

Baseline Water Quality Monitoring Report – Executive Summary

Introduction

1. CEDD has employed Cinotech Consultants Limited to conduct the baseline water quality monitoring at Kai Tak Approach Channel, Kwun Tong Typhoon Shelter, Kowloon Bay (including To Kwa Wan Typhoon Shelter) and Victoria Harbour from December 2009 to May 2011. The objective of the water quality monitoring is to determine the baseline marine water quality of the above areas.

Water Quality Monitoring Works

2. The water quality monitoring was conducted quarterly from December 2009 to May 2011. The results (Parameters of Water Quality Objective) of the seven water quality monitoring events are summarized in the following tables:

Table 1 Water Quality Monitoring Results (Bottom DO, Average Depth DO, UIA and TIN Concentrations) for the 1st Baseline Monitoring (December 2009)

Area	Station	Bottom DO (mg/L)	Average Depth DO (mg/L)	UIA (mg/L)	TIN (mg/L)
KTAC	AC1	4.3 - 5.5	4.2 - 6.1	0.0310 - 0.0330	4.16 - 5.40
	AC2	2.6 - 3.3	4.2 - 4.5	0.0070 - 0.0247	2.60 - 4.67
	AC3	5.8 - 5.9	5.7 - 6.0	0.0090 - 0.0290	1.01 - 5.50
	AC4	4.0 - 4.7	4.1 - 5.1	0.0140 - 0.0185	3.26 - 4.06
	AC5	4.3 - 5.6	3.8 - 5.7	0.0195 - 0.0405	2.19 - 7.75
	AC6	3.7 - 4.3	3.8 - 5.1	0.0153 - 0.0265	2.57 - 3.20
	AC7	4.6 - 6.2	4.4 - 5.9	0.0120 - 0.0470	2.73 - 7.53
	KTN	4.6 - 5.2	4.5 - 5.2	0.0140	2.05 - 2.45
JVC	3.9 - 4.5	4.0 - 4.4	0.0075 - 0.0160	0.87 - 2.42	
KTTS	KT1	5.7 - 6.3	5.0 - 5.8	0.0053 - 0.0087	0.71 - 2.64
To Kwa Wan Typhoon Shelter	IB1	6.0 - 7.0	5.9 - 6.2	0.0037 - 0.0052	0.30 - 0.37
	IB2	6.0 - 7.2	6.20 - 6.24	0.0037 - 0.0047	0.33 - 0.34
	IB3	6.8 - 7.0	6.68 - 6.70	0.0030 - 0.0045	0.24 - 0.31
	OB1	6.0 - 7.2	5.5 - 6.9	0.0027 - 0.0030	0.23 - 0.36
Victoria Harbour	VH1	5.9 - 7.0	6.8 - 7.0	0.0010 - 0.0030	0.18 - 0.23
	VH2	6.6 - 6.9	6.6 - 6.9	0.0015 - 0.0020	0.15 - 0.22
WSD Intake at Tai Wan		6.0 - 7.1	6.6 - 7.1	0.0020 - 0.0030	0.22 - 0.23
WSD Intake at Cha Kwo Ling		6.6 - 7.6	6.5 - 7.3	0.0020 - 0.0080	0.18 - 0.46
WSD Intake at Quarry Bay		6.1 - 6.9	6.3 - 6.8	0.0020 - 0.0080	0.18 - 0.34

Table 2 Water Quality Monitoring Results (Bottom DO, Average Depth DO, UIA and TIN Concentrations) for the 2nd Baseline Monitoring (March 2010)

Area	Station	Bottom DO (mg/L)	Average Depth DO (mg/L)	UIA (mg/L)	TIN (mg/L)
KTAC	AC1	4.5 - 5.6	4.82 - 6.33	0.0170 - 0.0240	2.78 - 3.53
	AC2	1.4 - 3.6	3.23 - 5.99	0.0133 - 0.0170	2.27 - 2.91
	AC3	5.3 - 7.3	5.20 - 6.80	0.0070 - 0.0300	2.33 - 6.10
	AC4	2.7 - 4.0	4.05 - 6.41	0.0130 - 0.0205	1.13 - 2.35
	AC5	1.2 - 3.8	3.23 - 5.59	0.0163 - 0.0172	1.84 - 2.85
	AC6	3.2 - 4.6	4.12 - 5.94	0.0242 - 0.0247	1.96 - 3.53
	AC7	3.5 - 3.9	3.50 - 5.28	0.0083 - 0.0122	0.81 - 1.17
	KTN	4.0 - 7.5	4.43 - 7.10	0.0060 - 0.0110	2.47 - 5.40
	JVC	1.8 - 6.4	3.41 - 6.78	0.0125 - 0.0160	1.40 - 3.92
KTTS	KT1	3.9 - 4.9	3.97 - 5.85	0.0108 - 0.0117	0.84 - 1.18
To Kwa Wan Typhoon Shelter	IB1	5.3 - 5.8	5.17 - 5.80	0.0065 - 0.0067	0.39 - 0.42
	IB2	5.5 - 6.4	5.33 - 5.99	0.0060 - 0.0150	0.37 - 0.39
	IB3	5.3 - 5.6	5.67 - 5.91	0.0062 - 0.0063	0.36 - 1.25
	OB1	5.5 - 5.8	5.53 - 5.87	0.0053 - 0.0055	0.34 - 0.37
Victoria Harbour	VH1	5.3 - 5.9	5.29 - 5.64	0.0063 - 0.0080	0.37 - 0.39
	VH2	6.0 - 6.6	6.04 - 6.22	0.0047 - 0.0052	0.28 - 0.31
WSD Intake at Tai Wan		5.7 - 6.8	5.75 - 5.76	0.0050 - 0.0055	0.33 - 0.35
WSD Intake at Cha Kwo Ling		5.8 - 6.1	5.71 - 6.10	0.0040 - 0.0050	0.26 - 0.27
WSD Intake at Quarry Bay		5.4 - 6.0	5.42 - 5.93	0.0040 - 0.0050	0.25 - 0.30

Table 3 Water Quality Monitoring Results (Bottom DO, Average Depth DO, UIA and TIN Concentrations) for the 3rd Baseline Monitoring (May 2010)

Area	Station	Bottom DO (mg/L)	Average Depth DO (mg/L)	UIA (mg/L)	TIN (mg/L)
KTAC	AC1	3.5 - 5.3	3.00 - 5.15	0.0240 - 0.0330	4.275 - 4.380
	AC2	0.8 - 0.9	2.59 - 3.02	0.0143 - 0.0273	3.020 - 4.320
	AC3	2.7 - 4.5	2.85 - 4.37	0.0295 - 0.0345	4.230 - 4.860
	AC4	0.6 - 1.4	2.07 - 3.98	0.0160 - 0.0325	2.190 - 4.108
	AC5	2.9 - 5.0	3.59 - 4.87	0.0408 - 0.0725	3.558 - 4.813
	AC6	0.3 - 3.0	2.61 - 3.26	0.0363 - 0.0460	2.358 - 3.738
	AC7	0.8 - 3.8	2.62 - 4.12	0.0217 - 0.0315	2.202 - 2.699
	KTN	2.4 - 7.7	6.50 - 7.43	0.0125 - 0.0405	2.695 - 5.030
	JVC	3.7 - 4.4	3.01 - 3.66	0.0040 - 0.0260	3.095 - 4.810
KTTS	KT1	4.6 - 5.6	6.13 - 10.86	0.0023 - 0.0097	0.629 - 0.634
To Kwa Wan Typhoon Shelter	IB1	5.4 - 6.4	5.41 - 6.42	0.0073 - 0.0078	0.295 - 0.321
	IB2	5.5 - 6.3	5.45 - 6.34	0.0095 - 0.0106	0.321 - 0.323
	IB3	5.3 - 6.2	5.52 - 6.39	0.0088 - 0.0090	0.299 - 0.307
	OB1	5.7 - 6.4	5.84 - 6.48	0.0113 - 0.0137	0.341 - 0.372
Victoria Harbour	VH1	5.0 - 5.9	5.83 - 6.35	0.0073 - 0.0090	0.296 - 0.342
	VH2	5.4 - 5.7	5.83 - 6.91	0.0023 - 0.0110	0.152 - 0.349
WSD Intake at Tai Wan		5.6 - 6.3	5.32 - 6.29	0.0090 - 0.0115	0.324 - 0.328
WSD Intake at Cha Kwo Ling		5.5 - 5.9	5.81 - 5.97	0.0075 - 0.0100	0.296 - 0.326
WSD Intake at Quarry Bay		4.7 - 6.4	5.11 - 5.79	0.0070 - 0.0080	0.242 - 0.255

Table 4 Water Quality Monitoring Results (Bottom DO, Average Depth DO, UIA and TIN Concentrations) for the 4th Baseline Monitoring (August 2010)

Area	Station	Bottom DO (mg/L)	Average Depth DO (mg/L)	UIA (mg/L)	TIN (mg/L)
KTAC	AC1	2.2 – 2.6	2.43 – 2.45	0.0205 – 0.0500	4.988 – 6.541
	AC2	1.2 – 1.3	1.89 – 3.01	0.0138 – 0.0158	3.874 – 5.118
	AC3	3.7 – 4.8	3.40 – 3.93	0.0110 – 0.0440	4.230 – 5.212
	AC4	0.8 – 1.3	2.12 – 2.87	0.0235 – 0.0345	4.674 – 5.673
	AC5	1.0 – 1.1	2.45 – 3.91	0.0200 – 0.0203	3.639 – 3.792
	AC6	0.8 – 0.9	2.57 – 2.76	0.0173 – 0.0370	3.929 – 6.140
	AC7	1.5 – 2.2	3.49 – 6.12	0.0058 – 0.0270	1.150 – 2.983
	KTN	1.9 – 2.9	1.65 – 2.00	0.0050 – 0.0070	2.058 – 5.701
JVC	1.2 – 1.4	1.58 – 3.57	0.0300 – 0.0515	3.816 – 4.409	
KTTS	KT1	3.2 – 3.9	4.05 – 7.09	0.0207 – 0.0228	1.401 – 1.924
To Kwa Wan Typhoon Shelter	IB1	3.7 – 5.8	3.78 – 5.39	0.01425 – 0.01433	0.395 – 0.425
	IB2	3.6 – 4.1	3.79 – 4.30	0.1483 – 0.1650	0.393 – 0.438
	IB3	3.8 – 4.1	4.06 – 4.72	0.0135 – 0.0140	0.385 – 0.415
	OB1	4.0 – 4.8	4.09 – 4.49	0.0137 – 0.0163	0.419 – 0.424
Victoria Harbour	VH1	3.6 – 3.7	3.78 – 3.94	0.0100 – 0.0160	0.303 – 0.474
	VH2	3.7 – 4.0	3.91 – 4.17	0.0063 – 0.0160	0.213 – 0.438
WSD Intake at Tai Wan		3.8 – 4.2	3.73 – 3.80	0.0090 – 0.0230	0.278 – 0.498
WSD Intake at Cha Kwo Ling		3.8 – 4.5	3.83 – 4.42	0.0130 – 0.0140	0.371 – 0.408
WSD Intake at Quarry Bay		3.9 – 4.1	3.91 – 4.02	0.0120 – 0.0125	0.310 – 0.348

Table 5 Water Quality Monitoring Results (Bottom DO, Average Depth DO, UIA and TIN Concentrations) for the 5th Baseline Monitoring (November 2010)

Area	Station	Bottom DO (mg/L)	Average Depth DO (mg/L)	UIA (mg/L)	TIN (mg/L)
KTAC	AC1	1.0 – 5.1	0.97 – 6.63	0.0050	1.589 – 3.315
	AC2	0.0 – 0.2	0.56 – 2.90	0.0035 – 0.0150	0.765 – 1.317
	AC3	0.5 – 5.7	0.95 – 5.99	0.0060	2.205 – 6.099
	AC4	0.7 – 3.5	4.17 – 4.47	0.0035 – 0.0075	1.754 – 7.080
	AC5	3.2 – 5.6	4.12 – 8.03	0.0025 – 0.0058	2.309 – 9.100
	AC6	1.5 – 1.7	2.91 – 5.48	0.0030 – 0.0045	1.576 – 4.377
	AC7	0.5 – 1.3	2.53 – 4.57	0.0017 – 0.0058	2.408 – 7.187
	KTN	1.8 – 6.5	1.50 – 4.48	0.0010 – 0.0080	0.819 – 1.931
JVC	2.7 – 5.9	2.67 – 6.43	0.0065 – 0.0070	2.755 – 6.015	
KTTS	KT1	5.6 – 6.7	7.02 – 7.33	0.0077 – 0.0113	0.999 – 1.094
To Kwa Wan Typhoon Shelter	IB1	6.5 – 6.8	6.69 – 7.01	0.0030	0.201 – 0.205
	IB2	6.9 – 7.9	6.92 – 7.41	0.0018 – 0.0025	0.182 – 0.219
	IB3	6.6 – 7.0	6.97 – 6.98	0.0020 – 0.0027	0.196 – 0.200
	OB1	7.1 – 7.9	7.15 – 7.43	0.0010 – 0.0020	0.175 – 0.208
Victoria Harbour	VH1	6.3 – 7.1	6.37 – 7.12	0.0010 – 0.0043	0.168 – 0.242
	VH2	6.7 – 7.1	6.46 – 7.24	0.0010 – 0.0043	0.168 – 0.225
WSD Intake at Tai Wan		6.3 – 7.2	6.24 – 7.22	0.0020 – 0.0060	0.208 – 0.251
WSD Intake at Cha Kwo Ling		6.7 – 7.3	6.78 – 7.28	0.0010 – 0.0030	0.166 – 0.181
WSD Intake at Quarry Bay		6.4 – 7.1	6.50 – 7.09	0.0010 – 0.0030	0.179 – 0.206

Table 6 Water Quality Monitoring Results (Bottom DO, Average Depth DO, UIA and TIN Concentrations) for the 6th Baseline Monitoring (February 2011)

Area	Station	Bottom DO (mg/L)	Average Depth DO (mg/L)	UIA (mg/L)	TIN (mg/L)
KTAC	AC1	0.3 – 3.7	0.81 – 3.87	0.0080 – 0.0115	5.979 – 7.101
	AC2	0.5 – 1.7	0.98 – 1.43	0.0105 – 0.0115	3.748 – 3.998
	AC3	1.2 – 2.9	1.65 – 2.49	0.0170 – 0.0205	7.267 – 7.871
	AC4	2.5 – 2.8	2.80 – 3.02	0.0130 – 0.0233	3.456 – 8.333
	AC5	2.8 – 3.8	3.37 – 3.44	0.0085 – 0.0223	2.191 – 3.949
	AC6	5.5 – 5.7	4.03 – 5.21	0.0240 – 0.0373	5.697 – 6.231
	AC7	5.9 – 6.6	3.63 – 5.94	0.0042 – 0.0430	2.058 – 6.619
	KTN	5.2 – 6.4	4.33 – 5.05	0.0030 – 0.0090	1.924 – 6.730
JVC	1.8 – 2.6	2.06 – 2.66	0.0148 – 0.0405	3.536 – 8.199	
KTTS	KT1	6.9 – 7.1	5.64 – 6.18	0.0060 – 0.0497	1.560 – 6.451
To Kwa Wan Typhoon Shelter	IB1	4.8 – 6.8	4.85 – 6.57	0.0025 – 0.0040	0.387 – 0.447
	IB2	5.2 – 6.8	5.33 – 6.72	0.0023 – 0.0032	0.359 – 0.403
	IB3	5.2 – 6.8	5.25 – 6.91	0.0025 – 0.0030	0.351 – 0.357
	OB1	5.0 – 6.8	5.04 – 6.79	0.0023 – 0.0028	0.366 – 0.377
Victoria Harbour	VH1	5.2 – 7.2	5.32 – 7.11	0.0027	0.352 – 0.374
	VH2	5.6 – 7.7	5.62 – 7.55	0.0020 – 0.0022	0.322 – 0.335
WSD Intake at Tai Wan		5.3 – 6.9	5.25 – 6.93	0.0020 – 0.0030	0.3685 – 0.3690
WSD Intake at Cha Kwo Ling		5.5 – 7.9	5.86 – 7.77	0.0025	0.404 – 0.476
WSD Intake at Quarry Bay		5.6 – 8.1	5.70 – 7.53	0.0020	0.312 – 0.319

Table 7 Water Quality Monitoring Results (Bottom DO, Average Depth DO, UIA and TIN Concentrations) for the 7th Baseline Monitoring (May 2011)

Area	Station	Bottom DO (mg/L)	Average Depth DO (mg/L)	UIA (mg/L)	TIN (mg/L)
KTAC	AC1	0.4 – 2.7	1.07 – 2.63	0.0180 – 0.0240	1.531 – 4.255
	AC2	0.9 – 2.3	1.28 – 2.08	0.0125 – 0.0153	1.444 – 5.918
	AC3	1.2 – 1.6	1.41 – 1.84	0.0160 – 0.0320	4.565 – 5.930
	AC4	0.1 – 2.8	0.31 – 2.95	0.0095 – 0.0165	0.754 – 5.770
	AC5	1.4 – 3.1	1.05 – 2.91	0.0090 – 0.0200	1.042 – 6.160
	AC6	0.7 – 0.9	1.05 – 2.17	0.0125 – 0.0243	1.525 – 5.430
	AC7	0.4 – 3.8	1.20 – 4.15	0.0093 – 0.0287	0.666 – 5.128
	KTN	3.2 – 3.9	3.20 – 4.15	0.0060 – 0.0330	5.868 – 6.138
JVC	0.3 – 1.1	1.05 – 2.11	0.0150 – 0.0225	1.675 – 5.360	
KTTS	KT1	4.4 – 4.6	4.16 – 4.75	0.0088 – 0.0108	0.712 – 2.182
To Kwa Wan Typhoon Shelter	IB1	4.8 – 5.5	5.12 – 5.44	0.0087	0.340 – 0.427
	IB2	5.1 – 5.9	5.32 – 5.65	0.0080 – 0.0083	0.299 – 0.382
	IB3	5.3 – 5.6	5.25 – 5.56	0.0060 – 0.0083	0.279 – 0.340
	OB1	5.2 – 5.4	5.25 – 5.39	0.0075 – 0.0082	0.323 – 0.334
Victoria Harbour	VH1	5.0 – 5.6	5.11 – 5.57	0.0053 – 0.0060	0.228 – 0.378
	VH2	5.6 – 6.0	5.49 – 5.93	0.0040 – 0.0080	0.174 – 0.398
WSD Intake at Tai Wan		5.1	5.03 – 5.12	0.0080 – 0.0100	0.351 – 0.387
WSD Intake at Cha Kwo Ling		5.0 – 6.2	5.05 – 6.21	0.0040 – 0.0050	0.197 – 0.340
WSD Intake at Quarry Bay		5.3 – 5.8	5.34 – 5.77	0.0050 – 0.0060	0.298 – 0.355

3. Results of baseline water quality monitoring works were all documented in the Water Quality Monitoring Reports and these reports were checked and reviewed by the Independent Environmental Checker.

[WATER QUALITY MONITORING REPORT \(DECEMBER 2009\) \(FULL VERSION\)](#)

[WATER QUALITY MONITORING REPORT \(MARCH 2010\) \(FULL VERSION\)](#)

[WATER QUALITY MONITORING REPORT \(MAY 2010\) \(FULL VERSION\)](#)

[WATER QUALITY MONITORING REPORT \(AUGUST 2010\) \(FULL VERSION\)](#)

[WATER QUALITY MONITORING REPORT \(NOVEMBER 2010\) \(FULL VERSION\)](#)

[WATER QUALITY MONITORING REPORT \(FEBRUARY 2011\) \(FULL VERSION\)](#)

[WATER QUALITY MONITORING REPORT \(MAY 2011\) \(FULL VERSION\)](#)