiology Laboratory Test Method Manual TM09/EC/10/98 Issue 3 Environmental Protection Department, HK	1 cfu/100mL

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
B7	21617-1	S	Mid-Ebb	190
B7	21617-3	B	Mid-Ebb	170
B8	21617-4	S	Mid-Ebb	680
B8	21617-6	B	Mid-Ebb	1100
B9	21617-7	S	Mid-Ebb	1000
B9	21617-9	B	Mid-Ebb	880

Remarks: 1) < = less than
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PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

Dr. Priscilla Choy
Laboratory Director

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TEST REPORT

Laboratory No.:	21617
Date of Issue:	2014-12-18
Date Received:	2014-12-13
Date Tested:	2014-12-13
Date Completed:	2014-12-18

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
B10	21617-10	S	Mid-Ebb	160
B10	21617-12	B	Mid-Ebb	340
B11	21617-14	M	Mid-Ebb	16
B12	21617-17	M	Mid-Ebb	52
B13	21617-19	S	Mid-Ebb	4
B13	21617-20	M	Mid-Ebb	6
B13	21617-21	B	Mid-Ebb	2
B14	21617-23	M	Mid-Ebb	<1
B24	21617-25	S	Mid-Ebb	<1
B24	21617-27	B	Mid-Ebb	<1
B25	21617-28	S	Mid-Ebb	6
B25	21617-30	B	Mid-Ebb	<1
B26	21617-31	S	Mid-Ebb	<1
B26	21617-32	M	Mid-Ebb	<1
B26	21617-33	B	Mid-Ebb	<1
F1	21617-34	S	Mid-Ebb	<1
F1	21617-35	M	Mid-Ebb	<1
F1	21617-36	B	Mid-Ebb	<1
F5	21617-37	S	Mid-Ebb	11
F5	21617-38	M	Mid-Ebb	12
F5	21617-39	B	Mid-Ebb	38
WSD5	21617-40	S	Mid-Ebb	150
WSD5	21617-41	M	Mid-Ebb	130
WSD5	21617-42	B	Mid-Ebb	98

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TEST REPORT

Laboratory No.:	21617
Date of Issue:	2014-12-18
Date Received:	2014-12-13
Date Tested:	2014-12-13
Date Completed:	2014-12-18

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
WSD6	21617-43	S	Mid-Ebb	100
WSD6	21617-44	M	Mid-Ebb	66
WSD6	21617-45	B	Mid-Ebb	18
WSD7	21617-46	S	Mid-Ebb	72
WSD7	21617-48	B	Mid-Ebb	92
WSD9	21617-49	S	Mid-Ebb	62
WSD9	21617-50	M	Mid-Ebb	74
WSD9	21617-51	B	Mid-Ebb	150
WSD10	21617-52	S	Mid-Ebb	26
WSD10	21617-53	M	Mid-Ebb	66
WSD10	21617-54	B	Mid-Ebb	96
WSD11	21617-55	S	Mid-Ebb	82
WSD11	21617-56	M	Mid-Ebb	96
WSD11	21617-57	B	Mid-Ebb	120
WSD12	21617-58	S	Mid-Ebb	2
WSD12	21617-60	B	Mid-Ebb	<1
WSD13	21617-61	S	Mid-Ebb	66
WSD13	21617-62	M	Mid-Ebb	130
WSD13	21617-63	B	Mid-Ebb	92
WSD15	21617-64	S	Mid-Ebb	62
WSD15	21617-65	M	Mid-Ebb	54
WSD15	21617-66	B	Mid-Ebb	48
WSD17	21617-67	S	Mid-Ebb	200
WSD17	21617-68	M	Mid-Ebb	320

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TEST REPORT

Laboratory No.:	21617
Date of Issue:	2014-12-18
Date Received:	2014-12-13
Date Tested:	2014-12-13
Date Completed:	2014-12-18

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
WSD17	21617-69	B	Mid-Ebb	340
WSD18	21617-70	S	Mid-Ebb	8200
WSD18	21617-71	M	Mid-Ebb	11000
WSD18	21617-72	B	Mid-Ebb	8400
WSD19	21617-73	S	Mid-Ebb	3500
WSD19	21617-74	M	Mid-Ebb	4600
WSD19	21617-75	B	Mid-Ebb	3700
WSD20	21617-76	S	Mid-Ebb	600
WSD20	21617-77	M	Mid-Ebb	540
WSD20	21617-78	B	Mid-Ebb	580
WSD22	21617-79	S	Mid-Ebb	1000
WSD22	21617-80	M	Mid-Ebb	1100
WSD22	21617-81	B	Mid-Ebb	1600
VM1	21617-82	S	Mid-Ebb	46
VM1	21617-83	M	Mid-Ebb	43
VM1	21617-84	B	Mid-Ebb	48
VM2	21617-85	S	Mid-Ebb	7000
VM2	21617-86	M	Mid-Ebb	3600
VM2	21617-87	B	Mid-Ebb	3800
VM4	21617-88	S	Mid-Ebb	350
VM4	21617-89	M	Mid-Ebb	740
VM4	21617-90	B	Mid-Ebb	1400
VM5	21617-91	S	Mid-Ebb	1100
VM5	21617-92	M	Mid-Ebb	1500

Remarks: 1) < = less than

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Website: www.wellab.com.hk

TEST REPORT

Laboratory No.:	21617
Date of Issue:	2014-12-18
Date Received:	2014-12-13
Date Tested:	2014-12-13
Date Completed:	2014-12-18

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
VM5	21617-93	B	Mid-Ebb	2200
VM7	21617-94	S	Mid-Ebb	2400
VM7	21617-95	M	Mid-Ebb	2300
VM7	21617-96	B	Mid-Ebb	1700
VM8	21617-97	S	Mid-Ebb	230
VM8	21617-98	M	Mid-Ebb	200
VM8	21617-99	B	Mid-Ebb	400
VM12	21617-100	S	Mid-Ebb	820
VM12	21617-101	M	Mid-Ebb	1200
VM12	21617-102	B	Mid-Ebb	940
VM14	21617-103	S	Mid-Ebb	78
VM14	21617-104	M	Mid-Ebb	260
VM14	21617-105	B	Mid-Ebb	120
VM15	21617-106	S	Mid-Ebb	600
VM15	21617-107	M	Mid-Ebb	800
VM15	21617-108	B	Mid-Ebb	720
JM3	21617-109	S	Mid-Ebb	<1
JM3	21617-110	M	Mid-Ebb	6
JM3	21617-111	B	Mid-Ebb	<1
EM1	21617-112	S	Mid-Ebb	<1
EM1	21617-113	M	Mid-Ebb	12
EM1	21617-114	B	Mid-Ebb	<1
EM2	21617-115	S	Mid-Ebb	<1
EM2	21617-116	M	Mid-Ebb	<1

Remarks: 1) < = less than

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TEST REPORT

Laboratory No.:	21617
Date of Issue:	2014-12-18
Date Received:	2014-12-13
Date Tested:	2014-12-13
Date Completed:	2014-12-18

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
EM2	21617-117	B	Mid-Ebb	<1
EM3	21617-118	S	Mid-Ebb	<1
EM3	21617-119	M	Mid-Ebb	<1
EM3	21617-120	B	Mid-Ebb	<1
MM13	21617-121	S	Mid-Ebb	<1
MM13	21617-122	M	Mid-Ebb	<1
MM13	21617-123	B	Mid-Ebb	<1
SM17	21617-124	S	Mid-Ebb	<1
SM17	21617-125	M	Mid-Ebb	<1
SM17	21617-126	B	Mid-Ebb	<1
B7	21617-127	S	Mid-Flood	<1
B7	21617-129	B	Mid-Flood	<1
B8	21617-130	S	Mid-Flood	<1
B8	21617-132	B	Mid-Flood	<1
B9	21617-133	S	Mid-Flood	2
B9	21617-135	B	Mid-Flood	<1
B10	21617-136	S	Mid-Flood	<1
B10	21617-138	B	Mid-Flood	<1
B11	21617-140	M	Mid-Flood	<1
B12	21617-143	M	Mid-Flood	<1
B13	21617-145	S	Mid-Flood	<1
B13	21617-146	M	Mid-Flood	<1
B13	21617-147	B	Mid-Flood	<1
B14	21617-149	M	Mid-Flood	1

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TEST REPORT

Laboratory No.:	21617
Date of Issue:	2014-12-18
Date Received:	2014-12-13
Date Tested:	2014-12-13
Date Completed:	2014-12-18

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
B24	21617-151	S	Mid-Flood	2
B24	21617-153	B	Mid-Flood	<1
B25	21617-154	S	Mid-Flood	<1
B25	21617-156	B	Mid-Flood	<1
B26	21617-157	S	Mid-Flood	1
B26	21617-158	M	Mid-Flood	<1
B26	21617-159	B	Mid-Flood	3
F1	21617-160	S	Mid-Flood	<1
F1	21617-161	M	Mid-Flood	<1
F1	21617-162	B	Mid-Flood	<1
F5	21617-163	S	Mid-Flood	2
F5	21617-164	M	Mid-Flood	4
F5	21617-165	B	Mid-Flood	8
WSD5	21617-166	S	Mid-Flood	6
WSD5	21617-167	M	Mid-Flood	10
WSD5	21617-168	B	Mid-Flood	20
WSD6	21617-169	S	Mid-Flood	<1
WSD6	21617-170	M	Mid-Flood	2
WSD6	21617-171	B	Mid-Flood	1
WSD7	21617-172	S	Mid-Flood	22
WSD7	21617-173	M	Mid-Flood	12
WSD7	21617-174	B	Mid-Flood	20
WSD9	21617-175	S	Mid-Flood	110
WSD9	21617-176	M	Mid-Flood	150

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TEST REPORT

Laboratory No.:	21617
Date of Issue:	2014-12-18
Date Received:	2014-12-13
Date Tested:	2014-12-13
Date Completed:	2014-12-18

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
WSD9	21617-177	B	Mid-Flood	130
WSD10	21617-178	S	Mid-Flood	68
WSD10	21617-179	M	Mid-Flood	120
WSD10	21617-180	B	Mid-Flood	100
WSD11	21617-181	S	Mid-Flood	110
WSD11	21617-182	M	Mid-Flood	250
WSD11	21617-183	B	Mid-Flood	230
WSD12	21617-184	S	Mid-Flood	<1
WSD12	21617-186	B	Mid-Flood	<1
WSD13	21617-187	S	Mid-Flood	<1
WSD13	21617-188	M	Mid-Flood	<1
WSD13	21617-189	B	Mid-Flood	<1
WSD15	21617-190	S	Mid-Flood	76
WSD15	21617-191	M	Mid-Flood	120
WSD15	21617-192	B	Mid-Flood	38
WSD17	21617-193	S	Mid-Flood	100
WSD17	21617-194	M	Mid-Flood	320
WSD17	21617-195	B	Mid-Flood	190
WSD18	21617-196	S	Mid-Flood	96
WSD18	21617-197	M	Mid-Flood	99
WSD18	21617-198	B	Mid-Flood	92
WSD19	21617-199	S	Mid-Flood	140
WSD19	21617-200	M	Mid-Flood	140
WSD19	21617-201	B	Mid-Flood	220

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TEST REPORT

Laboratory No.:	21617
Date of Issue:	2014-12-18
Date Received:	2014-12-13
Date Tested:	2014-12-13
Date Completed:	2014-12-18

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
WSD20	21617-202	S	Mid-Flood	180
WSD20	21617-203	M	Mid-Flood	110
WSD20	21617-204	B	Mid-Flood	200
WSD22	21617-205	S	Mid-Flood	180
WSD22	21617-206	M	Mid-Flood	200
WSD22	21617-207	B	Mid-Flood	160
VM1	21617-208	S	Mid-Flood	82
VM1	21617-209	M	Mid-Flood	130
VM1	21617-210	B	Mid-Flood	100
VM2	21617-211	S	Mid-Flood	84
VM2	21617-212	M	Mid-Flood	100
VM2	21617-213	B	Mid-Flood	120
VM4	21617-214	S	Mid-Flood	1200
VM4	21617-215	M	Mid-Flood	2000
VM4	21617-216	B	Mid-Flood	1800
VM5	21617-217	S	Mid-Flood	4200
VM5	21617-218	M	Mid-Flood	6200
VM5	21617-219	B	Mid-Flood	4800
VM7	21617-220	S	Mid-Flood	440
VM7	21617-221	M	Mid-Flood	320
VM7	21617-222	B	Mid-Flood	43
VM8	21617-223	S	Mid-Flood	22
VM8	21617-224	M	Mid-Flood	20
VM8	21617-225	B	Mid-Flood	39

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TEST REPORT

Laboratory No.:	21617
Date of Issue:	2014-12-18
Date Received:	2014-12-13
Date Tested:	2014-12-13
Date Completed:	2014-12-18

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
VM12	21617-226	S	Mid-Flood	16
VM12	21617-227	M	Mid-Flood	27
VM12	21617-228	B	Mid-Flood	50
VM14	21617-229	S	Mid-Flood	2
VM14	21617-230	M	Mid-Flood	4
VM14	21617-231	B	Mid-Flood	<1
VM15	21617-232	S	Mid-Flood	160
VM15	21617-233	M	Mid-Flood	410
VM15	21617-234	B	Mid-Flood	340
JM3	21617-235	S	Mid-Flood	<1
JM3	21617-236	M	Mid-Flood	<1
JM3	21617-237	B	Mid-Flood	4
EM1	21617-238	S	Mid-Flood	4
EM1	21617-239	M	Mid-Flood	9
EM1	21617-240	B	Mid-Flood	2
EM2	21617-241	S	Mid-Flood	<1
EM2	21617-242	M	Mid-Flood	<1
EM2	21617-243	B	Mid-Flood	<1
EM3	21617-244	S	Mid-Flood	<1
EM3	21617-245	M	Mid-Flood	<1
EM3	21617-246	B	Mid-Flood	<1
MM13	21617-247	S	Mid-Flood	<1
MM13	21617-248	M	Mid-Flood	<1
MM13	21617-249	B	Mid-Flood	<1

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TEST REPORT

Laboratory No.:	21617
Date of Issue:	2014-12-18
Date Received:	2014-12-13
Date Tested:	2014-12-13
Date Completed:	2014-12-18

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
SM17	21617-250	S	Mid-Flood	<1
SM17	21617-251	M	Mid-Flood	<1
SM17	21617-252	B	Mid-Flood	<1
Field replicate (EM2)	21617-253	B	Mid-Flood	<1
Field replicate (WSD11)	21617-254	S	Mid-Ebb	73
Field replicate (WSD13)	21617-255	S	Mid-Ebb	74
Field replicate (B26)	21617-256	S	Mid-Ebb	<1
Field replicate (B8)	21617-257	S	Mid-Flood	<1
Field replicate (B9)	21617-258	B	Mid-Ebb	750
Field replicate (WSD7)	21617-259	S	Mid-Ebb	52
Field replicate (WSD20)	21617-260	S	Mid-Ebb	680
Field replicate (WSD22)	21617-261	M	Mid-Flood	180

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
1710, Technology Park,
18 On Lai Street,
Shatin, N.T.

ATTN: **Ms. Mei Ling Tang**

Laboratory No.:	21844
Date of Issue:	2015-01-29
Date Received:	2015-01-24
Date Tested:	2015-01-24
Date Completed:	2015-01-29
Page:	1 of 11

Sample Description : 236 liquid samples as received from client said to be water
Project No. MA11007
Project Name : Contract No. DC/2009/10
HATS 2A Upgrading Works at Stonecutters Island Sewage Treatment Works – Main Pumping Station, Sedimentation Tanks and Ancillary Facilities
Custody No. : MA11007/150124
Sampling Date : 2015-01-24

Tests Requested & Methodology:

Item	Parameters	Ref. Method	Limit of reporting
1	*E. coli*	Environmental Microbiology Laboratory Test Method Manual TM09/EC/10/98 Issue 3 Environmental Protection Department, HK	1 cfu/100mL

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
B7	21617-1	S	Mid-Ebb	38
B7	21617-3	B	Mid-Ebb	62
B8	21617-4	S	Mid-Ebb	50
B8	21617-6	B	Mid-Ebb	82
B9	21617-7	S	Mid-Ebb	6
B9	21617-9	B	Mid-Ebb	6

Remarks: 1) < = less than
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PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

Dr. Priscilla Choy
Laboratory Director

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TEST REPORT

Laboratory No.:	21844
Date of Issue:	2015-01-29
Date Received:	2015-01-24
Date Tested:	2015-01-24
Date Completed:	2015-01-29

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
B10	21617-10	S	Mid-Ebb	10
B10	21617-12	B	Mid-Ebb	12
B11	21617-14	M	Mid-Ebb	10
B12	21617-17	M	Mid-Ebb	<1
B13	21617-19	S	Mid-Ebb	32
B13	21617-20	M	Mid-Ebb	28
B13	21617-21	B	Mid-Ebb	70
B14	21617-23	M	Mid-Ebb	<1
B24	21617-25	S	Mid-Ebb	2
B24	21617-26	M	Mid-Ebb	<1
B24	21617-27	B	Mid-Ebb	2
B25	21617-28	S	Mid-Ebb	8
B25	21617-29	M	Mid-Ebb	2
B25	21617-30	B	Mid-Ebb	18
B26	21617-31	S	Mid-Ebb	2
B26	21617-32	M	Mid-Ebb	4
B26	21617-33	B	Mid-Ebb	<1
F1	21617-34	S	Mid-Ebb	6
F1	21617-35	M	Mid-Ebb	2
F1	21617-36	B	Mid-Ebb	<1
F5	21617-37	S	Mid-Ebb	20
F5	21617-38	M	Mid-Ebb	46
F5	21617-39	B	Mid-Ebb	56
WSD5	21617-40	S	Mid-Ebb	96

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TEST REPORT

Laboratory No.:	21844
Date of Issue:	2015-01-29
Date Received:	2015-01-24
Date Tested:	2015-01-24
Date Completed:	2015-01-29

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
WSD5	21617-41	M	Mid-Ebb	92
WSD5	21617-42	B	Mid-Ebb	58
WSD6	21617-43	S	Mid-Ebb	120
WSD6	21617-44	M	Mid-Ebb	180
WSD6	21617-45	B	Mid-Ebb	170
WSD7	21617-46	S	Mid-Ebb	230
WSD7	21617-47	M	Mid-Ebb	180
WSD7	21617-48	B	Mid-Ebb	210
WSD9	21617-49	S	Mid-Ebb	540
WSD9	21617-50	M	Mid-Ebb	1,700
WSD9	21617-51	B	Mid-Ebb	1,400
WSD10	21617-52	S	Mid-Ebb	98
WSD10	21617-53	M	Mid-Ebb	120
WSD10	21617-54	B	Mid-Ebb	150
WSD11	21617-55	S	Mid-Ebb	160
WSD11	21617-56	M	Mid-Ebb	170
WSD11	21617-57	B	Mid-Ebb	160
WSD12	21617-58	S	Mid-Ebb	38
WSD12	21617-60	B	Mid-Ebb	16
WSD13	21617-61	S	Mid-Ebb	72
WSD13	21617-62	M	Mid-Ebb	220
WSD13	21617-63	B	Mid-Ebb	240
WSD15	21617-64	S	Mid-Ebb	680
WSD15	21617-65	M	Mid-Ebb	660

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TEST REPORT

Laboratory No.:	21844
Date of Issue:	2015-01-29
Date Received:	2015-01-24
Date Tested:	2015-01-24
Date Completed:	2015-01-29

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
WSD15	21617-66	B	Mid-Ebb	210
WSD17	21617-67	S	Mid-Ebb	260
WSD17	21617-68	M	Mid-Ebb	1,700
WSD17	21617-69	B	Mid-Ebb	1,600
WSD18	21617-70	S	Mid-Ebb	5,500
WSD18	21617-71	M	Mid-Ebb	3,900
WSD18	21617-72	B	Mid-Ebb	5,100
WSD19	21617-73	S	Mid-Ebb	2,900
WSD19	21617-74	M	Mid-Ebb	1,900
WSD19	21617-75	B	Mid-Ebb	1,300
WSD20	21617-76	S	Mid-Ebb	130
WSD20	21617-77	M	Mid-Ebb	190
WSD20	21617-78	B	Mid-Ebb	290
WSD22	21617-79	S	Mid-Ebb	1,200
WSD22	21617-80	M	Mid-Ebb	740
WSD22	21617-81	B	Mid-Ebb	2,600
VM1	21617-82	S	Mid-Ebb	80
VM1	21617-83	M	Mid-Ebb	130
VM1	21617-84	B	Mid-Ebb	270
VM2	21617-85	S	Mid-Ebb	1,300
VM2	21617-86	M	Mid-Ebb	1,100
VM2	21617-87	B	Mid-Ebb	1,100
VM4	21617-88	S	Mid-Ebb	2,400
VM4	21617-89	M	Mid-Ebb	1,800

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TEST REPORT

Laboratory No.:	21844
Date of Issue:	2015-01-29
Date Received:	2015-01-24
Date Tested:	2015-01-24
Date Completed:	2015-01-29

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
VM4	21617-90	B	Mid-Ebb	2,600
VM5	21617-91	S	Mid-Ebb	520
VM5	21617-92	M	Mid-Ebb	320
VM5	21617-93	B	Mid-Ebb	1,400
VM7	21617-94	S	Mid-Ebb	780
VM7	21617-95	M	Mid-Ebb	980
VM7	21617-96	B	Mid-Ebb	600
VM8	21617-97	S	Mid-Ebb	540
VM8	21617-98	M	Mid-Ebb	440
VM8	21617-99	B	Mid-Ebb	460
VM12	21617-100	S	Mid-Ebb	170
VM12	21617-101	M	Mid-Ebb	200
VM12	21617-102	B	Mid-Ebb	220
VM14	21617-103	S	Mid-Ebb	160
VM14	21617-104	M	Mid-Ebb	82
VM14	21617-105	B	Mid-Ebb	110
VM15	21617-106	S	Mid-Ebb	560
VM15	21617-107	M	Mid-Ebb	270
VM15	21617-108	B	Mid-Ebb	660
JM3	21617-109	S	Mid-Ebb	64
JM3	21617-110	M	Mid-Ebb	120
JM3	21617-111	B	Mid-Ebb	46
EM1	21617-112	S	Mid-Ebb	54
EM1	21617-113	M	Mid-Ebb	30

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Website: www.wellab.com.hk

TEST REPORT

Laboratory No.:	21844
Date of Issue:	2015-01-29
Date Received:	2015-01-24
Date Tested:	2015-01-24
Date Completed:	2015-01-29

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
EM1	21617-114	B	Mid-Ebb	32
EM2	21617-115	S	Mid-Ebb	14
EM2	21617-116	M	Mid-Ebb	20
EM2	21617-117	B	Mid-Ebb	4
EM3	21617-118	S	Mid-Ebb	2
EM3	21617-119	M	Mid-Ebb	<1
EM3	21617-120	B	Mid-Ebb	<1
MM13	21617-121	S	Mid-Ebb	<1
MM13	21617-122	M	Mid-Ebb	<1
MM13	21617-123	B	Mid-Ebb	<1
SM17	21617-124	S	Mid-Ebb	<1
SM17	21617-125	M	Mid-Ebb	<1
SM17	21617-126	B	Mid-Ebb	<1
B7	21617-127	S	Mid-Flood	<1
B7	21617-129	B	Mid-Flood	<1
B8	21617-130	S	Mid-Flood	<1
B8	21617-132	B	Mid-Flood	<1
B9	21617-133	S	Mid-Flood	1
B9	21617-135	B	Mid-Flood	<1
B10	21617-136	S	Mid-Flood	<1
B10	21617-138	B	Mid-Flood	<1
B11	21617-140	M	Mid-Flood	<1
B12	21617-143	M	Mid-Flood	2
B13	21617-145	S	Mid-Flood	<1

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TEST REPORT

Laboratory No.:	21844
Date of Issue:	2015-01-29
Date Received:	2015-01-24
Date Tested:	2015-01-24
Date Completed:	2015-01-29

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
B13	21617-146	M	Mid-Flood	2
B13	21617-147	B	Mid-Flood	6
B14	21617-149	M	Mid-Flood	<1
B24	21617-151	S	Mid-Flood	<1
B24	21617-152	M	Mid-Flood	4
B24	21617-153	B	Mid-Flood	2
B25	21617-154	S	Mid-Flood	30
B25	21617-156	B	Mid-Flood	20
B26	21617-157	S	Mid-Flood	<1
B26	21617-158	M	Mid-Flood	<1
B26	21617-159	B	Mid-Flood	2
F1	21617-160	S	Mid-Flood	20
F1	21617-161	M	Mid-Flood	20
F1	21617-162	B	Mid-Flood	12
F5	21617-163	S	Mid-Flood	<1
F5	21617-164	M	Mid-Flood	<1
F5	21617-165	B	Mid-Flood	<1
WSD5	21617-166	S	Mid-Flood	1
WSD5	21617-167	M	Mid-Flood	3
WSD5	21617-168	B	Mid-Flood	20
WSD6	21617-169	S	Mid-Flood	40
WSD6	21617-171	B	Mid-Flood	10
WSD7	21617-172	S	Mid-Flood	62
WSD7	21617-174	B	Mid-Flood	14

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Date of Issue:	2015-01-29
Date Received:	2015-01-24
Date Tested:	2015-01-24
Date Completed:	2015-01-29

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
WSD9	21617-175	S	Mid-Flood	540
WSD9	21617-176	M	Mid-Flood	600
WSD9	21617-177	B	Mid-Flood	420
WSD10	21617-178	S	Mid-Flood	210
WSD10	21617-179	M	Mid-Flood	380
WSD10	21617-180	B	Mid-Flood	260
WSD11	21617-181	S	Mid-Flood	210
WSD11	21617-182	M	Mid-Flood	220
WSD11	21617-183	B	Mid-Flood	230
WSD12	21617-184	S	Mid-Flood	210
WSD12	21617-186	B	Mid-Flood	1,500
WSD13	21617-187	S	Mid-Flood	34
WSD13	21617-188	M	Mid-Flood	110
WSD13	21617-189	B	Mid-Flood	74
WSD15	21617-190	S	Mid-Flood	1,200
WSD15	21617-191	M	Mid-Flood	300
WSD15	21617-192	B	Mid-Flood	320
WSD17	21617-193	S	Mid-Flood	460
WSD17	21617-194	M	Mid-Flood	370
WSD17	21617-195	B	Mid-Flood	220
WSD18	21617-196	S	Mid-Flood	190
WSD18	21617-197	M	Mid-Flood	8
WSD18	21617-198	B	Mid-Flood	220
WSD19	21617-199	S	Mid-Flood	190

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Date Received:	2015-01-24
Date Tested:	2015-01-24
Date Completed:	2015-01-29

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
WSD19	21617-200	M	Mid-Flood	1,400
WSD19	21617-201	B	Mid-Flood	80
WSD20	21617-202	S	Mid-Flood	38
WSD20	21617-203	M	Mid-Flood	58
WSD20	21617-204	B	Mid-Flood	24
WSD22	21617-205	S	Mid-Flood	160
WSD22	21617-206	M	Mid-Flood	130
WSD22	21617-207	B	Mid-Flood	64
VM1	21617-208	S	Mid-Flood	170
VM1	21617-209	M	Mid-Flood	160
VM1	21617-210	B	Mid-Flood	280
VM2	21617-211	S	Mid-Flood	190
VM2	21617-212	M	Mid-Flood	240
VM2	21617-213	B	Mid-Flood	220
VM4	21617-214	S	Mid-Flood	1,000
VM4	21617-215	M	Mid-Flood	580
VM4	21617-216	B	Mid-Flood	980
VM5	21617-217	S	Mid-Flood	5,000
VM5	21617-218	M	Mid-Flood	2,400
VM5	21617-219	B	Mid-Flood	2,300
VM7	21617-220	S	Mid-Flood	420
VM7	21617-221	M	Mid-Flood	320
VM7	21617-222	B	Mid-Flood	340
VM8	21617-223	S	Mid-Flood	4
VM8	21617-224	M	Mid-Flood	28

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TEST REPORT

Laboratory No.:	21844
Date of Issue:	2015-01-29
Date Received:	2015-01-24
Date Tested:	2015-01-24
Date Completed:	2015-01-29

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
VM8	21617-225	B	Mid-Flood	10
VM12	21617-226	S	Mid-Flood	22
VM12	21617-227	M	Mid-Flood	6
VM12	21617-228	B	Mid-Flood	<1
VM14	21617-229	S	Mid-Flood	<1
VM14	21617-230	M	Mid-Flood	<1
VM14	21617-231	B	Mid-Flood	<1
VM15	21617-232	S	Mid-Flood	36
VM15	21617-233	M	Mid-Flood	80
VM15	21617-234	B	Mid-Flood	74
JM3	21617-235	S	Mid-Flood	220
JM3	21617-236	M	Mid-Flood	250
JM3	21617-237	B	Mid-Flood	300
EM1	21617-238	S	Mid-Flood	110
EM1	21617-239	M	Mid-Flood	110
EM1	21617-240	B	Mid-Flood	62
EM2	21617-241	S	Mid-Flood	18
EM2	21617-242	M	Mid-Flood	10
EM2	21617-243	B	Mid-Flood	<1
EM3	21617-244	S	Mid-Flood	<1
EM3	21617-245	M	Mid-Flood	<1
EM3	21617-246	B	Mid-Flood	<1
MM13	21617-247	S	Mid-Flood	<1
MM13	21617-248	M	Mid-Flood	<1

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TEST REPORT

Laboratory No.:	21844
Date of Issue:	2015-01-29
Date Received:	2015-01-24
Date Tested:	2015-01-24
Date Completed:	2015-01-29

Results:

Sample ID	Sample No.	Sampling Depth	Tide	*E. coli* (cfu/100mL)
MM13	21617-249	B	Mid-Flood	<1
SM17	21617-250	S	Mid-Flood	<1
SM17	21617-251	M	Mid-Flood	<1
SM17	21617-252	B	Mid-Flood	<1
Field replicate (WSD13)	21617-253	B	Mid-Flood	89
Field replicate (WSD19)	21617-254	B	Mid-Ebb	1,600
Field replicate (WSD17)	21617-255	M	Mid-Ebb	1,700
Field replicate (MM13)	21617-256	B	Mid-Ebb	<1
Field replicate (WSD12)	21617-257	B	Mid-Ebb	12
Field replicate (WSD7)	21617-258	B	Mid-Ebb	180
Field replicate (B13)	21617-259	B	Mid-Ebb	68
Field replicate (WSD18)	21617-260	S	Mid-Flood	180
Field replicate (B8)	21617-261	B	Mid-Flood	<1
Field replicate (WSD13)	21617-253	B	Mid-Flood	89

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Laboratory No.:	QC21484
Date of Issue:	2014-11-25
Date Received:	2014-11-22
Date Tested:	2014-11-22
Date Completed:	2014-11-25

ATTN: **Ms. Mei Ling Tang**
QC report:

Page: 1 of 2

Medium Quality Control

Test Organisms	Result		Acceptance	
	Growth (at 44.0°C)	Color of colonies	Growth (at 44.0°C)	Color of colonies
E. coli	Yes	Greenish-blue	Yes	Greenish-blue
E.aerogenes	No	Purple (at 35 °C)	No	Purple (at 35 °C)
P. aeruginosa	No	Colorless (at 35 °C)	No	Colorless (at 35 °C)
K.pneumoniae	Yes	Purple	Yes	Purple
E. faecalis	No	Not applicable	No	Not applicable

Method Quality Control

	Result	Acceptance
Blank control	<1cfu/100mL	<1cfu/100mL
Positive control	Colour of colonies on culture medium: *E. coli* (greenish blue), *E. aerogenes* (purple), and *K. pneumoniae* (purple)	Colour of colonies on culture medium: *E. coli* (greenish blue), *E. aerogenes* (purple), and *K. pneumoniae* (purple)
Negative control	Colour of colonies on culture medium: *P. aeruginosa* (colourless) *E. faecalis* (no growth)	Colour of colonies on culture medium: *P. aeruginosa* (colourless) *E. faecalis* (no growth)

Remarks: 1) < = less than
2) This report is the summary of quality control data for report number 21484

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For and On Behalf of **WELLAB Ltd.**

Dr. Priscilla Choy
Laboratory Director

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Website: www.wellab.com.hk

TEST REPORT

Laboratory No.:	QC21484
Date of Issue:	2014-11-25
Date Received:	2014-11-22
Date Tested:	2014-11-22
Date Completed:	2014-11-25

Sample Duplicate

Sample ID	Sample result (cfu/100mL)	Sample duplicate (cfu/100mL)	LOG difference	Acceptance (Yes/No)
21484-33	<1	<1	0.0000	Yes
21484-53	16	18	0.0512	Yes
21484-73	1,100	1,200	0.0378	Yes
21484-93	220	250	0.0555	Yes
21484-113	26	30	0.0621	Yes
21484-136	54	47	0.0603	Yes
21484-165	36	32	0.0512	Yes
21484-185	10	9	0.0458	Yes
21484-205	640	700	0.0389	Yes
21484-225	230	210	0.0395	Yes
21484-245	<1	<1	0.0000	Yes
21484-265	86	81	0.0260	Yes

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2) This report is the summary of quality control data for report number 21484
3) Acceptance Criteria: LOG difference ≤0.0625

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Laboratory No.:	QC21617
Date of Issue:	2014-12-18
Date Received:	2014-12-13
Date Tested:	2014-12-13
Date Completed:	2014-12-18
Page:	1 of 2

ATTN: **Ms. Mei Ling Tang**
QC report:

Medium Quality Control

Test Organisms	Result		Acceptance	
	Growth (at 44.0°C)	Color of colonies	Growth (at 44.0°C)	Color of colonies
E. coli	Yes	Greenish-blue	Yes	Greenish-blue
E.aerogenes	No	Purple (at 35 °C)	No	Purple (at 35 °C)
P. aeruginosa	No	Colorless (at 35 °C)	No	Colorless (at 35 °C)
K.pneumoniae	Yes	Purple	Yes	Purple
E. faecalis	No	Not applicable	No	Not applicable

Method Quality Control

	Result	Acceptance
Blank control	<1cfu/100mL	<1cfu/100mL
Positive control	Colour of colonies on culture medium: *E. coli* (greenish blue), *E. aerogenes* (purple), and *K. pneumoniae* (purple)	Colour of colonies on culture medium: *E. coli* (greenish blue), *E. aerogenes* (purple), and *K. pneumoniae* (purple)
Negative control	Colour of colonies on culture medium: *P. aeruginosa* (colourless) *E. faecalis* (no growth)	Colour of colonies on culture medium: *P. aeruginosa* (colourless) *E. faecalis* (no growth)

Remarks: 1) < = less than
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TEST REPORT

Laboratory No.:	QC21617
Date of Issue:	2014-12-18
Date Received:	2014-12-13
Date Tested:	2014-12-13
Date Completed:	2014-12-18
Page:	2 of 2

Sample Duplicate

Sample ID	Sample result (cfu/100mL)	Sample duplicate (cfu/100mL)	LOG difference	Acceptance (Yes/No)
21617-32	<1	<1	0.0000	Yes
21617-53	66	63	0.0202	Yes
21617-74	4,600	4,200	0.0395	Yes
21617-94	2,400	2,400	0.0000	Yes
21617-114	<1	<1	0.0000	Yes
21617-138	<1	<1	0.0000	Yes
21617-166	6	6	0.0000	Yes
21617-187	<1	<1	0.0000	Yes
21617-207	160	140	0.0580	Yes
21617-227	27	25	0.0334	Yes
21617-247	<1	<1	0.0000	Yes
21617-261	180	170	0.0248	Yes

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3) Acceptance Criteria: LOG difference ≤0.0625

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
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Shatin, N.T., Hong Kong

Laboratory No.:	QC21844
Date of Issue:	2015-01-29
Date Received:	2015-01-24
Date Tested:	2015-01-24
Date Completed:	2015-01-29

ATTN: **Ms. Mei Ling Tang**
QC report:

Page: 1 of 2

Medium Quality Control

Test Organisms	Result		Acceptance	
	Growth (at 44.0°C)	Color of colonies	Growth (at 44.0°C)	Color of colonies
E. coli	Yes	Greenish-blue	Yes	Greenish-blue
E.aerogenes	No	Purple (at 35 °C)	No	Purple (at 35 °C)
P. aeruginosa	No	Colorless (at 35 °C)	No	Colorless (at 35 °C)
K.pneumoniae	Yes	Purple	Yes	Purple
E. faecalis	No	Not applicable	No	Not applicable

Method Quality Control

	Result	Acceptance
Blank control	<1cfu/100mL	<1cfu/100mL
Positive control	Colour of colonies on culture medium: *E. coli* (greenish blue), *E. aerogenes* (purple), and *K. pneumoniae* (purple)	Colour of colonies on culture medium: *E. coli* (greenish blue), *E. aerogenes* (purple), and *K. pneumoniae* (purple)
Negative control	Colour of colonies on culture medium: *P. aeruginosa* (colourless) *E. faecalis* (no growth)	Colour of colonies on culture medium: *P. aeruginosa* (colourless) *E. faecalis* (no growth)

Remarks: 1) < = less than
2) This report is the summary of quality control data for report number 21844

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Date of Issue:	2015-01-29
Date Received:	2015-01-24
Date Tested:	2015-01-24
Date Completed:	2015-01-29
Page:	2 of 2

Sample Duplicate

Sample ID	Sample result (cfu/100mL)	Sample duplicate (cfu/100mL)	LOG difference	Acceptance (Yes/No)
21844-30	18	20	0.0458	Yes
21844-50	1,700	1,500	0.0544	Yes
21844-71	3,900	4,200	0.0322	Yes
21844-91	520	460	0.0532	Yes
21844-111	46	53	0.0615	Yes
21844-133	<1	<1	0.0000	Yes
21844-162	12	15	0.0969	Yes
21844-184	210	170	0.0918	Yes
21844-205	160	190	0.0746	Yes
21844-225	10	12	0.0792	Yes
21844-244	<1	<1	0.0000	Yes
21844-261	<1	<1	0.0000	Yes

Remarks: 1) < = less than
2) This report is the summary of quality control data for report number 21844
3) Acceptance Criteria: LOG difference ≤0.1187

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APPENDIX F
ACTION PLAN

Appendix F Action Plan

Event	Action Plan
Case 2 - Temporary sewage bypass during construction phase	1. If temporary sewage bypass is required, Plant operators / DSD to inform EPD, WSD and LCSD at least 4 weeks prior to the discharge. 2. Environmental Team to conduct daily marine water monitoring (as discussed in Section 3.2.15) until the baseline water quality levels are restored or 3 days after the emergency discharge is ceased, whichever is the shortest. 3. Plant operators / DSD to record the effluent flow and effluent quality (i.e. *E.coli* level, pH value, temperature, salinity, turbidity and dissolved oxygen) during the water monitoring period. 4. The IEC shall compare the impact monitoring data with the baseline data to identify the degree of impact caused by the temporary sewage discharge (if any) and to determine when the normal water quality conditions are restored. The findings shall be provided to EPD, WSD and LCSD.